Picking up litter: a trade-off between the costs and benefits among walkers

Sustainable Entrepreneurship Project

Anniek Barendregt (S4370155)

The 5th of June 2024

Valerija Gulubic as supervisor

Gjalt De Jong as co-assessor

Abstract

Within the domain of sustainable entrepreneurship, the practice of picking up litter emerges as a critical yet underexplored aspect of environmental stewardship. This study delves into the trade-off between the perceived costs and benefits that influence individuals, particularly walkers, in their engagement with litter picking activities. Through qualitative research methods, including semi-structured interviews, this research investigates the perceived costs and benefits associated with litter picking, shedding light on the underlying factors that shape behavior in this context. By delving into the complexity of litter picking behavior, this study not only contributes to the existing literature on sustainable practices but also offers practical insights for fostering a culture of environmental responsibility. Ultimately, this research seeks to be of guidance to serve strategic interventions and initiatives that promote sustainable behavior, enhance environmental quality, and cultivate a sense of collective responsibility towards preserving our natural surroundings.

Keywords: picking up litter, perceived costs, perceived benefits, commons dilemma.

INTRODUCTION

It is estimated that in the Netherlands approximately 50 million kilos of litter ends up on the streets or in green areas every year. In the past, Municipalities, Rijkswaterstaat* and the managers of nature reserves in the Netherlands were the ones responsible to keep the public spaces clean (Milieu Centraal, n.d.). Three years ago, Rijkswaterstaat, commissioned by the Ministry of Infrastructure and Water Management, conducted a study on the costs of preventing, cleaning up, monitoring and processing litter in the Netherlands. The total sum of the costs that prevent the existence of litter rose to 324 million euros, of which 94% of the expense is borne by municipalities (Argaman et al., 2023). It seems that the misplaced trash that we call litter, not only has an impact on the budget of the municipalities. It appears that the phenomenon also has an influence on house prices; houses tend to be sold for less money in streets with a lot of litter, whereas house prices seem higher in areas where there is less litter (Milieu Centraal, n.d.). Financially, litter takes quite the governmental resources, and additionally it takes too much space in our environmental ecosystem too. Litter pollution is a pressing global issue with far-reaching consequences for ecosystems, wildlife, and public health (Le, et al., 2024; Chaudhary, Polonsky & McClaren, 2021). Currently, nearly one-quarter of the world's plastic waste is mismanaged or littered, which means it is not stored in secure landfills, recycled or incinerated. In other words, 19 million tonnes of plastic end up in the environment; 13 million tonnes can be found in terrestrial environments, and 6 million tonnes move to rivers or coastlines (Ritchie & Roser, 2023).

---

*The Rijkswaterstaat is the executive agency of the Ministry of Infrastructure and Water Management in the Netherlands. It is responsible for the design, construction, management, and maintenance of the country's main infrastructure facilities, including the national roads, waterways, and water systems. Established in 1798, the Rijkswaterstaat plays a crucial role in water management, flood protection, and ensuring safe and efficient transportation networks across the Netherlands.

In terrestrial environments, large plastics can limit the exchange of gasses and compounds that might affect environmental health (Steinmetz et al., 2016) and cause organism entanglement (Barnes et al., 2009). Smaller particles can be ingested or inhaled causing pseudo satiation and blockage of the digestive tract, or abrasion and irritation of mucosa (Barnes et al., 2009; Rehse et al., 2016). As the proliferation of litter in our environment poses significant ecological challenges, threatening biodiversity and human well-being (Huffman, et al., 1995; Bergmann, Gutow & Klages, 2015; Usman, et al., 2023), humanity has to take responsibility for our man-made issue; through the simple act of throwing trash in the bin and picking up litter.

Therefore, the first step of this research is to understand the motivation behind individuals who do and do not litter. The theoretical framework showcases the costs and benefits of littering behavior through existing academic research on behavior. The second step is to find out what the perceived costs and benefits of the responsible behavior of picking up litter are. Through semi-structured interviews with individuals that are approached during walks, the aim is to understand how the participants feel and act when they encounter litter and what motivates the behavior that follows (picking it up, walking past it, etc.). The participants of choice - walking individuals - serve as a representative target group, as they are likely to encounter pieces of misplaced trash on a regular basis. Therefore, there is a significant chance that the walkers have already formed an opinion about the existence of litter and have reflected on their personal behavior towards it. Frequent walkers can have a great impact on the amount of trash that can be found in outdoor and public spaces, if they are willing to pick up litter.

While there is a growing interest in litter clean-up activities (Damen, n.d.), there remains a gap in understanding the motivations that drive individuals to pick up litter. Similarly, the research gap also can be found in understanding the motivations that limit people to engage with

litter. Previous studies primarily focused on the motivation - costs and benefits - of the littering behavior itself. Therefore, the aim of this study is to bridge the gap between the present literature, and what still can be found on behavior related to litter. The proposed research question is as follows: what are the perceived costs and benefits of picking up litter among walking individuals? The aim with this research is to understand how the behavior of picking up litter can be enhanced. Based on this research, suitable actions to limit the amount of litter in the Netherlands can be further examined, to contribute to preserving both environmental and human health and decreasing governmental expenses caused by existing litter. Additionally, the concept and behavior of picking up litter is something that Sustainable Entrepreneurs could and should do something with. Currently litter is still a big problem, both on a national and international scale. As sustainable entrepreneurs are known for their aim to contribute on a social and/ or environmental level (Hoogendoorn, Van Der Zwan & Thurik, 2019), this research can be used as a stepping stone towards entrepreneurial initiatives that will increase the individual and collective benefits of picking up litter.

THEORETICAL BACKGROUND

Common's dilemma

Littering has numerous bad implications, therefore it is of importance to question why individuals partake in littering behavior in the first place. According to Kolodko, Read and Taj, the decision to litter can be described as a classic commons dilemma (2016). To understand the concept of a commons dilemma, the work done by Edney and Harper can serve as a great example (1978).

Consider a scenario where a small group of individuals are seated around a bowl , which contains a limited number of glass marbles. Each marble possesses value, as it can be exchanged for a desirable good. The objective of the game is for each participant to acquire as many marbles as possible, which the individuals can win by removing marbles from the bowl at any time and in any quantity. Every 10 seconds, the number of marbles that are (still) present in the bowl is automatically doubled from an external source; however, if the bowl is ever entirely emptied, the game stops. Communication between players is strictly forbidden. The possible outcomes of the game are numerous, as each participant may end up with either a few or many marbles. Therefore, the individual scores of the participants can vary extremely at the end of the challenge. A brief consideration reveals that if players refrain from taking marbles during the first 30 seconds, the bowl can become significantly filled through the doublings that occur after each 10 seconds. When players eventually begin to take marbles, they can achieve very high scores. However, in many instances, the first doubling never occurs because some or all players immediately gather the initial marbles, resulting in an empty bowl and a very short duration of the game. Consequently, the players often end up with few or no marbles (Edney & Harper, 1978).

The example of the game serves as an analogy for situations that occur in resource management, where multiple individuals harvest resources from the same pool. The consumers face the choice of extracting large amounts of resources immediately for short-term personal gain or exercising restraint to ensure the long-term sustainability of the pool and the collective benefit. In natural scenarios, such as whale hunting or timber extraction, the resource pools and consumer groups are significantly larger than considered in the earlier presented scenario, but the game encapsulates the fundamental dilemma: short-term personal gain at the expense of

long-term communal benefit versus short-term self-restraint for the long-term advantage of all (Edney & Harper, 1978).

