

Université Libre de Bruxelles

Institut de Gestion de l'Environnement et d'Aménagement du Territoire

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**A Discourse Analysis of the Motivations of Participation in the Zero-Waste Lifestyle Movement:**

**A Case Study in the Brussels Capital Region**

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« LIU, Xiaoxi »

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Directeur : Prof. Maria Mancilla Garcia



*To my thesis director, Maria,  
for her stable support and abundant knowledge,  
for being a kind and caring mentor,*

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*And to my family across the continent,  
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who were open and courageous to make my thesis possible.*

## Résumé

Les déchets, un problème émergent de la production et de la consommation de masse depuis la révolution industrielle, nécessitent une attention particulière de la part de différents types d'acteurs. Les chercheurs ont étudié en profondeur les effets, la mise en œuvre et les défis de la gestion des déchets aux niveaux macro et méso, qui se manifestent à travers le concept d'économie circulaire et de villes sans déchets. En revanche, on ne peut pas en dire autant de la gestion des déchets au niveau micro, qui concerne les individus et les communautés. Le mouvement pour un mode de vie zéro déchet (ZWLM) a suscité un manque d'intérêt de la part des chercheurs, ce qui fait qu'il est mal compris et largement ignoré.

Dans cette thèse, j'ai pour objectif de mettre en lumière ce mouvement socio-environnemental qui implique plus de couches de complexité que la simple absence de déchets, en proposant des réponses à deux questions de recherche : les principales motivations de la participation au ZWLM ; le(s) discours environnemental(s) le(s) plus approprié(s) pour catégoriser les discours des participants. Pour ce faire, je me suis d'abord appuyée sur la littérature antérieure pour examiner et résumer les motivations relatives aux pratiques de zéro déchet, mais aussi à la réduction et à la prévention des déchets ménagers en général ; j'ai ensuite utilisé la Région de Bruxelles-Capitale comme étude de cas, en adoptant des méthodes combinées de collecte et d'analyse des données : un questionnaire suivi d'une analyse quantitative et huit entretiens approfondis d'une analyse qualitative. Plus précisément, j'ai adopté les méthodes d'analyse du discours de Dryzek pour identifier les discours environnementaux les mieux adaptés.

Je conclus que les participants sont principalement motivés par le désir de protéger l'environnement et de réduire leurs impacts négatifs, par le souhait de changer les modèles de production et de consommation actuels encouragés par le capitalisme, et par l'aspiration à prendre soin des générations futures, entre autres. En outre, le discours adopté par les participants au ZWLM correspond étroitement au radicalisme vert, y compris ses deux subdivisions, la conscience verte et la politique verte. À travers la discussion, je cherche à politiser le discours du ZWLM en abordant l'inégalité en termes d'accès à la participation, le point de vue anti-consumériste et l'écart entre les sexes dans l'engagement.

J'espère que l'achèvement de ce travail servira d'introduction à des études plus approfondies dans ce domaine. Je pense qu'il est essentiel de saisir ces significations et logiques plus profondes derrière la participation et la nature politique du discours. Je propose plusieurs angles d'approche du discours de ZWLM dans une perspective d'écologie politique, en guise de suggestions pour de futures orientations de recherche.

*Mots-clés* : zéro déchet ; mouvement socio-environnemental ; écologie politique ; motivations personnelles ; analyse du discours ; agence ; genre ; inégalité.

## **Abstract**

Waste, an emergent problem from mass production and consumption since the industrial revolution, requires an acute attention from various types of actors. Scholars have extensively studied the effects, implementation, and challenges of the macro- and meso-level waste management, manifested through the concept of circular economy and zero waste cities. To the contrary, the same cannot be said for the micro-level waste management involving individuals and communities. The zero-waste lifestyle movement (ZWLM) has attracted a shortage of interest from scholars, leaving it narrowly understood and largely ignored.

In this thesis, I aim to shine a spotlight on this social-environmental movement that involves more layers of complexity than merely creating no waste, by offering answers to two research questions: the top motivations for participation in the ZWLM; the most suitable environmental discourse(s) to categorize the participants' speeches. I have done so by first of all drawing on past literature to review and summarize the motivations on zero-waste practices, but also on broader household waste reduction and preventions in general; then using the Brussels Capital Region as a case study, through an adoption of a combined data collection methods and data analysis methods: a questionnaire followed by a quantitative analysis and 8 in-depth interviews by a qualitative one. More specifically, I have adopted Dryzek's discourse analysis methods to identify the best fitted environmental discourses.

I conclude that participants are mainly motivated by the desire to protect the environment and lower their negative impacts, by the wish to change the current production and consumption patterns fostered by capitalism, and by the aspiration to care for the next generations, among others. Moreover, the discourse adopted by ZWLM participants matches closely with green radicalism, including both subdivisions green consciousness and green politics. Through the discussion, I seek to politicize the ZWLM's discourse by addressing the inequality in terms of the access to participation, the anti-consumerism standing point, and the gender gap in engagement.

I hope that the completion of this work will serve as an introduction to more insightful studies in the field. I believe that it is essential to grasp these more profound meanings and logics behind the participation and the political nature of the discourse. I offer several angles to approach the ZWLM discourse in a political ecology perspective as suggestions for future research direction.

*Keywords:* zero waste; social-environmental movement; political ecology; personal motivations; discourse analysis; agency; gender; inequality

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## List of Abbreviations

|      |                               |
|------|-------------------------------|
| BCR  | Brussels Capital Region       |
| ZWLM | Zero-Waste Lifestyle Movement |
| PEB  | Pro-Environmental Behaviors   |
| EU   | European Union                |
| EC   | European Commission           |
| ULB  | Université Libre de Bruxelles |
| MSW  | Municipal Solid Waste         |

# 1. Introduction

With society evolving, cities expanding, and consumption increasing, more resources are used, and more waste produced, despite the increasing technological efficiency of production (Awasthi et al., 2021). In “On Economics as a Life Science”, Daly (1968) has proposed a steady-state analogy between the economy and the environment, where useful energy and matter enter a system and degraded energy and matter leave as the ultimate output. The degraded matter can also be called waste, which according to Daly, would only make sense to be minimized.

For several decades, different methods and concepts have been developed to deal with the fact that “biological ecosystems cannot sustain the rate of raw material extraction and energy consumption, nor the subsequent waste generation resulting from this.” (Franklin-Johnson et al., 2016), and one of these concepts that covers a broad range of activities is the zero-waste concept. In the zero-waste discourse, waste is perceived as an “unwanted hazardous byproduct of capitalist development” (Pete et al. 2011, 30), corresponding to Daly’s perspective.

Zero waste can be manifested through two major discourses: the discourse of waste management; the discourse of zero-waste lifestyle movement (Kalina, 2020). The discourse of waste management is largely studied in Brussels Capital Region (BCR) by Zeller, Achten and other colleagues at ULB (Zeller et al., 2019, and Towa et al., 2021). However, the discourse of the zero-waste lifestyle movement (ZWLM) is left unattended. The area of social learning and individual behavior changes is often understudied, especially in policy making and management, even though individual practices are important in the sustainability transition and innovation mainstreaming (Loorbach 2007, 101-128). Therefore, this thesis focuses on the individual or household lifestyle movement.

The objectives of this thesis are to contribute to the research on the discourses of social-environmental movement through the exploration of the perspectives of the individuals who participate in the zero-waste movement in Brussels Capital Region. I have a focus on understanding the “why” in the participation in the ZWLM, and consequently revealing the participants’ values and worldviews behind the discourses that they possess. A famous quote from philosopher Friedrich Nietzsche says, “He who has a strong enough why can bear almost any how” (Elliott, 2022). Even though it was originally used to describe a completely different situation in life as the participation in social-environmental movements, the essence stays the same: if the participants have a strong enough belief in what motivates them in the movement, they will be able to traverse difficult periods and scenarios that are bound to happen in their participation.

Not only does a strong “why” help participants maintain their passion and determination to continue through difficulties, but also does it offer us broader and deeper perspectives and logics of participation. By gathering these reasons, we can see behind their words into the meanings and values that the ZWLM offers them.

The research questions to be answered in this thesis are:

*What are the motivations of participation in the zero-waste lifestyle movement for individual participants in the Brussels Capital Region?*

*What environmental discourse(s) does the discourse of the zero-waste lifestyle movement best fit in?*

To answer these questions, this work starts with a state of the art on the current research and literature on the topic, as well as a theoretical framework on the methodology of the qualitative analysis, and an introduction to the case of BCR. A combined methodology of data collection was adopted through an online questionnaire and individual semi-structured interviews. As a consequence, a combined methodology of data analysis was adopted: a quantitative analysis for the data collected through the questionnaire and a qualitative analysis for the interview texts. More specifically, a discourse analysis following the checklist of elements proposed by John Dryzek in his book *The Politics of the Earth - Environmental Discourses* was performed to analyze the qualitative data collected. The results for the questionnaire and the interviews are each presented, and a discussion section follows. Furthermore, the limitations of this study are discussed and recommendations for future research directions are provided. At the end, a conclusion is offered.

## 2. State of the art

### 2.1 The concept of zero waste

Waste has become a concern for society since the industrial revolution due to the mass production of cheap and low-quality products manufactured in assembly lines (Mauch, 2016). The first industrial revolution allowed humans to manufacture goods with materials that were not naturally available and long-lasting, with an imbalance between supply and demand that caused the accumulation of products (Yang, 2022). Even though there is not a clear and consented date of when the concept of zero waste started, it is known that Paul Palmer, the founding director of the Zero Waste Institute, first used the term “zero waste” in the chemical sector in the 1970s, with the goal of recovering all waste products from the industry in California (Mauch, 2016). In the 1980s, Daniel Knapp started the concept of total recycling and founded Urban Ore in Berkeley, California, an organization aiming at ending the age of waste (Antonia P, 2020). The Zero Waste International Alliance (ZWIA) (n.d.) was afterwards formed in the early 2000s and has expanded to the globe since then. From the dates of appearance above, we could conclude that zero waste is relatively new internationally, starting from the late 20<sup>th</sup> century to the early 21<sup>st</sup> century, which might explain why it is still understudied by scholars as a social-environmental movement.

According to the most recent definition by the Zero Waste International Alliance (ZWIA) board in December 2018, “zero waste is the conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning and with no discharges to land, water, or air that threaten the environment or human health”. Pietzsch and colleagues (2017) proposed a list of key aspects for the ZW concept after summarizing different definitions:

- (i) to manage wastes holistically;
- (ii) to develop guidelines/policies that address activities of smart planning of products and services;
- (iii) to communicate and educate citizens;
- (iv) to develop green supply chains;
- (v) to focus on material efficiency in raw material selection;
- (vi) to plan and insert in the market products with extended lifetime;
- (vii) to invest in technologies for the adequate management of sanitary landfills.

The zero-waste concept consequently encompasses all resources through their whole life cycle to limit their environmental and health impacts. Therefore, it requires sustainable production, responsible consumption, increasing reuse, and eventually effective and complete recycle or recovery of the waste. Even though the supply chain of a product mainly concerns the industry, individuals can have an impact on “consumption, reuse, and recovery”, which is why citizen engagement is emphasized by the World Bank (2018) for their capabilities of influencing the amount of waste to be dealt with by

waste managers and how well waste could be recycled. To achieve the goal of zero waste, all parties must be involved, *i.e.*, the private sector, the public sector, and the civil sector.

## 2.2 Circular Economy

As stated in the introduction, the notion of zero waste can be divided into two categories: large-scale waste management and micro-scale lifestyle movement. Even though the center place of the article is on the lifestyle movement, the discourse of waste management is indispensable in reaching the goal of waste prevention and reduction. According to Kalina (2020), waste management is closely linked to the concept of circular economy, which seeks to optimize the life cycle of a product in order to minimize the creation of waste.

The concept of circular economy is often used in large-scale implementations in city level or company level. It is influenced by Kenneth Boulding's work *The Economics of Coming Spaceship Earth* (1966) in which he uses the analogy of a "spaceship" to argue that the Earth should be seen as a desirable closed-loop system with limited assimilative capacity. Twenty-five years later, building on the work of Boulding's, Pearce and Turner (1990) were the first ones to come up with the original circular economy concept in 1990 in their *Economics of Natural Resources and the Environment*. Leontief (1991) has equally established the link between the environment and economics. Similar to Boulding, Leontief (1991) is also in search of an equilibrium between economy and environment, using the idea of circular flows to view the principle of economic and biological systems.

Nowadays, the circular economy concept is known for its three R principle: reduce, reuse and recycle (Samiha, 2013). It is mostly implemented in a meso level, for example, in the industry or in a community (Heshmati, 2017). Within the concept of circular economy, a variety of indicators to measure the efficiency and achievement have been developed. One of them that can be used for a large-scale assessment is the zero-waste index.

The zero-waste index is a circular economy indicator proposed by Dr. Zaman from Curtin University, Australia to assess the sustainability level and waste management efficiency of a city (Zaman, 2013). It is one of 55 circular economy indicators proposed by scientists, companies, and organizations around the world (Saidani et al., 2019). According to the Excel-based query tool - "The C-Indicators Advisor", the zero-waste index is useful to "forecast the amount of virgin materials, energy, water and greenhouse gas emissions substituted by the resources that are recovered from waste streams within a given city" (Saidani et al., 2019). The zero-waste index can tell us how much of the materials that are used in a city is recycled materials. The higher the index, the more recycled materials take part in production. However, recycling is located at the last step of the life cycle, therefore, the zero-waste index fails to reduce the usage of materials upstream.

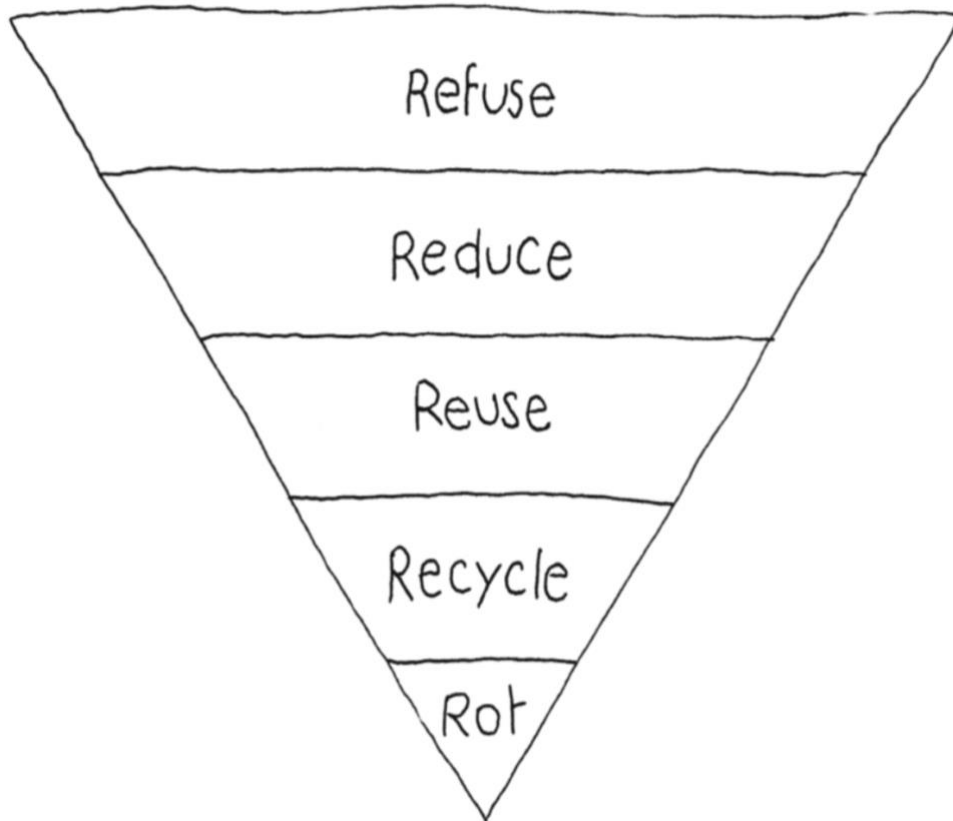
### 2.3 Zero-waste lifestyle movement

The two sides of the zero-waste discourse, *i.e.*, the zero-waste lifestyle movement and the waste management discourse, are non-exclusive. The individual zero-waste movement could complement the initiatives in circular economy. Lifestyle movements such as the ZWLM allow individuals to effect social changes through their daily actions (Spiteri, 2021). The three principal identifying characteristics of a lifestyle movement are that actions are at an individual level towards social changes, participants cultivate an identity around the movement, and the structure of the movement is diffuse (Spiteri, 2021).

