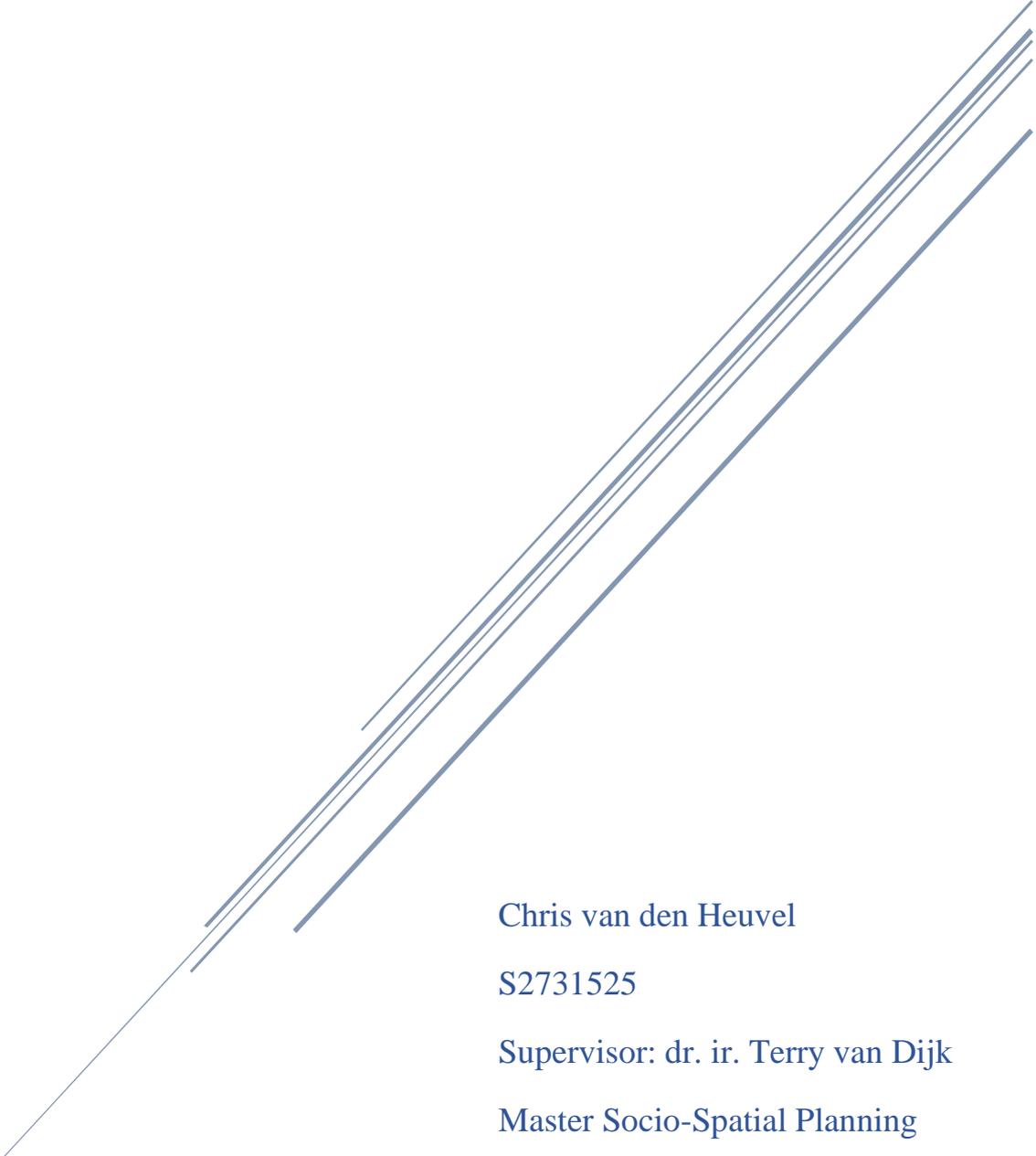


INFLUENCING SUBCONSCIOUS BEHAVIOUR TO REDUCE LITTER IN PUBLIC SPACE IN THE NORTHERN NETHERLANDS



Chris van den Heuvel

S2731525

Supervisor: dr. ir. Terry van Dijk

Master Socio-Spatial Planning

University of Groningen

Faculty of Spatial Sciences

12-07-2019

Abstract

Influencing the society's behaviour by governments to achieve socially desirable behaviour got a lot of attention in recent years. This research focuses on influencing subconscious behaviour by municipalities in the Northern Netherlands to reduce litter in public space. Three methods are further elaborated in this research: nudging, priming and messaging. The goal of this research is to investigate how municipalities in the Northern Netherlands influence the behaviour of their residents subconsciously in public space to stop them from littering. Furthermore, the reasons why municipalities make use of these techniques will be investigated. Eight semi-structured interviews are conducted with policy workers that are involved in the litter policy in their municipality. Municipalities from different sizes are selected spread out over the three northern provinces of the Netherlands.

All the interviewed municipalities mentioned that they are already using at least one of the three methods that are discussed in this study. The so called garbage catchers and the use of social normative messages were the most frequent mentioned techniques that are applied by the municipalities in this study. Different reasons for influencing subconscious behaviour to reduce litter in public space were given by the municipalities. The assumed effectiveness of these methods is reason for the most municipalities to experiment with it. Moreover, the relatively low costs and the fact that these methods fit in a positive approach were also mentioned as a reason for implementing these methods. However, municipalities mentioned also what restrain them from implementing techniques of influencing subconscious behaviour. Maintenance, it influences the overall design of the public space, techniques only work at specific locations and the need to keep innovating are arguments municipalities gave. The application of these methods to reduce litter in public space seems to be still in the initial phase in the Northern Netherlands.

Keywords: *Influencing behaviour, nudging, priming, messaging, public space, litter, Northern Netherlands*

List of figures and tables

Figures

Figure 1: Illustration of the influence of environmental factors on behaviour	12
Figure 2: Conceptual model	22

Tables

Table 1: Overview of conducted interviews	24
Table 2: Relevant questions to answer section 4.1	27
Table 3: Relevant questions to answer section 4.2	29
Table 4: Relevant questions to answer section 4.3	31
Table 5: Relevant questions to answer section 4.4	34

Maps

Map 1: Map of municipalities that participated in this research	25
---	----

Images

Image 1: Voting with your cigarette butt	14
Image 2: Voting with your chewing gum	14
Image 3: Holle Bolle Gijs	15
Image 4: Hopscotch bin	15
Image 5: Garbage catcher	15
Image 6: Artificial grass with flowers around underground garbage container	17
Image 7: Social normative message	18

Table of contents

Abstract	1
List of tables and figures	2
Table of contents	3
1. Introduction	5
1.1 Problem statement	5
1.2 Relevance	6
1.3 Research questions	7
2. Theoretical framework	8
2.1 Broken window theory	8
2.2 Public spaces	9
2.3 Commons dilemma	9
2.4 Behavioural insights	11
2.5 Methods of influencing subconscious behavior	13
2.5.1 Nudging	13
2.5.2 Priming	16
2.5.3 Messaging	18
2.6 Critique	19
2.7 Expectations	21
2.8 Conceptual model	22
3. Methodology	23
3.1 Research method	23
3.2 Analysis	25
3.3 Ethical considerations	26
4. Results	27
4.1 Methods used by municipalities to reduce litter in public space	27
4.2 Familiarity with techniques that influence subconscious behavior	29
4.3 Arguments for municipalities to implement methods that influence subconscious behavior	31
4.4 Arguments used by municipalities to use other methods to reduce litter instead of behavioural methods	34
5. Discussion and Conclusion	38
5.1 Discussion	38
5.2 Limitations	40
5.3 Conclusion	40
5.4 Recommendations	41

6. Reflection	43
References	44
Appendices	48
Appendix A: Interview guide	48
Appendix B: Transcripts of Oldambt, Smallingerland, Leeuwarden and Groningen	50
Appendix C: Transcripts of Emmen, Midden-Drenthe, Tynaarlo and Midden-Groningen	54

1. Introduction

Waste and litter were considered as the most common annoyances of Dutch citizens in 2015. Almost 30 percent of all the complaints that municipalities received, were related to this topic (RTL Nieuws, 2016). Research about litter in the Netherlands has shown that almost 95% of the Dutch people gets annoyed by litter. Litter can be defined as rubbish that is thrown away or left behind consciously or subconsciously on places that are not intended for rubbish. Empty bottles, cans, cigarette butts, chewing gum and candy packages are of frequent occurrence (Recycling Netwerk, 2019).

Counteracting and removing of litter is a municipal task. Moreover, the municipality is responsible for preventing litter (Milieucentraal, 2019). Litter has negative effects on the livability in public space (VROM, 2003). Littering is in the core a behavioural problem, caused by daily practice of citizens (Broeders et al., 2010).

Approximately 50 million kilos of litter ends up on the street or in nature in the Netherlands every year. It takes a very long time before litter breaks down in nature and pieces of plastic and glass will never break down. Moreover, it is difficult to clean up litter of its accessibility for example: litter near benches, litter in the bushes or litter that sticks on the ground such as chewing gum (Milieucentraal, 2019). It seems that the focus should be on prevention of littering instead of cleaning-up public spaces. According to Campbell (2007), it is more acceptable to litter in an area that is already dirty than in an area that is tidy and presentable. Thus, when an area becomes more clean, it is assumable that it will stay more clean in the long term.

A littered area can cause negative effects for among other things: environment, health and perceived safety (Broeders et al., 2010). Litter can end up in the water and so contribute to the 'plastic soup', nowadays considered to be of major global concern (Kühn, 2015). A littered street can make people feel unsafe, what is considered as worrisome. When streets are safe to use, it will enhance quality of life, which is vital element in human needs (Rashid et al., 2017).

1.1 Problem statement

The Dutch government is ambitious for a transition from a classical welfare state towards a participation society, a society where everyone takes responsibility for themselves and their environment. However, withdrawing responsibilities seems to be difficult for governments since a lot of social problems are caused by the behaviour of individuals as energy consumption and unsafe behaviour in traffic. So, the government has to find a new role where individual freedom are guaranteed but at the other hand support is provided and limits are determined (Raad voor Maatschappelijke Ontwikkeling, 2014).

To guarantee freedom and prevent social problems, governments have a few instruments to help them with achieving certain goals. The current classical policy instruments are: prohibitions / commands, subsidies / taxes and communication / information. However, these three methods of steering are not

sufficient to let citizens solve social problems by themselves. Extension of laws and regulations implies distrust in citizens instead of trust, for subsidies is too less budget and provision of more information could be seen as a form of paternalism. In addition, these instruments seem to be ineffective because policy makers often assume that citizens always make rational choices (Raad voor Maatschappelijke Ontwikkeling, 2014; NSOB, 2014).

To ensure a society where the governments take a step back, the policy instruments need to be renewed. New insights from psychology and behavioural sciences can be helpful to give citizens freedom of choices, but still behave desirably according to the government.

Those insights are already used by governments to encourage sustainable behaviour among citizens (Mont et al., 2017). Also using insights from behavioural sciences can contribute to let people live healthier by presenting only healthy food on eye-level. A Research in the Netherlands has shown that typical illustrations from a famous Dutch illustrator (Dick Bruna) of child books near the road have a positive effect in reducing speed. People associate these illustrations with childhood and are automatically inclined to reduce speed and so contribute to safe traffic (Goldenbeld et al., 2017).

1.2 Relevance

The attention for litter has grown in the Netherlands since 2008. As a result, a lot of research is done regarding behaviour towards litter. By using knowledge from behavioural sciences several interventions are possible to influence citizens to litter less. The last decade has seen a dramatic turn toward non-legal methods on controlling behaviour of citizens (Calo, 2014). This shapes the expectation that the application of behavioural sciences in policy will increase. A lot of tasks for policy makers can be reduced to adjust behaviour of people to normative and socially desirable behaviour. This can be done with several methods and instruments, such as: media campaigns and providing information on the risks or benefits of certain actions. But also two relatively unknown methods can be effective to influence behaviour of citizens: nudging and priming. These concepts receive a lot of attention in this thesis and will be further elaborated. The effectiveness of these interventions is proven by using behavioural experiments in the Netherlands. In 2014 the Dutch government embraced the application of behavioural insights and established the 'Behavioural Insights Network of the Netherlands' (Financieel Dagblad, 2018).

However, there is a little use of behavioural insights by many municipalities (Milieu Centraal, 2015). There are a lot of opportunities for influencing behaviour in public space that are not used by municipalities yet (Dijksterhuis & van Baaren, 2015).

1.3 Central research questions

To get an understanding on what methods are used for influencing subconscious behaviour by municipalities and which underlying thoughts are dominant, the following research question is formulated:

How and why do municipalities in the Northern Netherlands influence subconscious behaviour of its citizens to reduce litter in public space?

The following secondary research questions will be used to try to find an answer to the central research question:

1. What methods of influencing behaviour are already known in the literature?
2. What methods are used by the municipalities to reduce litter in public space?
3. Are municipalities familiar with techniques that influence subconscious behaviour processes of its citizens?
4. What arguments are used by municipalities to implement behavioural insights in strategies for reducing litter?
5. What arguments are used by municipalities to use other methods to reduce litter instead of behavioural methods?

2.Theoretical Framework

The last decades global attention increased to keep our environment clean for several reasons. To prevent areas from littering, it is important that people behave in a way that contributes to a clean environment. In the following section the broken window theory explains how a littered area influences others to litter as well. The underlying processes why people litter are further explained with help of the commons dilemma. After that, the focus will be on using behavioural insights by governments to influence behaviour of people. The notion of ‘communication and information’ will be further elaborated with influencing subconscious processes. Concepts as nudging, priming and messaging will be presented with examples from the Netherlands, but also from other countries in the world. This chapter closes with a small overview of critiques and opinions about the above mentioned concepts that are present in the existing literature.

2.1 Broken window theory

Wilson & Kelling (1982) elaborated the notion that neighbourhood level disorder caused residents to feel unsafe. They theorized that disorder not only causes fear of crime but also caused crime itself. This means in essence that for example municipalities could reduce crime effectively by eradicating disorder.

Litter in public space could cause a lot of negative effects for a society. The broken windows theory is based on the phenomenon that an apartment with a broken window would attract more vandalism than an apartment without broken windows. This theory predicts that citizens’ perceptions of disorder in their communities cause fear and social withdrawal, as a result the amount of crimes could increase.