If the examples mentioned above were to be compared with the behavioral act of littering, the dilemma can be stated as follows. The first key feature of the commons dilemma on littering behavior is that there is a shared resource, such as a park, a forest or a street. Individuals can choose to maintain (at a cost) or exploit this resource. Maintaining the resource would entail the responsible disposal of waste in the trash bin. Exploiting the resource on the other hand, would encompass engaging in littering behavior. Since the act of putting litter in a bin is costly, both in time and in effort, the cost can exceed the benefit, which causes people to choose to litter. The second feature of the commons dilemma, is that the individual effects of the exploitation are relatively small, which causes people to typically choose to act on the exploitative behavior. If a litterer drops a few pieces of trash in a day, the impact to the individual itself might be not even noticeable, whereas the benefits that person experiences by not having to carry their litter is a short-term benefit that can be directly experienced at the time of contamination. In short, based on the concept of the commons dilemmas, the interest of the individual and the interest of the collective are in conflict: society is worse off if individuals litter, while the litterer is better off (Kolodko, Read & Taj, 2016).

Building upon the analogy of the marble game presented by Edney and Harper (1978) and the application of the commons dilemma to littering behavior, the decision to use bins for waste disposal can be framed as a similar dilemma faced by individuals in managing a common resource. Esfandiar, Dowling, Pearce and Goh's study delves into the complexities of binning behavior in national parks, where visitors are confronted with the choice of either responsibly disposing of their waste in bins or littering the environment (2020). Drawing parallels to the

common dilemma as mentioned above, their findings also confirmed that the decision to use bins for waste disposal can be seen as a trade-off between short-term personal convenience and long-term communal benefit. Similar to the scenario of the marble game, individuals may prioritize their immediate comfort and convenience by littering, as the act of using bins is perceived as costly in terms of time and effort. Esfandiar, Dowling, Pearce and Goh's results showcase through different psychological theories the importance of personal responsibility, social norms, and awareness of the consequences of littering (Esfandiar, et al., 2020). According to their study, the norm activation model explains that an individual's pro-environmental behavior - such as putting litter in a bin - comes from personal obligations or altruistic beliefs regarding what is appropriate or inappropriate behavior (i.e. moral decision making model), whereas the theory of planned behavior focuses on an individual's environmentally responsible behavior being caused by personal costs and benefits (i.e., a rational decision making model). Although the theoretical background tends to focus more on the moral decision making model, the methodology of the research dives more into the rational decision making model, which aims at targeting the perceived costs and benefits.

Solution of the dilemma

If littering is approached from the perspective of the commons dilemma and the rational decision making model, there are two options to lowering littering behavior. The first option is to reduce the perceived cost difference between not littering and littering, which for example could mean to make it simpler to use a bin or more difficult not to. The second opportunity would be to increase the perceived advantages of not littering vs littering, which means e.g. rewarding not littering and charging for littering. The term "perceived" is of significance here. People often do not go through conscious cost-benefit evaluations when making decisions, because of limited

cognitive resources, impulsivity, and the emotional influence. On the contrary, people frequently make decisions based on the context they find themselves in, on social norms or on their own personal standards or guidelines. However, because of the rather unconscious decision making, small changes in the design of choice can be of great significance in relation to behavioral change and therefore help solving the commons dilemma (Edney & Harper, 1978). The perceived personal discomfort needs to weigh lighter than the collective benefit in the decision making process. This phenomenon, the trade-off between perceived costs and benefits, is similar to individuals who engage in the behavior of picking up litter. Theory suggests that there are different methods to enhance binning behavior. The study of Esfandiar, Dowling, Pearce and Goh identified the significance of pro-environmental binning awareness and pro-environmental binning personal norms. Their study pofesses that providing sufficient awareness of the consequences of littering and creating a sense of morality are effective methods of fostering binning behavior (2020).

DATA AND METHODS

As litter is still a problem of today's world, it is useful to understand what the perceived costs and benefits of picking up litter are. It is especially important to understand those costs and benefits among individuals who can serve as a potential solution to the litter that still ends up in our ecosystem. Previous research has been done on the costs and benefits of partaking in littering behavior (e.g. Edney & Harper, 1978; Esfandiar, et al., 2020), and since the perceived costs and benefits of picking up litter is still an unexplored area, the aim of this paper is to understand the perceived costs and benefits that individuals relate to picking up litter. As such, qualitative research with semi-structured interviews seems best (Molecke & Pinkse, 2017). For the

interviews, the intention is to approach individuals on their walks in nature. This setting fits the aim of the research, since walkers are prone to encounter litter regularly. Additionally, walking individuals are likely to have thought about litter prior to the interview, and are presumably going to think about it again afterwards when encountering misplaced trash. Therefore, the interviews can serve as a moment of reflection, which can be seen as an additional bonus to increase the awareness of litter among individuals who are willing to participate in the study.

By conducting 15 different interviews, a total of 24 people participated. Seven participants participated individually, 14 individuals participated as a duo and there was one group of three. 24 interviews were conducted in Dutch and one interview was done in English. All of the participants were above the age of 18. The participants were approached in a timespan of two weeks, in a nature walking area in the north of the Netherlands. Before participation, all approached individuals were informed about the research based on the information sheet and they agreed to sign the informed consent form. For the interview itself, a semi-structured format was used, starting with a standard list of questions to probe how often the participant is walking, whether they encounter litter during these walks, what they think about encountering litter, how they deal with encountering litter, what motivates their behavior, and what would motivate them to act contrary. Once completed, all participants received an appreciative present relevant to the research.

After collecting all data, the interviews were transcribed and analyzed using the programs Goodtape.io and Excel. The first step was to start coding inductively, using first-order, in vivo codes based on concepts and themes expressed directly in the statements of the interviewees (Corbin and Strauss, 2008). Since these codes did not have clear conceptual boundaries between them, an initial process of consolidating and refining codes occurred. Codes that did not have a

clear initial relation to the costs and benefits of picking up litter were temporarily set aside. Next, a fuller thematic analysis was manually performed to uncover second-order linkages, commonalities, and the more general, aggregate themes (Corbin and Strauss, 2008). Appendix A details the progression from First-Level coding to Second-Order Themes (Gioia, Corley & Hamilton, 2013), which then were linked to the aggregate understanding of the costs and benefits of picking up litter. There are two Aggregate Dimensions: the "cost of picking up litter" and the "benefit of picking up litter". Both of the Aggregate Dimensions were connected to multiple Second-Order Themes, and almost all Second-Order Themes were based upon multiple First-Level Categories. The Aggregate Dimension "Cost of picking up litter" included the following Second-Order Themes: Length of carrying, Amount, Location safety, Difficulty of carrying, Getting dirty, Expenses of extra trash, Negative disruption and Time. The Dimension "Benefit of picking up litter" included the following Second-Order Themes: Preventing harm, Making a difference, Protecting nature, Clean living area, Financial profit from trash and Fun.