The ZWLM focuses on daily sustainable living for individuals, which has been gaining much popularity in recent years since Béa Johnson captured worldwide attention via her blog in 2009 (Slatalla, 2010). The ZWLM was predicted by Euromonitor International to be “one of the most emerging consumer trends” in 2019 (Saplacan and Márton, 2019).

The ZWLM can be largely personalized to suit everyone’s needs, investment, and priorities (Korst 2012, 3), which means that different participants could have completely different practices in the same movement. Typically, the ZWLM starts with identifying all the items in one’s life that are not waste free, especially not plastic free, and weighing the quantity of waste generated per week (Korst 2012, 23). Then the new participant gathers information on how to reduce this waste by researching online, reading books, attending workshops, and/or talking to other participants. Once the information obtained, the new participant follows the guidelines to progressively eliminate waste in his/her household.

A well-known guiding principle for living a zero-waste lifestyle is the 5Rs proposed by Béa Johnson (2013): Refuse, Reduce, Reuse, Recycle and Rot shown in Figure 1. If a participant follows this principle, he/she would prevent the creation of waste in life through the first two steps – refusing and reducing. To refuse is to say no to unnecessary items such as “freebies” and single-use plastics. To reduce is to reflect on the essentials and to lower consumption. The participant can then reduce the waste generation through the next three steps – reusing, recycling, and rotting. To reuse is to increase the lifetime of an item and postpone its end of life. To recycle is to properly treat end-of-life items and view them as resources. To rot is to compost organic waste and recontribute to the ecosystem with soil and nutrients.



**Figure 1:** 5R principle by Béa Johnson for the ZWLM (Chapman, 2018)

## **2.4 Motivations of actions related to food waste**

The household organic waste reduction is one of the common pro-environmental behaviors (PEB) studied by researchers. The action involves three main dimensions: reduce, reuse, recycle (Attiq et al., 2021). The behavior is influenced and motivated by a series of factors, social, emotional, and cognitive, and the complex interactive relationship between them (Attiq et al., 2021).

When studying the motivations of an environmentally friendly or pro-social action, researchers often divide them into two categories: extrinsic motivations and intrinsic motivations. Intrinsic motivations are defined as motives that come from “within the person’s attitude” and are absent from an “external reward” (Barr, 2007 and Cecere et al., 2014). They include internal factors such as beliefs, perceptions, values, or interests rather than external influences to satisfy one’s needs, desires, and pleasure (Lai, 2011). Such motivations are for example altruistic values, environmental awareness and self-acknowledgement. These motives are “endogenously determined by individuals” and can increase “both social and individual welfare” (Cecere et al., 2014).

On the opposite side, extrinsic motivations are motivations that come from “outside the person”, such as material rewards, social pressure perceived by individuals and social norms accepted (Oakley et al., 2008).

Cecere and colleagues (2014) have adopted this division of motivations in their study on bio-waste reduction of the European Union countries as a whole. The authors used data collected from a survey that was answered by 22759 people in the EU countries, done in 2011 by the Gallup Organization on behalf of Eurobarometer. The study showed the significance of intrinsic motivations in waste reduction behaviors while waste recycling behaviors were more fueled by extrinsic motivations. This difference between the motivations for bio-waste reduction and recycling was explained by its nature of visibility, meaning that recycling was more visible, thus more socially influenced, and consequently more externally motivated.

The case study in Exeter, UK performed by Stewart Barr in 2007 corresponds well to Cecere and colleagues' findings. He collected data from 673 residents in the form of questionnaire. What he found was precisely that waste reduction behaviors were motivated dominantly by intrinsic motives such as environmental concerns and knowledge, while waste recycling behavior was predicated by extrinsic factors such as "the acceptance of the norm to recycle" (Barr, 2007). In this case, he also added the behavior of reuse that was similar to the behavior of reducing waste, both less visible, and both more motivated by intrinsic reasons (Barr, 2007).

The finding that waste reduction is heavily influenced by intrinsic motivations is furthermore agreed on by an Australian study on household food waste reduction realized by Nabi and colleagues in 2021. In this case study, consumers performed food waste reduction actions because they considered that "wasting food is a wrongful act" (Nabi et al., 2021) that would bring intrinsic moral reliefs. Wanting to do the right thing as a motivation for minimizing household food waste was confirmed by Graham-Rowe and colleagues (2014) in the UK study through 15 interviews. The concerns about waste and the environment were also influential in food waste reduction (Graham-Rowe et al., 2014).

However, do waste reduction and waste recycling have to be exclusive of each other? In the ZWLM, both Rs are incorporated. D'Amato and colleagues have answered this question in their UK study in 2016. They have concluded that there is a relation of complementarity between waste reduction and recycling behaviors, meaning that the policies promoting waste recycling also indirectly promote waste reduction (D'Amato et al., 2016). For example, one very important motivation for waste reduction is the "personal environmental values", which in return promotes the behaviors of recycling (D'Amato et al., 2016).

Other than bio-waste reduction and recycling, the intrinsic and extrinsic motivations can also be applied on the analysis of upcycling behaviors. According to an Italian study by Coppola and colleagues in 2021, upcycling behaviors are motivated both intrinsically and extrinsically, though the balance leans towards internal motivations such as satisfaction, self-empowerment, affection and knowledge acquirement. Through the action of upcycling, upcyclers become prosumers (*i.e.*, producers and consumers), gaining autonomy, creativity, and competence. With such an effect, upcycling is considered as "an introspective and pragmatic, hidden and scattered form of resistance to consumerism" (Coppola et al., 2021). Although individual motivations are important for upcycling, the collective



aspect cannot be left aside. Collective upcycling actions allow knowledge exchange and transfer, enhance communication between participants, and further ensures the feelings of empowerment. If the younger generations were sensibilized as well through collective activities, creativity would be preserved and new social norms could be built (Coppola et al., 2021).

The zero-waste movement incorporates all the waste management behaviors mentioned above, reduction, reuse, recycling, upcycling, and beyond. What motivations would then be more pronounced?

## **2.5 Motivations of participation in the ZWLM**

Unlike the abundance of scientific literature on the motivations of food waste reduction and recycling, there is a lack of peer-reviewed literature on the ZWLM. Many articles in the field of zero-waste discourse focus on large-scale waste management as mentioned above in the circular economy section, while academics have not taken a noticeable interest in the individual-scale waste related movement. Consequently, most sources cited in this subchapter are master or doctorate dissertations.

Kleesattel and van Dormalen (2018) have co-studied the process of adopting a zero-waste lifestyle in Sweden. Eleven in-depth interviews were performed to capture the behavior change process of zero-waste consumers, which was then analyzed using the Transtheoretical Model proposed by DiClemente et al. in 1991, which separated the behavioral adaptation into five stages: precontemplation, contemplation, preparation, action, and maintenance. The authors have also studied the motivators of the behavior change of zero-waste consumers by categorizing them into intrinsic and extrinsic motivation, as did many studies on food waste prevention and reduction above.

Even though the study tried to analyze the motivation changes along the process of behavioral adaptation towards a zero-waste lifestyle, the authors have only reached a broad distinction in terms of motivations between the intrinsic and extrinsic ones in each stage. In the precontemplation stage, intrinsic motivation dominates. The contemplation stage is influenced by both motivations. Within the preparation stage, both motivations played a similar role. The action stage was characterized by mostly intrinsic motivation. Finally, the last stage, the maintenance, was dominated by intrinsic motivation due to the internalization of processes and the increased level of confidence with their new lifestyle. There was lack of deeper and more nuanced analysis about the motivations of zero-waste consumers.

Furthermore, their study has a specific focus on zero-waste consumption and purchases, and participants in the zero-waste movement are called “zero-waste consumers”. By doing so, the authors take capitalism as the fundamental element. Hence, this perspective excludes many other important perspectives and corresponding actions in the ZWLM, such as the non-monetary trading actions inside the zero-waste community and minimalism. It has also excluded other potential discourses in the zero-waste movement, such as the desire to change the present patterns and norms of buying and throwing. Therefore, the perception on the participants’ motivations of the ZWLM is narrow and biased in their study.

The finding that the zero-waste behaviors are heavily driven by intrinsic motivations is further confirmed by Saplacan and Márton's questionnaire-based study (n=378) in Hungary (2019). They have found that consumers with zero-waste practices were driven by altruistic values. The ZWLM participants were considered "nonconformist towards mainstream's lifestyle" because they lived a lifestyle following their own guidelines. However, they did establish a community with other participants and appreciated others' efforts. Their questionnaire had an 88% of female respondents, causing a limitation of not being representative of the whole population.

It is not uncommon that female respondents were overrepresented in Saplacan and Márton's questionnaire study since women were shown to have a higher rate of engagement in environmental issues in a series of studies. Scannell and Gifford (2013) have concluded that women tend to engage more in climate change movements. Not only in climate change engagement, but more generally, "women tend to report stronger environmental attitudes, concern and behaviours than men ... across age and across 14 countries in Europe, Latin America and the U.S" (Gifford and Nilsson, 2014). Various reasons have been proposed to explain this gendered difference in pro-environmental behaviors (PEB), for example, women are more socially responsible and altruistic than men (Zelezny et al., 2000); women are more concerned with health and safety than men (Davidson & Freudenburg, 1996). Tindall and colleagues (2003) have argued that women are more engaged in environmentally friendly behaviors because they are more concerned about environmental issues compared to men in their case study in British Columbia, Canada. These explanations appear problematic to Kennedy and Kmec (2018) as they use "individual-level traits" as explanations. Kennedy and Kmec have therefore deepened the research to link women's high engagement in household PEB with their economic status, and to show that the burden of solving environmental problems and engaging in PEB is shifted onto women (Sandilands, 1993 cited by Kennedy and Kmec 2018). Furthermore, women could experience higher level of barriers in the engagement in PEB due to their lack of knowledge and education in environment and science (Levine & Strube, 2012), and/or due to the lack of access to financial capital (Terry, 2009).

Tran (2019) has realized a thesis on the challenges and potential solutions of the participation in the ZWLM with a case study in Tampere, Finland, via the diffusion of a questionnaire (n=200). The author concluded that the top one reason of non-participation in the ZWLM was the excessive packaging of essential goods and the second reason the lack of facilities (Tran, 2019). As a consequence, the respondents claimed that they would participate if proper infrastructures were offered and the sensibilization with helpful information was provided. Even though this study did not focus on the motivations of participation, it nonetheless offered the perspectives on the obstacles and challenges that could be potentially faced by participants.

The three above mentioned case studies on the ZWLM failed to incorporate the political aspects of the participation in the ZWLM. This lack of political focus corresponds to the criticism on sustainability transitions in general, where power and agency are put aside (Genus and Coles, 2008). It is not that power issues do not exist in the ZWLM because "in our age there is no such thing as 'keeping

out of politics'. All issues are political issues, and politics itself is a mass of lies, evasions, folly, hatred, and schizophrenia" (Orwell, 1946). To ignore the political aspects of the ZWLM is thus to take a photograph of a landscape with mountains, a river, a village, and roads, and to reframe it so that the village is cut off.

This gap was partially filled by Mette K. Pederson's case study of the zero-waste movement in Denmark (2017), in which he specifically studied the influence of social media usage on participation based on framing theory with a combined methodology by observing directly local Facebook groups and Instagram activity and by performing in depth interviews. His research question was how participants used social media to make their mundane climate change activism meaningful.

In his discussion, he recognized several challenges faced by participants. For example, participation in the zero-waste movement was time consuming due to the trips required to go to special stores. Another challenge came from the objection from people around the participants, relatives, and friends. However, these challenges could be compensated by the simple joy of small daily actions and the connected power of a zero-waste community. Social media helped to resolve these challenges by serving as a platform to provide participants a sense of community and belonging and by allowing them to find inspiration and share with others their own daily actions (Pederson, 2017).

Pederson claimed that for some participants, the political aspect of the ZWLM was obvious because they believed that "personal is political", and thus the way of spending and of living was a political statement; while for others, the daily practices did not quite fit in the traditional view of political engagement. However, the analysis of politics in zero-waste movement has left many aspects to be developed further. Pederson mentioned that participants did not wish to wait for the government to take initiatives; instead, they preferred the do-it-yourself approach. Unfortunately, he did not dig deeper in the logic behind, such as "is there a mistrust from historical incidents between citizens and the government?" or "is there a real lack of action from the government side or is it not well known for citizens?", etc.

In conclusion, the motivations of participation are predominantly intrinsic and altruistic, with an emphasis on personal values and environmental awareness. Alas, most studies on the motivations of the ZWLM participation assumed the role of participants as consumers and consumption behaviors were extensively studied. The naming of "zero-waste consumers" is narrow and reductive, excluding all other practices and is against the fundamental purpose of the ZWLM to oppose the "constantly growing consumer movement" and the center of the ZWLM on a "mindful minimalistic anti-consumerism lifestyle, to reduce their negative impact, preserve the environment and create a change in society's mindset" (Kläschen, 2020). When the discourse of the researchers sets the consumption-centered tone, the economic structures stay unchallenged and unproblematic. Moreover, the studies failed to take into account the power relations between the participants and the public and private sectors, leaving aside the hidden logics behind the motivations.

I hope to contribute to the research on ZWLM by bringing in a case that has not been studied so far, and to bridge the gap by challenging the consumption-focused studies and politicizing the motivations of participation.

## **2.6 Critics on the ZWLM**

The most frequent critique on the ZWLM is its inability or lack of intention to challenge consumerism (Kalina, 2020). This critique matches my conclusion from the literature review in the ZWLM research. As Valenzuela and Böhm (2017) argue with their case study of Apple Inc., the ZWLM helps to “depoliticize capitalism” and hence consents to the cycle of consumption and disposal. It would be problematic if the critique was proven true, since the creation of the ZWLM in the first place was to challenge to the mainstream overconsuming lifestyle backed up by the capitalist economic system (Kläschen, 2020). The critique would consequently demonstrate a sort of failure in the ZWLM for its inability to stay uncontaminated by the growth-focused consumerism.