This theory can also be applied on litter in public spaces and the negative effects it could entail. The importance of this litter lies not in its physical presence or the location in a public space, but in the social meaning that passer-by attach to it. When a pedestrian simply steps over the litter and does not give meaning to it, the litter has no social importance. However, when people interpret the presence of litter in public space as a reflection on an underlying social ill, the litter affects the social construction negatively and the causal chain of the broken window theory is sparked (Gau & Pratt, 2008). The behaviour of people in public space is influenced by social norms. Social norms can be divided into injunctive norms and descriptive norms. Injunctive norms are determined by the perception of common (dis)approval of a particular kind of behaviour. An injunctive norm provides information about what is most appropriate in a given situation. The antilitter norm is an example of a widely held injunctive norm. The more an injunctive norm is in someone’s mind, the more it affects behaviour of the society. When people see someone picking up a piece of litter or throwing it away in the rubbish bin, it is an action that shows disapproval of littering. This action could affect the behaviour of the people in the same environment. Descriptive norms provide information about which behaviour is

most common in a specific situation, so a littered setting shows that it is common to litter and will therefore enhance littering. Thus, the probability that someone litters a littered setting is enhanced when a lot of litter is present or when the participants see someone that litters (Keizer et al., 2008). However, eradicating disorder does not seem to be always the solution to reduce crime effectively. According to Sampson & Raudenbush (2004), eradicating disorder may have only limited payoffs in neighbourhoods inhabited by poor people and large numbers of ethnic minorities. This means that in this case, removing litter or littering in public space may lead to nothing, depending on the social context.

2.2 Public spaces

In this research the concept of ‘public space’ needs more elaboration since there are different views and definitions on this concept. The definition of Carr et al. (1992) will be used: “Public space as the common ground where people carry out the functional and ritual activities that bind a community, whether in the normal routines of daily life or in periodic festivities” (p.11). Furthermore, public space is also used for private purposes, for buying and selling things, gardening and self-improvement for exercise. In daily practice we consider public space as the streets, squares, parks and other green areas that everyone can use whenever they want (Hemel & Uum, 1999).

The public spaces at the centre of European cities are considered as their major nodes, and as such have always received much attention and investment (Madanipour, 2004). Maintenance of these public spaces seems to be important, since the broken-window theory explained that bad maintenance could cause a lot of negative effects for a neighbourhood. Gehl (2011) emphasizes the importance of a high quality public space. He states that in public spaces of poor quality, only strictly necessary activities occur. Even though in high quality public spaces approximately the same amount of necessary activities occur, they clearly tend to take a longer time because the physical conditions are better. Moreover, more optional activities will occur because place and situation invite people to stop, seat, play and eat. The point he tries to make is that in a good environment, a completely different, broad spectrum of human activities is possible. An increased level of human activities in public space will entail more interaction between people, resulting more social cohesion in that area.

2.3 Commons dilemma

According to Kolodko et al. (2016) the decision to litter is considered as a classic commons dilemma. For instance, it can be safely assumed that most people prefer a clean environment, that their garbage is recycled and that certain environmental standards are taken into account by the production of the goods they buy. However, there is still a temptation to litter or to do other practices that are not in favour of a clean environment. Now a commons dilemma occurs, in a narrow sense it pays better of

for each person to defect, because it is easier to throw your litter on the street than to find out where a rubbish bin is located. However, if everybody behaves in this way, the common good could be spoiled, which leaves everybody worse off than if everybody cooperated (Thøgersen, 2008) . In this sense cooperated means that everybody takes the effort to keep the street clean by not littering.

A key feature of the commons dilemma is that there is a shared resource, such as a square or a street. People can choose to maintain at a cost or to exploit. In the example of littering, the cost will exceed the benefit and people will choose to litter. Another characteristic of a commons dilemma is that the individual effects of exploitation are small and so people will typically choose to exploit the resource. The essence of the problem is that when someone who litters drops a few small pieces of litter, the impact may not even be noticeable to that person. But, this will become a problem when all those pieces of litter add up and the whole area will experience negative effects of it. Thus, individual and collective interests are at odds in a commons dilemma (Kolodko et al., 2016).

Sometimes public good problems can be solved by assigning property rights since people do not want to litter on their own property. As a result most of the littering will occur on the property of someone else. Although it seems to be very difficult to assign property rights to persons on public spaces, even without assigning these rights certain problems could be solved successfully. Cooter (1996) used the so called “pooper-scooper” law in the city of Berkeley as an example to solve certain public domain problems. In this law a fine is imposed on dog owners who do not clean their pet droppings. The public perception and expectations have changed enough nowadays resulting in that most dog owners clean up their pets’ droppings. However, this does not mean that imposing a fine on a certain crime could solve the problem. In the case of the “pooper-scooper” law, social incentives were supporting effectiveness of the law, the hard glares of passers-by and the feeling of guilt at the side of the offenders (Kolodko et al., 2016). Cooter (1996) states: “ the law solves the problem it addresses without formal enforcement” (p.1675). With this statement the importance of social norms in order to solve such commons dilemmas are seen as very helpful.

Kolodko et al. (2016) propose two approaches to solve the commons dilemma about litter: “ Reduce the perceived ratio of costs between not littering and littering, i.e. make it easier to use a bin, or harder no to” and “ Increase the perceived ratio of benefits between not littering and littering i.e. reward not littering and/or charge for littering” (p.5). It is important to notice that people are not always doing a careful cost-benefit analysis on beforehand whether they decide to litter or not. People are influenced by emotions, impulsivity and limited cognitive capacities. As a result, the choices people make are often based on norms, personal rules and arbitrary clues that are dependent on the situation. Therefore, small changes in choice design can result in significant changes in behaviour and can contribute to solving the commons dilemma.

2.4 Behavioural insights

Changing behaviour of people as a means to reduce litter in public space seems to be a helpful solution to this problem. Governments can influence the behaviour of citizens by providing information about what should be the best for them and their environment to do, par example information and pictures about the consequences of smoking on cigarette packages. This can be considered as a ‘think’ strategy and will enhance rationality. This information service of the government is a method to stimulate conscious decision-making among citizens (Baldwin, 2014).

Nowadays litter policy in the Netherlands is predominantly focussed on awareness. With campaigns in the media, clean up actions, neighbourhood projects, challenges and information meetings on schools the Dutch government tries to make people aware of the consequences of litter. The actions mentioned above can be considered as a method for *conscious* change in the attitude of people towards litter, resulting in a change of behaviour (Broeders et al., 2010). However, *subconscious* processes based on habits are the main reason that people litter in public space. To change the habits, governments must respond to the automatic processes of their citizens. Techniques that steer people in the desired direction in a subtle way contribute to the fact that people will litter public spaces less frequently. The more people that litter less, the more this will be a habit and will improve the chance on a real change in behaviour.

Kahneman (2011) introduced in his book “thinking, fast and slow” a dichotomy between two different modes of thought, called ‘system 1’ and ‘system 2’. System 1 thinking is about fast, automatic, emotional, frequent and subconscious processes of thinking and decision making. On the other hand, system 2 embraces more slow, conscious, deliberate and calculated processes.

As mentioned in the introduction, one of the classical policy instruments is communication and information. This can be considered as system 2 thinking, since the government desires a change of mind or a certain view towards a social problem. For instance in the case of litter, making people aware of what negative effects litter can have on our environment and thus influence behaviour of citizens with media campaigns or information meetings. The last decades the policy instrument ‘communication and information’ mainly focused on the system 2 thinking. However, The Raad voor Maatschappelijke Ontwikkeling (2014) concluded that this policy instrument was insufficient and needed to be renewed. Influencing behaviour by responding to system 1 thinking can be a helpful tool for governments to solve social problems. Research by several social psychologists has shown that our everyday behaviour is predominantly based on automatic, impulsive and intuitive decisions. A big part of our behaviour is not based on deliberate, conscious and explicit decisions, but is a result of fast and automatic assessments of stimuli (Van Knippenberg, 2012). Thus, system 1 thinking seems to be important in our decision making process. To change behaviour of people, governments should focus more on automatic and subconscious processes.

Behavioural insights are hardly applied by municipalities in the Netherlands and especially for a change in subconscious behaviour there are many unused opportunities. Applying behavioural insights in developing policy and interventions, will benefit the approach to reduce litter in public space (Milieu Centraal, 2015).

Ajzen (1991) outlines in his theory of planned behaviour that someone's attitude towards behaviour, his or her subjective norms, his or her perceived behavioural control form together an individual's behavioural intention and the actual behaviour. Leijdekkers et al. (2015) further elaborate on this theory and add the influence of environmental factors (Figure 1). Environmental factors influence someone's behaviour directly, but this influence on behaviour does not appeal to conscious processes, but to subconscious processes in the brain. Subconscious processes take into account many details of the environment and influence decisions. So according to Leijdekkers et al. (2015) environmental factors influence behaviour directly through our sub-consciousness.

With regard to litter policy, these environmental factors include par exemple: the amount of bins, existing litter level and the characteristics of the bin.

Figure 1 shows the influence of the environmental factors on the theory of planned behaviour. The intention to behave in a certain way, does not necessarily translate into behaving that way. In other words, the gap between intention and behaviour can mainly be attributed to persons who intend to act, but fail to realise their intentions (Sniehotta et al., 2005).

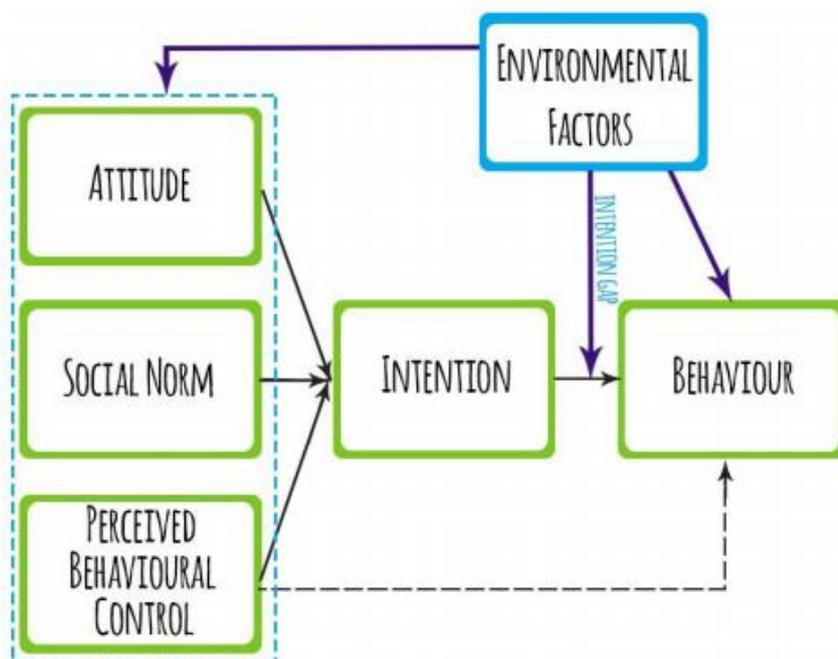


Figure 1: Illustration of the influence of environmental factors on behaviour (Leijdekkers et al., 2015)

As shown in the model, environmental factors influence the attitude of people. When someone has the desire to throw his garbage in the bin but has to walk a long distance to do so. The negative consequences for walking that distance do not outweigh the desire to throw it in the bin.

Environmental factors can influence subjective norms of people in the sense of litter. If there is a lot of litter on the street, it seems to be more accepted to litter by yourself. In this case the environment caused a change in the subjective norm. The perceived behavioural control means according to Ajzen (2002, p.665): “The perceived ease or difficulty of performing the behavior”.

Intervening in the environmental factors in a public space seems to be helpful in changing the behaviour of people. In the case of reducing litter of public space, a government can adjust the environmental factors that influence a specific subconscious behaviour among citizens.

2.5 Methods of influencing subconscious behaviour

In the following section three methods of influencing subconscious behaviour will be described that are derived from the existing literature.

2.5.1 Nudging

The concept ‘nudging’ is developed by Richard Thaler and Cass Sunstein in their book ‘Nudge: Improving Decisions About Health, Wealth and Happiness. This book is released in 2008 (Whitehead et al., 2014). The definition used by Thaler & Sunstein (2008., P6) of Nudging is as follows : “any aspect of the choice architecture that alters people’s behaviour in a predictable way without forbidding any options or significantly changing their economic incentives”. This means that prohibiting specific behaviour, giving fines or providing subsidies is not covered by nudging.

Nudging seems to offer policy makers an effective way to influence citizens’ behaviour without restricting freedom of choice (Hansen & Jespersen, 2013).

Nudging does sometimes work the best in a situation when people are not aware of being affected by a government (NSOB, 2014). Nudging techniques could be beneficial to reduce societal problems, such as overweight among children. By presenting healthy snacks at eye level in school canteens and painting lines on the ground that ‘guide’ people to the stairs instead of the elevator contribute to a more healthy lifestyle. Some examples of already existing nudges to reduce litter are:

- Painted footprints on the ground in the direction of a bin. This technique is responding to the automatic process of people to follow other people (Milieu Centraal, 2015). An research conducted in Copenhagen showed 46 percent decrease in littering when green footprints on the street were in use (Ly et al., 2013)

- Voting with cigarettes or chewing gum. By facilitating a kind of ‘garbage referendum’ people can vote with their garbage, for example a cigarette (Image 1) or chewing gum (Image 2). This technique is also successfully applied during a festival in the city of Rotterdam (CCV, 2016). It is important to make the outcome of the referendum visible for people, because people can see that many other people voted and chance increases that they will do this as well.



Image 1: Voting with cigarette butt (Swissinfo, 2017)



Image 2: Voting with your chewing gum (Nudge, 2009)

- Making use of ‘fun-theory’. An interactive bin that responds with sound effects and light effects when people throw garbage in it. This bin is used in the city of Nijmegen, almost 50 percent more garbage was collected by using this kind of bins (CCV, 2016). Another famous interactive bin in the Netherlands is ‘Holle Bolle Gijs’, located in theme park the Efteling, this bin asks for garbage and thanks people who put garbage in his mouth (Image 3). The city of Eindhoven did a successful pilot by using a similar concept in a parc (Omroep Brabant, 2017)



Image 3: Holle Bolle Gijs (*De leukste sprookjes*, 2018)

- Making use of gamification. Implementing game elements around bins to attract more people to throw their garbage in the bin. An example of gamification is the so called ‘Hopscotch bin’ (Image 4), the city of Luzern in Switzerland has done several experiments with creating game stations around various bins in the city (Luzerner Zeitung, 2011). Another example of gamification is the ‘garbage catcher’ (Image 5), people can throw their garbage into a kind of basket, often located near to a road or cycling path. These baskets are at a specific height, to make sure people that are on their bike on in their car can easily throw their garbage in it. Although, it seems that there is an opportunity that people miss the target and the garbage will fall on the ground, it is likely people are not going to stop and pick it up. But, even if this happens it will entail that the litter is concentrated to a certain place, what reduces the time and costs to clean the area. Dutch people are already quite familiar with this concept, called ‘blikvanger’ (Concern voor werk, 2019).



Image 4: Hopscotch bin (Scott, 2011)



Image 5: Someone throwing her garbage into a garbage catcher (Concern voor werk, 2019)

There are examples of nudges that showed to be effective and some of them are already applied in the Netherlands. The garbage catcher is a technique that is used in several Dutch municipalities (Concern voor werk, 2019).