FINDINGS

Overarching findings

Throughout the interview, it occurred that the majority of all interviewees indicated to be regular walkers. The frequency of walkers ranged from three times a day to one time a week. Additionally, it is interesting to note that all walkers mentioned that they encounter litter on their walks, both in more and less amounts, which proves the usefulness of this research. Three participants stated that the amount of litter that they encounter is depending on the area that they are walking in. In addition, all 24 participants expressed a feeling of irritation, disapproval and/

or disappointment when encountering litter. Especially when one knows a litterer has purposely thrown something on the ground. One participant commented:

I think it is such a shame that people insist upon knowingly throwing stuff to the ground. Sometimes, yes, things fall out of a pocket or out of a bag by accident. The wind comes and all of a sudden, something goes. That's fine. But I do see people just eating something and then purposefully throwing it to the ground. And that I just do not understand. It is so easy to pick it up if you have carried your sandwich or whatever even a few meters with it in the package, and you have then eaten the contents so the package is now lighter than it was. Why can you not take a few more steps and throw it away? I do not understand (Participant 1, personal communication, April 30, 2024).

The comment indicates the inability to understand why people would consciously choose to participate in littering behavior. The same participant mentioned a surprising story about walkers who participated in walking the international routes of the Camino de Santiago in Spain - also called the Jacobs Path - where people from all over the world are walking one trail by following certain signs, including shell and yellow arrow symbols. This route is walked by people who go for spiritual reasons, some for religious and for personal motives. Surprisingly, participants of the route just throw their garbage everywhere. The interviewee commented:

You walk along and you think: "well why?" You are doing this with intent. You know, it is not like every day you are walking 20 to 30 kilometers with everything on your back. Why are you being so stupid as to show disrespect to the country that you are walking through and just throw stuff everywhere. There are people and groups who go out and who spend a week or a month - other pilgrims from various countries - and they go out and pick up all the garbage, all

the litter along certain routes. Unfortunately that still does not stop people from putting more. You just have to wonder, why in human nature we have to throw things and destroy the countryside (Participant 1, personal communication, April 30, 2024).

Multiple participants mentioned that whenever they see individuals littering, they occasionally approach them to speak to that person to point out the behavioral mistake of throwing trash purposefully on the ground. One of the participants commented:

I have often seen children just throwing cans on the ground. I had that too a few months ago. I was standing at an intersection and a child drank a bottle or whatever. Then they threw it on the ground just like that. When I saw that, I opened the window of my car and I kindly asked them to pick it up (Participant 10, personal communication, May 8, 2024).

Throughout the interviews with the participants, the overarching feeling towards misplaced trash and the people who leave litter around, was clear: one should not litter. Additionally, the participants answered the questions that aimed at reflecting on why we as humanity do and do not act when encountering litter, which led to the following sections of the findings.

Costs

One of the reasons that hinders individuals from picking up litter is the individual perceived cost that it takes to pick a piece of misplaced trash from the ground. The dimension of the perceived costs can be divided into the following sections: Length of carrying, Amount, Location safety, Difficulty of carrying, Getting dirty, Expenses of extra trash, Negative disruption and Time. Some of these Second-Level Themes could be backed up by multiple

quotes from participants, other themes only were backed up by one statement that indicated the cost. In the following part, based on the table that can be found in Appendix A, all occurring themes are explained more in depth.

Length of carrying

The willingness of individuals to pick up litter is influenced by the perceived length that they must carry the litter before finding a suitable point to dispose of the item responsibly. 10 of the 24 participants mentioned the factor of the relatively close presence of waste bins during the interviews. Participants consistently indicated that their decision to pick up litter hinges on the distance that they have to walk with the item. For instance, if they are aware of a garbage bin within a short distance, such as 100 meters, they are more inclined to pick up litter. Conversely, if no disposal point is in sight or if they anticipate having to carry the litter for an extended period, they are less likely to engage with the litter by picking it up. One of the participants commented:

> *If I'm sure there will be a garbage can in 100 meters, then I'm willing to take it with me, but I don't want to walk the entire walk with trash in my hand (Participant 3, personal communication, April 30, 2024.*

The comment implies that the inconvenience of carrying trash over long distances, especially during recreational activities like walking or running, is a notable deterrent. Additionally, the presence of adequate disposal facilities along common routes can significantly enhance litter-picking behavior, making it more convenient for individuals to contribute to a cleaner environment without disrupting their primary activities. This theme underscores the importance of strategically placing trash bins to encourage public participation in litter control.

Amount

The amount of litter present in an area also impacts individuals' willingness to engage in cleanup activities. Respondents noted that encountering a large amount of litter can be discouraging. One of the participants commented:

Some places there is just so much litter that if you pick up one thing, it does not really help (Participant 8, personal communication, May 2, 2024).

For instance, picking up a single piece of litter in a heavily polluted area, such as near a skateboard park, is perceived as not helpful, which discourages efforts. This contrasts with areas where litter is sparse; individuals are more likely to pick up isolated pieces of trash, where their actions will make a more visible difference. Another participant commented:

If you come across only a bag of chips, you pick it up and throw it away. Not that difficult. But where there are a lot of young people, for example at a skateboard track in a park, it is bursting with waste. I'm not going to pick everything up (Participant 16, personal communication, May 8, 2024).

The comments indicate that the perceived impact of their efforts thus also play a critical role in motivating or deterring picking up litter. This also will be discussed in the section dealing with the perceived benefits of picking up litter.

Location safety

Another factor that hinders participants from participating in picking up litter, is their personal safety. If the individual has to put themself in a situation where their safety might be at risk, they are not or less willing to participate in the act of picking up litter. One of the participants commented:

It may be dangerous if you are near cars to try and pick up things (Participant 1, personal communication, April 30, 2024).

Difficulty of carrying

The practicality of carrying litter also influences individuals' decisions to engage in the behavior of picking up litter. 10 of the 24 participants indicated that the difficulty of carrying a piece or pieces of litter determines whether or not they engage in the behavior of picking up misplaced trash. Participants expressed that the physical difficulty of carrying litter, especially when their hands are already full or if the litter is large in volume, acts as a significant hindrance. For instance, one participant commented:

If I see something, I will take it with me. Then I throw it in my bicycle bag. But if I do not have a garbage bag with me or anything, I will not. You have to be able to take it with you (Participant 18, personal communication, May 8, 2024).

Additionally, the availability of carrying aids, such as plastic bags or bicycle bags, was highlighted as a crucial factor. Without these aids, individuals are less likely to pick up litter. Moreover, the size of the litter matters; large or bulky items are often left behind due to the inconvenience of carrying them. One participant mentioned the example that they were likely to pick up a can, but would not think twice about carrying an old bike (Participant 22, personal communication, May 8, 2024).

Getting dirty

Through multiple interviews, it became clear that getting dirty hands and clothing also was of importance in the decision making process of picking up litter. The individuals indicated that whether they would pick up litter, was depending on how they are dressed at the moment of

action, whether they have something to wash their hands with afterwards, whether they have something with them to put the litter in or something to pick up the piece of trash with. One of the participants commented:

For example, you don't have anything to take it with you. I am not going to walk around with dirty tissues in my hand, yak (Participant 14, personal communication, May 8, 2024).

Participant 16 gave the example that they were not going to pick up cigarette butts, especially if they did not have a grab stick with them (personal communication, May 8, 2024). Another person indicated that they were not willing to pick up litter, when they are wearing their fancy clothes and the litter item looks very dirty, or when it rains (Participant 23, personal communication, May 8, 2024). All statements can be found in Appendix A.