The discourse of ZWLM assigns the responsibility of sustainability to each individual, shifting the focus away from political economic structures (Valenzuela and Böhm, 2017). The market adapts and responds to the new zero-waste consuming patterns by offering a wide range of “innovative” products (Sattlegger and Raschewski, 2019), therefore, continuing to serve as a solution, instead of being treated as the source of the issues. The private sector can then build a green image while perpetuating the cycle of consumption and discard, even aggravating consumerism by offering moral reliefs that customers search for when making a purchase.

This critique of the zero-waste movement on its lack of intention to challenge consumerism is often further extended to its lack of focus on economic degrowth. As in the concept of sustainable development, economic growth remains the goal in the zero-waste concept (Valenzuela and Böhm, 2017). Companies improve their business models for the purpose of catching the wave and expanding their market share. The transition towards a waste-free society thus cannot escape the goal of economic growth.

The third critique often targeting the ZWLM is its unequal access for different social classes (Sattlegger and Raschewski, 2019; Tan, 2019). As the authors have agreed on, the poor has less freedom for action due to the disparities in terms of income and education. The zero-waste movement often requires time investment and economic investment, restraining certain classes from participating (Müller and Schönbauer, 2020). To experiment and verify the validity of this critique, I have done a short case study of the BCR to check the spatial inequality of zero-waste infrastructures and the inequality of participation in the Zero Waste Challenge hosted by Brussels Environment (Appendix I). The case study confirms Müller and Schönbauer’s criticism (2020) that the resources and infrastructures for the ZWLM “often don’t exist in low-income neighborhoods”, forcing them to enter unhabitual territories and feel out of the place.

### 3. Theoretical framework of discourse analysis

#### 3.1 Discourses

It is essential to introduce the concept of discourse and the methodology of discourse analysis since the qualitative data analysis of the thesis is based on the conceptual framework of discourse analysis. Discourse plays a crucial role in incorporating the concepts of power dynamics and distribution of agency in an environmental issue (Battilana et al., 2009). A discourse could legitimize certain positions and actors while denying others through the framing of the issue at stake (Scrase and Ockwell, 2010). The adoption of a discourse analysis could thus most suitably address the critiques listed above.

There are different angles to see a discourse and thus different ways to define a discourse. I have selected three definitions of discourse from three groups of authors to provide an overview. According to Barnes and Duncan, discourses are “frameworks that embrace particular combinations of narratives, concepts, ideologies, and signifying practices” (Barnes and Duncan 2013). Yet, Hajer and Versteeg (2005) focus on more meanings and reproducibility, and define a discourse to be “an ensemble of ideas, concepts and categories through which meaning is given to social and physical phenomena, and which is produced and reproduced through an identifiable set of practices”; while Dryzek and Niemeyer’s definition (2008) of a discourse insists on “a set of categories and concepts embodying specific assumptions, judgments, contentions, dispositions, and capabilities”. The discourse analysis in this article is used to identify concepts and categories and therefore to discover the meaning that is given to the zero-waste movement by participants.

Discourses are heavily influenced by social norms and media that “situate and control” how we perceive and frame environmental problems, and furthermore our actions about them (Peet et al., 2011). Furthermore, Peet and colleagues (2011, 34) explain the ubiquity of discourses on environmental issues:

framing environmental problems is something people do, a set of practices like making maps, writing newspaper articles, giving speeches, sending emails, displaying photographs, selling advertising, posting flyers, posting blogs, or telling stories at a bar.

How participants talk about their motivations in the zero-waste movement, the language and vocabulary that they use, the unsaid words in their discourses, and images that are shared all contribute to the discourse and are strongly influenced by how the larger society views the movement. The ZWLM is often represented by a mason jar of trash collected over several years. Articles about similar stories and photos of people sharing their own jars that diffuse on social media give certain impressions on the problem of waste.

Waste is an ecological but also political construct (Pete et al., 2011). Understanding the meaning and logic behind participants’ motivations can add to the techno-managerial dominance of waste management. Recycling was an example given by Pete and colleagues as a showcase of a socially

and politically constructed concept that has a normalized discourse. The act of recycling did not come naturally or spontaneously. It was for the benefit of separating metals and paper from the rest of the waste stream for profit. Media propagation has naturalized this act and citizens internalized it. The zero-waste movement is more reserved and of minority, not as mainstream and accepted as recycling (Tan, 2019), but it is also influenced by socially constructed discourses.

### 3.2 Dryzek’s discourse analysis

Dryzek proposed one of many methods of analyzing a discourse in his book *The Politics of the Earth* in 2005, by going through the four categories below in Table 1:

**Table 1:** Checklist of elements for discourse analysis by Dryzek (2005, 19)

|    |  |
|----|--|
| 1. | Basic entities recognized or constructec   |
| 2. | Assumptions about natural relationships    |
| 3. | Agents and their motives                   |
| 4. | Key metaphors and other rhetorical devices |

Dryzek (2005, 17) defines natural relationships as relationships between entities that are natural, or in other words, innate, original, or inherent. That is to say then, unnatural relationships happen when natural relationships are broken. The goal of an environmental movement is often to restore the natural relationships between entities.

According to Dryzek, industrialism focuses on the growth of production and consumption and environmental discourses aim to challenge these deep-rooted characteristics of the industrial society. Therefore, the main environmental discourses can be classified by two dimensions of departure from industrialism: reformist or radical; prosaic or imaginative (Table 2). In the first dimension, reformist departure from industrialism is progressive with non-fundamental changes, while radical departure rejects the industrialist definition of the environment as resources. In the second dimension, prosaic departure from industrialism leaves the economic and political structures inherited from industrialism unchallenged and views environmental problems as troubles to development. On the other hand, imaginative departure perceives environmental issues as opportunities, in the center of the stage for development, which challenges and redefines the economic and political structures.

**Table 2:** The classification of main environmental discourses via two dimensions of departures from industrialism (Dryzek 2005, 15)

|                    | <b>Reformist</b> | <b>Radical</b>   |
|--------------------|------------------|------------------|
| <b>Prosaic</b>     | Problem solving  | Survivalism      |
| <b>Imaginative</b> | Sustainability   | Green radicalism |

### 3.3 Green radicalism environmental discourse

Through a process of exclusion, I have narrowed down the potential discourses with which the ZWLM is likely to match. In Dryzek’s explanation, the discourse of *problem solving* “takes the political-economic status quo as given” and reforms lead to no fundamental changes; the discourse of *survivalism* focuses on “limits” and an imaginary apocalypse but only proposes solutions within industrialism; the discourse of *sustainability*, though deviant from “limits”, stays on the trajectory of economic growth and more precisely green growth. The ZWLM aims to challenge the industrialist methods of production and consumption, and protect the environment, thus radical and imaginative based on Dryzek’s categorization. It does not belong to any of the three environmental discourses above, leaving green radicalism to be tested.

Green radicalism takes a position both radical and imaginative (Dryzek, 2005). Thus, it rejects industrialism by incorporating environmental problems inside the social systems, reshaping political-economic structures and proposing large and radical changes. It further challenges the solutions to environmental problems proposed in the school of thoughts of ecological modernization. It goes beyond the dominant neo-liberal capitalist economics in the current society, and beyond the present patterns of production and consumption (Sandholm Duberg, 2016). Actors in green radicalism rethink the relationship between the ecosystem and the human society, and how economy has turned nature into a powerless object through different means, such as extractivism, pollution, overconsumption, etc.

The discourses of green radicalism can be further divided into two subcategories: green consciousness and green politics, with one more concentrated on idealism while the other one more on materialism, respectively. Dryzek has provided his own analysis following the checklist for green consciousness and green politics.

Green consciousness believes that the way for transitions is to change how people perceive and experience the world and how people think (Table 3). It focuses on the change of mental and intellectual consciousness that will allow other concrete changes to happen as a result. With the stress on the cultural and emotional aspects, green consciousness does not directly act on structures in society. According to Dryzek’s ontological analysis (2005, 195) of the green consciousness discourse, nature – both inner and outer – locates at the foundation of green consciousness. With the realization of the fundamental role of nature, the green conscious criticize the damaging effects imposed on nature by the industrial society, through distorting the position of human beings in the world. Therefore, the discourse of green

consciousness tries to restore this deformation of people’s place by changing their ideas and so their behaviors. Similar to survivalism, green consciousness recognizes the “global ecological limits” and the urgent need to act. The four elements of discourse analysis for green consciousness are shown in Table 3.

**Table 3:** Discourse analysis of green consciousness (Dryzek 2005, 193-197)

|   | <b>Green consciousness</b>   |
|---|--|
| Basic entities                          | <ul style="list-style-type: none"> <li>• Global limits</li> <li>• Nature</li> <li>• Unnatural practices</li> <li>• Ideas</li> </ul>                            |
| Agents and their motives                | <ul style="list-style-type: none"> <li>• Human subjects</li> <li>• Nature has agency</li> </ul>  |
| Assumptions about natural relationships | <ul style="list-style-type: none"> <li>• Natural relationships between humans and nature are violated</li> <li>• Equality between people and nature</li> </ul> |
| Key metaphors and rhetorical devices    | <ul style="list-style-type: none"> <li>• Biological and organic metaphors</li> <li>• Passion</li> <li>• Appeals to emotions, intuitions</li> </ul>             |

Green politics, on the other hand, focuses directly on the social, political, and economic practices and structures (Table 4). A social environmental movement in green politics aims at resolving social and ecological issues through political changes “social institutions and collective decisions” such as policies from the government and support from organizations (Dryzek 2005, 181). It sometimes encompasses green consciousness but with a lesser degree of focus on people’s mindset. The four elements of discourse analysis for green politics are shown in Table 4.



**Table 4:** Discourse analysis of green politics (Dryzek 2005, 215-218)

|   | <b>Green politics</b>  |
|---|--|
| Basic entities                          | <ul style="list-style-type: none"><li>• Global limits</li><li>• Nature as complex ecosystems</li><li>• Humans</li><li>• Social, economic, and political structures</li></ul> |
| Agents and their motives                | <ul style="list-style-type: none"><li>• Individual and collective actors with multidimensional motivation</li><li>• Nature's agency downplayed</li></ul>                     |
| Assumptions about natural relationships | <ul style="list-style-type: none"><li>• Natural relationships between humans and nature are complex</li><li>• Equality among people</li></ul>                                |
| Key metaphors and rhetorical devices    | <ul style="list-style-type: none"><li>• Organic metaphors</li><li>• Link to progress</li><li>• Appeals to social learning</li></ul>  |

## **4. Background of Brussels Capital Region**

### **4.1 EU Initiatives on the Management of Plastics**

The European Commission has identified plastics as a “key priority” in the EU Action Plan for circular economy in December 2015 (European Commission, 2015). The EU green deal as EU’s next step plan also stresses the importance of plastics in the transition: “The Commission will develop requirements to ensure that all packaging in the EU market is reusable or recyclable in an economically viable manner by 2030, will develop a regulatory framework for biodegradable and bio-based plastics, and will implement measures on single use plastics” (European Commission, 2019).

In 2018, the Commission adopted a European directive on single-use plastics, *A European Strategy for Plastics in a Circular Economy*. The European Union wants to be the leader in the transition towards the goal of reaching fully recyclable or reusable plastics by 2030 (European, 2022). In June 2019, the Commission has adopted a new directive on the treatment of plastics, Directive (EU) 2019/904 of the European Parliament and of the Council of 5 June 2019 on the reduction of the impact of certain plastic products on the environment. Single-use plastics are the focus on the directive since they represent 50% of marine litter in the Union (EUR-Lex, 2019). The directive aims to replace single-use plastics by “easily available and affordable sustainable alternatives” (European Commission, n.d.).

Reducing single-use plastics is a good initiative, but what the European Union (EU) wants is not simply to reduce the production and usage of plastics. The directive makes it clear that this transition of plastics must be economically profitable and beneficial, “moving decisively towards a more prosperous and sustainable plastics economy could deliver considerable benefits” (European Commission, 2018). Consequently, it is reasonable to conclude that economic prosperity stands at the foundation of the sustainable transition of plastics in the EU. The directive has an underlying and unchallenged assumption that economic development and growth is at the same time the mean and the end result of sustainability transitions. It leaves neoliberalism and capitalism unquestioned.

The involvement and efforts of all actors, including the industry, government and individuals, are called for. Following the central focus of the directive, all players must not only contribute for the reduction of plastic use, but also to “support more sustainable and safer consumption and production patterns for plastics” (EUR-Lex, 2019). Therefore, the economical aspect continues in the center stage of the EU initiatives while the environmental and social aspects are left behind.

### **4.2 Waste Management in BCR**

In BCR, 29% of the total waste collected is generated by households, which is the single largest producer of glass, food, textile and garden waste (Zeller et al., 2019). According to the UN Environment Programme 2018, the total collected municipal solid waste (MSW) in BCR is 400 kilograms per capita per year, higher than major cities such as Toronto (300 kg/capita), Melbourne (360 kg/capita) and Amsterdam (370 kg/capita) (Gil et al., 2018). Of these 400 kg/capita, only 37% is recycled and the rest

63% (*i.e.*, 312 kilotons in total) are incinerated for energy production (Bru-Energie, n.d.), with no landfill. Even though the rate of recycling has increased to 39% in 2020 (Bruxelles-Propreté, 2020), compared to the two other regions of Belgium, BCR is still far behind while the Walloon Region has a recycling rate of 70% and the Flemish Region 75% (Franklin, 2014). This difference between BCR and the rest two regions in Belgium is explained by the gap in the infrastructure of collection and treatment of MSW, and its high urban density (Gentil, 2013). However, major cosmopolitan cities such as Los Angeles, USA (more than 75% recycling rate) and San Francisco, USA (reaching 80% diversion rate) with similar or higher population density are performing as waste management leader (Gil et al., 2018 and San Francisco Department of Environment, 2012). Whether comparing nationally or internationally, BCR still has a large room to improve.

Currently, the MSW is collected in five types of bags: blue, yellow, orange, green, and white. Blue bags are for PMD packaging, *i.e.*, plastic and metal packaging and drink cartons; yellow bags for paper and cardboard; orange bags for organic food waste; green bags for garden waste; and finally white bags for residual waste, which is defined as non-recyclable waste (Bruxelles-Propreté, 2022). Glass waste is recycled in stores or at bottle banks in neighborhoods.

Since around 2014 to 2015, local level organizations have taken its position to help individuals to participate in the zero-waste movement. Zero Waste Belgium is one of these associations. It was created in 2015 by a small group of people, hosting workshops in making your own tote bags from cloth materials (Zero Waste Belgium, n.d.). The variety of workshops has increased during the past years and more volunteers were incorporated to help support the growing organization. The family Zéro Carabistouille is another organization founded by a zero-waste family in Brussels in November 2015. The initiator is Sylvie Droulands who has also written several books on the zero-waste practices in daily life. Workshops, events and trainings are proposed by the organization Zéro Carabistouille (n.d.). Ecozy is another association that offers zero-waste workshops and advice on having a clean and organized home, founded in 2015 by Céline De Schryver (Ecozy, n.d.).