However, Milieu Centraal (2015) states that nudges in public space in The Netherlands are still not applied frequently. As a result, the application of nudging techniques to reduce litter in public is expected to be in the initial phase in the Netherlands.

2.5.2 Priming

Primes are considered as a powerful means to change behaviour. Subtle, often sensory stimulations that can activate specific knowledge by people without being aware of it. Behaviour of people is dependent of what knowledge or mood is activated at a certain moment. Contrary to nudging, priming works by activating already existing knowledge instead of steering someone in the desired direction. Priming can be applied to reduce litter in public space, knowledge and moods needs to be activated that are linked to 'clean' (Dijksterhuis & van Baaren, 2015). Some examples mentioned in the existing literature about priming are:

- A possibility to let people litter less and behave in a more pro-environmental way, is to remind them on the desired behaviour. By using returning 'cues', these are reminders that work via the memory, that provoke certain knowledge that people gained earlier. Cues consist mostly out of visual stimuli, such as a picture with a specific logo of a national campaign against litter. When people see these logos more often, they will get more positive associations with it (Dijksterhuis & van Baaren, 2015)
- Be creative with colour of the bin. Research has shown that making bins the colour of a green apple reduce the amount of litter in that area (Rijkswaterstaat, 2018). Also shining bins or shining objects near to the bin will let people make associations with clean and will result in a less littered area (Dijksterhuis & van Baaren, 2015).
- Show pictures of nature on a bin or near a bin. These pictures have a restful effect on people and let people feel more comfortable in a certain environment. When people feel comfortable in an environment, they are less likely to litter (Dijksterhuis & van Baaren, 2015).
- Create a natural setting around an underground waste container to prevent that people put their waste next to the container when this is full. The last couple of years more and more Dutch municipalities are successfully experimenting with providing small gardens around waste containers (Tubantia, 2018; Gemeente Leiden, 2019) . This can be artificial grass with flowers (Image 6), but there are also examples of real plants and flowers being used around the containers.



Image 6: Artificial grass with flowers around an underground garbage container (De Sleutel, 2018)

- By spreading a specific smell in an area, the behaviour of people can also be influenced. A smell that often is associated with cleaning or clean areas can activate that people will clean more. De Lange et al. (2012) demonstrated in their research that a subtle smell of citron in a specific place can activate more people to behave clean. However, this technique will only work when the smell is subtle, so that it is not consciously noticed. Even though it works the best in covered spaces, so the smell stays suspended in the air.

The existing literature about priming techniques provides examples of primes that seem to be effective. Different techniques are proposed in the literature and some of these techniques have also been used already by some Dutch municipalities experimenting with primes around underground garbage containers. But, primes are still not frequently applied in Dutch public space to reduce litter (Milieu Centraal, 2015).

2.5.3 Messaging

With messages and pictures on posters and signs with regards to a clean environment, the behaviour of people can be influenced consciously as well as subconsciously. This technique differs from nudging and priming, because attention is required to understand the message. Meanwhile nudging and priming can also be successful without people paying attention to it. As a result, messages are only helpful when people are able to pay attention to the message and think about it. Messages are the most successful when they fit well in the context. So, when you want to reach the users of a particular parc, mention this parc in the message you want to provide them.

- People tend to behave in the same way like others do in the same situation. So called social normative messages try to give people the feeling that other people behave in a certain way (Image 7). The reader of the message gets the idea that it is good to behave in the same way. The messages could contain information about what others do, this increases the chance other people will follow (Dijksterhuis & van Baaren, 2015). For example, ‘ 95% of the visitors of this parc keep it clean’. This principle is also applied by governments to let citizens pay their taxes on time with messages as ‘90% of people in Ireland believe that people should pay their taxes on time’ (Sunstein, 2014).



Image 7: Social normative message near a road in the United Kingdom (Anthropocene, 2018)

- Another effective principle in steering behaviour of people is the authority principle. A message from an expert or a local hero is likely to make more sense on people who read the message than a general message. For instance when a local sport club deals with litter, a well-known trainer can be cited that he or she thinks that a clean environment is important.
- Using the principle of commitment and consistency in messages seems to be an effective method as well. People like to comply to what they have said. So, when people say that they will do something, or be something, the chance is bigger that they will do it is bigger. Examples of these messages are: “By walking through this parc, you promise to keep it clean” or “You are hospitable! Hospitable people keep this parc clean”

- The last type of message Dijksterhuis & van Baaren (2015) discuss in their article is one using the principle of reciprocity. When someone does something for you, you want to do something in return. An example of this kind of messaging is: “With pleasure we offer you a clean parc, do you help us with the clean up?”

The use of positive words is the most important for an effective message. Prevent using words as ‘litter’ or ‘garbage’, because people will unconsciously emphasize the negative words in a message. The above mentioned types of messages can be considered as principles that motivate people subconsciously to behave in a certain way. However, some types of messages respond more to conscious behavioural processes. This can be done by providing the reader more knowledge about the situation. This can be done by a message like: “On a clean beach, people have more fun”. But also messages that stimulate action as: “let’s keep it clean”. An disadvantage of messages that try to respond to conscious behavioural processes is that this could lead to more resistance among the target group.

Messages are already applied by Dutch municipalities to prevent people from littering. However, these messages are often still formulated in the ‘wrong’ way (Milieu Centraal, 2015).

In the literature another proven effective method of reducing litter in public space is mentioned. Besides that cleaning the public spaces has a big influence on the amount of litter, demonstratively cleaning has also a big influence on people’s behaviour. The percentage of people who litter in a specific area decreases when they see someone cleaning in that area (Keizer et al., 2008). This positive effect occurs even if people do not consciously notice that people are cleaning the area where they are located (Milieu Centraal, 2015). Even though it is sometimes more practical to clean up the streets in the city centre early in the morning before the shops open, doing it in the afternoon could have a positive outcome for reducing litter. This method can be seen as a more implicit message, people are reminded to the social norm that litter does not belong on the streets.

2.6 Critique

Governments are increasingly adopting behavioural science techniques for changing individual behaviour in pursuit of policy objectives (Benartzi et al., 2017). But that also raises critical questions about the role of the government in the society and transition to sustainability (Lehner, 2016). As a result of this new method of government control, a political and social debate occurred about the morality of nudging. Critics think that the emphasis on nudging is mainly on paternalism and manipulation. Even though someone has still the freedom of choice, litter or throw it in the bin, the government could steer someone too much that people consider it as manipulation. Other critics think

that there is a risk that government is morally superior when nudging. This violates the freedom of choice of citizens. A lot of critical articles are released in the United States, with titles such as “ Gov’t knows best? White house creates ‘nudge squad’ to shape behaviour” and “Nudge off!” (NSOB, 2014). Goodwin (2012) states that nudges are ethically wrong because it is a form of manipulation. Besides that he mentions that nudges will not bring about prolonged social change, something that is needed when dealing with policy problems like climate change.

Nudges are often confounded with libertarian paternalism (LP). Libertarian in the sense that people have complete freedom of choice, even if they are worse off by that choice. Paternalistic in the sense that governments influence citizens in what is best for them, even if they would make another choice initially. Schubert (2015, P.3) links this with nudging: “ In a nutshell, LP says that nudges should be used to ‘improve’ agents’ choices – specifically, to steer agents in the direction of those choices they would have made were they perfectly rational and ‘fully informed’ , which implies that paternalistic interventions are deemed legitimate”.

Hansen & Jespersen (2013) state that nudging is a good method to steer behaviour, while the freedom of choice keeps preserved and people are nudged into the ‘right’ direction without a punishment when they ‘misbehave’ . Furthermore they state that people are always subject to nudging and that the government nudges people towards ideas and principles they already had. Although, there are some general critiques on nudging, those critiques seem to play a less dominant role in this research.

A clean public space without litter is assumed to be preferred among people, so nudging and priming strategies to reduce litter in public spaces seem to be tolerated among everyone. However, according to Sunstein (2015), transparency and responsibility are important factors to nudge in a responsible way as a government and prevent the feeling of manipulation among citizens. He pleads for a ‘Bill of Rights for Nudging’ , a document in which clear rules and agreements about nudging are discussed (NRC, 2019). The five most important principles are that nudges must be consistent with people’s values and interests, must be for legitimate ends, must not violate anyone’s individual rights, must be transparent and that nudges ought not to take things from people without their consent (The Mandarin, 2018).

Based on the above nudging and priming could be helpful tools for policy makers to solve certain social problems. Especially for environmental issues, because it is assumable that everyone wants a clean environment but is not always aware of their own litter behaviour. However, a disadvantage as well of nudging and priming in relation to influencing conscious processes. If we always get nudged, and need to be nudged to behave in a certain way, we are not able anymore to make good considerations by ourselves. In the case of litter, people are throwing their litter in the bin because of attractive bins but probably their intrinsic motivation to throw it in the bin is not about to keep the environment clean. So, information is still very important, people have to be aware what the effect is

for the environment if they litter. Nudges and primes could help people as a kind of reminder to these knowledge about litter and the environment.

2.7 Expectations

Since 2016, Rijkswaterstaat (Dutch ministry of infrastructure and water management), NederlandSchoon (Organisation that supports municipalities with advice regarding litter) and NVRD (Dutch association for litter management) work together to connect actors that have an interest in preventing litter (Landelijke Aanpak Zwerfval, 2017). Rijkswaterstaat gives courses for municipalities where knowledge is provided about techniques as nudging, priming and social normative messages. There is a lot of theoretical and practical knowledge available among these organisations. However, this knowledge is still not often used by municipalities in the Netherlands (Rijkswaterstaat, 2018). This shapes the expectation that Dutch municipalities are already familiar with techniques of influencing subconscious behaviour, but barely apply these techniques in their own public spaces.

The above mentioned techniques of influencing subconscious behaviour seem to be effective. For this reason, Rijkswaterstaat provides information about how to apply these techniques correctly to municipalities. Another advantage of these techniques is the relatively low costs to apply them (Rijkswaterstaat, 2018). The expectation is that when municipalities are applying techniques of influencing subconscious behaviour, the assumed effectiveness and the relatively low costs will be important motives.

2.8 Conceptual model

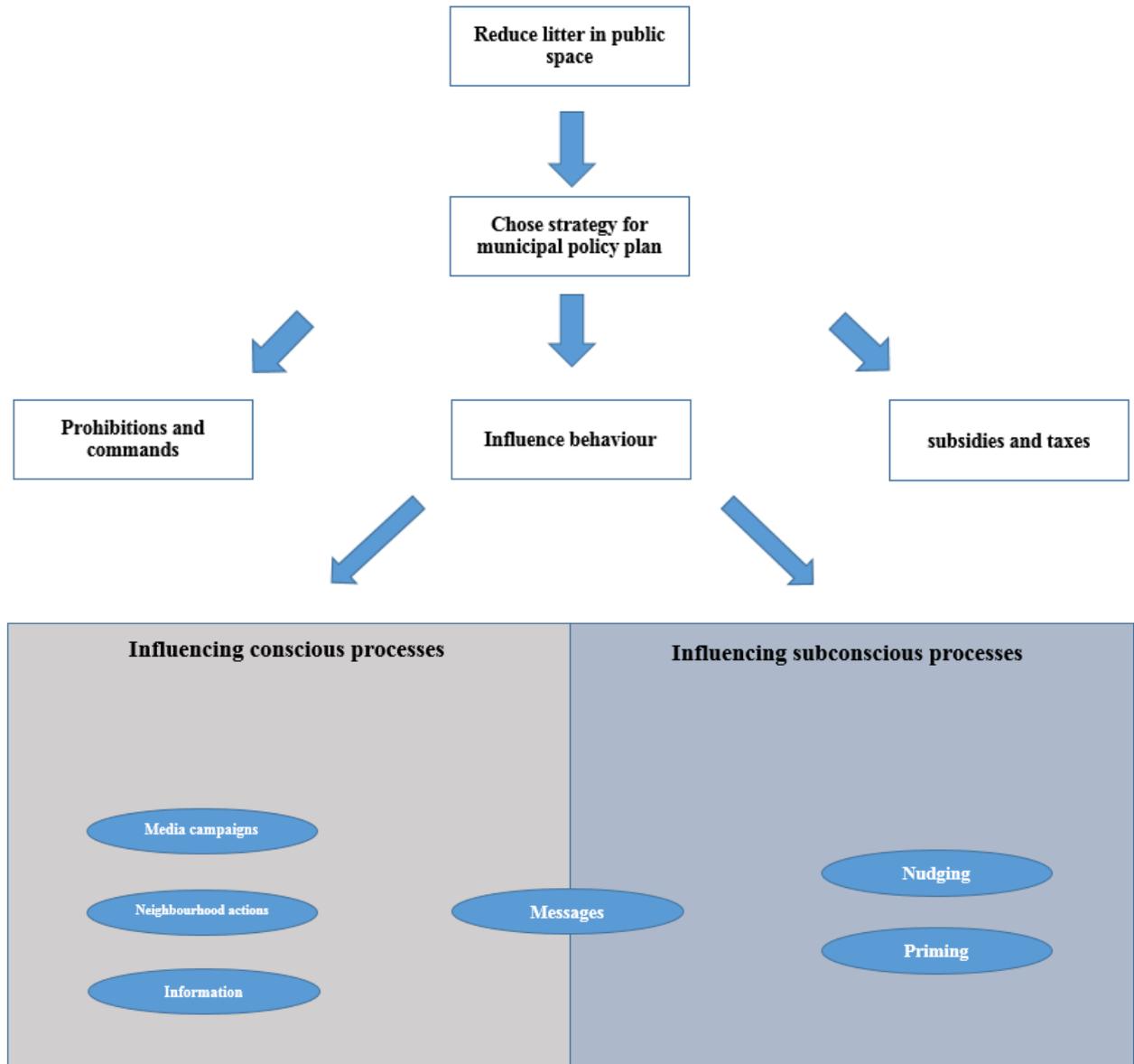


Figure 2: Conceptual model about influencing subconscious behaviour as a policy instrument to reduce litter in public space

3. Methodology

3.1. Research method

A qualitative research method is chosen to find an answer on the research question: “*How and why do municipalities in the Northern Netherlands influence subconscious behaviour of its citizens to reduce litter in public space?*”. According to Hammarberg et al. (2016) qualitative methods are often used to answer questions about experience, meaning and perspective, mostly from the perspective of the participant. On the other hand, quantitative research is often conducted to find facts, where the results are expressed in numbers. In this research different methods of influencing subconscious behaviour will receive attention. Since influencing subconscious behaviour to solve social problems is slightly new, not all methods may be described in the literature. A qualitative research is helpful to gain new insights that were not taken into account by the researcher. Furthermore, underlying considerations that municipalities make and convictions that they have are valuable for this research. A deeper understanding of the incentives that municipalities have to implement such strategies or not can be gained by qualitative research methods.