Expenses of extra trash

The last couple of years, the amount of governmental taxes that need to be paid per household, are increasing to depend on the amount of trash that is submitted per home address. Although the topic of the extra expenses that tag along when one puts found litter in their personal waste bin, it was not something that occurred on multiple occasions. One participant did make the following statement:

I collect the cans. If I find a can with a deposit, I also put the found litter in the trash. So then I balance the expenses (Participant 6, personal communication, May 2, 2024).*

---

*The Dutch deposit system, known as "statiegeld," is a recycling initiative designed to encourage the return of empty beverage containers. Consumers pay a small deposit when purchasing beverages in plastic bottles and cans, which is refunded upon returning the empty containers to designated collection points. These collection points are typically located in supermarkets and other retail locations. The system aims to reduce litter, promote recycling, and support environmental sustainability by ensuring that bottles and cans are properly recycled rather than discarded as waste.

The participant indicated through the statement that they were willing to deal with the extra financial burden of more household trash, when they could gain the deposit money from found cans.

Negative disruption

Another factor that contributes to whether one is willing to pick up trash, is the fact that the intention of going on a walk is a rather positive one, while picking up trash was associated with a negative disruption. One participant commented:

If you are walking, you are not cleaning up. You go for a walk, and instead you are focused on the mess and not on the beautiful nature (Participant 14, personal communication, May 8, 2024).

The comment indicates that the intention of the walk is to enjoy the environment. Picking up trash shifts this positive focus towards a negative one.

Time

The final factor that could be seen as a perceived cost of picking up litter, is the fact that picking up litter is time consuming. One of the participants commented:

If I am in a hurry for example, I would not pick it up (Participant 23, personal communication, May 8, 2024).

Picking up misplaced trash can take up some time of the walk. Through the statement, the participant indicated that the extra time that has to be spent to pick up litter, can be a hindrance.

Benefits

In addition to the perceived costs associated with picking up litter, the dimension of the perceived benefits can be divided into the following sections: Preventing harm, Making a difference, Protecting nature, Clean living area, Financial profit from trash and Fun.

Preventing harm

One of the benefits that is associated with picking up litter, is the perceived feeling of preventing harm. By moving or picking up litter, harm can be prevented. One of the participants commented:

> *Sometimes I do pick it up, especially if it is something that could be dangerous to an older person who is walking with a cane or someone who does not see very well and who would not see whatever it is on the ground that could be dangerous to them (Participant 1, personal communication, April 30, 2024).*

The same participant mentioned that they also would pick up plastic bags near roadways, as the item could scare or hinder the driver, when carried by the wind. Important to acknowledge is the fact that the prevention of harm in this part is aimed at the protection of humans. Animals were not mentioned in the statements from the interviewees in terms of harm.

Making a difference

The perceived impact of individual actions affects the motivation to pick up litter. Participants expressed that their willingness to engage in litter picking is strongly tied to the belief that their efforts will have a meaningful and visible effect. One participant commented:

By picking up litter, I hope to contribute to a clean nature. That it stays beautiful (Participant 23, personal communication, May 8, 2024).

This sentiment underscores the importance of feeling that one's actions are part of a larger, positive change. However, in areas where litter is present in huge amounts, some individuals feel their efforts are futile, describing it in Dutch as “Vechten tegen de bierkaai”, which translates to "fighting against the odds” (Participant 2, personal communication, April 30, 2024). These perspectives highlight the need for fostering a sense of efficacy among individuals.

Protecting nature

A strong motivation for individuals to pick up litter is the desire to protect and preserve the natural environments. Multiple participants emphasized that litter does not belong in nature and expressed a concern for the ecological impact of waste. One participant articulated this statement by commenting the following:

Well, nature should remain nature, right? Litter just does not belong in nature. It does not break down, it is not degradable and it stays there (Participant 11, personal communication, May 8, 2024)

This comment reflects that the act of picking up litter is seen as a crucial contribution to maintaining the beauty of natural spaces. The commitment to environmental responsibility drives individuals to remove litter to prevent harm to ecosystems.

Clean living area

Another factor that contributes to whether litter is being picked up, according to the participants, is when individuals live in the area of the litter. When they live close to the litter, individuals will just throw the collected litter in the waste bin of their household. One of the participants commented:

If I live there, I will just throw it in my waste bin (Participant 6, personal communication, May 2, 2024).

Another one indicated that neatness is something that motivates people to pick up litter. In specific words, the Dutch phrase "opgeruimd staat netjes" were used twice, which translates to something along the lines of "when something is tidy, it looks neat" (Participant 4, personal communication, May 2, 2024; Participant 6, personal communication, May 2, 2024).

Financial profit from trash

Additionally, the personal benefit of gaining deposit money is a motivating factor to pick up litter. During three interviews, the term was mentioned. One interviewee commented:

The deposit on bottles and the like, maybe that will help. I would think about picking it up, because a can or bottle is already 15 cents (Participant 11, personal communication, May 8, 2024).

Additionally, another participant mentioned that people even come by their sports club and try to empty the trash bins that still contain the cans to gain another 15 cents in return (Participant 16, personal communication, May 8, 2024). Picking up cans and bottles is highly

motivated by the money that can be earned. Another participant mentioned that when they go to the music festival Pinkpop, there are often individuals walking with big bags full of cans that they are gathering along the route to the festival (Participant 17, personal communication, May 8, 2024). These statements substantiate that the incentive of the financial profit is of importance for the decision making process to pick up litter.

Fun

Lastly, a factor that was mentioned multiple times, is the fact that picking up litter can be a fun and challenging activity. Especially when it is done with a team or with peers. One of the participants mentioned the idea of organizing a tour once a month or so, where one would have a grab stick and bags, with the intention of walking together or in a small group. Getting as much litter as possible could be seen as a challenge (Participant 12, personal communication, May 8, 2024). Another participant commented:

That you make it an educational game for primary or secondary schools, whoever collects the most waste earns something. That's quite fun (Participant 18, personal communication, May 8, 2024).

An interviewee also introduced the idea of implementing the talking and nice looking trash bins similar to the ones that can be found in the Dutch amusement park the Efteling (Participant 7, personal communication, May 2, 2024). Throwing away the litter of others could be a fun activity and reinforcing the fun aspect of collecting waste could be a motivating factor to create more sustainable binning behavior.

The trade-off

When the perceived cost of picking up litter becomes higher than the perceived benefit, (e.g. no bins nearby, or dirty litter objects), individuals indicated that they are more likely to leave the trash in nature. Whereas, when the perceived benefit weighs higher than the cost, (e.g. the feeling of making a difference, or being able to live in a clean area), individuals tend to be more willing to pick up the litter and throw it into the bin. To showcase this trade-off between the perceived costs and the perceived benefits, one can think of it as an old-fashioned scale, with on one side the perceived costs and on the other side the perceived benefits. To stimulate the behavior of picking up litter, the perceived costs should not outweigh the perceived benefits. This can be achieved by decreasing the perceived costs and/or increasing the perceived benefits. In figure 1, the elements that constitute the benefits and costs are presented. The behavior of walkers in regards to litter is determined by which side of the scale weighs the heaviest. If the costs outweigh the benefits, an individual is more likely to leave litter behind. If the benefits outweigh the costs, a walker is more likely to engage and pick up the misplaced trash.