Other than the organizations, special stores to support zero-waste participants have also emerged around the same time in BCR. According to Ecoconso, the first bulk shop has also emerged in Belgium in 2014 (Ecoconso, 2022). In May 2017, the first store of a nowadays chain zero-waste grocery store, The Barn Bio Market, was opened in Etterbeek (The Barn - Bio Markets, n.d.).

If we allow the timeline of organizations and stores to represent the timeline of the zero-waste movement in BCR, then we can conclude that the zero-waste movement is rather new to the BCR with only less than 10 years of development. Fortunately, with such a short amount of time, it has already gained quite some interest.

What's more than private efforts, the public entity in BCR is also involved in taking actions to support the zero-waste participants. From 2018 to 2022, Brussels Environment has held a Zero Waste Challenge three times in order to stimulate its citizens to decrease the amount of trash thrown in the white bag whose intended use is to collect residue trash after recycling and composting (Brussels

Environment, 2022). The participants started with an average white bag weight of 61 kg/capita/year in October 2018 and finished with 43 kg, *i.e.*, a 30% decrease in September 2019 (Brussels Environment, 2022). From the MSW weight comparison, we can tell that the participants of the Zero Waste Challenge started from 36% of the city's average MSW that is 171 kg/capita/year, and achieved 25% at the end of the challenge. Brussels Environment also calls for proposals of zero-waste projects from the private sector, especially in the domain of alimentary commerce and horeca (hotels, restaurants, and cafés) (Lambertz & Vanderbeck, 2019).

In 2021, Brussels Capital Region has signed the European Zero-Waste City Charter made of a network of 445 cities and municipalities (Bonnici, 2021). The region promised to reduce its waste by 20% per capita by 2030 (Bonnici, 2021). The concrete strategy to reduce waste in the short term includes to mandate sorting organic waste in households and to expand the range of plastics to be recycled (The Brussels Times, 2021). Alain Maron, Brussels Climate Change and Environment Minister, explains this commitment of a zero-waste city for the concern about the impacts of consumption and the acceleration of climate change (Balgaranov, 2021).

The targeted population of Brussels's transition towards zero-waste is households and small to medium enterprises (Balgaranov, 2021). One of the actions taken by Brussels Capital Region is the expansion of types of waste accepted in the blue bag in January 2021 (Bruxelles Environnement, 2021), and the promotion of the orange bag for organic waste. The old blue bag only accepted plastic bottles, metal cans and drink cartons, while the new blue bag accepts various plastics bags and packaging, such as yogurt jars, plastic films, etc. (Bruxelles Environnement, 2021).

The Brussels Capital Region promotes the use of orange bag to sort out organic waste because food waste takes up 40% to 45% of the waste in the white bag (Bruxelles Propreté, n.d. and Baele, 2019). The kinds of organic waste accepted in the orange bag is nonetheless limited. For example, bones, eggshells, and compostable containers are *not* accepted (Bruxelles Propreté, n.d.). This limitation does not permit the reduction of the quantity of residual waste to the maximum. It also renders the innovation of compostable containers meaningless or even worse, more detrimental to the environment since plastic containers can be recycled. The organic waste collected is sent to industrial composting centers to produce biomethane in Ypres (West Flanders) or in Herstal (Wallonia) (Triez vos déchets alimentaires, n.d.). In other words, both facilities are outside of the Brussels Capital Region, increasing the carbon footprint from transport.

In conclusion, there is a strong desire in reducing plastic waste in Europe. The government of BCR is following the lead of the European Union by reforming waste sorting techniques, promoting zero-waste practices, and joining the zero-waste city initiatives. Collective civil actors such as organizations and commercial actors are involved as well in the transition. However, there is still a long way ahead to reach zero-waste in BCR despite the efforts.

## 5. Methodology

### 5.1 Data Collection

I adopted a combined methodology for data gathering, using both questionnaire and in-depth interviews. Doing so did not only allow me to obtain an overview of the top themes of motivations, but also offered a detailed and nuanced text base for further analysis.

To develop the questionnaire, I summarized the possible motives seen in the literature, in combination with my personal experience in the movement. I then formed a list of the most frequently appearing motivations towards the ZWLM, as following: environmental consciousness; acquaintance (family, friends, colleagues); social media (Youtube, Instagram, Facebook); children (their education, as well as health concerns); political response/protest; economic reasons (to save money); gaining reputation/status/respect; identity expression; community connection; consumer industry. Each topic was phrased into a closed-end multiple-choice question that allows an answer of “yes”, “no”, or “I am not sure” (see Appendix V for the complete questionnaire). The bias, *i.e.*, the tendency of always saying yes or always saying no depending on individuals, was taken into consideration by posing some questions in a negated way. The survey was completed with a few open-ended questions for elaboration at the end, providing a space for participants to express other motivations not mentioned in the questionnaire. I also provided an introduction about me at the very beginning of the questionnaire, and a plain language form about the research project. A consent from the respondent was mandatory to be redirected to the body part of the questionnaire.

Before the official launch of the survey, I sent the questionnaire to an expert in Brussels Environment who was also a participant in the movement for some opinions. The comments were then integrated in the final version of the questionnaire.

The distribution of the questionnaire required contacting actors with a large social network in the zero-waste movement. Such actors included project managers of the zero-waste challenge in Brussels, responsables for non-profit associations working on the zero-waste movement, and well-known people in the field such as influencers. Due to the privacy policy restriction for organizations such as Brussels Environment, diffusion of the survey through the subscriber mail list was forbidden, which posed an initial difficulty. However, with social media and other forms of communication tools, the survey was eventually distributed through several means. Firstly, it was distributed in multiple Facebook groups: Les amis du zéro déchet Belgique/Minimalisme/Bien-Être; Zero Afval Challenge Zéro Déchet - Leefmilieu Brussels Environnement; Zerocarabistouille : une famille zéro déchet. Secondly, it was shared by email to a network of participants that have joined the community compost in my neighborhood. Thirdly, my personal connections helped to promote the questionnaire by sharing it with their social circle. Finally, participants that responded to the questionnaire shared it with their social circle. The questionnaire was diffused and kept accessible from the beginning of December to the end of February for a total of three months.

The questionnaire not only allowed a thematic overview to be obtained, but also helped me to have a foot in the door, a psychology theory stating that people are more willing to say yes to something with more significance if a favor with smaller efforts has been asked first (Freedman et al., 1966). By first asking participants to fill in a survey that only took 10 to 15 minutes as a preparation step, I had access to the subjects and higher success when requesting for a more time-costly interview later.

I checked on the results of the survey periodically, contacting participants who were enthusiastic about an interview. In total, I performed 8 individual in-depth semi-structured interviews that each lasted between 30 and 60 minutes. The interviews were performed via Zoom (a platform that allows face-to-face online meetings, n=6) or phone call (n=2) due to the covid-19 global pandemic. Individual interviews were evaluated as most fitted in comparison to collective discussions such as focus groups because the interview questions focused on the private personal experience and thoughts. Confidentiality cannot be easily guaranteed in a focus group discussion since researchers cannot control what participants will disclose to people outside of the group (UMass Amherst, 2019 and Sim and Waterfield, 2019). A less private setting with the presence of third parties could therefore deter interviewees from speaking openly due to fear of judgement and gossip.

The interview was composed of open-ended questions to facilitate deeper reflection and the generation of more nuanced answers. An interview guide with about 10 questions was used as an anchor to get through the essential elements, navigate the general direction, and avoid questions with moral judgement (see Appendix VI for interview guide). The main topics covered in the interviews are shown in Table 5. Improvisation of more specific questions following up with the responses of the interviewees was equally necessary. These spontaneous questions help to show the interviewees that the interviewer had been paying close attention and actively listening and help the interviewer to gain access to more subject-based data (Bearman, 2019).

**Table 5:** Overview of the main topic areas covered in the semi-structured interviews

|  |
|--|
| <ul style="list-style-type: none"><li>• General motivations in favor of the participation in the zero-waste movement</li><li>• Aspects of the zero-waste movement that the participant enjoys and appreciates</li><li>• Aspects of the zero-waste movement that are challenging and difficult</li><li>• Perspectives and views of the participant's social circle on the zero-waste movement</li><li>• Significant and meaningful events, time or people in the journey of participation</li><li>• Views on the waste treatment of the Brussels Capital Region</li><li>• Types of actions to support the participation in the zero-waste movement that are currently missing</li></ul> |
|--|

## 5.2 Data Analysis

The questionnaire was formulated using the platform of Google Forms that automatically summarized all surveys and kept a record of the answers to all questions, which facilitated the analysis. The raw data from both the English and French questionnaires were extracted into Excel and combined. I then applied a quantitative thematic analysis to the data gathered from the questionnaire. Even though a larger dataset would be ideal for a thematic analysis (Nowell et al., 2017), this nonetheless allowed me to have an overview of the motivations of participation and discover several interesting points. The respondents were categorized into age groups of 10 years interval. The ratio of the respondents that were driven by each motivation versus non-driven was calculated for each age group by taking a division between the number of Yes and the number of Yes plus No, excluding the neutral answers. The ranking of the motivations was established for each age group as well. In case of tie, the specific ranking is arbitrary.

As for the interviews, each interview conducted using the platform of Zoom was recorded on the platform with an oral consent of interviewees at the beginning of the interview; as for the two phone interviews, a Mac-based application Voice Memos was used for recording. The recordings were then transcribed into written documents after the conduction. Even though the transcription was a time-costly process, it helped me familiarize myself with each interview, and it consequently allowed me to get into the use of certain vocabulary and compare the usage of languages in different interviews, which then facilitated the summarization and categorization of certain ideas.

I finally performed a discourse analysis of the qualitative data by following John Dryzek's checklist of elements, which was elaborated in the theoretical framework section. The list of elements was then compared with that of green consciousness and green politics side by side to identify the similarities and differences.

## 6. Results

### 6.1 Questionnaire results

In total, 44 surveys were filled, among which 39 respondents consented to the survey and lived in the Brussels Capital Region while 4 did not live in the BCR and 1 did not consent to the survey. All respondents (except one who did not fill in the age) were from the age range between 20 years old to 59 years old and were split into four age groups as shown below in Table 6, with the details of the demographics of the respondents. The female respondents took up 87% of the total respondents, matching up Saplacan and Márton's study (2019). The average participation time of the respondents did not show an increasing trend with age.

**Table 6:** Demographics of the questionnaire respondents

| Age group | Number of respondents | Ratio of females | Average time of participation (years) | Mean time of participation (years) |
|-----------|-----------------------|------------------|---------------------------------------|------------------------------------|
| 20-29     | 9                     | 80%              | 3.8                                   | 4                                  |
| 30-39     | 15                    | 89%              | 2.7                                   | 3                                  |
| 40-49     | 9                     | 87%              | 4.4                                   | 4                                  |
| 50-59     | 5                     | 89%              | 2.9                                   | 3                                  |

#### 6.1.1 Ranking of the motivations of participation

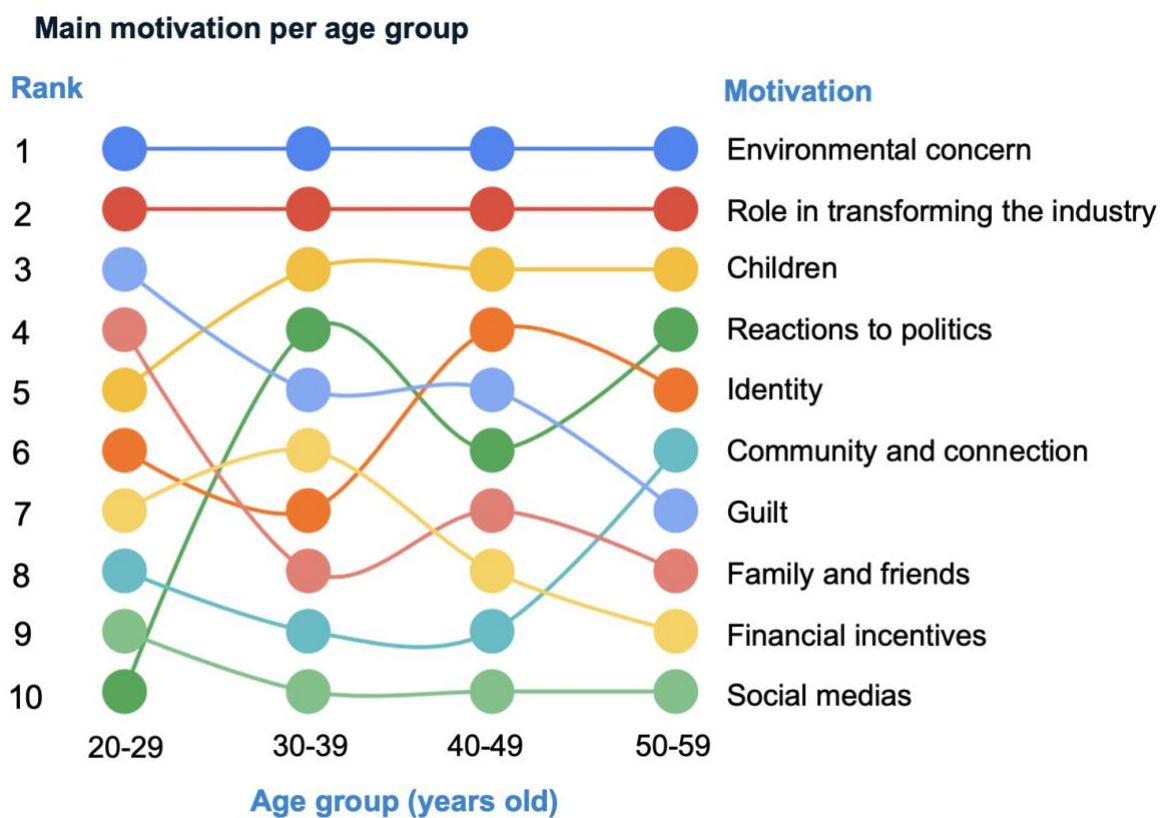
The first place of the most influential motivation for participation in the ZWLM was the same for all age groups, being the environmental concerns. The second place of the most important motivation was also the same for all age groups, being the role as an individual to transform the industry towards more zero-waste production. After the consented first two motivations, the ranking of the rest of the motivations was different for different age groups.

Figure 2 below ranks the top ten motivations by age group of respondents, noting that respondents were permitted to select more than one motivation. For each age group, environmental concerns were the most prioritized motivation for participation in the zero-waste movement, as all but one respondent listed environmental concerns as one of their main motivations. Similarly, 100% of the respondents of the questionnaire responded yes to the question "Are environmental concerns something that you try to deal with through participation?", the only consensus of motivation shared among all. This discovery showed that the respondents were deeply concerned about the ecological degradation and more broadly the environment. Since these concerns motivated respondents to continue the journey in the zero-waste movement, it also showed that respondents believed that their zero-waste actions could contribute to the resolution of these environmental concerns. In other words, the respondents not only recognized the global ecological limits that the nature has, but also did they believe in their agency and power to act to make changes.



Second place of the most commonly selected motive for each age group was the role and power to change the private sector. 70% of the respondents believed that they, as an individual, played a role in transforming the consumer industry by refusing to purchase wasteful products and this role motivated them to continue. The respondents were therefore aware of the ability to exercise the power of sovereignty as a consumer. This discovery extended the motivation towards structural and concrete changes that were more than thoughts and ideas.