Commonly used methods of qualitative research are observations, in-depth interviews and open ended interviews (Patton, 2005). In this research is chosen for conducting interviews among different municipalities in the Northern Netherlands. In this research opinions, meanings and underlying considerations of municipalities are more useful to answer the research question than facts and numbers. A semi structured interview made it easier to respond when the interviewee says something interesting that could be helpful in the research but was not taken into account beforehand. Furthermore, the interviewee was able to repeat or reformulate a sentence when it was not completely clear what he or she meant. This made it an effective way of collecting data since no data will be lost as a result of miscommunication. However, the interviews were based on a list with questions that are divided in different topics (See appendix A). It is important to ask the same kind of questions in each interview to compare the approach of different municipalities with each other. The interview guide consists of some general questions about how municipalities tackle litter added with concepts derived from the existing literature. Subsequently concepts such as nudging and priming were introduced with some pictures of already used nudges and primes over the world. The interview ends with questions to find out what municipalities perceive as limitations to influence subconscious behaviour of citizens and where they see opportunities. A total of eight in-depth interviews are conducted (Table 1). This amount was not determined in advance. First six interviews were planned, after conducting four interviews the decision was made to plan two more interviews, because differences were noticed in the answers policy makers gave. After eight interviews with in total nine respondents, that varied from 30 minutes till 55 minutes no new additional information was provided by the policy workers. At this

point there was data saturation and conducting more interviews was not considered to be very helpful in this research.

The geographical scope of this research is the Northern Netherlands. The Northern Netherlands are defined as the geographical area of the provinces of Groningen, Friesland and Drenthe. The choice for this region is to keep the travel time and travel expenses at a modest level since this thesis is written in the city of Groningen. A total of eight interviews are conducted among policy workers that were involved in litter policy. Several e-mails were sent to different municipalities in the Northern Netherlands with the question to come in contact with a policy maker that is involved in litter in the municipality.

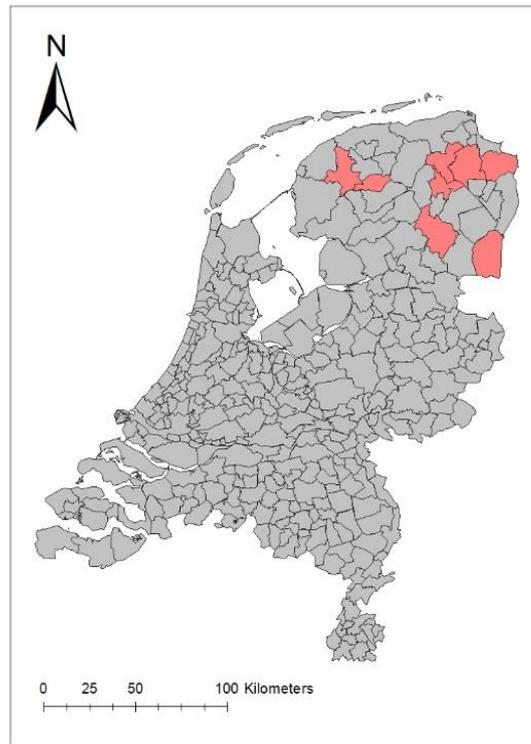
The respondents are divided more or less equally (3 in Groningen, 3 in Drenthe and 2 in Friesland) over the three Northern provinces to get a more representative view of the region (Map 1).

The size of the municipalities is also taken into account, since bigger municipalities could deal with more or other problems regarding litter than smaller municipalities. The city of Groningen, Leeuwarden and Emmen are the three cities with the highest population in respectively the provinces of Groningen, Friesland and Drenthe. But also smaller municipalities that consist of predominantly villages as the municipality of Tynaarlo and Midden-Drenthe got attention.

All eight interviews are conducted in the city hall or at the waste collection and disposal location in the concerned municipality. These are familiar locations for the respondents and are considered as a comfortable setting for them, where they can talk straight-out. The spoken language in the interviews was Dutch, since this is the native language of all interviewees. This made it easier for them to answer my questions properly and give clear explanations to their answers.

Respondent	Name of municipality	Date of interview
1	Oldambt	15 May 2019
2	Smallingerland	17 May 2019
3, 4	Leeuwarden	20 May 2019
5	Groningen	22 May 2019
6	Emmen	24 May 2019
7	Midden-Drenthe	24 May 2019
8	Tynaarlo	27 May 2019
9	Midden-Groningen	27 May 2019

Table 1: overview of conducted interviews



Map 1: interviews conducted in the municipalities marked in red (Map made with ArcGis)

3.2. Analysis

Every interview is transcribed as soon as possible after the interview was conducted. After transcribing, all the collected data was put in a table (See Appendix B & C). This table consists of questions from the interview guide. A few sentences to reflect the answer to each question of the eight municipalities were entered into the table. During this process the information was filtered, so only information that was helpful for answering the research questions is used in the table. The data is visually analyzed by looking up in the table the answer given by the policy makers to every question. Answers that were remarkable or answers that represented a more general vision were traced back in the transcripts and quoted to invigorate arguments that are used in the result. To answer each secondary question, the questions that were relevant in answering the secondary question were merged into a new table. To give the reader a good overview of the answers municipalities gave, for each subsection of the results tables are provided with the relevant answers shortly explained.

3.3 Ethical considerations

Before the start of each interview the interviewees were told that their names will be kept anonymous, so that their names will not be mentioned in the research. However, they gave permission to mention their function and the municipality they are working for. This made it easier to link quotes to certain people and make comparisons between different municipalities.

All the interviews were recorded digitally after getting permission from the respondents. This made it possible to listen to their answers properly and to make a transcription of the interview.

The respondents were told that this record is only used for transcription purposes and would be deleted after the transcribing process.

The final thesis will be sent to all respondents, so they are able to see how they contributed to this research. Furthermore, the thesis can be used to gain more knowledge and as a source of inspiration for municipalities to use in their own policy regarding to litter.

4. Results

This section presents the analysis of the data. Every subsection provides an answer on a secondary research question that is formulated in chapter 1.3.

4.1 Methods used by municipalities to reduce litter in public space

Municipality/Question	Oldambt	Smallerland	Leeuwarden	Groningen	Emmen	Midden-Drenthe	Tynaarlo	Midden-Groningen
Techniques used to reduce litter	Initiatives, information on schools and clean up	Clean up, stimulate behavioural change and involving citizens	Clean up, projects on schools	Responsibilities to neighbourhoods	Information on schools, clean up, volunteers	Reactive approach, supporting initiatives	Reactive, clean up, trash walking	Facilitating bins and local initiatives
Aware of successfulness of the techniques used	Evaluation, no concrete numbers	Monitored	Monitoring, observing, annoyance numbers	Observing	No monitoring. Watch when something works	Observing every month	Do not spend too much attention on this	No monitoring, watching to hotspots
Fines as technique to reduce litter	Fines in some situations	No, predominantly warnings	Fines in some situations	No	No	No	No	No
use of methods of influencing behaviour	Cannot think of anything	Yes, garbage catchers and messages	Yes, foot prints, messages, thoroughly cleaning, garbage catchers	Deliberately visible cleaning	Design contest for a creative bin	Locating bins on strategic spots	No	Not yet
a vision for the future regarding litter	Not yet	Yes, a plan every two years	Yes, a plan every year	yes	yes	Yes	No	No

Table 2: overview of answers on the relevant questions that are needed for answering section 4.1

As mentioned in the introduction removing, counteracting and preventing litter is a municipal task in the Netherlands. Dutch municipalities can make a vision by themselves and can choose different methods to tackle litter in the public spaces in their municipality. As a result of the responsibility for every municipality to determine a strategy by themselves, differences between strategies can be found. The well-known policy instruments are: prohibitions / commands, subsidies / taxes and communication / information. During the interviews all three policy instruments were mentioned in the answers of the policy workers. However, not every municipality makes use of all of them to control litter.

Prohibitions and commands are not very popular among the municipalities that got attention in this research. The most municipalities prefer a more positive approach instead of giving fines. Furthermore, the interviewed municipalities mentioned that it is difficult to enforce prohibitions by giving fines. Reason for this is that it is required to catch someone who litters in the act. This is considered to be difficult since people who litter do this predominantly discretely. Some municipalities have a so called 'BOA', this is a municipal enforcer that is qualified to give fines and warnings for a some specific infringements. Although the BOA barely gives a fine to someone who throws his garbage on the street, in some municipalities they give fines to people who put their garbage bag next

to an underground garbage container. These fines are easier to impose since personal documents and address labels with a name or address on it can be found in the bag, which makes it easier to identify the offender.

All the municipalities mentioned that cleaning up the public spaces by themselves is predominantly used as method to prevent littered public spaces. Most municipalities mentioned that it does not matter what kind of interventions you do as a municipality, litter will never disappear and is a problem that will never be completely solved.

Providing subsidies is frequently used as policy instrument by the interviewed municipalities. Almost all the municipalities support bottom-up initiatives that are involved in the reduction of litter, by providing money or by facilitating attributes to support the initiative. Also some municipalities organised different kinds of contests where schools could battle to win their own designed rubbish bin. Besides that, rewarding with money is also a strategy some municipalities use. By giving children small amounts of money when they help to clean up the neighbourhood. However, some municipalities avoid consciously a rewarding system with money, such as the municipality of Groningen:

Something we do not do, is rewarding people with money. We predominantly focus on the intrinsic side. We want to investigate if we are able to make people conscious and to involve them.

Communication and information is used in every municipality as a policy instrument to prevent littering. This is mainly focussed on creating awareness among people.

All the municipalities are involved in information programs on elementary schools and/or sport clubs. With playful initiatives and education programs municipalities try to make children aware of what problems litter could cause and how they can contribute to a clean environment. However, some municipalities are sceptic about such initiatives for people on secondary schools, because this age group is more difficult to influence with such instruments. The municipality of Smallerland confirmed this vision:

Since last year we stimulate behaviour change for the youth in elementary education. This works pretty well in elementary education and those children convey the message to their parents. Secondary schools, we do not put effort and time into those people. That teenage brain, they do not think it is cool.

At the start of the interviews the municipalities were asked to name methods they use in daily practice to tackle litter. This is predominantly focussed on cleaning, subsidizing bottom-up initiatives, organising playful actions and providing information to youth. Methods of influencing subconscious behaviour were actually not mentioned by the policy workers in the first instance.

4.2 Familiarity with techniques that influence subconscious behaviour

Municipality/Question	Oldambt	Smallingerland	Leeuwarden	Groningen	Emmen	Midden-Drenthe	Tynaarlo	Midden-Groningen
Familiarity with concept 'nudging'	Yes, not able to give an explanation	Yes, not able to give an explanation	Yes	Yes	Yes	Yes, not able to give an explanation	No	Yes, not able to give an explanation
Use of nudging techniques	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Familiarity with concept 'priming'	No	Yes, not able to give an explanation	Yes, not able to give an explanation	No	Yes, not able to give an explanation	No	No	No
Use of priming techniques	No	Yes	Yes	Yes	No	Yes	No	No
Use of social normative messages	Yes	Yes	Yes	Yes	No	No	No	Yes
Deliberately visible cleaning in public space	No	Yes	Yes	Yes	Yes	No	No	No

Table 3: overview of answers on the relevant questions that are needed for answering section 4.2

When asking the policy workers if they make use of methods to influence subconscious behaviour of citizens in their municipality, some policy workers were able to mention some techniques that they use. However, the more rural municipalities had a lot more difficulty to come up with specific techniques or methods influencing subconscious behaviour. The 'garbage catchers', foot prints, creative rubbish bins and demonstratively visible cleaning were mentioned. However, this does not mean right away that some municipalities do not use any method of influencing subconscious behaviour.

Almost all the policy workers heard about of the concept 'nudging', but some had some difficulties to clarify the 'nudging' concept. Pictures of famous nudging techniques gave more clarity about the concept.

The garbage catcher is the most used nudging method among the municipalities, with a total of six municipalities making use of it. These garbage catchers are often smart positioned near cycle paths around secondary schools. There is no coherent set of nudging instruments that are applied by all municipalities interviewed. Every municipality develops its own policy/measures to reduce littering. All the municipalities recognized at least some of the shown nudging instruments, but do not always use them for several reasons. This means that municipalities are at least familiar with different nudging instruments, but every municipality has another view on these methods.

The concept 'priming' was less known among the policy workers. Five respondents did not know 'priming' and three respondents just heard about it, but could not explain the concept. This does not mean, as in the case of nudging, that these methods are not used by municipalities. Initially some policy workers told that they do not use priming techniques, but after providing some examples seven

municipalities noticed they are using different priming strategies. Some municipalities mentioned that they are experimenting with the colour and the design of the bins. They are aware that a clean bin with a nice design, or a bin with an intense often green colour could be more attractive to people to use it. One municipality uses posters on garbage collections stations with pictures of nature on it. Creating a natural setting around an underground garbage container was familiar to every policy worker. Experiments with flowers around underground garbage containers are started as pilot projects or are planned to start soon. The municipality of Tynaarlo uses another strategy to prevent people from dropping their garbage next to an underground container. Respondent 8 stated:

What we do, we put them consciously on beautiful spots. In Eelderwolde [*small village within the municipality*] there are two containers on a wonderful location, near a small sluice and from there you have a nice view over the Ommelanden [*Name of the area in the province of Groningen that is not located within the city of Groningen*]. It would be ridiculous to drop your garbage next to the container instead of in the container.

Instead of locating underground containers on hidden spots i.e. parking lots, they choose to confront people with the beautiful surroundings in the municipality and so try to influence them to litter less.

A few municipalities also strongly believe in the principle that a clean area will remain clean. They sometimes thoroughly clean up a specific area, with the idea that when people see a clean area they tend to litter less.

The use of messages that confront people with a social norm are known by most of the municipalities, but are not always used. Some municipalities are still using more direct messages, but are intending to change the messages they use now. Such as the municipality of Midden-Groningen:

We are thinking about it. So not messages as “forbidden to put your garbage here”, because that does not work. This is very common in the Netherlands [*social normative messages*]. So, we will follow.

The municipality of Groningen is already using more creative messages to influence its citizens. For different kind of actions and initiatives they use the slogan “Groningen clean, thanks to me”.

Another technique to prevent people from littering is demonstratively visible cleaning in public spaces. Half of the municipalities is doing this, with the idea that people will litter less when they see people cleaning. Wearing striking coloured vests by people who clean the public space, some

municipalities hope to get the attention of the people watching the cleaners. However, the municipality of Emmen uses a different approach:

We have around 70 volunteers that clean up, they have a bag and grabber. But Nederland Schoon [*an organisation to keep the Netherlands clean*] says that it is better to give no striking coloured vests to them. Because then it is obvious that they are volunteers and not municipal workers that are cleaning up. But when next to busy road, it would be recommended to wear the coloured vests for safety reasons.