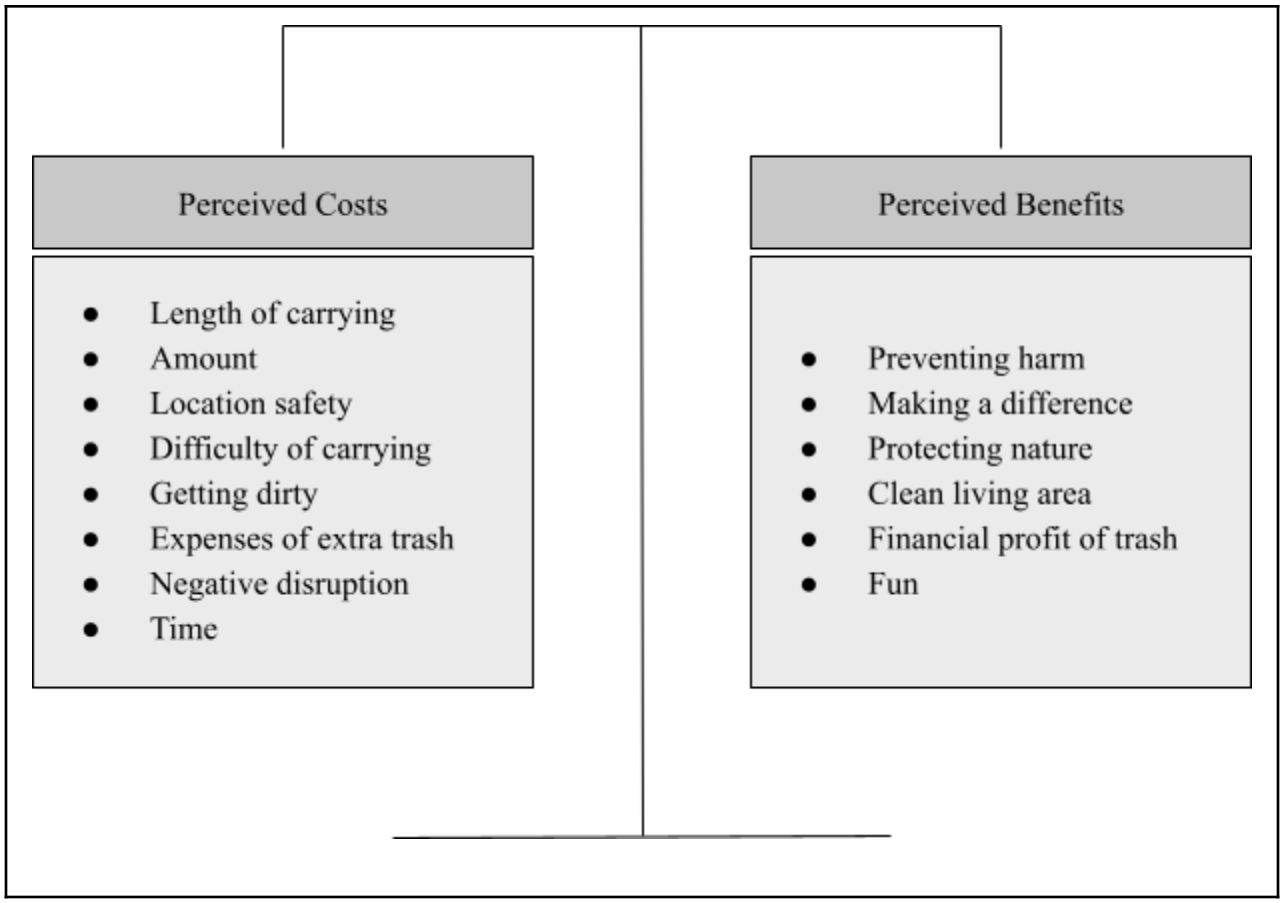

Figure 1. The trade-off between the perceived costs and the benefits.

DISCUSSION AND CONCLUSIONS

In the study on the trade-off between the costs and benefits of picking up litter among walkers, I identified a number of factors that contribute or hinder behavior related to litter. The found factors are connected to the perceived benefits and costs of picking up litter. The perceived benefits include Preventing harm, Making a difference, Protecting nature, Clean living area, Financial profit from trash, and the element of Fun. The factors that related to the perceived costs of picking up misplaced trash include Length of carrying, Amount, Location safety, Difficulty of carrying, Getting dirty, Expenses of extra trash, Negative disruption and Time. Although there is

present literature available on the perceived costs and benefits of individuals on littering behavior, this research is the first to focus on the perceived costs and benefits of individuals on picking up litter. The findings show that litter picking behavior is guided by similar cost-benefit reasoning as littering behavior itself, however there are some distinctions that can be drawn. Theory suggests through the concept of the commons dilemma, that littering behavior occurs when the interest of the individual and the interest of the collective are in conflict: society is worse off if the individual litters, while the litterer is better off when they make litter from their trash. When an individual actively or passively decides to litter, the individual interest is chosen above the collective. If one turns this theory around, this would result in an opposite conflict. When an individual actively or passively decides to pick up litter, the collective interest is chosen above the personal interest. The findings of the research showcase that indeed, individuals show some form of perceived collective benefits and perceived individual costs when picking up litter. Surprisingly, participants perceived both collective and individual benefits when picking up litter. Preventing harm, making a difference and protecting nature, all can be seen as a collective benefit. A clean living area, financial profit from trash and fun, all can be categorized among the individual benefits. Unsurprisingly, the perceived costs of picking up litter are all related to the individual interest. Additionally, the theory suggests that providing sufficient awareness of the consequences of littering and creating a sense of morality are effective methods of fostering binning behavior. Reflecting on the perceived benefits associated with picking up litter, they do support this theory. The themes of making a difference and protecting nature are grounded in the concept of being aware that certain actions contribute to tackling the consequences of litter.

From a practical side, the findings of the study can contribute on multiple levels. The overarching findings reveal that the majority of interviewees are regular walkers who all

encounter litter during their walks, leading to feelings of irritation, disapproval, and disappointment. The findings confirm that litter is still a problem, and that solutions to the matter are necessary. First, the study gives guidance for governmental action in order to prevent littering behavior and stimulate the behavior of picking up litter. Municipalities could focus on the finding that individuals are more likely to pick up litter if they are aware of the fact that they do not have to walk for a long period of time with the found trash. Additionally, individuals clearly state the value of enough trash bins. Therefore municipalities could start to experiment with more trash bins to test whether the amount of bins in fact does decrease the amount of litter that can be found in public spaces. Since walkers are aware of the relatively close bins, the perceived costs might be lowered enough to create more room for the perceived benefits. In addition to the extra waste bins, trash bags and grab sticks could be made more accessible for individuals. Moreover, individuals are more likely to pick up litter when they know the item has deposit money on it, such as cans and bottles. The government, NGOs and sustainable entrepreneurs could start to experiment with putting deposit money on more items, such as chips bags, McDonalds packaging and other items that are regularly littered in the Netherlands. As the findings show, financial incentives tend to be perceived as a motivating factor. Last, governmental institutions, NGOs and sustainable entrepreneurs can catch on and use the study as an inspiration to create more fun and social activities related to picking up litter. As individuals value the aspect of fun in relation to picking up litter, it might be interesting to scale out the organized joint waste cleaning activities that are already occasionally introduced at primary schools. As shown, the study can be used to inspire organizations, institutions and enterprises to drastically reduce the existence of litter by creating incentives that lower the perceived costs of picking up litter and enhance the perceived benefits.