For all age groups except for 20-29, children were the third most widely shared motivation. The absence of children being a strong motive in the youngest age group could be potentially explained by the stage of life that respondents in this age group were in since none of the respondents in the age group of 20-29 had children. Among all respondents, 17 out of 39 had children while 22 did not. Out of the 17 respondents who had children, 9 chose children to be their top motivations; while among the 22 respondents who did not have children, only 2 chose children to be their top motivations. Not having children could lead to a more diversified motivations after the top two common ones.

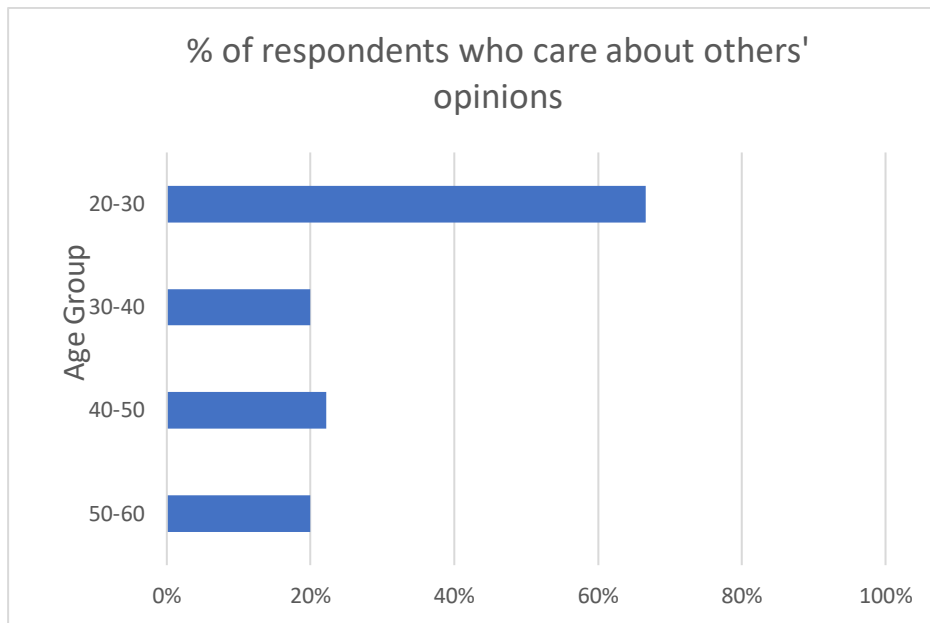


**Figure 2:** Ranking of ten main motivations for the four age groups. <sup>1</sup>

1. Note: “Children” as a motivation refer to both the respondents’ own children, and the future generations; “Identity” refers to whether the respondents consider zero-waste to be a part of who they are; “Guilt” refers to feeling guilty when the respondents did not reach zero-waste; “Family and friends” refer to their support for the respondents in continuing the journey.

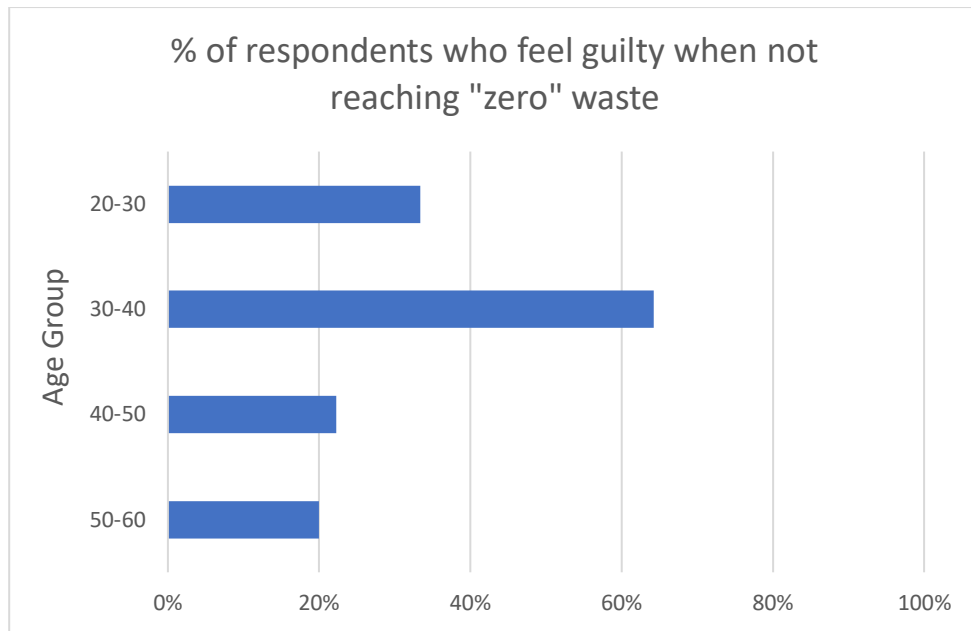
### 6.1.2 Age Group Specific Results

Other than the summary of the most powerful motivations for participation via thematic analysis, I also reached some age-specific findings. The first question was whether others' opinions on the ZWLM mattered to the respondents. 67% of respondents in the age group of 20-29 found that the opinions of others on participation mattered versus 20% of respondents in other age groups (Figure 3). The decline of the influence of others' opinions for participants could be that with the growth of age, participants became more focused on oneself, caring less about what others thought of them.



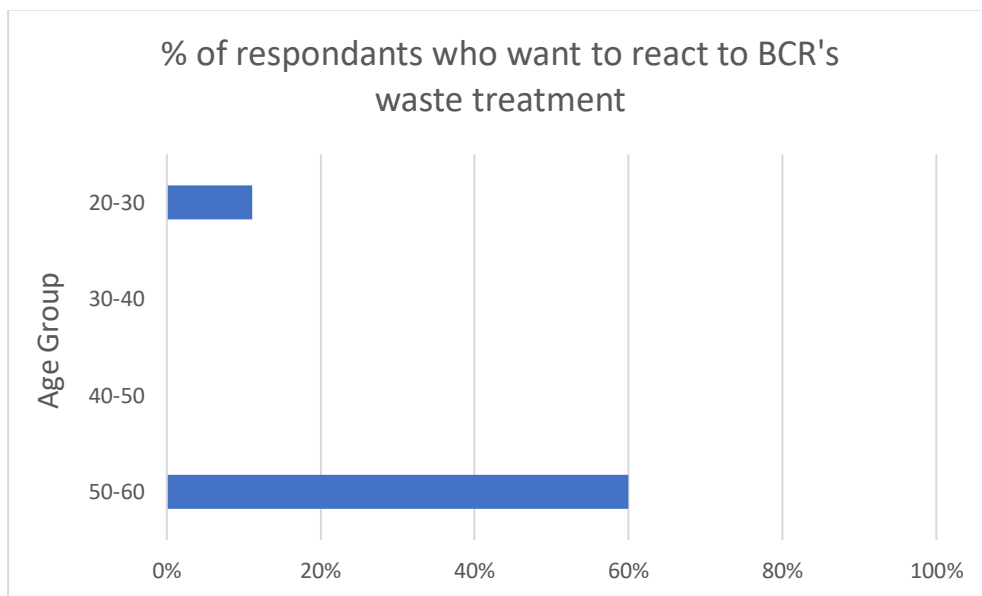
**Figure 3:** Ratio of questionnaire respondents who care about other people's opinions on the ZWLM

The second age-specific finding was on the feelings of guilt. 64% of respondents in the age group of 30-39 answered yes to the question "Would you feel guilty when you didn't achieve zero-waste?" while only 20-30% of respondents said yes in other age groups (Figure 4). However, in combination with the ranking of motivations (Figure 2) where the guilty emotion ranked number 5 for the age group of 30-39, I concluded that the feelings were present but not strong enough to compete with the care for the future generations.



**Figure 4:** Ratio of questionnaire respondents who feel guilty when they do not reach zero-waste

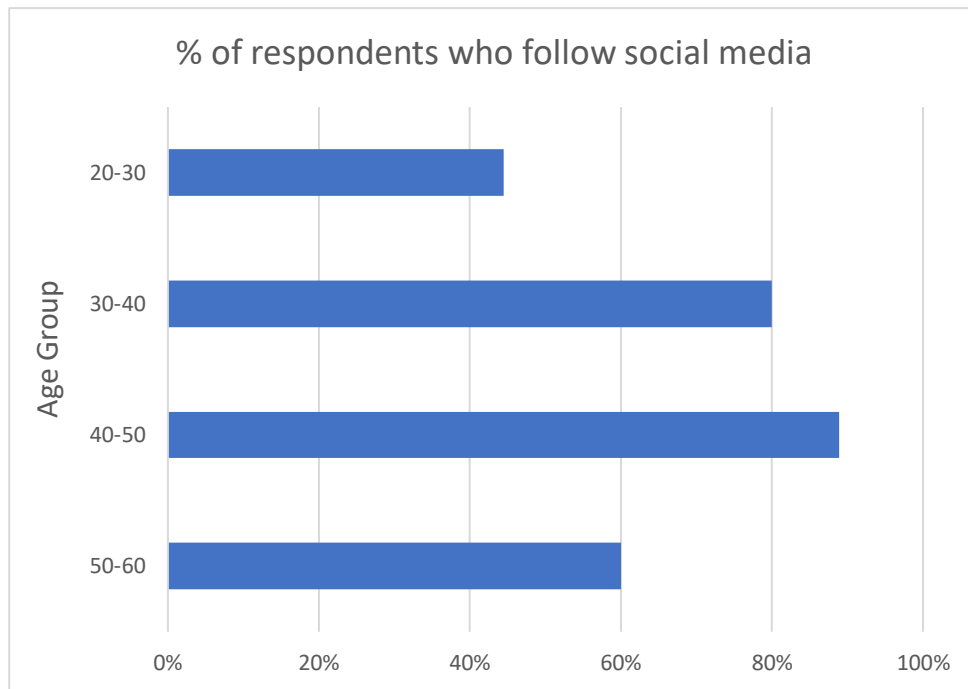
The third finding was that only one respondent in other age groups did so, while 60% of (n=3) respondents in the 50-59 age group participated in the zero-waste movement as a way of reacting to the region’s waste treatment policies (Figure 5). The overall low positive response to this question could mean that the respondents viewed the ZWLM as more personal and less of a way to protest and effect changes in the region.



**Figure 5:** Ratio of questionnaire respondents who want to respond to the BCR’s waste treatment policies through participation

The last age-specific finding was that 80-89% of respondents in the age group of 30-39 and 40-49, responded that they followed social media accounts on the zero-waste movement while only 44%

of respondents in the age group of 20-29 did (Figure 6). On average, more than half of the respondents followed social media accounts with contents on the ZWLM. Pederson's study on social media's impacts on ZWLM explained that participants found the sense of belonging and connection from the use of social-media, and thus initiated collective actions, which could be reasons why respondents had a high social media following rate.



**Figure 6:** Ratio of questionnaire respondents who follow social media accounts on the ZWLM

In conclusion, environmental concern was the most important motivation for participation in the zero-waste movement regardless of age and gender. The role of transforming the private sector was the second most broadly shared motivation. For parents, children were a non-negligible motive. As for non-parents, other motivations took up more votes.

## 6.2 Interview results

I have conducted semi-structured interviews with eight female interviewees, with their demographics detailed in the Appendix III. The selection of interviewees was not intentionally female only. However, only female participants showed interest in the interviews and accepted my request. The interviewees have an age span between 20 years old to 60 years old, corresponding to that of the questionnaire respondents. Their geographical location is diverse in different communes in BCR (Appendix III).

Following the theoretical framework of discourse analysis, I have based the qualitative analysis of the interviews on Dryzek's categorization of environmental discourses following his checklist of elements: basic entities recognized and constructed; agents and their motives; assumptions about natural

relationships; key metaphors and other rhetorical devices. Therefore, I have separated the results section according to these four elements, with a table summarizing the representative terms for each element.

### 6.2.1 Basic entities recognized and constructed

The first element in Dryzek's checklist is the ontology of the discourse, *i.e.*, the basic entities that are recognized as existing (Dryzek 2005, 17). For the discourse of the ZWLM, the basic entities mentioned by the interviewees, summarized in Table 7, include the environment or the nature and its limited capacity, the negative impacts caused by humankind, ideas, and socio-political structures.

#### a. Environment and humans

When asked about the general motivations of their participation in the zero-waste movement, most interviewees' first motivation concerned the environmental degradation caused by human society. Below are some interview extracts where the interviewees incorporated the entities of the environment:

“Since I was very young, I always wanted to reduce my garbage I think, my sort of footprint on the planet. The motivation for participation in the zero-waste movement, I mean first and foremost for the **environment**, for the **planet**.” [participant 2]

“I am strongly concerned about everything related to the **environment** in general since already a long time.” [participant 4]

“I have learnt an important value, which is the **respect of the nature**.” [participant 5]

“I was always quite close to some kind of **nature**, and working in a garden and stuff like that. I do care about nature, and I like being in nature, and I would like to keep it **in a good state** because I see that it is important.” [participant 7]

With this motivation, interviewees identified two types of entities: first, the environment; second, the human. The human was recognized as each one of us. The environment was referred to as “nature”, or “planet”, or “ecology” as well, which all implied an entity that's non-human.

#### b. Ecological limits

Interviewees have noted that the quantity of waste that humans have generated and disposed of into the natural ecosystems has exceeded the threshold of a healthy planet, implying the notion of ecological limits. Several interviewees recounted personal anecdotes of witnessing large quantity of trash unsorted and untreated during their travels and even in the canal in Brussels. Others shared about their experience of eco-shock from seeing the plastics continent in the middle of the ocean. Through these observations, the interviewees realized that the global limits of the planet to absorb the waste

generated by humankind has been strained and perhaps already exceeded. “The world as it is, as it functions at present, we have already seen it with all the last **crises** that we are aiming at, it will **not be able to continue** functioning like that” [participation 8]. Once the tipping point was reached, the extent of the ecological impacts left the planet unable to recover by itself, which imposed a sense of severeness and urgency, and motivated interviewees to take immediate actions.

c. Ideas

The interviewees showed their recognition of the importance of the awareness, knowledge, and ideas. The sensibilization of the zero-waste movement to others was a non-negligible motivation to the interviewees because the reason of non-participation to them was ignorance. They believed that more people would take actions if they had information and education on the topic. Interviewees thought that workshops and information sessions initiated their participation and helped them to keep the habit. Spreading the ideas of zero-waste movement is essential for them to call for more participants.

Below are extracts from the interviews that help to show the importance of ideas and mindset for the interviewees:

“I think once you start recycling and sorting stuff, you become more **aware** of the trash. With these 200 something people who will participate (in the Zero Waste challenge), I hope they will **spread the word**. So 200 to perhaps 600 people, who knows how many people we **inspire**.” [participant 2]

“I also realize that more and more people around me are more **sensitive** than before to this aspect.” [participant 4]

“We will try to make others **aware**. The **idea** is "here it is, we're here, we're doing it, why not you".” [participant 5]

“I still see a lot of things around those metal grids where the rainwater goes, along the pavement, and I think it's the behavior of a few that still draw a lot of cigarettes in fact near those. And they see it a bit as a bin. And also the wind and the rain that brings along things there I think. There is **not enough sensibilization** about the fact that this is the beginning of the ocean, for example.” [participant 6]

Following the discourse of green consciousness, ideas and consciousness were valued by interviewees as a bridge to reach others. Interviewees believed that sensibilization of non-participants about the zero-waste movement would permit changes to happen. The change of mindset and awareness, and the sensibilization and propagation of ideas and values related to the zero-waste movement was an important motivation for participants.

d. Political-Economic Structures

Interviewees noticed the limited scope of impacts of ideas and thoughts from individual actions, and therefore called for more structural changes in the industry and for supporting policies from the government. They valued political-economic structures, such as economic models of production and consumption, monetary incentives and taxation, control and enforcement of regulations, and change of waste treatment policies. Their recognition of political-economic structures matched with the green politics discourse.