The concepts ‘priming’ and ‘nudging’ are not always known by name, but the principles are often known by the municipalities. This makes it possible that some municipalities have never heard of the concepts, but still apply them in the public space. The interviewed municipalities are aware of the importance of communication through messages. The way you bring a message and the choice to use specific words is considered to be important among the respondents.

4.3 Arguments for municipalities to implement methods that influence subconscious behaviour

Municipality/Question	Oldambt	Smallerland	Leeuwarden	Groningen	Emmen	Midden-Drenthe	Tynaarlo	Midden-Groningen
Exchange ideas with other municipalities	Yes	Yes, better steal something good, than invent something bad	Yes	Yes	Yes, discussing with colleagues from other municipalities what they already have applied	Yes, we also use knowledge from other municipalities	Yes	No
Reason for using nudges	Garbage catchers work, people like it to throw something in it	Other municipalities use them as well	Inhabitants do want garbage catchers on specific locations, we make agreements and facilitate it	We try to make it nice to throw litter away (positive approach)	We use garbage catchers and get positive responses	-	This kind of techniques are cheap to implement	-
Reason for using primes	-	If we give a specific spot a natural character, people tend to keep it clean	We are thinking about painted eyes next to a bin, we think that is nice and will work	Research have shown that a specific green colour works, so we are going to use that	We think that specific colours work in the school areas	We want to make it nice throw litter away, a more positive approach	it works to put underground garbage container on spots with a nice view, it is absurd to put your garbage bag next to it.	We get new underground garbage contains, I asked to use the recent behavioural insights in the design
Reason for using messages	-	I am able to monitor these messages and see that it is effective	Yes, it is effective at some places	We use slogans. And also experiment with messages	I really like these kind of creative messages	We get subsidies and so take these methods into account	-	Actually not using it, but willing to use this
Deliberately visible cleaning for a reason	no	In some parts of the city, that someone can see that someone else is cleaning up his garbage	Yes, we think this will help	Yes, in the city centre we do this deliberately during office hours	Yes, volunteer do. So everyone can see it is a volunteer	No	no	We are visible, but not for a specific reason

Table 4: overview of answers on the relevant questions that are needed for answering section 4.3

All interviewed policy workers are aware of the potential of techniques to influence subconscious behaviour and think that these methods will gain more popularity the next decade. All municipalities are planning to apply more of these techniques in their own public spaces. Respondent 6 states:

People do not want to be overwhelmed with rules. You have to make it as easy as possible for them.

The most nudging, priming and messaging strategies are relatively low cost methods from which previous research has shown they could help in reducing litter. The policy workers were aware of this and made considerations about what kind of method to use. All municipalities are in contact with other municipalities and most of them are member of an umbrella organisation. In this umbrella organisations often techniques are introduced at conferences. The most frequently mentioned umbrella organisation that provides classes to reduce litter in public space is Rijkswaterstaat (Dutch ministry of infrastructure and water management). During these classes many strategies for influencing subconscious behaviour are shown and explanation from professionals is provided for using those techniques properly and on the right locations. When municipalities are confronted with ideas that the Dutch government and professionals are proposing, this could convince municipalities to apply such techniques by themselves.

But during these conferences there is also much of interaction between municipalities, they can exchange ideas and share what works in their municipality and what not. In other words, an argument for implementing such methods is because other municipalities have good experiences with a specific technique. The policy worker in Smallerland confirms this with the following mindset:

Better steal something good, than invent something bad

A few municipalities think that 'gamification' techniques, related to nudging, are helpful in reducing litter. For instance the garbage catcher, this makes throwing litter away more playful and challenging. A policy worker in Emmen told that children know exactly where those garbage catchers are located and instead of throwing their garbage on the ground, wait until they pass the garbage catcher. The playful design could trigger the target group, mostly teenagers, to throw their garbage in the bin.

All the municipalities are very sceptic about giving fines and strict enforcement to tackle litter. But more frequently cleaning is mostly not considered as a good strategy to guarantee clean public space. If people get the idea that everything they throw away will immediately be cleaned by the municipality, this could provoke people to litter more since they know it will be cleaned up soon. Influencing behaviour seems to be a good solution when strict enforcement and cleaning more frequently are not considered as the best solutions to tackle litter.

Two municipalities were also enthusiastic about painting two eyes on a rubbish bin or close to a rubbish bin. The municipalities did not use this technique yet, but were eager to apply them soon. This is considered as a very cheap technique that could result in people littering less. People can get the feeling that everyone can see them and as already mentioned in the literature, this affects the litter behaviour of some people.

All municipalities had positive thoughts about the use of social normative messages, since they are aware that the way you formulate a message is important. The municipality of Smallerland has positive experiences with showing messages that confront people with social norms. Respondent 2 underlined this statement with an example:

This year we have a digital application with dates when specific kinds of garbage will be picked up by the municipality. We used a message like “30 per cent of the people living in The Wiken [*a neighbourhood within the municipality*] is already using the application”. I am able to see where all new people come from who are signing up, and then you see immediately an increasing amount of registrations. So we strongly believe in a positive approach

Most municipalities are convinced of the notion that a clean area attracts more ‘clean behaviour’ of people. As a result a specific spot will be cleaned thoroughly, so not only removing the litter on that spot, but also cleaning every stone on a pavement individually. Also demonstratively visible cleaning is considered by most municipalities as a means that helps to reduce litter. Because this confirms the social norm that litter does not belong on the ground and people can respond subconsciously on this.

4.4 Arguments used by municipalities to use other methods to reduce litter instead of behavioural methods

Municipality/Question	Oldambt	Smallerland	Leeuwarden	Groningen	Emmen	Midden-Drenthe	Tynaarlo	Midden-Groningen
Quit with specific methods the last few years	No	Yes	Yes	Yes	Yes	Yes	Yes	No
Reason for not using nudges	There is never a solution that solves the issue	Because a specific technique did not work	Showing garbage is considered to be bad	The city centre must not transform into a play garden	You want to make people aware of their behaviour. Location important and for how long is it nice?	Sceptic about garbage catcher, you could miss the target	Striking bins do not look pretty. Sceptic about garbage catcher.	-
Reason for not using primes	Maintenance needed	Maintenance needed	Maintenance needed	Maintenance needed	Green colour of the bin does not fit in the overall design	-	Bins in a bright colour do not look pretty	-
Reason for not using messages	Some people are difficult to reach	-	Messages should be changed over time	-	-	-	-	If everyone use this way of communication, how long will it work?

Table 5: overview of answers on the relevant questions that are needed for answering section 4.4

The interviewed municipalities do not prefer giving fines and strict enforcement to reduce litter in their municipality. This seems to be a good starting point to make use of a strategy to change behaviour of people. Nudging, priming and social normative messages are, as mentioned in the literature, helpful techniques to influence people's behaviour. However, there are some general critiques on these methods, such as manipulation and a too paternalistic acting government. The municipalities mentioned also some more specific arguments why they do make use of these techniques, specifically in case of using these techniques to reduce litter.

The most frequently heard argument why municipalities do not chose for nudging techniques is because of the maintenance. Most nudges and primes are relatively cheap, but maintaining them is important. When a nudge or prime is badly maintained, this could work counterproductive. For this reason, half of the municipalities is sceptic about the artificial grass with flowers around the underground garbage containers. The grass will get dirty easily, so this needs to be maintained very well and some municipalities think that costs a lot of time/money. Respondent 6 stated:

It looks very nice, but how does it look like after a year? You have to keep it clean of course..

Respondent 3 agrees with this:

Maintenance is very important, these things work very well when they are perfectly maintained.
But, when someone puts something on it..... That makes it hard

One municipality had also rejected a method they were using as a result of the financial costs. They used a bin with technical features that made it funny to throw garbage in the bin. These kind of bins are quite high in purchase price, furthermore the costs of maintenance are high. When the bin got some technical problems that needed to be repaired, the costs were too high for the municipality. As a result the project was stopped and the municipality lost confidence in nudges that make use of technical features.

Another argument why municipalities are careful applying nudges and primes is because it could affect the aesthetic design of the public space. Municipalities like well-designed public spaces with a neutral appearance. A lot of different groups of people use the public spaces at different times and for different reasons. People that use the city centre for nightlife, people that use it for shopping or come to the city for specific events. The municipality of Groningen is also aware of the different types of use of the city centre, respondent 5 mentioned about the city centre:

Actually it is a kind of theatre.....When the functionality of a public space varies a lot, then I think we do not have an interest in using such techniques.

So, nudges and primes can be helpful for specific target groups. But on places where different kind of people come with different intentions it becomes very hard to apply nudges and primes that will address to everyone. Respondent 5 stated that implementing too much nudging in the city centre is not desirable and was illustrated by the following example:

In the city centre, painted footprints will not work. I mean, nobody sees it. And you will also get questions from people who ask what is this for kind of play garden? It will simply not work

Respondent 9 shares this vision and perceives the context also as very important, he said:

You are applying a quite strong instrument in a very generic way. You must only apply those things on places where there is a real problem. So not generic preventive, make it very specific.

The context in which you apply nudges and primes is considered to be important by the municipalities. You need to know what kind of people you want to address and identify the places that they predominantly litter. Placing a garbage catcher next to cycle paths near secondary schools seems to be a deliberate choice of a municipality to tackle a problem. However, two municipalities are deliberately not applying these kind of bins. The first argument is that you stimulate to throw garbage from your

bicycle away and when people miss the target they probably do not stop to throw it in de bin instead. So, there is still litter around the bin and this could be scattered by wind and end up in the water or the meadows. Another argument is that these garbage catchers stimulate the act of throwing your litter away from you, something that is considered to be bad.

The municipality of Leeuwarden provided an argument that showing litter is something bad. They do use a garbage catcher, but a model where the litter is not visible once it is collected in the bin. For this reason they are also sceptic about the garbage referendum boards, where you can vote with your gum by sticking it on a board with a specific question. Furthermore, every time you stick your gum on a board it becomes normal to stick your gum on something. This is considered as an unwanted behaviour by the municipality of Leeuwarden.

A frequently heard argument against the use of nudges, primes and social normative messages is that at a given moment everyone knows he or she is steered in a certain direction. Some interviewees doubted about the effectiveness of nudges, primes and social normative messages when everybody is aware of the technique. Another point of attention for the municipalities was the question for how long will it be effective and funny, especially when making use of the 'fun theory'. To give an example of a bin that makes a funny noise when using it, this may be funny at the beginning. But if you pass this kind of bin every day, it becomes boring or even annoying. Some respondents mentioned this example and proposed that such a nudge would be more effective when you use it in a theme park.

Being innovative seems to be important for the effectiveness of nudges, primes and social normative messages. Especially creative messages need to be changed over time according to some municipalities. Once you have read the message for a few times, you will not read it anymore and the effectiveness of the message could decrease. It is considered to be important to use multiple messages over time, and make the message visible so it attracts the attention. Thus if you want to influence people in a specific direction with messages, you need to change them a lot, something that could cost a lot of time and money. Respondent 9 is quite enthusiastic about social normative messages, but doubts the effectiveness in the long term for the following reason:

If authorities in the Netherlands approached the inhabitants this way, when will they turn away from it? At a certain moment it will become an overload, you see it also in a lot of advertisements nowadays

It was also mentioned frequently mentioned by the respondents why nudges, primes and social normative messages will not completely tackle the litter problem. There will always be a specific group of people that you will not reach regardless what kind of methods you use. People that litter purposely will not stop doing this when you make a bin attractive or put messages at specific places.

The question raises again if influencing subconscious behaviour can be seen as a technique that is morally good. With these techniques people are guided in a certain direction, but this does not automatically mean that they act in this way deliberately. Thus, there is not always the intrinsic motivation of someone who is influenced by these techniques. Especially with regard to a clean environment, making people aware of what they are doing and inform them about the consequences of their actions could be more helpful on the long term. Respondent 6 supports this thought with the following statement:

You want to make people aware of their behaviour. And I think that will be less by using such techniques

The general critiques on especially nudging do not seem to have a big influence on the considerations municipalities make in determining their strategy. None of the municipalities sees manipulation as a constraint for implementing nudging techniques. But most municipalities think that there is a kind of limit how far they can go. It is important to keep the core tasks by the municipality and do not give too much attention to these techniques. When it works in specific places, than it could have a good contribution to reduce litter. But applying too much of these techniques on too many places could also constrain a municipality in their policy. Respondent 5 endorses these thought:

On the one hand I do not think it is such a problem, compare with advertisements. But I think that as a government you have to deal with this with a certain extent of restraint. I mean you have to keep the magnitude of the problem in mind. How big is the problem really when there is somewhere at a certain moment an empty can on the ground, do you have to place a board with a message immediately? The whole tolerance disappears. But when places become hotspots, I think, if it works then it works.

Despite some counterarguments towards influencing subconscious behaviour, all the municipalities have indicated to implement more of the in this research mentioned techniques in the future. Every technique needs to be implemented on the right place and have the right target group. As a result municipalities need to make good considerations to decide to implement a technique on a specific place.

Half of the municipalities does not have a vision on litter prevention for the future. These municipalities act more reactive to problems regarding litter. The other municipalities do have a vision for the future regarding litter, however no concrete methods or measures on influencing subconscious behaviour are mentioned.

5. Discussion and conclusion

5.1 Discussion

The goal of this research is to discover how and why do municipalities influence subconscious behaviour of its citizens to reduce litter in public space.

The nine respondents in this research are all involved in municipal litter policy and have knowledge about different techniques. The respondents were able to make considerations between different techniques and were able to reflect critically on specific approaches. As a result the data derived from the interviews was helpful in finding an answer on the research question. The outcomes are in line with the expectations made in the theoretical framework. Dijksterhuis & van Baaren (2015) made a distinction between three techniques of influencing subconscious behaviour: nudging, priming and messaging. It depends per municipality what techniques were used and what techniques were known by name, but all the municipalities were familiar with the principles of these techniques. This endorses Rijkswaterstaat (2018), that mentioned that a lot of theoretical and practical knowledge about these techniques is available, but still not often used by municipalities.

The municipalities had a couple of reasons why they use such techniques. The most frequent mentioned reason is that policy workers assume that a specific technique works. The reason why they assume this, is mostly based on communication with Rijkswaterstaat or exchange of ideas with other municipalities. Furthermore, some municipalities do already apply specific techniques and are convinced of the effectiveness of these techniques because they are able to monitor it. According to Rijkswaterstaat (2018), the implementation of these techniques is relatively cheap. This argument was not often explicitly mentioned by the respondents. However, most respondents mentioned that they receive subsidy for this kind of initiatives and are willing to experiment with it. Thus there does not seem to be a financial constraint on the application of these techniques. Except from techniques that are equipped with technical features or that need a lot of maintenance. The respondents mentioned also that they like such techniques because instead of enforcement and giving fines, they prefer the positive approach.