Despite the valuable insights gained from the research, certain limitations should be acknowledged. Due to the limited time frame of the study, the sample size was rather small. Additionally, the participants were mostly approached during nice weather, in a beautiful walking area and during a Dutch holiday: the May vacation. Therefore, the assumption arises that the participants were in a rather positive mood. It can be questioned whether the findings would be different if the participants were approached during work time, in bad weather or at a less pleasant location. To add on, the study focussed primarily on walkers, and although this group can be very diverse, the perspectives from other stakeholder groups potentially can be overlooked. Also, the study is dependent on individual perception and personal reflection of the participants. Although all interviewees were above the age of 18, it is not guaranteed that every participant was able to reflect on and communicate their perceptions to the full potential. Lastly, the interviewed walkers may have given socially desirable answers. Even though the researcher has done their utmost to appear neutral, some form of bias cannot be ruled out. Since certain limitations can be found in the study, further research should be conducted with more participants to verify the significance of the perceived costs and benefits of picking up litter. Future research could also explore the effectiveness of different incentive mechanisms, such as adding more bins in walking areas or increasing the awareness of the benefits of picking up misplaced trash. Additionally, since the research is conducted in the north of the Netherlands, more research should be done on a broader scale. It might be interesting to conduct the study in different nations and compare the outcomes. Another interesting addition to the equation could be to take into consideration the cultural dimensions of various nations, for example through Hofstede's theory. The chance that there is a different perception visible towards picking up litter

in more individual nations or communities compared to more collective environments, can be a valuable insight.

In summary, this study delved into the perceived costs and benefits of picking up litter among walking individuals, shedding light on the conflict between those costs and benefits that occur related to the behavior of picking up misplaced trash. By exploring the trade-off between personal and collective interest, valuable insights were uncovered that can serve as a guideline for future interventions to combat litter pollution and promote community engagement in responsible behavior. Together, let us strive towards a cleaner, greener future where every small act of picking up litter contributes to a safer and healthier planet for all.

Acknowledgements

To round up the graduation assignment of the Sustainable Entrepreneurship Project, I want to speak a few kind words about those who helped in contribution to the research. First and foremost, Valerija Gulubic as my direct supervisor. Due to her helpfulness, positivity and regular check-ins, the research went well and that made it incredibly fun and educational to work on the project. Second, I want to thank all the participants who were willing to participate in the research for their openness and kind words. My words of appreciation to all the individuals involved, who make this experience such a positive one.

REFERENCES

Argaman, A., Kamphorst, K., Ooms, J., Welsem, P. Van, Wentzel, A., & Zelfde, J. Van 't. (2023). Definitieve bevindingen Kostenonderzoek Zwerfafval: peiljaar 2021. Rijkswaterstaat Publicatie Platform. https://open.rijkswaterstaat.nl/open-overheid/onderzoeksrapporten/@258329/definitieve-bevindingen-kostenonderzoek/

Barnes, D. K. A., Galgani, F., Thompson, R. C., & Barlaz, M. (2009). Accumulation and fragmentation of plastic debris in global environments. Philosophical Transactions of the Royal Society B: Biological Sciences, 364(1526), 1985–1998. https://doi.org/10.1098/rstb.2008.0205

Bergmann, M., Gutow, L., & Klages, M. (2015). Marine anthropogenic litter. SpringerOpen, 75-116. https://doi.org/10.1007/978-3-319-16510-3

Centraal Bureau voor de Statistiek. (2024). Bevolkingsteller. Centraal Bureau Voor De Statistiek. https://www.cbs.nl/nl-nl/visualisaties/dashboard-bevolking/bevolkingsteller#:~:text=Eind%20februari%202024%20telde%20Nederland,mannen%20en%20vrouwen%20dat%20zijn.

Chaudhary, A. H., Polonsky, M. J., & McClaren, N. (2021). Littering behaviour: A systematic review. International Journal of Consumer Studies, 45(4), 478–510. https://doi.org/10.1111/ijcs.12638

Corbin, J. M., & Strauss, A. L. (2008). Basics of qualitative research: techniques and procedures for developing grounded theory (3e [ed.]). SAGE. https://dx.doi.org/10.4135/9781452230153

Damen, A. (n.d.). Weg met zwerfafval. Plandelen = Wandelen + Plastic Rapen. https://www.plandelen.nl/

Edney, J. J., & Harper, C. S. (1978). The commons dilemma: A review of contributions from psychology. Environmental Management: An International Journal for Decision Makers, Scientists and Environmental Auditors, 2(6), 491–507. https://doi.org/10.1007/BF01866708

Esfandiar, K., Dowling, R., Pearce, J., & Goh, E. (2020). Personal norms and the adoption of pro-environmental binning behaviour in national parks: an integrated structural model approach. Journal of Sustainable Tourism, 28(1), 10–32. https://doi.org/10.1080/09669582.2019.1663203

Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology. Organizational Research Methods, 16(1), 15–31. https://doi.org/10.1177/1094428112452151

Hoogendoorn, B., van der Zwan, P., & Thurik, R. (2019). Sustainable Entrepreneurship: The Role of Perceived Barriers and Risk. J Bus Ethics, 157, 1133–1154. https://doi.org/10.1007/s10551-017-3646-8

Huffman, K. T., Grossnickle, W. F., Cope, J. G., & Huffman, K. P. (1995). Litter Reduction: A Review and Integration of the Literature. Environment and Behavior, 27(2), 153-183. https://doi.org/10.1177/0013916595272003

Kolodko, J., Read, D., & Taj, U. (2016). Using behavioural insights to reduce littering in the UK. WBS, Great Britain, 21-36. https://cleanupbritain.org/WBS-Report-for-CLUB.pdf

Le, V.-G., Nguyen, H.-L., Nguyen, M.-K., Lin, C., Hung, N. T. Q., Khedulkar, A. P., Hue, N. K., Trang, P. T. T., Mungray, A. K., & Nguyen, D. D. (2024). Marine macro-litter sources

and ecological impact: a review. Environmental Chemistry Letters, 22(3), 1257–1273. https://doi.org/10.1007/s10311-024-01702-w

Milieu Centraal. (n.d.). Zwerfafval: zo voorkom je het. https://www.milieucentraal.nl/minder-afval/voorkom-afval/zwerfafval/#:~:text=Kauwgom%20%20vergaat%20pas%20na%20%20minstens,daar%20de%20%20plasticsoep'%20%20%20verergeren.

Molecke, G., & Pinkse, J. (2017). Accountability for social impact: A bricolage perspective on impact measurement in social enterprises. Journal of Business Venturing, 32(5), 550–568. https://doi.org/10.1016/j.jbusvent.2017.05.003

Ritchie, H., & Roser, M. (2023). How much plastic waste ends up in the ocean? Our World in Data. https://ourworldindata.org/how-much-plastic-waste-ends-up-in-the-ocean

Steinmetz, Z., Wollmann, C., Schaefer, M., Buchmann, C., David, J., Tröger, J., Muñoz, K., Frör, O., & Schaumann, G. E. (2016). Plastic mulching in agriculture. Trading short-term agronomic benefits for long-term soil degradation? Science of the Total Environment, 550, 690–705. https://doi.org/10.1016/j.scitotenv.2016.01.153

Usman, G., Mashood, A. A., Aliyu, A., Adamu, K. S., Salisu, A., Abdullahi, A. K., & Sheriff, H. K. (2023). Effects of environmental pollution on wildlife and human Health and novel mitigation strategies. World Journal of Advanced Research and Reviews, 19(02), 1239–1251. https://doi.org/10.30574/wjarr.2023.19.2.1644

APPENDIX A

Interviewees responses on the costs and benefits of picking up litter.