Participant 4 valued the role to change the industry and wrote emails to producers to request for a zero-waste packaging for their products, hoping to have a real impact. She also advocated for the region to reignite the law on banning certain types of plastic bags and implement regular controls in stores, which was agreed on by participant 5. Interviewees did not simply believe that information and consciousness would change everything. They recognized the power in the institutional actors to facilitate the zero-waste movement via policies and infrastructures (such as neighborhood compost centers).

e. Conclusion

As shown in Table 7 in the theoretical framework, green consciousness and green politics share many common entities, such as nature, human, global limits, which interviewees recognized in their discourse of the zero-waste movement. The discourse of the ZWLM valued ideas as an important entity, conforming to green consciousness. It also perceived the political-economic structures as important, matching with the green politics discourse. Hence, in terms of ontology, the ZWLM discourse encompassed the entities of both green consciousness and green politics.

**Table 7:** Basic entities recognized and constructed in the discourse of ZWLM

|   |  |
|---|--|
| Basic entities recognized and constructed | <ul style="list-style-type: none"> <li>• Ecosystem, planet, Earth, environment</li> <li>• Human, society</li> <li>• Threshold, limits</li> <li>• Sensibilization, awareness, ideas</li> <li>• Industry, government, commune</li> </ul> |
|---|--|

**6.2.2 Agents and their motives**

The second element in Dryzek’s checklist corresponds to the agents and their motives, which I have summarized in Table 8. A variety of actors were recognized by the interviewees to have agency, which included individuals and different types of collective actors. The motives of participation were perceived to be diverse, but in general for the collective good of protecting the environment and sharing the efforts between participants.

a. Individuals as agents

Interviewees believed that individuals were agents, each having the power of participating in the movement. The ability to spread the word, sensitize others and potentially change how they perceive the zero-waste movement was a strong motive for most interviewees.

They believed that the ZWLM was the best way for individuals to contribute to the care for the environment because each person had the power and agency to do something within their reach and ability. Here was how participant 1 put it: “I can't really find a better solution that anyone of us can do on their own scale”. Participant 4 thought that it was very important that every person advanced and did a little, and participant 7 agreed with her, “I think it would be better for everyone if more people would do at least something”.

What motivated participants was not to reach the “perfect” state of not having one gram of trash in the white bag. What motivated them was to inspire others to adopt low-waste behaviors to each one's own capacity. They wanted to empower others to make small steps towards a bigger goal together. They told their family and friends, colleagues and neighbors, partner and children so that every person had the knowledge and power for action. In return, they got the warm and fuzzy feeling when someone had taken a small step towards his/her own low-waste journey. The interviewees thought that individuals' motives to act in the zero-waste movement were multiple, first because the environmental problems were collective and urgent; second because it was humans who caused these issues; third because each one had their health and life quality on the stake.

However, the interviewees did not consider all individuals as agents. They noted that the zero-waste movement was reserved to a certain population, usually financially able and educated enough to care about the environment, making it a privileged movement. Three interviewees described the movement using the word “bobo”. “Bobo”, according to Larousse French dictionary, is an acronym for an American word *bourgeois bohemian*, which refers to a type of population, “a rather young, well-off and cultured person, displaying his non-conformism” (Larousse, n.d.). The social inequality of participation will be elaborated in the discussion section.

b. Collective actors as agents

Other than individuals, the interviewees considered the public sector to be a powerful actor as well, in terms of providing support and help for individuals through workshops and engagements, passing rules and laws against waste in the industry, and ameliorating the waste treatment of BCR. The public sector mentioned by the interviewees contained several levels, from local commune, to BCR, to the European Union. To the interviewees, actions can be taken at diverse scales with different focus. For example, the local commune could act on cleaner and more convenient trash pickup by hiring more employees; open up more neighborhood compost facilities; host workshops; the BCR could enforce existing regulations and pass more progressive policies on waste prevention and reduction. Furthermore,



the interviewees hoped that the European Union could set up a universal ban on plastic packaging in the industry.

The interviewees have also recognized the agency of other collective actors, such as zero-waste communities and environmental organizations who could provide information and tips for living a zero-waste lifestyle. What’s more was that these collective actors were believed to have louder voices and more visible seats in political arenas by the interviewees, and thus helping the ZWLM to gain visibility and acknowledgement.

c. Nature’s agency

Nature was not seen with much agency. Participant 5 said that “we only have one planet, and she is really very very fragile”. The fragility of the Earth was also reflected through the extent of negative impacts that humans could have on it. Humans have agency to destroy or protect the planet while the planet’s agency in return was unmentioned. This sense of the power of protection and care towards the planet that was vulnerable to our irresponsible actions was conveyed in the words of the interviewees and served as a primary motivation for their participation.

d. Conclusion

In conclusion, both individual and collective actors were identified in the zero-waste discourse. According to Dryzek, green consciousness solely focuses on the individual agents while green politics contains both. Consequently, the second element of the checklist conformed closely with that of green politics.

**Table 8:** Agents and their motives in the discourse of ZWLM

|                    |   |
|--------------------|---|
| Agents and motives | <ul style="list-style-type: none"> <li>• Individuals with excluded populations</li> <li>• Collective actors</li> <li>• Nature’s agency unmentioned</li> </ul> |
|--------------------|---|

**6.2.3 Assumptions about natural relationships**

The third element in Dryzek’s checklist corresponds to the assumptions about the relationships. I have therefore summarized the assumptions made by participants about the natural and unnatural relationships, shown in Table 9. In the ZWLM, the interviewees’ assumptions about the relationships between the ecosystem and human were that the natural relationships between the two were ruined by humans, but could be restored with efforts. The interviewees believed that the natural human relationship was based on connection and mutual help.

a. Relations between the environment and humans

According to the interviewees, nature was damaged by human actions, especially through the industrial production and consumption supported by the development of capitalism. Participant 1 believed that zero-waste practices offered a chance to “get ourselves out of the mess that we got ourselves into”. By the “mess”, she meant the environmental destruction in the general and large sense, larger than waste, such as climate change, pollution, waste management, etc., and to get out of a mess was to end the negative relationships that human and the ecosystem have and shift towards a more desirable relationship. Participant 7 reproached the negative environmental impacts from pesticide, land clearing and waste incineration. These non-environmentally friendly human behaviors were criticized by her due to their destruction of the natural relationships.

Thus, the natural relationships between the ecosystem and the society could be extrapolated to be reciprocate in a positive manner, where humans did not cause harm to the environment due to self-centeredness and took good care of it, and the environment in return rewarded humans with clean air, water, food, and beauty.

Interviewees expressed the desire to care for the environment and to lower their negative environmental impacts as the most important motivations of participation in the zero-waste movement. They used the ZWLM as a media to foster a positive relationship between them and the environment. Participant 2 joined the movement to “reduce her footprint on the planet”. Participant 6 joined as well because of her “general desire to limit her negative impact on the environment”. Other interviewees focused more on the care of the planet and less on the reduction of the environmental impacts. Participant 3 joined the ZWLM because she recognized the importance of the environment to our life and to “take care of the Earth”. The relation of stewardship stood out in her motivations.

#### b. Relations between human entities

On the cultural side, the interviewees believed that the natural relationship between human entities was connection and mutual support. The feeling of belonging within the zero-waste community helped interviewees to advance further. Since participants were in the same social-environmental movement, they could foster a closer relationship with each other. Inside the community, participants exchanged knowledge, tips, shared home-made items and repaired broken items together. Some interview extracts where participants expressed the solidarity of the zero-waste community are provided below:

“**Sharing with people** such as people organizing workshops to repair this or that from the bathroom, it gives pleasure. So this is something that I discovered. There is **a connection with the community.**” [participant 1]

“What I enjoy in this zero-waste experience is that I **got to know my neighbors** here upstairs, because I knew that they had a compost.” [participant 2]

“There is nothing that can replace the **human contact** so these workshops allow to have a human contact and to have a transmission of knowledge. Each one

brings a little his knowledge, his know-how and **the community behind this movement is important.**” [participant 3]

“I find that we are very **solidary**. So it's great to say that we're actually a **community**. There are neighbors, there are my friends from the Boy Scouts who are really like me. In this community, everyone shares. They're not selfish.” [participant 5]

“It's nice when you have this occasion when you meet the people, and you also see that some of them are really really engaged in it. It's also **a nice feeling to be a part of people** trying to do something good for the environment.” [participant 7]

c. Conclusion

According to the theoretical framework, green consciousness recognizes that the natural equal relationships between humans and nature are violated, and green politics focuses more on the complexity of the relationships and adds the social aspect as well. Compared to these two environmental discourses, the discourse of the ZWLM dabs into both. Similar to green consciousness, the discourse used by the ZWLM participants recognized the violation of an equal relationship between the ecosystem and humans. However, the hope and desire to restore it added a layer of complexity, conforming with the green politics discourse. Even though humans had done damages, the interviewees were working on preserving the environment. Thus, the relationship was not all white or all black. It was complex. The ZWLM discourse also valued the relationship between human entities, just like the green politics discourse.

**Table 9:** Assumptions about natural relationships in the discourse of ZWLM

|   |  |
|---|--|
| Assumptions about natural and unnatural relationships | <ul style="list-style-type: none"> <li>• Natural relationships were ruined by humans but can be restored</li> <li>• Care for the environment</li> <li>• Connection and support between human entities</li> </ul> |
|---|--|

**6.2.4 Key metaphors and other rhetorical devices**

The final element in Dryzek’s checklist covers the metaphors and rhetorical devices. Hence, I have summarized the metaphors used by the participants to describe their motivations in the ZWLM in Table 10. The rhetorical devices used by the interviewees were mostly biological and organic. The interviewees called for emotional appeals but also logical arguments.

a. Organic metaphors

The hummingbird effect (“effet colibri” in French) was used as a rhetorical device by several interviewees to describe their motivations and to convey the urgency to conserve the planet and reverse

the damages. The interviewees described themselves as a small hummingbird: even though small in size, the bird amplifies its power through calling others for actions, which is what the interviewees aspired to do. The legend of the hummingbird is told by Pierre Rabhi as such:

*One day, there was an immense fire in the forest. All animals were terrified and unsure of what to do. The disaster is only exacerbating while they watch. Right then, a small hummingbird flew to get some water with its tiny beak and put it on the fire. But how can it fight the fire with such unproportionally small beak? The armadillo mocked the hummingbird, saying, "Are you crazy? It's not a few drops of water that can extinguish the fire." The hummingbird was undeterred and answered, "I know I cannot, but I am doing my part. If you, the elephant, you, the rhino, you, the tiger, and all of the rest of the forest animals do your parts too, the fire would be extinguished in no time!" (Les écolo Humanistes, n.d. and Mouvement Colibris, n.d.)*

b. Emotional appeal

The interviewees also used emotional contagion from personal experience as a rhetorical tool. Personal anecdotes illustrating the feeling of self-worth, of freedom, and of guilt have been told to provide more "intuitive and empathetic" appeals as does green consciousness (Dryzek 2005, 196).

Before joining the zero-waste movement, participant 1 felt pressured into following a lifestyle of consuming and discarding due to the fear of disconformity, "Back then, it was like a 'coming out of the closet' moment for me. It was something that I always felt not right, but I had to follow everybody and otherwise I'd be a freak." The feeling of non-conformism was shared with participant 2 who told her experience, "When you talk about it to the average person, they think you're a bit crazy almost".

Many interviewees described themselves using derogatory terms that either they had heard directly from others or thought that others thought so, such as "extreme, crazy, freak, weird". These words were powerful rhetorical devices that gave a dark hue on how the participants thought the ZWLM was perceived and what the interviewees feared.

Other negative emotions associated by the interviewees were guilt. It could happen when they did not reach the goal of "zero" waste, when they did not sacrifice their comfort to create less waste, when they refused others' offerings that came with waste, among others. They felt guilty because they believed that they could do more and generate less waste.

Other than these unpleasant emotions, the interviewees also experienced positive emotions associated with the ZWLM, which constituted of a strong motivation for participation. Such pleasant emotions included the sense of accomplishment after having reached a goal, the pride and victory of making progress, the joy from influencing others and forming a special bond, and the moral relief from doing the right thing. Some interview extracts that demonstrate the positive emotions associated with the ZWLM were provided below:

“When I first started (the participant in the ZWLM), I can still remember back in the point in time, I was really **happy**. I was relieved. I’m so happy to discover this **creativity** and this **relief** from things and a connection with some inner pleasures.” [participant 1]

“I know a friend of mine, she has really become better at sorting and recycling because of me, so I’m really **happy** about that.” [participant 2]

“What changed is that I see that people around me who were opposed to some behaviors, I see that they start to adopt them, so it makes me **happy**.” [participant 6]

“There were moments when I did **feel good** about it (*i.e.*, influencing people towards zero-waste practices) because maybe I helped with this and it’s maybe a small step but it’s a good step nevertheless.” [participant 7]

c. Rhetorical devices linked to social learning

Interviewees expressed their belief in social learning and progress. They believed that if more people were aware of what’s happening, and if they were offered means of actions, then they would be capable of learning and changing their behaviors. Participant 2 thought that school was a good place for students to learn about the zero-waste movement and transmit the concept to their parents so that they could learn as well. Participant 5 praised the capability of children and teens to absorb the new information about zero-waste practices and act accordingly. Many participants believed that the practical workshops organized by Brussels Environment or other workshops at their workplace were helpful in terms of the implementation of a new lifestyle. Participants saw real changes from their social circle after the sensibilization shown in some of the examples above, and hence they believed in people’s ability in learning and making progress.

d. Conclusion

Both green consciousness and green politics incorporate many biological metaphors, as did the discourse in the ZWLM. The expression of emotions such as fear and pain before the participation, and of emotions such as relief and joy after the participation, was in sync with the rhetorical devices of green consciousness. As for the more rational rhetorical devices used by the interviewees, such as the beliefs in human capacity of learning and of progress, they corresponded more closely to green politics.

**Table 10:** Metaphors and other rhetorical devices used in the discourse of ZWLM

|  |  |
|--|--|
| Metaphors and other rhetorical devices | <ul style="list-style-type: none"> <li>• The hummingbird effect</li> <li>• Emotions: pride, guilt, sense of freedom, creativity</li> <li>• Social learning: awareness and knowledge fosters the change of actions</li> </ul> |
|--|--|

In conclusion, the discourse that the interviewees demonstrated when describing their motivations towards the participation in the ZWLM matched the best with the combination of green consciousness discourse and green politics discourse. In other words, the environmental discourse of green radicalism matched well with the discourse adopted by the ZWLM participants.