The policy workers were able to be critical as well on techniques of influencing subconscious behaviour and provided reasons why they do not implement such techniques in specific situations as well. Interesting is that these arguments are not in line with the general critique as manipulation (Goodwin, 2012) and paternalism (NSOB, 2014) on especially nudging. More practical constraints were given by the policy workers such as: maintenance, overall design and importance of context. The respondents were convinced that some nudges and primes only work with certain requirements. The described literature more or less shaped a view of success stories. The described techniques are published or reached the news because of their effectiveness. The literature describes predominantly

what works in a specific situation on a specific place. This makes it hard to generalise the effectiveness of these techniques.

Urban and rural municipalities are interviewed, because some differences could be expected in the approach those municipalities use. The interviews were also equally distributed among the three northern provinces, this makes the research representative for the Northern Netherlands. At the same time, when doing this research with eight other Dutch municipalities and take their size into account similar outcomes are plausible. Because Dutch governmental organisations play a big role in proposing techniques of influencing subconscious behaviour. Furthermore, municipalities do often exchange ideas with other municipalities and take over ideas that seem to work. This makes it likely that in other parts of the Netherlands more or less the same techniques are applied and the same considerations are made by municipalities.

This research focused on influencing subconscious behaviour only for preventing litter. Based on this research it is hard to say if the reason why municipalities use such techniques will be the same when it is concerning other policies as preventing anti-social behaviour or supporting a healthy lifestyle. The general critique on nudging as paternalism and manipulation seemed to be less relevant in this research. An explanation could be that a clean public space is generally desired among the people that use it, so there is more tolerance for such techniques. Possibly more resistance of citizens can be expected when governments use such techniques to let people eat healthier.

The methods of influencing subconscious behaviour (nudging, priming and messaging) that were discussed in this thesis were assumed to be the most relevant methods for the case of litter. It depends on what kind of problem a government addresses to determine what kind of techniques of influencing subconscious behaviour will be used.

This research could add to the existing literature an overview of various views from different policy makers of techniques to influence subconscious behaviour to reduce litter. The existing literature predominantly focusses on why these techniques are helpful and offers less attention to reasons why municipalities should not implement them.

This research could contribute to planning practice because it observes that municipalities are interested in applying more of the mentioned techniques in public space in the future. These techniques can influence the overall design of the public space, as a result a lot of considerations need to be made by urban planners. Certain instruments need to be located on strategic locations to reach the target groups, something urban planners need to take into account.

5.2 Limitations

Even though by conducting eight interviews it is tried to get insight in how and why municipalities use such techniques, it is difficult to formulate a clear answer on the research question. The municipalities have shown to use different approaches for different reasons, this makes it hard to find an unambiguous answer. In fact this means that one single municipality in the Northern Netherlands could not be fully representative for the outcomes of this research.

This research is focused on the Netherlands, which means that a similar research in another country could have different outcomes.

Although the respondents knew a lot about their local litter policy, they might not know every method of influencing subconscious behaviour in their municipality. For instance, sometimes such techniques are already processed in the bins they have without a policy worker being aware of it. This research is completely dependent on the answers the respondents gave, there are no public spaces observed in the concerning municipalities. As a result, it could be the case that not in every municipality all the useful data is obtained.

5.3 Conclusion

The literature provides examples of influencing subconscious behaviour concepts like nudging, priming and the use of social normative messages. A lot of knowledge from behavioural and psychological sciences is applied in the field of policy making in order to reduce litter. Creative design, use of specific colours, creating natural settings, gamification, the fun-theory and confronting people with social norms are techniques that are already used all over the world.

Municipalities in the Northern Netherlands have shown to a certain extent to make use of such techniques as well. However, it differs per municipality what techniques are used and in what extent. This differentiation is mainly caused by the fact that every municipality determines its own policy, which results in different approaches by the different municipalities. Another explanation why there are differences between municipalities is the population. More urban municipalities with a lot of inhabitants often face more litter problems than the more rural municipalities. On the other hand, densely and more populated municipalities do often have more budget and have more personnel. Thus these municipalities are better equipped and further developed in their strategy and implemented policies to tackle litter compared with smaller municipalities.

All the municipalities in this study apply at least one of the techniques that is described in this research. Not all the respondents were familiar with the name of the concepts, but understood the principles and recognized some examples. The respondents expect that the use of these techniques will be applied more frequently in the future in Dutch public spaces.

It is concluded that influencing subconscious behaviour as policy instrument to reduce litter is gaining popularity, but it seems to be still in the initial phase. This is in line with the literature, which emphasizes that these concepts are relatively new and familiarity is still growing.

Nudges, primes and social normative messages are used for several reasons by municipalities. A lot of ideas are proposed by an umbrella organisation, often a Dutch governmental organisation, and municipalities use some of these ideas to apply in their own public spaces. It is clear that the proposed techniques will positively impact the behaviour of people and reduce littering. Furthermore, these techniques are relatively cheap to implement, so municipalities are willing to experiment with it. Most municipalities prefer a more positive approach in reducing litter. These techniques are considered to be positive in contrary to strict enforcement.

However, a certain degree of prudence is required in implementing such techniques. The respondents named several reasons why they (should) not apply specific techniques. Municipalities take a lot of factors into account before applying a technique (nudging, priming and/or social normative messages). The main factors are:

- The overall design of the public space must stay intact
- The applied techniques need to be well maintained and renewed in time
- Locate techniques on strategic locations where you can reach the target group
- Keep innovating since these techniques will lose effectiveness over time
- The techniques do not directly influence the intrinsic motivation of people to litter less

Concluding, municipalities in the Northern Netherlands use different techniques of influencing subconscious behaviour that are predominantly context dependent. Garbage catchers and social normative messages seem to be the most popular techniques nowadays. These techniques are used because of the assumed effectiveness, the relatively low costs and it fits in a more positive approach to tackle litter.

5.4 Recommendations

In this research the views and information of different municipalities are collected on the implementation of techniques of influencing subconscious behaviour in public space. Municipalities that have not yet started with applying these techniques, or are still in the initial phase, can be recommended to make good considerations before applying a technique. During the interviews some municipalities were able to formulate a number of constraints of the techniques described in this research. The constraints of these techniques in this study have to be taken into account before applying it. However, based on this research the application of these methods can still be recommended to municipalities who are not started yet or have barely thought about applying it. Implementing these techniques is considered to be effective to reduce litter in public space.

Further research could focus on the limits of influencing subconscious behaviour. All the interviewees think these techniques will be applied more frequently the next decade in at least The Netherlands. However, a lot of constraints of these techniques were mentioned as well in the interviews. The importance and application of these techniques in littering prevention will increase, but will not completely replace the currently used techniques. Thus an interesting follow-up research could be to investigate what a good balance is between all the known policy instruments to reduce litter in public space.

Another interesting research could be a comparative research between different countries and how they apply or not the techniques to influence subconscious behaviour to reduce litter in public space. In some countries these techniques receive a lot of attention and especially in the United States there is a lot of criticism (NSOB, 2014). Probably there are differences or comparisons in policy, the application and the acceptance to these techniques between countries.

6. Reflection

The conclusions make it possible to answer the research question, but could have been more detailed in my opinion. After conducting the interviews I noticed different techniques of influencing subconscious behaviour that are used in the municipalities, because the policy workers I interviewed informed me about the methods they use. I have not done observations or location visits by myself in the municipalities, so I was completely dependent on the policy worker what the policy worker could tell me about the techniques they use. In other words, I do not know whether a policy worker was aware of all the techniques that are applied in their municipality or not. This is in my eyes a disadvantage of using qualitative method for doing this research. Numbers about what techniques are used and where in the Netherlands could help to make the conclusion more convincing. Due to the limited time and means of this research, I was not able to acquire concrete numbers about which techniques are used in each municipality I interviewed.

However, in my opinion a qualitative research was a helpful method to answer my research questions. I was able to acquire underlying thoughts about why municipalities use such techniques or deliberately not use such techniques.

The last eight months I have experienced to work almost independently on my own research. The ability to choose a subject myself gave me the opportunity to broaden my knowledge on a subject that fascinates me. During my bachelor I have learned a lot about doing research as an academic. As a result, it was at the start of this project clear for me what steps to take.

I had no problems with finding respondents for my research. Thus, I think my strategy to e-mail the aldermen of a municipality to get subsequently in contact with the involved policy worker worked out well.

I experienced some difficulties with the data analysis. It was sometimes difficult to formulate on each question from the interview guide an answer for every municipality. Sometimes I did not literally ask the question I formulated beforehand. As a result, during the analysis it was sometimes difficult to write down an answer down in a few sentences. Especially, to find a clear answer on why municipalities use techniques of influencing subconscious behaviour was difficult. Because I did not always explicitly ask why they use every technique they are currently applying. The answer to this question was more implicitly told by the policy workers during the entire interview.

This thesis is written in English, this complicated the process of writing. Since the interviews are all conducted in Dutch, quoting people was sometimes difficult due to literally translating the sentence.

The next time I would pay more attention to my interview guide. Hindsight I think that too many questions were asked that did not contribute to answer the research question. I would also structure my interviews more, so that afterwards I can make a clear scheme with all the answers on my questions.

References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, 50(2), 179-211.
- Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior 1. *Journal of applied social psychology*, 32(4), 665-683.
- Anthropocene (2018). *Can we hack our tribal brains to protect the planet?* [Digital image]. Retrieved on 11 July 2019 from <http://www.anthropocenemagazine.org/2018/09/can-we-hack-our-tribal-brains-to-protect-the-planet/>
- Baldwin, R. (2014). From regulation to behaviour change: Giving nudge the third degree. *The Modern Law Review*, 77(6), pp.831-857.
- Benartzi, S., Beshears, J., Milkman, K.L., Sunstein, C.R., Thaler, R.H., Shankar, M., Tucker-Ray, W., Congdon, W.J. and Galing, S. (2017). Should governments invest more in nudging?. *Psychological science*, 28(8), pp.1041-1055.
- Broeders, R., Midden, C.J.H. and Ham, J.R.C. (2010). Zwerfafval: Met automatisch gemak gooi je het in de afvalbak.
- Campbell, F. (2007). *People who litter*. Wigan, UK: ENCAMS
- Calo, R. (2014) Code, Nudge, or Notice? *Iowa Law Review*, 99(2), 773-802
- Carr, S., Stephen, C., Francis, M., Rivlin, L.G. and Stone, A.M. (1992). *Public space*. Cambridge University Press.
- CCV (2016). *Veiligheidsverleiding*. Utrecht: Centrum voor Criminaliteitspreventie en Veiligheid
- Concern voor werk (2019). *De blikvanger voor zwerfvuil* [Digital image]. Retrieved on 11 July 2019 from <https://www.concernvoorwerk.nl/Blikvanger/>
- Concern voor werk (2019). *De Blikvanger voor zwerfvuil*. Retrieved on 25 march 2019 from <https://www.concernvoorwerk.nl/Blikvanger/>
- Cooter, R.D., (1996). Decentralized law for a complex economy: the structural approach to adjudicating the new law merchant. *University of Pennsylvania Law Review*, 144(5), pp.1643-1696.
- De Lange, M. A., Debets, L. W., Ruitenburg, K., & Holland, R. W. (2012). Making less of a mess: Scent exposure as a tool for behavioral change. *Social Influence*, 7(2), 90-97.
- De leukste sprookjes (2018). *Holle Bolle Gijs* [Digital image]. Retrieved on 11 July 2019 from <https://www.deleukstesprookjes.nl/holle-bolle-gijs/>

De Sleutel (2018). *Nepbuxus volgt het kunstgras op in creatieve strijd tegen zwerfafval* [Digital image]. Retrieved on 11 July 2019 from <https://www.desleuteloss.nl/nieuws/algemeen/521109/nepbuxus-volgt-het-kunstgras-op-in-creatieve-strijd-tegen-zwerfafval>

Dijksterhuis & van Baaren (2015). *Inspiratielijst voorkomen zwerfafval in de openbare ruimte*. Nijmegen

Financieel dagblad (2018). *Ook u laat zich door de overheid manipuleren*. Retrieved on 21-11-2018 from: <https://fd.nl/achtergrond/1276207/ook-u-laat-zich-door-de-overheid-manipuleren>

Gau, J., & Pratt, T. (2008). Broken windows or window dressing? Citizens'(in) ability to tell the difference between disorder and crime*. *Criminology & Public Policy*, 7(2), 163-194

Gehl, J. (2011). *Life between buildings: using public space*. Island press.

Gemeente Leiden (2019). *Groene veldjes tegen bijplaatsen afval*. Retrieved on 30 march 2019 from: <https://gemeente.leiden.nl/nieuws/groene-veldjes-tegen-bijplaatsen-afval/>

Goldenbeld, C., Groot-Mesken, J. de & Temürhan, M. (2017). Nudging van rijsnelheid via Dick Bruna-borden: een veldexperiment. R-2017-11. SWOV, Den Haag.

Goodwin, T. (2012). Why we should reject 'nudge'. *Politics*, 32(2), 85-92.

Hammarberg, K., Kirkman, M. and De Lacey, S. (2016). Qualitative research methods: when to use them and how to judge them. *Human Reproduction*, 31(3), pp.498-501.

Hansen, P.G. and Jespersen, A.M. (2013). Nudge and the manipulation of choice: A framework for the responsible use of the nudge approach to behaviour change in public policy. *European Journal of Risk Regulation*, 4(1), pp.3-28.

Hemel, Z., & Uum, E. v. (1999). Open ruimte wordt openbare ruimte. In SCP, *De stad op straat*. Den Haag: SCP.

Kahneman, D. (2011). *Thinking, fast and slow*. New York: Farrar, Straus and Giroux

Keizer, K., Lindenberg, S. and Steg, L. (2008). The spreading of disorder. *Science*, 322 (5908), pp.1681-1685.

Kolodko, J., Read, D. and Taj, U. (2016). Using Behavioural Insights to Reduce Littering in the UK. *Clean up Britain*. (14) pp.09-18.

Kühn, S., Rebolledo, E.L.B. and van Franeker, J.A. (2015). Deleterious effects of litter on marine life. *Marine anthropogenic litter*, 75-116.