Aggregate Dimension	Second-Order Themes	First-Level Categories	Representative Data
Cost of picking up litter	Length of carrying	● Costs decrease when individuals can see some place close by where litter can be thrown away. ● Costs increase when individuals know or expect they have to walk with the litter in their hands for a long time. ● Costs decrease when there are enough places in the area where litter can be thrown away. ● Costs decrease when individuals have to carry the litter for a short period of time.	● Sometimes I do pick it up, especially if I can see there is some place close by where it can be thrown away (P1). ● If I'm sure there will be a garbage can in 100 meters, then I'm willing to take it with me, but I don't want to walk the entire walk with trash in my hand (P3). ● If I have to walk with it for a long time, I don't always do it (P6). ● If there are enough places in the area where you can throw it away. That makes a difference. If there is a bin nearby, you can pick it up and nod into it (P8). ● I don't like having to carry that in my hands, especially if I'm going to walk really far (P13). ● If I know that there is a trash can there, I will pick it up and throw it away and if I don't know if there will be a trash can anywhere, then I'm not going to grab it (P18). ● If it is all the way back there and I am running, I'm not going to take it with me. It must be handy for me to take with me. If it is at the end of the route, I'm willing to pick it up (P18). ● Sometimes I clean it up, but you do not always have trash bins in the woods, so not always. I find it a bit annoying to have to walk around with the waste in my hands for half the day (P21).

	Amount	● Benefits decrease when there is a lot of litter, because of an increased feeling of not making a difference. ● Costs increase when there is a lot of litter. ● Costs decrease when there is only one litter item, but increase when there are multiple items.	● Some places there is just so much litter, that if you pick up one thing, it does not really help (P8). ● If you come across only a bag of chips, you pick it up and throw it away. Not that difficult. But where there are a lot of young people, for example at a skateboard track in a park, it is bursting with waste. I'm not going to pick everything up (P16).
	Location safety	● Costs increase when the litter is located in a dangerous place.	● It may be dangerous if you are near cars to try and pick up things (P1).
	Difficulty of carrying	● Costs increase when individuals already have their hands full, since it is harder to carry trash. ● Costs increase when it is a big piece of trash, but decrease when it is a small item. ● Costs decrease when individuals have bike bags, a plastic bag and/ or something to pick up the litter with.	● It may depend on what I am carrying with me. If I already have my hands full, then it can be harder to take trash with me (P1). ● It also depends if it is a big or small item of litter (P1). ● When I'm on my bike, I do it sometimes. Then I pick it up, put it in the bicycle bag and then put it in the trash bin at home. Then I'll do it. I have to be able to take it with me (P3). ● It also depends. If I still have a bag with me, I take it with me (P6). ● Sometimes I pick it up, but that depends on whether I have a plastic bag or something with me (P11). ● If I do not have a bag or

		● Costs increase when individuals do not have material with them to pick up or carry litter with.	something with me, I do not take the litter with me (P13). ● If I see something, I will take it with me. Then I throw it in my bicycle bag. But if I do not have a garbage bag with me or anything, I will not. You have to be able to take it with you (P18). ● If it is too big or something. I am not going to lug an old bike around all day, for example (P22). ● I can imagine that if something is very big, you do not pick it up and take it with you (P24).
	Getting dirty	● Costs increase when individuals expect to get dirty. ● Costs decrease when individuals have something to clean their hands with or pick up the litter with. ● Costs increase when individuals have fancy clothes on.	● It depends on how I am dressed (P1). ● Whether I have something with me to wash my hands afterwards (P1). ● You also have to have something with you to put it in or pick it up with. I don't just pick up litter with my hands (P8). ● For example, you don't have anything to take it with you. I am not going to walk around with dirty tissues in my hand, yak (P14). ● I'm not going to clean up cigarette butts, especially if I don't have a grab stick with me (P16). ● If there is something very dirty, then I'm not going to pick it up and take it (P18). ● I would not pick it up if I am wearing my fancy clothes and it looks very dirty, or when it rains (P23).
	Expenses of extra trash	● Benefits increase when individuals are aware that they	● I collect the cans. If I find a can with a deposit, I also put the found litter in the trash. So then I balance the expenses (P6).

		gain money through picking up the cans with deposits. ● Costs increase when individuals are aware of the extra expenses of putting litter in their household bin.	
	Negative disruption	● Costs increase when picking up litter disrupts personal activities such as walking.	● If you are walking, you are not cleaning up. You go for a walk, and instead you are focused on the mess and not on the beautiful nature (P14).
	Time	● Costs increase when individuals are in a hurry.	● If I am in a hurry for example, I would not pick it up (P23).
Benefit of picking up litter	Preventing harm	● Benefits increase when picking up litter prevents harm to others, especially vulnerable individuals.	● Sometimes I do pick it up, especially if it is something that could be dangerous to an older person who is walking with a cane or someone who does not see very well and who would not see whatever it is on the ground that could be dangerous to them (P1).
	Making a difference	● Benefits increase when individuals believe their actions make a difference. ● Benefits decrease when individuals feel their actions do not make a	● Some places there is just so much litter that if you pick up one thing, it does not really help (P8). ● It is fighting against the odds, so it doesn't help much (P2). ● By picking up litter, I hope to contribute to a clean nature. That it stays beautiful (P23).

		significant impact.	
	Protecting nature	● Benefits increase when individuals understand the consequences of picking up litter and want to protect and preserve nature.	● Simply because rubbish does not belong in nature. That's simple (P5). ● Well, nature should remain nature, right? Litter just does not belong in nature. It does not break down, it is not degradable and it stays there (P11). ● Litter is a shame for nature (P23). ● I am a nature lover and I would like it if it could continue to exist. If we continue to pollute our nature, it will of course not work at all (P22). ● It's just not nice to see a piece of plastic lying there in nature, so to speak. It doesn't belong there. It does not go away on its own either (P18).
	Clean living area	● Benefits increase when individuals live near the litter. ● Benefits increase when individuals appreciate clean public space.	● If I live there, I will just throw it in my waste bin (P6). ● When something is tidy, it looks neat (P4 & P6).
	Financial profit from trash	● Benefits increase when individuals can earn financial profit from picking up litter, such as deposits on bottles.	● The deposit on bottles and the like, maybe that will help. I would think about picking it up, because a can or bottle is already 15 cents (P11). ● You see it with those cans nowadays. We used to find cans everywhere, and nowadays you hardly find cans anymore (P16). ● People even come by the club and try to empty the trash bins that still contain the cans, to get

			another 15 cents in return. The deposit certainly helps (P16).
	Fun	● Benefits increase when picking up litter is made into a fun and engaging activity.	● If you were to organize a tour once a month or so, where one would have a grab stick and bags, you would be walking together or with a small group. Then it is also a challenge to find as much as possible, I think (P12). ● That you make it an educational game for primary or secondary schools, whoever collects the most waste earns something. That's quite fun (P18). ● Maybe by introducing bins like they have in the Efteling, such as the talking bin, which makes throwing trash away a fun activity (P7).