## 7. Discussion

The aim of this thesis is to conclude the main motivations for participating in the ZWLM, and to find the most suitable fit(s) of environmental discourses to which the discourse of the ZWLM belongs.

As for the main motivations of participation, both the questionnaire and the interviews demonstrated that the top concern was the environmental degradation and the top priority thus the reduction of individual environmental impacts. Other intrinsic motivations were strongly present in the ZWLM as well, such as emotions, both positive and negative, and the desire to make real changes in the industry. The focus on the environmental issues and emotional drivers corresponds closely to the predominance of intrinsic motivations attested in the studies mentioned in the state of the art.

The extrinsic motivations such as social norms and monetary benefits were minimal as shown by both the quantitative and qualitative results. Quite the contrary, non-conformism was conveyed by the interviewees when they expressed the experience of challenging socially accepted practices at the risk of being seen as “the others”.

In the case of the discourse of motivations of the zero-waste movement, green consciousness and green politics coexist in the interviewees’ perspectives. The emotional, spiritual and psychological aspects of motivations mentioned by interviewees fit in the green consciousness discourse, as well as the desire to sensitize other people for a change in their consciousness in environmental challenges. Furthermore, their motivations were not limited to the scope of thoughts. The interviewees hoped for tangible political, economic, and social changes from the government, private sector, and organizations. The desire for practical transitions in public institutions and collective actors matches with the green politics discourse.

### 7.1 Cognitive dissonance towards hedonic alternative

Nature was a highly valued entity for interviewees, it deserved care and stewardship, which did not only manifest through the care for the outer nature, *i.e.*, the planet, the ecosystem, the environment, but also for the inner nature. This care for the inner nature of an individual, including health-related, emotional, psychological, and spiritual elements, served as a significant motive of the participation and matched the discourse of green consciousness in its focus on ideas and emotions.

Eco-shock was an emotional response often brought up by the interviewees after having learnt about ecological disasters through various means. For some interviewees, the eco-shock came from the news or an exposition, for example, the continent of plastics in the ocean; for others, it came from their personal experience such as the witness of trash burning during a trip or the notice of dead animals in the canal in Brussels. The acquisition of new information caused participants discomfort because their original interpretation of the world was challenged, their consciousness and morality could no longer tolerate a way of living that was perceived as environmentally harmful, as how participant 4 put it, “I

cannot support this system (of adding plastics in the ocean), I cannot close the eyes either, I have to do what I can”.

At the moment when they experienced the eco-shock, their lifestyle did not match their new consciousness and ideas anymore. Cognitive dissonance happens when one’s actions do not correspond to one’s beliefs, and thus there could be psychological and/or physical discomfort, which can be accentuated in the presence of a group of reference (Festinger, 1962). For example, if you want to contribute to slowing down global warming by biking to work, but people from your group of reference at work all drive, you’d feel a social pressure to change your behaviors to conform with the group, in this case, driving to work. The conformity to the group of reference would lead you to behave against your beliefs and cause you cognitive suffering. Furthermore, high self-monitors (*i.e.*, people who readily modify their behaviors to match those of the group of reference) are more easily influenced by groups of belonging than low self-monitors, and hence more easily feel forced to behave in a disparaging way from their mind (Briggs et al., 1980).

People suffering from cognitive dissonance seek to find ways of relief, either by converging their behaviors towards their mind, or the other way around. In the case of the ZWLM, the convergence of participants’ daily mundane behaviors towards their desire in reducing environmental impacts helped them to solve the cognitive dissonance. The zero-waste practices offered the interviewees solace also as an entry point of other environmentally friendly behaviors. Whether it is picking up the trash on a walk, transmitting their values to the next generation, exchanging ideas with neighbors, they constantly tried to reach coherence between thoughts and actions.

Joining the ZWLM does not only aim at resolving the discomforting emotions associated with cognitive dissonance, but also generates pleasant emotions. Hedonic alternative is an idea proposed by Kate Soper (2008) to describe the motivations of participation in the movement of minimalism, to which the ZWLM can also be linked. It is to say that the reasons for doing environmentally friendly activities do not always have to come from selfless and altruistic perspectives. They could also be for personal pleasure, from the mental and spiritual aspects (Soper, 2008). The kind of people who participate in the zero-waste movement could then be described as the “disillusioned seduced”, who seek to satisfy their material and spiritual fulfillment through an alternative lifestyle (Soper, 2008).

Participation in the ZWLM could consequently be considered as a type of hedonic alternative that could ease the suffering of participants from the cognitive dissonance. Participants often find emotional and spiritual enlightenment by living a zero-waste lifestyle. Zero-waste practices do not need to be dull and exigent. They can be creative and rewarding. Such hedonic benefits originating from the ZWLM for the interviewees included: the increase of creativity to repurpose different objects and DIY products; the feelings of satisfaction and personal victory for not contributing to the growing plastic waste; the quality time with family members, especially the bonding with children.

As important as environmental concerns were to the interviewees, more self-focused and pleasure-driven motivations could not be denied. The altruistic drivers are not necessarily in conflict



with the self-centered drivers. “Self-centered” also does not have to be a derogatory term. The intrinsic and extrinsic motivations could act in a complementary way and offer backup motivations if either side was not strong enough to sustain the participants through a difficult period.

Moreover, the interviewees believed that they were “doing the right thing” through participation in the movement. That argument resonates with Kushner’s idea (2006) that people live their lives neither in search of power nor for pleasure, but in quest for meaning. “Doing the right thing” may seem trivial and insignificant, but it facilitated the interviewees in their search for meaning. Knowing that they were contributing to the collective wellbeing of human society, the interviewees felt proud and morally satisfied of themselves. Additionally, they did not feel hubristic with their achievements because the participation in the ZWLM required continuous efforts. Since it is unfeasible to reach *zero waste*, there is always more to be done.

## **7.2 Individuals as agents**

Hawkins (2012) criticizes that the agency given to individual actors tends to discourage collective actions that could otherwise emerge from the participants’ social networks. In the case of the ZWLM, I’d like to argue that individual efforts have not prevented collective actions; instead, quite the opposite. Participants continue to be a part of the movement because they love the solidarity of the community. It offers them a feeling of belonging. Neighborhood groups and Facebook groups pop up, commune and city level workshops are organized, neighbors exchange ideas and gifts, networks of local fresh produce boxes emerge, and much more. Thanks to workshops and coaching sessions organized by Brussels region and the communes, many participants had a pleasant and helpful start with zero-waste practices. Participant 2 has also volunteered at the Brussels canal waste collection with a group of volunteers. Moreover, several participants have not only attended but organized workshops, such as umbrella reparation and composting techniques, which gives participants an opportunity to connect and share with others. Therefore, the ZWLM give individual participants agency, but also allows collective actions from both the individuals and the public actors to flourish.

This social relationship echoes with the relationship between ecosystems and human systems. Ecological and human entities are thus not isolated remote islands; instead, they are interconnected and interdependent. The survival and thriving of one is heavily reliant on the wellbeing of the other. The complexity and interconnectedness of relationships between human and the environment, and between human and human is captured by the interviews. Hence, the discourse of the ZWLM does not only follow that of green consciousness, but also of green politics.

Linda Nash (2005) advocates for the rethinking of agency. To her, human agency cannot be thought separately from its environment; in other words, the dichotomy between human and the environment should not exist because humans depend on their specific environment to have any sort of agency (Nash, 2005). In the case of the ZWLM, the dependency on the specific environment from

participants to have agency is extensively present in participants' words. As participant 5 said, "In Brussels, we are in a city where people have enough luxury to ask themselves questions about ecology, does it make sense what I do, do I consume correctly. Because I lived in Peru. And in Peru, it has nothing to do with that, and I know that over there you can't afford to think: does my car pollute too much or not enough? There, if you have a car, you are lucky and that's how it is. So I think that you really have to take into account where you are."

It is essential to recognize that the participants' living environment plays a key role in the ZWLM and human agency in participation cannot be separated from their environment. Physically, infrastructures are nonnegligible for zero-waste practices. For example, without access to waste-free alternatives, without a garden to grow one's own vegetables, and without transportation options to access different places, it would be nearly impossible to live a zero-waste lifestyle. The ZWLM could grow and flourish in BCR thanks to the infrastructures available to participants: various workshops in easily accessible locations; bike lanes and the public transport system; bulk stores and farmers markets; composting facilities in a series of neighborhoods.

Other than these concrete facilities, to participate in a movement, one must first know about it. To know about and learn about something requires access to information, through different media channels such as internet search, television, reading materials, and oral communication from the social circle. Therefore, the knowledge of the existence of a movement is the base of participation. As mentioned in the framework of the BCR case study, the emergence of multiple organizations dated back around 10 years, serving as a knowledge transmission platform to inform more people about the ZWLM in BCR, along with the Zero Waste Challenge organized by Brussels Environment. Furthermore, BCR is following the lead of the EU initiatives to reduce the usage of plastics, so the promotion of the ZWLM situates in a broader political context.

### **7.3 Inequality in access**

Even with a good supporting system for the movement, individuals still need to have access to time and money in order to participate, which is a major obstacle that leads to inequality in participation. The ZWLM has been criticized in the literature to be exclusive of certain people and unequal in terms of access (Sattlegger and Raschewski, 2019; Tan, 2019), which was proved a valid critique through the analysis of interviews. Even though the interviewees considered that agency of participation lied in individual actors, not every individual was seen to have an agency. To the interviewees, the zero-waste movement was reserved to persons with sufficient material means and awareness of ecological issues to participate.

"It's true that if you live on the street, your first concern is not going to be environment." [participant 2]

“I think these issues usually concern people when they are rich enough to think about it.” [participant 7]

Moreover, as shown in the results, many interviewees described the movement as “bobo” and not for the poor. In other words, they considered themselves, and by extension other participants in general, belonging to the category of people with sufficient material means and awareness of ecological issues, and the ZWLM participants consequently shared common backgrounds and similar socio-economic perspectives.

However, the assumption that “people who have satisfied their personal needs are more likely to act ecologically because they have more resources (time, money, energy) to care about bigger, less personal, social and pro-environmental issues” is more complicated than being true (Kollmuss and Agyeman, 2002). Diekmann and Franzen (1999), for example, showed that the poor cared greatly about the environment, and did not lack the intention and awareness of the environment. Therefore, the interviewees’ claim that the environmental issues were not a priority of the poor might not be correct.

The interviewees identified two reasons why not all people could be agents, the lack of time and money. Time is a non-negligible and influential factor here because many interviewees thought that participating in the zero-waste movement was time costly. Most participants have started their journey in a period in life where they had more time available to spend on personal pursuits, due to the high time consumption especially at the beginning of the participation when everything was new and required more efforts. It took time to sign up and show up to workshops; it took time to repair clothing or household items, either by oneself or going to a repair shop; it took time to follow a zero-waste challenge which requires the participation of more than 10 workshops; it took time to go to different locations for shopping instead of doing all the groceries in one big supermarket; it took time to prepare a lunch than purchasing a pre-made wrapped sandwich; and much more. Most zero-waste alternatives, by alternatives the interviewees did not only mean items of consumption, required more time investment and organization of one’s schedule than the conventional choice. They felt that the time investment became less significant once a routine was established and habits were in place. Participation in the zero-waste movement is therefore a learning process and learning takes time.

Other than time, the economic component of participation also has a role to play, which is closely tied to consumption. Some participants thought that participation in the zero-waste movement has actually led to economic advantages, even though in the questionnaire most participants would not agree. The money-saving side of the argument for grocery shopping goes as:

“When I shop my groceries in a zero-waste manner, I often buy a lot more fresh produce, vegetables and fruits, from local farmers and I also purchase vegan protein-rich items; as a consequence, I do not purchase large amount of meat and processed food, which lowers the bill. On top of that, I waste less food, meaning that I waste less money. Therefore, I actually pay less in total.”

Besides grocery shopping, the budget for fashion can also be lowered by the zero-waste movement. The ZWLM promotes reuse, so shopping for second-hand clothes is prevalent. It also promotes refuse, which applies in purchases, such as the concept of “BISOU” shared by participant 6. “BISOU” represents “Besoin, Immediatement, Substitute, Origin, Utilité”, translated into English to be “need, immediately, substitute, origin, and utility”. This concept seeks to offer a moment of reflection before jumping into a purchase fueled by emotions and desires, typically ignited by marketing strategies and advertisement, by proposing questions using each of the key words: Do I need this? Do I need this now? Do I already have something similar? Do I know the origin of this product? Will I really use it?

The economy of spending also applied on interviewees with children who often opted in toy renting and sharing rather than buying. Participant 1 explained that with a subscription fee at a library or toy-library, her children could exchange a toy every two weeks. She gave the example of a ride-on toy car that her child wanted. If she were to purchase it, it would cost at least 100 euros, it’s made in plastics, and the child would outgrow it in at most a year. Thus, renting saved money that would have been invested in the purchase and then wasted after a year. Some logic worked for books. Children’s books were expensive, and children wanted new stimulations periodically, so they wanted new books. Instead of purchasing a book for 20 euros, interviewees could have free access to the libraries in the commune or to libraries with a low subscription fee and second-hand bookstores to save money too.

On the other side of that economic view, some interviewees would not necessarily agree that the zero-waste lifestyle saved money because zero-waste alternatives were often priced higher than their conventional replacements and therefore required a higher investment upfront. For example, a reusable water bottle costs more at once than one plastic bottle of water. For parents, washable diapers costs in the beginning more than disposable ones. Even though eventually the investment will be reimbursed throughout the time of use, it is difficult for people to spend a large amount of money all at once in the beginning, thus excluding some people from participation.

Even though participation in the zero-waste movement might have an effect of saving money, saving money is not the cause of participation. The causal relationship cannot be reversed. According to Cecere and colleagues in their study of motivations for food waste reduction mentioned in the state of the art, pecuniary incentives could actually undermine the intrinsic motivations because people would have a different perception of the pro-environmental actions with monetary motivations. Non-pecuniary motivations are more important than pecuniary motives in better waste treatment and higher waste reduction.

## **7.4 Anti-consumerism**

Another critique that individualized agency in the ZWLM faces is the shifted focus towards individual responsibility, and more importantly, away from the systemic and structural causes of waste

(Sattlegger and Raschewski, 2019). According to Kalina (2020), the capitalist production makes up of the root causes of waste accumulation, more precisely, the consumerism promoted by the capitalist production. However, in the case of the ZWLM, I would argue against that alternative consumption is the main focus for participants. On the contrary, alternatives that do not involve making purchases are more accepted and sought for.

The interviewees recognized that humans did not own nature and that Earth was gracious and generous to provide human society with what we needed for thousands of years. They realized that it was only through the constant remembrance that human beings were only borrowing the Earth, could positive behaviors towards environmental protection occur. Therefore, the interviewees sought to stay humble and modest with the idea of only temporarily being on the planet and to reduce their consumption through zero-waste practices. The western society has overconsumed compared to the South, causing environmental damages on a global scale through the supply chain of products and their end-of-life treatment (Hawkins, 2012). Interviewees recognized the problematic of consumption-related environmental destruction. For example, participant 1 said, “I’m a bit insistent on reducing consumption especially here in the western society where we consume a hundred-time fold more than we should.”