Landelijke Aanpak Zwerfafval (2007). *Samenwerking Nederlandschoon, NVRD en RWS, een tussentijdse evaluatie*

- Lehner, M., Mont, O., & Heiskanen, E. (2016). Nudging—A promising tool for sustainable consumption behaviour?. *Journal of Cleaner Production*, 134, 166-177.
- Leijdekkers, S., Marpaung, Y. M., Meesters, M., Naser, A. K., Penninx, M., van Rookhuijzen, M., & Willems, M. (2015). Effective Interventions on littering behaviour of youngsters. *What are the ingredients*.
- Luzerner Zeitung (2011). Abfall: Luzern will den Spieltrieb wecken. Retrieved on 25 march 2019 from <https://www.luzernerzeitung.ch/zentralschweiz/luzern/abfall-luzern-will-den-spieltrieb-wecken-ld.20585>
- Ly, K., Mazar, N., Zhao, M. and Soman, D. (2013). A practitioner's guide to nudging. *Rotman School of Management Working Paper*.
- Madanipour, A. (2004). Marginal public spaces in European cities. *Journal of Urban Design*, 9(3), pp.267-286.
- Milieu Centraal (2015). *Zwerfafval*. Utrecht. RWS Leefomgeving, ministerie Infrastructuur en Milieu
- Milieu centraal (2019). *Zwerfafval*. Retrieved on 16 january 2019 from: <https://www.milieucentraal.nl/minder-afval/voorkom-afval/zwerfafval/>
- Mont, O., Lehner, M. and Heiskanen, E. (2017). Nudging a tool for sustainable behaviour?. *The Swedish Environmental Protection Agency*.
- Nederlandse School voor Openbaar Bestuur (2014). *Nudges onderscheiden over inbedding van gedragspsychologie in overheidsbeleid*. Den Haag.
- NRC (2019). *Een nudge stuurt het brein de goede kant uit*. Retrieved on 24 april 2019 from: <https://www.nrc.nl/nieuws/2019/01/24/een-nudge-stuurt-het-brein-de-goede-kant-uit-a3651615>
- Nudge (2009). *By a show of gum* [Digital image]. Retrieved on 11 July 2019 from <http://nudges.org/2009/09/15/by-a-show-of-gum/>
- Omroep Brabant (2017). *Efteling inspireert Eindhoven en Tilburg: steden zoeken moderne Holle Bolle Gijs*. Retrieved on 25 march 2019 from: <https://www.omroepbrabant.nl/nieuws/231508/Efteling-inspireert-Eindhoven-en-Tilburg-steden-zoeken-moderne-Holle-Bolle-Gijs>
- Patton, M.Q. (2005). Qualitative research. *Encyclopedia of statistics in behavioral science*.
- Raad voor maatschappelijke ontwikkeling (2014), *de verleiding weerstaan. Grenzen aan beïnvloeding van gedrag door de overheid*. Den Haag: RMO
- Rashid, S.A., Wahab, M.H., Rani, W.N.M.W.M. and Ismail, S. (2017), October. Safety of street: The role of street design. In *AIP Conference Proceedings* 1891 (1).
- Recycling Netwerk (2019). *Zwerfafval, hoe lossen we het op?*. Retrieved on 1 may 2019 from: <https://recyclingnetwerk.org/themas/zwerfafval/>
- Rijkswaterstaat (2018). *Inspiratielijst maatregelen zwerfafval gedrag, participatie en beleving*

RTL Nieuws (2016). *Dit zijn de grootste ergernissen in jouw buurt*. Retrieved on 16 January 2019 from: <https://www.rtlnieuws.nl/buurtfacts/wonen/artikel/372361/dit-zijn-de-grootste-ergernissen-jouw-buurt>

Sampson, R.J. and Raudenbush, S.W. (2004). Seeing disorder: Neighborhood stigma and the social construction of “broken windows”. *Social psychology quarterly*, 67(4), pp.319-342.

Schubert, C. (2015). On the ethics of public nudging: Autonomy and agency.

Scott, C. (2011). *Hopscotch bin* [digital image]. Retrieved on 11 July from <http://www.trendhunter.com/trends/lucerne-switzerland-uses-games-to-inspired-citizens-to-keep-the-city-clean>

Sniehotta, F. F., Scholz, U., & Schwarzer, R. (2005). Bridging the intention–behaviour gap: Planning, self-efficacy, and action control in the adoption and maintenance of physical exercise. *Psychology & Health*, 20(2), 143-160.

Sunstein, C.R. (2014). Nudging: A very short guide. *Journal of Consumer Policy*, 37(4), pp.583-588.

Sunstein, C.R. (2015). The ethics of nudging. *Yale J. on Reg.*, 32, p.413.

Swissinfo (2017). *This example from the UK used the football craze to influence littering behaviour* [Digital image]. Retrieved on 11 July 2019 from https://www.swissinfo.ch/eng/opinion_-_butt-out-but-don-t-litter/43457480

Thaler, R.H. & Sunstein, C.R. (2008). *NUDGE Improving Decisions About Health, Wealth, and Happiness*. First edition. Yale University Press

The Mandarin (2018). *Cass Sunstein’s Bill of Rights for Nudging*. Retrieved on 24 April 2019 from: <https://www.themandarin.com.au/96009-cass-sunsteins-bill-of-rights-for-nudging/>

Thøgersen, J. (2008). Social norms and cooperation in real-life social dilemmas. *Journal of Economic Psychology*, 29(4), pp.458-472.

Tubantia (2018). *Bloemetjes tegen afval in Enschede*. Retrieved on 30 March 2019 from: <https://www.tubantia.nl/enschede/bloemetjes-tegen-afval-in-enschede~a6632ff8/>

Van Knippenberg, A.F.M. (2012). *Gedrag*. Nijmegen

VROM (2003). *Burgers over zwerfafval*. Den-Haag: Ministerie van Vrom.

Whitehead, M., Jones, R., Howell, R., Lilley, R. and Pykett, J., (2014). Nudging all over the World. *ESRC Report, Economic and Social Research Council, Swindon and Edinburgh*.

Wilson, J.Q. and Kelling, G.L. (1982). Broken windows. *Atlantic monthly*, 249(3), pp.29-38.

Appendices

Appendix A: Interview guide

Algemene vragen

Hoe probeert de gemeente X zwerfafval in de publieke ruimte te bestrijden?

Hoe bepalen jullie de strategie die jullie hanteren om het zwerfafval te bestrijden?

Hoe succesvol zijn de methoden die jullie toepassen in jullie zwerfafvalbeleid?

Denkt u dat handhaving en het geven van boetes voldoende is om zwerfafval in de gemeente te bestrijden?

Zijn er methoden afgewezen? Of is van methoden gebleken dat ze niet goed werkten?

Wanneer beschouwen jullie een methode als succesvol?

Bij wie vindt u, of de gemeente X, dat de verantwoordelijkheid ligt in de strijd tegen zwerfafval?

Kijken jullie wel eens naar strategieën van andere gemeenten om inspiratie op te doen?

Beïnvloeding van automatische processen door de gemeente

Gebruikt de gemeente X creatieve methoden om het gedrag van burgers te beïnvloeden, zonder dat zij zich hier echt bewust van zijn?

Komt het begrip ‘Nudging’ u bekend voor?

Maakt de gemeente X gebruik van nudging strategieën? Zoals voetstapjes op de grond naar prullenbaken, referenda met afval, interactieve prullenbakken die bijvoorbeeld geluidjes maken of het toevoegen van spelelementen rondom prullenbakken, bv. Blikvangers?. (foto’s)

Zo ja, op welke locaties en waarom is hiervoor gekozen?

Zo nee, zijn dit soort methoden wel eens ter sprake gekomen? En welke overwegingen zijn hier gemaakt?

Bent u bekend met het begrip ‘Priming’?

Maakt de gemeente X gebruik van Primes? Zoals terugkerende logo’s op afvalbakken van reeds gevoerde campagnes, de keuze voor een opvallende kleur (appeltjesgroen), natuurfoto’s op of rondom afvalbakken of het plaatsen van bloemen rondom ondergrondse afvalcontainers?

Zo ja, op welke locaties en waarom is hiervoor gekozen?

Zo nee, is dit overwogen? Welke afweging is er toen gemaakt? Of wat zou volgens u een belangrijke afweging zijn?

Maakt de gemeente X gebruik van boodschappen op borden in de openbare ruimte, of op andere manieren? Bijvoorbeeld boodschappen die mensen met een bepaalde norm confronteren zoals “95% van de bezoekers van dit park gooit zijn afval gewoon in de prullenbak”. Of bijvoorbeeld lokale bekende mensen die gebruikt worden om een boodschap over te brengen?

Zo ja, op welke locaties en waarom is hiervoor gekozen?

Zo nee, is dit overwogen? Welke afweging is er toen gemaakt? Of wat zou volgens u een belangrijke afweging zijn?

Wordt er bewust zichtbaar gereinigd in de publieke ruimte in de gemeente X?

Zo ja, is dit met een bepaald doel?

Zo nee, zou u dit een goede manier vinden om mensen op deze manier te beïnvloeden?

Afsluiting

Zijn er technieken van gedragsbeïnvloeding die gebruikt worden in de gemeente X die nog niet ter sprake zijn gekomen in dit interview?

Vindt u dat er een grens moet liggen tot waar gemeenten kunnen gaan bij de vandaag behandelde tactieken? Denk aan belemmeren van vrije keuzes/manipulatie etc.

Denkt u dat vandaag besproken tactieken de komende jaren meer bekendheid zullen krijgen en vaker worden toegepast?

Heeft de gemeente X een visie voor de toekomst om zwerfafval in de publieke ruimte te reduceren?

Zou de gemeente openstaan om in de toekomst meer technieken als nudging, priming en boodschappen toe te passen?

Appendix B: Transcripts of Oldambt, Smallingerland, Leeuwarden and Groningen summarized for every question (In Dutch)

Vraag / Gemeente	Oldambt	Smallingerland	Leeuwarden	Groningen
Hoe probeert gemeente zwerfafval te bestrijden?	Acties, scholen, belonen, blikvangers, opruimen	Zwerfafvalfonds, kauwgom verwijderen, inzamelen. Stimuleren gedragsverandering, inwoners actief betrekken, schoonmonitor	Overeenkomst met reinigingsdienst, buitendienst, veel projecten op basisscholen	Stadsdelen verantwoordelijk voor eigen deel. Wijkposten. Samen zorgen ze voor een schone ruimte. Vanuit de wijkposten wordt aangestuurd
Hoe bepalen jullie strategie?	Sommige dingen van oudsher, kijken nog hoe subsidie in te zetten, eisen worden strenger.	Op gevoel en de ervaringen. Basisonderwijs werkt het heel goed. Middelbare scholen geen moeite in	Veel projecten bottom-up, langs op scholen. Gouden grijper, houdt het schoon van telekids, bewonersinitiatieven	Verschildt per stadsdeel. Overleg tussen boa's en wijkposten. Educatieprogramma's op scholen. Als sluitstuk handhaving en boetes
Hoe succesvol zijn de methoden?	Evalueren en schouwen wel. Op gevoel, geen concrete cijfers. Moeten nu wel evalueren. Moeten gaan monitoren voor subsidie	Wordt gemonitord. En de schoonmonitor	Kan beter. Wel monitoren, schouwsystematiek. Ergernis cijfers monitoren. Bijhouden hoe vaak vrijwilligers de container gebruiken.	We doen schouwen. 2x per jaar stadspanel. Validatieonderzoek met beeldlatten. Gekeken naar mate dat het voldoet met wat met de raad is afgesproken
Is handhaven en boetes geven voldoende?	Er wordt wel opgetreden, niet heel streng. Lopen twee boa's. wel streng op bijplaatsingen. Als er een juiste methode was, gebruikte iedereen die.	Daar geloven we niet zo in. Wel beetje waarschuwen	Soms schrikt het wel af. Wel eens boetes uitgedeeld.	Absoluut niet.
Methoden afgewezen?	nee	Verantwoording afleggen naar de stichting van de subsidie, soms is t daar niet voor bedoeld.	Ja. Pratende afvalbakken, alles met technische snufjes. Hoge kosten.	Ja. Mensen met geld belonen doen we niet. We zitten vooral op de intrinsieke kant
Wanneer is een methode succesvol?	niet zo objectief. Op gevoel. Praktisch.	Als het zwerfafval verminderd	Als bewustwording wordt gecreëerd. Verschillende aanpak per doelgroep	Op het moment dat we zien dat mensen actief meedoen. Twee parameters. De afspraken met kwaliteitsniveau's. tevredenheid over eigen inzet
Waar ligt de verantwoordelijkheid?	nvt	Producenten, statiegeld. Uiteindelijk van de mens zelf.	Gemeente is verantwoordelijk voor openbare ruimte. Uiteindelijk de veroorzakers.	De gemeente kan het niet alleen. Gemeente verantwoordelijk voor

				faciliteren. Verpakkingsindustrie ook een rol
Inspiratie opdoen bij andere gemeenten?	Ja. Overal let je op. Marktpartijen.	Ja, kenniscentrum zwerfafval. Beter gejat dan slecht bedacht	Ja, verschillend overkoepelende organisaties. Kennisclub.	Ja. Nederlandse vereniging van reiniging. Veel contacten en ook nederland schoon met congressen.

Vraag / Gemeente	Oldambt	smallingerland	leeuwarden	Groningen
Gebruik methoden gedragsbeïnvloeding?	Kan me niks bedenken	Ja, blikvangers en boodschappen	ja, voetstapjes. Pratende afvalbakken. Normeringstelsel. Grondig reinigen, want schoon houdt schoon. blikvangers	Boa's attenderen en hebben picknickkleedjes bij zich. Bewust zichtbaar reinigen
Begrip nudging?	Wel eens van gehoord, kan geen definitie geven	Bekend voor, kan geen definitie geven	Ja, bekend mee. Bij een cursus geleerd.	Ja.
Gebruik nudging strategieën?	Blikvangers.	Voetstapjes, blikvangers	Ja. Voetstapjes, blikvangers. Hinkelblok voor de prullenbak.	Ja in de praktische hoek, het leuk maken. Grasmatten rondom containers. Grondig schoonmaken want schoon houdt schoon
Op welke locaties?	Schoolroutes, langs fietspaden	Hotspots, hondenpoep, fietspaden	Prinsentuin. Hotspots die na voren komen.	Rondom de ondergrondse vuilcontainers.
Zo nee, wel eens ter sprake gekomen? Overwegingen?	Kauwgom referendum positief. Kan helpen. Maar geen oplossing die alles oplost.	Snake gehad, werkte niet.	Negatief over afval referenda. Afval mag niet zichtbaar zijn, dus ook geen afval op een rotonde plaatsen om bewustwording te creëren.	Over voetstapjes niet enthousiast. Dat moet je niet in de binnenstad gaan doen, niemand ziet dat. Het moet geen speeltuin worden. Niet de hele stad vol met prullenbakken, kost je veel geld.
Begrip Priming?	nee	Met cursus gehad, kan geen definitie geven	Wel eens van gehoord, kan geen definitie geven	Nee..
Gebruik priming strategieën?	nee	Blipvert, posters blikjes in de natuur. Beetjejammer.nl	Grasmatten rondom containers → werkt niet. Containers fel blauw	Kunstgrasmatten, containers de kleur appeltjesgroen
Zo ja, op welke locaties?	nvt	Blipvert containers Strakke designs en lampen	Rondom containers. Felblauwe containers	Hotspots, de oudere wijken, de nieuwe containers.