APPENDIX B

Informatieblad.

MOTIVATIE VAN WANDELAARS MET BETREKKING TOT ZWERFAFVAL

Beste deelnemer,

Dank voor uw interesse om mee te doen aan het onderzoek. Dit informatieblad legt uit wat het onderzoek inhoudt en hoe het onderzoek zal verlopen. Neem alstublieft de tijd om de volgende informatie zorgvuldig door te nemen. Indien bepaalde informatie niet duidelijk is, neem dan contact op door middel van de bijgevoegde contactgegevens onderaan dit blad.

Waar gaat het onderzoek over?

- Dit onderzoek gaat over het gedrag en de motivatie van wandelaars met betrekking tot zwerfafval. In totaal worden er 20 deelnemers gevraagd om deel te nemen aan het onderzoek. Om beter te begrijpen hoe wandelaars omgaan met zwerfafval, is het van belang dat er gesprekken aangegaan worden met de desbetreffende doelgroep.

Wat houdt deelnemen aan het onderzoek in?

- Deelnemen aan het onderzoek houdt in dat de deelnemer gevraagd wordt om enkele vragen te beantwoorden omtrent het onderwerp zwerfafval. Het beantwoorden van de vragen zal hooguit vijf tot tien minuten kosten en kan plaatsvinden tijdens de wandeling.

Moet u meedoen?

- Het is van belang om te realiseren dat meedoen geheel vrijwillig is. U kunt op elk moment van het onderzoek ervoor kiezen om bepaalde vragen niet te beantwoorden of te stoppen met het deelnemen zonder gevolgen of vereiste reden voor 20 mei 2024.

Zijn er risico's om deel te nemen?

- Aan dit onderzoek zijn geen potentiële risico's verbonden. Hoogstens kunt u gestimuleerd worden om te reflecteren op persoonlijk gedrag en/ of motivatie rondom zwerfafval.

Zijn er voordelen om deel te nemen?

- Het is belangrijk om te realiseren dat er geen directe voordelen verbonden zijn aan het deelnemen, maar meedoen kan bijdragen aan een verdere uitbreiding van uw kennis op het onderzoeksgebied. Toch is het leuk om te vermelden dat iedere deelnemer aan het einde van het interview een klein presentje krijgt als dank voor de bijdrage.

Hoe zal de informatie die u geeft opgenomen, bewaard en beschermd worden?

- Na overeenstemming met de deelnemer zal het interview via een geluidsopname worden opgenomen. De deelnemer krijgt een nummer, waardoor er niet gewerkt hoeft te worden met persoonlijke gegevens. De gegevens (toestemming formulieren, opnames, transcripties van interviews) zullen op de Google Drive van de Rijksuniversiteit van Groningen worden bewaard in overeenstemming met de Europese GDPR-wetgeving. Na het afstuderen zullen de gegevens verwijderd worden.

Wat gebeurt er met de resultaten van het onderzoek?

- De resultaten zullen gebruikt worden voor het afstudeeronderzoek om het Sustainable Entrepreneurship master's diploma te behalen. Het onderzoek zal eenmalig gepresenteerd worden op de Campus Fryslan Conferentie, de scriptie zal beschikbaar zijn in de RUG bibliotheek en eventueel kunnen interessante bevindingen worden gepresenteerd op de website die de onderzoeker aan het bouwen is.

Ethische goedkeuring

- Dit onderzoek heeft ethische goedkeuring gekregen van de Ethische Commissie van Campus Fryslân. De onderzoeker zal zich houden aan de relevante ethische normen.

Geïnformeerd toestemmingsformulier

- U zal gevraagd worden het geïnformeerd toestemmingsformulier in te vullen. Dit betekent dat u de intentie heeft om deel te nemen aan het onderzoek. Natuurlijk is het ten alle tijden mogelijk om de deelname stop te zetten voor 20 mei 2024.

Met wie moet u contact opnemen voor meer informatie?

Mocht u vragen hebben, voelt u zich dan zo vrij om contact op te nemen met de desbetreffende onderzoeker / student:

Naam: Anniek Barendregt

E-mailadres: a.b.barendregt@student.rug.nl

Mobiele nummer: +31621198252

APPENDIX C

Geïnformeerd toestemmingsformulier.

MOTIVATIE VAN WANDELAARS MET BETREKKING TOT ZWERFAFVAL

Nummer deelnemer:

……

Onderzoek

- Ik heb het informatieblad gelezen en heb eventuele aanvullende vragen aan de onderzoeker kunnen stellen.
- Ik begrijp dat ik op elk moment vragen mag stellen over het onderzoek.
- Ik begrijp dat ik het recht heb om op elk moment en zonder opgaaf van reden uit het onderzoek te stappen voor 20 mei 2024.
- Ik begrijp dat ik op elk moment kan weigeren een vraag te beantwoorden, zonder enige gevolgen.
- Ik begrijp dat ik geen direct voordeel heb van deelname aan dit onderzoek.

Vertrouwelijkheid en gegevensgebruik

- Ik begrijp dat geen van mijn individuele gegevens aan iemand buiten het onderzoeksteam zal worden bekendgemaakt en dat mijn naam niet zal worden gepubliceerd.
- Ik begrijp dat de verstrekte informatie alleen zal worden gebruikt voor dit

onderzoek en publicaties die direct verband houden met dit onderzoeksproject.

- Ik begrijp dat gegevens (toestemmingsformulieren, opnames, transcripties van interviews) op de Google Drive van de Rijksuniversiteit van Groningen worden bewaard in overeenstemming met de Europese GDPR-wetgeving en verwijderd zullen worden na het afstuderen van de onderzoeker.

Toekomstige betrokkenheid

- Indien gewenst mag ik na het interview om een kopie van de wetenschappelijke output van het project vragen.

Nadat ik al het bovenstaande gelezen en begrepen heb, ga ik akkoord met deelname aan het onderzoek: ja / nee

Datum

……..

Handtekening

……..

In te vullen door de onderzoeker

- Ik verklaar dat ik de onderzoeksdeelnemer grondig heb geïnformeerd over het onderzoek en de overige vragen naar mijn beste weten heb beantwoord.
- Ik ga ermee akkoord dat deze persoon deelneemt aan het onderzoek.

Datum

……...

Handtekening

……...

APPENDIX D

Interview guideline.

Allereerst, mag ik dit gesprek opnemen?

1. Bent u een regelmatige wandelaar?

2. Hoe vaak gaat u eropuit om te wandelen?

3. Komt u weleens zwerfafval tegen tijdens uw wandelingen?

4. Wat vind u ervan als u zwerfafval tegen komt?

5. Hoe gaat u ermee om als u zwerfafval treft?

6. Wat motiveert u om hier op deze manier mee om te gaan?

7. Wat zou u motiveren om tegenstellend te handelen?

Hartelijk dank dat u het gesprek aan wilde gaan! Als blijk van mijn waardering heb ik nog een klein presentje (inclusief een kopie van het informatieblad + toestemmingsformulier)