		Ecoparkjes natuurlijke setting, blijft ook schoon		
Zo nee, overwogen?	Wel eens. Als het nieuw is ziet het er mooi uit, moet het wel netjes houden	Grasmatten, niet enthousiast, onderhoud, wordt vies, andere redenen waarom mensen bijzetten.	Grasmatten mee gestopt. Onderhoud is erg belangrijk → werkt niet Denken na over ogen plaatsen.	Grasmatten zitten wel nadelen aan, vies worden. Bepaalde groepen bereik je toch niet
Gebruik van boodschappen?	Ja. -bijplaatsen, 100 euro boete-	Ja, "wij in rottevalle". "30% heeft de afvalwijzer al", positief effect.	Ja.	Ja, groningen schoon dankzij mij. Experimenten met stickers tegen bijplaatsingen
Zo ja, welke locaties?	Ondergrondse afvalcontainers	Parkjes, digitaal	Rondom te afvalcontainers.	Afvalcontainers en in de oude wijken
Zo nee, overweging?	Bijplaatsingen maar op enkele locaties. Bepaald soort mens die moeilijk te bestraffen is. Twijfels of boodschap werkt. Inzet lokale helden is ter sprake gekomen, nog geen uitkomst.	Lokale helden, enthousiast. Moet nog verder uitgewerkt worden door communicatie	Borden zouden vaker veranderd moeten worden.	
Bewust zichtbaar gereinigd?	Niet bewust. Wel overdag.	Ja in de wijken wel, in het centrum vroeg in de ochtend	Ja. Sturen vrijwilligers aan zo zichtbaar mogelijk te reinigen..	Ja. Tijdens kantooruren.
Zo ja, met een bepaald doel?	nvt	Ja met een doel. Maar in centrum niet zo handig. Wijkteams, mensen uit de wijk zelf. Gelooft zeker in het nut van zichtbaar reinigen. Kan ook doorslaan, als je prullenbak gelijk leegt dat mensen denken dat het toch wel wordt opgeruimd	Ja, mensen laten zien wat er met afval gebeurt.	In de binnenstad bewust. Constant bezig zijn, het is de huiskamer. Wordt wel steeds drukker, dus sommige plekken is t steeds lastiger.
Zo nee, zou het een goede manier zijn?	Misschien wel. Je hebt er een beeld bij. Zou kunnen helpen	ja	nvt	

Vraag / Gemeente	Oldambt	Smallerland	Leeuwarden	Groningen
Technieken nog niet aan de orde gekomen?	Bezig met containers en prullenbakken in het licht te zetten. Extra verlichten. Ogen plaatsen.	Buurtmonitor. Het adopteren van een veldje of pleintje	Niet dingen per se als gemeente uitdragen. Meer creatief via social media. Vrijwilligers die het zelf uitdragen	Ja, mensen bewust betrekken. Mensen van een organisatie zichtbaar maken. Mensen zichtbaar maken die meehelpen. Sluit aan bij collectiviteit.
Een grens voor gemeenten met deze tactieken?	geen enkele moeite mee, met onbewust sturen. Moet zeker kunnen. Dit snapt iedereen	Nee. Hoewel eigenlijk is t wel een beetje manipulatie. Maar kan wel	Ja. Voorzichtig met privacy van medewerkers. Willen mensen niet in een discussie laten komen	Ja. De binnenstad is een soort toneel. Veel soorten publiek, dus neutrale uitstraling. Functionaliteit openbare ruimte is wisselend. Dan geen belang, wil je niet. Voorzichtig, bepaalde vorm van terughoudendheid. Omvang van het probleem in de gaten houden. Tolerantie verdwijnt. Op hotspots: helpt het dan helpt het
Meer van deze tactieken in de toekomst?	ja denk ik wel. Imago is ook veranderd tov zwerfvuil	Ja. Als je de middelen hebt	ja	Ja, maar moet geen hobbyisme worden.
Heeft de gemeente een visie voor toekomst?	Nee. Moeten we gaan maken. Moet wel gaan gebeuren, ook voor de subsidie	Doelstellingen, iedere 2 jaar wordt er een plan gemaakt	Ja, ieder jaar wordt er een plan gemaakt. Voornamelijk voor de subsidie.	Ja een afvalbeheerplan.
Staat de gemeente open voor de benoemde tactieken in de toekomst?	Ja waarom niet. Verlichting lijkt me leuk. Grasmatten om vuilcontainers lijkt me nep (sceptisch over). Referenda en voetstapjes interessant.	Ja zeker. Blickvangers helpen, natuurparkjes. Het speelse moet op de doelgroep afstemmen. Adopteren van parkjes	Ja, staan overal voor in.	Ja.

Appendix C: Transcripts of Emmen, Midden-Drenthe, Tynaarlo and Midden-Groningen summarized for every question (in Dutch)

Gemeente/vraag	Emmen	Midden-Drenthe	Tynaarlo	Midden-Groningen
Hoe probeert gemeente zwerfafval te bestrijden?	Zwerfafvalplan. Inzetten op onderwijs. Schoon belonen. Vegen op straat. Buurtsupport. vrijwilligers	Gebruik van de zwerfafvalvergoeding. Erg reactief. Steunen wel initiatieven van nl schoon	Reactief. Als we hopen zien liggen dan ruimen we dat op. Mensen van sociale werkvoorziening lopen rond met prikkertjes. Trash walking.	We hebben een extern iemand ingehuurd. Voornamelijk prullenbakken plaatsen en legen. Soms opruimacties.
Hoe bepalen jullie strategie?	Kijken naar ideeën van inwoners. Ad hoc aanpak voor prullenbakken	Coalitieakkoorden. Samen met scholen tegen zwerfafval. Nu nog ad hoc. Nog geen gedachtegoed achter	We hebben een dorpschouwer. Die kijkt met objectieve methoden naar zwerfafval en waardeert met een cijfer	Veelal burgers die met initiatieven komen. Beleidsplan geschreven. Bedoeling om samen met inwoners te kijken naar problemen. Communicatie nu ook belangrijk
Hoe succesvol zijn de methoden?	Niet monitoren. Soms werkt iets niet, zoals de snoeproute.	We doen een show. Twee niveaus a en b. schouwen iedere maand of het voldoet. Kleine mate van monitoring	Wordt verder niet veel gemonitord. Besteden er niet teveel aandacht aan. We zeggen er is geen zwerfvuil, we zeggen niet dat het een troep is	Nog niet echt bezig. Geen monitoring. Gaat een beetje af op de algemeen landelijk bekende hotspots. Nu wel een projectplan aan het opstellen met hotspots
Is handhaven en boetes geven voldoende?	Nee. Boa's spreken wel mensen aan, boetes zou optie kunnen zijn. Liever positieve aanpak.	Nee.	We hebben een boa. Maar het komt nooit voor, je hebt een heterdaadje nodig, gebeurd niet.	Nee niet aan de orde. Hebben nu ook geen boa meer die bevoegd is. Wij geloven daar niet in.
Methoden afgewezen?	Ja, snoeproute aanpak. Het is context afhankelijk of iets werkt	Ja. Project op school vanwege praktische en technische redenen.	Ja. Veel prullenbakken hebben we weggedaan. Alleen op kritieke punten laten staan. Overal neerzeten werkt niet en kost veel geld	Nee. Zover zijn we nog niet
Wanneer is een methode succesvol?	Als mensen van gedrag veranderen en actief bezig gaan	Op basis van aantal deelnemers.	We hebben geen maatstaven. Subjectief verhaal	Hebben we als gemeente nog niet echt een mening over. Vooral samen met inwoners vaststellen wat acceptabel is en dat met de

				acceptabele kosten probeert te bereiken
Waar ligt de verantwoordelijkheid?	Samen.	Beide.	De gemeente. Maar een bepaalde groep ga je toch niet bereiken, wat je ook doet.	beide
Inspiratie opdoen bij andere gemeenten?	Ja. Via RWS. Sparren met collega's van andere gemeenten	Ja. Samenwerkingsverband met andere gemeenten voor zwerfvuil.	Ja. Met drenthse gemeenten. Wisselen ideeën uit.	Nee niet echt, doen weinig met zwerfafval. Zitten wel bij RWS dan praat je wel eens met een andere gemeente

Gemeente/vraag	Emmen	Midden-Drenthe	Tynaarlo	Midden-Groningen
Gebruik methoden gedragsbeïnvloeding?	Ontwerp contest voor creatieve prullenbak	Bezig met afvalbakkenoptimalisatie. Logische plekken en routes die mensen lopen	Nee niet echt	Nog niet. Zijn er wel over aan het nadenken met huishoudelijk afval.
Begrip nudging?	Ja. Via RWS	Ja, maar geen definitie	nee	Ja een beetje
Gebruik nudging strategieën?	Blikvangers,	Nee. Peukentegels wel	Nee. Zouden meer moeten doen	Ja blikvangers hebben we.
Op welke locaties?	snoeproutes	nvt	nvt	Blikvangers op schoolroutes
Zo nee, wel eens ter sprake gekomen? Overwegingen?	Blikvangers hebben ook nadelen. Je leert mensen afval weg te gooien en als ze missen ruimen ze het niet op. Erg belangrijk waar je ze neerzet (niet bij weiland of water). Hoe lang is het leuk? Blijven vernieuwen.	Ja. Willen voetstapjes doen. Blikvangers willen we niet, je kan misgooien en je stimuleert de handeling van weggooien.	Ja. Opvallende containers wel eens, maar vind dat niet zo mooi. De blikvangers willen we ook niet, alles gaat er naast en de sport van het weggooien. Die felle prullenbakken en andere nudging dingen vind ik erg slordig in de openbare ruimte. Ik ben niet creatief genoeg voor dat soort dingen, ik denk dat vrouwen daar beter in zijn	ja. We willen ook iets doen met aanpak bijplaatsingen

Begrip Priming?	Ja wel eens van gehoord.	nee	nee	nee
Gebruik priming strategieën?	nee	Ja, een aantal kunstgrasmatten besteld. Kijken naar kleurkeuze in de schil Schoon houden want schoon trekt schoon aan met intensieve opruimrondes.	Nee niet echt	Nog niet nee. Probeer nu met nieuwe ondergrondse containers ze wel op nette plekken te zetten, strak design en op lichte plekken. Zodat het minder verleid tot bijplaatsingen
Zo ja, op welke locaties?	nvt	Ondergrondse afvalcontainers. Randen van het dorp, niet in het centrum	Wat we wel doen is bewust ondergrondse containers op hele mooie plekken zetten, met uitzicht over de ommelanden. Niet achter een paar auto's verschuuld. In Zuidlaren hebben we ook wel prullenbak met mooie kleuren en goede kwaliteit.	Ondergrondse vuilcontainers
Zo nee, overwogen?	Knallende kleuren worden overwogen maar botst met design. Kunstgrasmatten moet je goed onderhouden.	nvt	We kiezen niet voor felgroene containers oid. We willen ze juist laten wegvallen. Dat is mooier. Mensen die wat willen weggooien vinden hem toch wel	Ja, ik wil wel het wel uitproberen. Van die felle containers om te kijken of het helpt. Misschien kunnen we ook iets met citroen en pepermuntgeur doen bij de containers.
Gebruik van boodschappen?	Nog niet.	nee	Nee, ik geloof er wel echt in	Ja af en toe. Denken er over na. Dus niet van "verboden afval te storten" maar op een andere manier.
Zo ja, welke locaties?	Een wijk waar veel overlast is willen ze het toepassen. Man met husky die boegbeeld is in emmen	nvt	nvt	nvt

	op poster om mensen aan te sporen. Kunstwerk van de hond gemaakt.			
Zo nee, overweging?	nvt	Ja, zouden we meer mee moeten doen. Zeker iets om mee te nemen	Ja.	We willen het wel gaan gebruiken. Maar, als iedereen in NL mensen op deze manier gaat benaderen, wanneer gaan ze zich dan afkeren?
Bewust zichtbaar gereinigd?	Ja. Maar beter zonder hesjes, dan ziet iedereen dat het vrijwilliges zijn. Maar naast drukke weg wel een hesje. Veel waardering voor die mensen	Nee.	nee	Niet bewust. Hebben wel een collega die met een bakfiets al jaren door de wijk gaat.
Zo ja, met een bepaald doel?	Ja om de sociale norm te bevestigen	nvt	nvt	Niet met een doel
Zo nee, zou het een goede manier zijn?	nvt	Ja zitten er wel aan te denken, met evenementen	Ligt niet zoveel rotzooi bij ons. Dus denk dat het niet echt nodig is	Ik weet het niet.. als er geveegd wordt kan het ook zijn dat mensen het sneller op de grond gooien. Misschien een leuke boodschap op de wagen plakken. Je gaat dan wel een hard middel heel generiek toepassen. Dat moet je alleen toepassen op plaatsen waar echt iets aan de hand is. Dus niet generiek preventief, maak hem situatiegericht.

Gemeente / Vraag	Emmen	Midden-Drenthe	Tynaarlo	Midden-Groningen
Technieken nog niet aan de orde gekomen?	Nee, proberen eerst de basis wat meer op orde te krijgen	We willen datagestuurd schoonhouden. Reinigen met sensoren etc.	nee	Ja we willen filmopnames maken voor afvalscheiding. Daar willen we van die technieken toepassen.
Een grens voor gemeenten met deze tactieken?	Nee. De commercie doet het ook. Op het gebied van afval zal niemand er moeite meehebben.	Tot een zekere hoogte. Houd kerntaken bij de gemeente, niet actief mensen gaan werven. Participeren van burgers op eigen initiatief.	Het beperkt je ook. Je moet er niet een te groot gebeuren van maken. Blijf bij je kerntaken. Laat het accent er niet te veel op vallen	Zal vast ergens een grens liggen. Je moet niet in de sfeer van manipulatie terecht komen. Wanneer kom je daar? Als het teveel is werkt het denk ik niet meer
Meer van deze tactieken in de toekomst?	Ja. Mensen willen minder regeltjes, je moet het leuk maken	Ja denk het wel. Hangt ook af van de doorontwikkelingen op dit gebied.	Ja dat gaat wel gebeuren.	Jawel. De eerste gemeenten zijn er 5 jaar geleden mee begonnen, het is een begin en t zal ook aangepast worden.
Heeft de gemeente een visie voor toekomst?	Ja.	Ja nieuw beleid. Hotspots benomen etc. schoon is de norm.	Nee. Alles gaat op gevoel. Ik vind dat er ook niet een zwerfafval probleem is hier	nee
Staat de gemeente open voor de benoemde tactieken in de toekomst?	Ja. Je zou ook de spelelement met green graffiti kunnen doen, dan kan je blijven variëren. Maar als iedereen door heeft dat ze genudged worden zal het minder werken. Het moet niet gaan storen	Ja. Maar we lopen een beetje achter. Kerntaak is nu om alles schoon te krijgen. De volgende stap in beïnvloeding	Ja. Wij hebben een actieve afdeling communicatie	Ja. Een knelpunt is wel dat we er nog niet echt specifiek iemand op hebben zitten.