The awareness of participants against capitalism responds to the frequent critique that the zero-waste movement simply replaces single-use products by reusable substitutes without taking into consideration their environmental impacts (Tan, 2019). Tan claims that participants in the zero-waste movement do not cure the disease, *i.e.*, consumerism promoted by capitalism, but superficially masking the symptoms (Tan, 2019). Such a claim is proven unjust by the interviews. The interviewees were motivated by the need to address the cause. Instead of limiting the zero-waste practices to simply purchasing different products without targeting the fundamental cause of where waste comes from, they understood that to reduce waste, it was essential to reduce consumption. They were aware that the ZWLM encompassed a broad series of themes in their daily lives, involving everything related to consumption:

“I mean zero waste is not just about food. I think it's it encompasses I would say more or less everything in your life. I mean or at least everything that involves some kind of consumption, something that you could buy, some kind of objects that you use in your everyday lives, and stuff you eat, stuff you put on yourself, etc.”  
[participant 7]

“For me, zero waste is part of something global, a more global reflection on our way of consuming, beyond not having visible waste. It is what is my impact in terms of consumerism, both human and ecological.” [participant 8]

Not only did the interviewees take into account the root cause of waste, *i.e.*, blind consumerism, by minimizing their consumption, but also did they reuse items that they already possessed to further avoid making purchases. Participant 4 reused empty plastic containers that she already owned for bulk

shopping instead of buying more glamorous and special-made containers and bags, and she gave away resealable plastic bags to friends with small businesses. What's more, the missing support in the ZWLM from the government to her was the "legislative rules against programmed obsolescence". Other interviewees upcycled furniture, repaired umbrellas, sewed various objects, shared their children's toys, and so on. It is unfair to claim that the ZWLM is all about replacing the purchase of the conventional objects by the zero-waste objects, without acknowledging the participants' efforts to avoid consumerism. The participation in the ZWLM helps to break the vicious cycle created by capitalist companies of repeating purchase, discard, and more purchase.

In this sense, the ZWLM is closely linked to another social-environmental movement, minimalism. The narratives of minimalism promote material and mental simplicity against the idea of maximizing consumption through various daily activities such as decluttering the house, freeing up time for oneself, and thinking about what really matters (Meissner, 2019). Minimalism was mentioned by multiple participants as they strived to combine it with the ZWLM. The desire to participate in both further proves that the resistance against capitalism is an important motivation since both movements target the blind and compulsive buying culture.

Therefore, the ZWLM is not just about the avoidance of plastics. It is about a way of living that's coherent with the respect towards the environment, a different way of producing other than industrialism, a different way of purchasing other than consumerism, and finally a different way of using and disposing. The interviewees seek to maintain a holistic and coherent perspective on how to treat the environment in a general sense. Participant 8 expressed her frustration when friends did not understand her systemic care for the environment, "they'll buy something industrial for us and take the packaging off and give it away because they thought that we just did not want plastics." Zero-waste practices serve as a media and a bridge to facilitate the awareness of other environmental problems that might not be as visible as waste, and foster the adoption of broader pro-environmental behaviors.

## **7.5 The hummingbird effect**

As mentioned in the results section, many interviewees used the rhetorical device of the hummingbird effect when discussing their motivations. By comparing humans with birds and animals in the forest, a similarity and bond between the human society and the environment was formed, instead of the dichotomy between subject and object.

When participants use the hummingbird effect to explain what motivates them to participate, it illustrates more than their desire of involving more people in the movement. It also compares environmental problems, in this case more specifically waste, to a forest fire. What is the forest fire known for if we think back to the news? Adjectives that are used to describe forest fires are "dangerous, urgent, uncontrollable, spreading, etc.". To use the metaphor of forest fire for waste treatment problem and plastic accumulation on the Earth is to convey the picture of an emergency. Participant 5 asked a

critical question, “would people do nothing if their backyard is on fire? No. Then why would they do nothing when the Earth is in a similar situation?” The metaphor of humans as animals and environmental degradation as a forest fire gives a very representative organic rhetorical device that both green consciousness and green politics discourses incorporate.

The hummingbird effect also implied taking initiatives as individuals despite the miniscule impacts. Rather than waiting for other more powerful actors to act, the interviewees acted directly. By doing so, they inspired and touched other actors so that the other actors could also join the movement. They were aware of the minimal direct impacts that they have on the plastics issue by comparing themselves with the hummingbird. However, even though the effects of each participant are not significant, the addition of all participants efforts leads to a significant contribution towards the reduction of waste. Moreover, knowing that they have played their role and have motivated others brought them a sense of achievement and satisfaction. The interviewees considered that the action of propagating the knowledge and ideas about waste was an empowerment for both themselves and the people who were yet to participate, conforming to the “green education” in green consciousness (Dryzek 2005, 195).

In other words, the urgency and the collectiveness of efforts illustrated through the hummingbird effect served as motivations for participation. Sadly, the sensibilization of the others did not always come easily for the interviewees. The conflicts of values frustrated the interviewees and left them wondering how to proceed in a more acceptable manner.

“I think maybe they felt judged. They thought, "(participant’s name), she's doing better than us, and she wants us to do this," or something like that. And so I found it hard to find language with them that encouraged them to behave in a way that I thought was very good.” [participant 6]

“Sometimes there are conflicts, and I don't feel respected in my values, and they feel as if they were forced to do something they don't necessarily want to do and they are also attacked in their freedom. People have the impression that we really want to impose a way of life on them.” [participant 8]

## **7.6 Being women**

As discussed in the state of the art, women are unproportionally more involved in pro-environmental behaviors (PEB) both because they are more concerned about environmental issues but also due to their economic status in a household (Gifford and Nilsson, 2014, Tindall et al. 2003, Kennedy and Kmec 2018). In this case study of the BCR, the fact that 90% of respondents to the questionnaire and all interviewees were women serves as evidence that women are more likely to engage in PEB. Another reason why more women show environmentally friendly behaviors could be that the responsibility of sustainability falls unproportionally on the shoulders of women’s since women

take up most household chores that could potentially cause environmental damages (Hawkins, 2012). Even though some interviewees' partner supported their zero-waste practices, it was nonetheless these female interviewees who took up the majority of the responsibility and the initiation of participation. They took care of daily chores supporting the zero-waste lifestyle, such as cooking, shopping, composting, and had the initiatives to go further, such as joining community groups, attending workshops, and educating their children about waste.

Interviewees stated that they felt a responsibility of becoming an environmental steward and of becoming a steward for the next generations. Their intention to care for the children was closely fused with the intention to care for the environment. This desire of stewardship was often fueled by new motherhood for the interviewees, to whom becoming a mother was a big life changing step that linked them closer to the environment because they were deeply worried about the kind of environment that would be passed over to their children.

“During the pregnancy, it was like this new child that I’m bringing to the world. I was more sensitive to these issues.” [participant 1]

“I think that since I got kids, it made me think more about it and it became more acute. So I'm thinking about what are we doing and what are we handing over to them, etc.” [participant 2]

Another motivation of adopting zero-waste practices for interviewees who were mothers was to deal with their children's health-related issues. The participation in the ZWLM brought several benefits for dealing with health problems: first, they chose toys without plastics to avoid chemical exposure by toy sharing or renting; second, they purchased second-hand clothes due to persistent chemical residue in new clothes; third, they could more easily manage children's allergies with simple ingredients that zero-waste grocery shopping offers; fourth, it was easier to avoid fast food and provide their children with local produce of a grand variety. All of these actions to ensure the least harm imposed on their children were made easier by zero-waste practices.

“It's this idea of simplicity that interests me. My son is allergic. The fact of going and buying in bulk, we buy simpler products, less processed.” [participant 4]

“for gifts for children, we try to really advocate renting, just having a base here as a toy, and rather going to the library and so on.” [participant 8]

Other than for safety and health reasons, interviewees felt responsible to transmit the awareness of environment issues and the lifestyle to the next generation. Chawla (1999) claims that children's awareness in environmental issues is most influenced by family and experiences in nature. As participant 7 said, “I think it's very important to teach the children from very young age to be conscious about environment.” For interviewees who did not have children, the family members of the next generation were important to them. Having a young niece or nephew often offered a new perspective,



to think further along in time than they had before. The interviewees educated the children and created opportunities for them to actively participate in the ZWLM such as having a routine for zero-waste grocery shopping, picking up waste on walks, attending family friendly workshops, among others.

Therefore, the interviews demonstrate that women are more engaged in the ZWLM in BCR indeed because they are more concerned about environmental issues as shown in the literature review (Gifford and Nilsson, 2014). The interviewees were conscious of the negative ecological impacts that human society had on the environment and would like to act on reversing them. The female interviewees were consequently more altruistic and responsible corresponding to what Zelezny and colleagues found out (2000). Nevertheless, their higher participation in the ZWLM might also not be a completely voluntary choice since they took care of more household chores with the burden of sustainability on their shoulders, matching Hawkins's claim (2012). Finally, the motivation of participation in the ZWLM for female participants also included their higher degree of concern in the health and development of their children, and the next generations in general, as Davidson and Freudenburg concluded (1996).

## 8. Limitations and future research directions

Due to the particularity of Brussels Capital Region, language was an unneglected barrier for the field work. Residents in the BCR speak French, Flemish and English, among others. Unfortunately, I did not have the language sufficiency for Flemish, thus, the questionnaire and the interviewees were conducted in French and English. The usage of these 2 languages might also add some variability to the analysis as translations might not always be understood in exactly the same ways.

The sample size of the questionnaire was relatively small despite efforts of diffusion so that it was difficult to generalize the results for the whole region (see Appendix IV for geographics of the respondents). This limitation could be solved if Brussels Environment were to perform a similar analysis originating from inside the organization in order to diffuse the questionnaire through its network of subscribers.

Moreover, there were also participants in the movement who did not answer the questionnaire or accept the interview, who might have a different view on their motivations. The answers from a certain type of participants who were willing to respond might not be representative for participants who were not willing to do so.

What's more, the discourse analysis and discussion presented earlier have provided sufficient evidence that the ZWLM is not apolitical in terms of its anti-consumerism standing, unequal access for certain social class, and women's disproportional responsibility. On this basis, I argue that scholars who study the ZWLM should open up a series of conversations using my thesis as a starting point and situate themselves in a lens of political ecology. Similar to what was proposed by Kennedy and Kmec (2018) for research in gender-differentiated PEB, rather than trying to understand the motivations of participation "by studying attributes of individuals, the current practice among those who study individual environmental beliefs or values, scholars should consider the impact of social context".

I propose consequently here four potential directions of research in the ZWLM. It is more for inspirations of research topics, not in any way exhaustive. The first direction could be to explore the relationship between the participation in the ZWLM and participants' socio-economic status. From the descriptive analysis above, I concluded that participants were aware of an inequality of access to the movement, due to the shortage of time or money for a certain socio-economic class. Hence, a more focused study to prove or reject the validity of interviewees' statements would be interesting and necessary for the implementation of waste-reduction strategies. If the creation of larger quantity of household waste was linked to a lower income, then the promotion of a zero-waste lifestyle should be accompanied by the determination to eradicate of poverty. Otherwise, if policies of waste reduction were implemented in a top-down manner, the poor households striped of agency would be further punished, leading to an accentuation of the inequality gap.

The second direction of future research could be the topic of consumerism via the exploration of non-consumption-related or anti-consumption practices in the ZWLM. As discussed in the state of

the art, scholars have criticized the ZWLM's inability to stand against capitalism and consumerism. Even though my analysis proved otherwise through the interviewees' practices and their awareness that it was crucial to rethink about consumption, it is a subject worth of deeper inspection. The popular discourse of the ZWLM on the internet often promotes making purchases of alternative zero-waste items, which might give an impression of ZWLM's failure to address capitalism and fulfill its original purpose. However, it would be meaningful to investigate whether this popular discourse is representative of the reality in participants' daily life.

In addition, the third research direction that I propose is to delve on the subject of nature's agency. From the discussion above, nature and human do not have to be in the relationship of object and subject. The social and ecological entities are interdependent, and their agencies intertwined. Human's agency cannot be exercised without the specificity of the environment. The ZWLM could serve as an entry point to discover whether the dichotomy between human and the environment holds in social-environmental movements.

Finally, the fourth potential direction is to relate ZWLM to the domain of ecofeminism. Existing literature evidence and the case study in BCR have shown that women participate more than men in the ZWLM, Researchers could study the reasons behind this inequality. Do the social expectations shaped by power inequality between men and women cause the gendered difference in participation? Researchers could test the hypothesis whether the participation has a positive or negative impact on women. It is probable that women participate in the ZWLM because they consider the participation as a way of feminist empowerment through care for the environment; but the opposite could be true as well, that doing household chores in a pro-environmental manner is an assigned task by the patriarchal society that adds to their burdens.

I have listed these four potential directions in the hope of encouraging deeper and more specific studies on the ZWLM to make up for the current lack of scientific research on the topic, and consequently helping readers to view the ZWLM as a complex and political movement with diverse aspects that are worth of more interest.

## 9. Conclusion

In conclusion, the desire to reduce negative ecological impacts and to care for the environment as an individual was the most influential motivation. Participants valued the beauty of the Earth and aimed to replace polluting actions with stewardly ones. The pro-environmental motive was followed by a strong aspiration to change the present production and consumption system. To achieve so, on the one hand, participants hoped to change the industry by applying consumer sovereignty and to get support from the governmental policies; on the other hand, they focused on sensibilizing others with ideas and changing their consciousness and consequently behaviors. The future generations played an important role in initiating and supporting the participation. It was essential for participants to raise children in a healthy and safe environment and leave a clean planet for the future generations.

The discourse adopted by the interviewees to describe their motivations in the ZWLM was best fitted with green radicalism that contains both green consciousness and green politics. While the discourse of green consciousness states that the alteration of the mindset, ideas and thoughts of one is the most important in order for his/her behaviors to change, the green politics discourse incorporates the importance of structural and material elements in a process of adopting pro-environmental actions. The interviewees in the ZWLM covered both perspectives, according to Dryzek's checklist of elements for discourse analysis. They perceived emotions and consciousness to be essential in transitioning towards a pro-environmental lifestyle while recognizing the non-negligible impacts that economic and political structures exercised through infrastructures and the focus on growth.

The discourse adopted by ZWLM participants further demonstrated the existence of a series of political dimensions in the movement, which addressed the shortcomings of the existing literature. The interviewees perceived the agency of participation to be distributed unequally among individuals, dependent on one's socio-economic status. The issue of access and power distribution was a non-negligible political aspect. The present participants share a common socio-economic background, which could deter people who belong in different social groups from entering. The ZWLM would never be widespread to everyone if the barriers to participation were not studied and resolved. These barriers are physical and material, such as infrastructures, money, and time; but they could also be feeling out of the place and unwelcome.

The aspect of power dynamics also evolved around the economic structures. Interviewees exercised their consumer sovereignty to try to effect changes in the industry while following anti-consumption practices. They believed that the participation in the ZWLM could lead to a new perception on consumption and growth and serve for their political standing of anti-capitalism.

In addition, nature's agency was largely downplayed in the interviewees' perspective. They portrayed an image of a small and fragile Earth being held in the hands of humans, in which humans had a life-or-death impact on the survival of the planet. The interviewees believed in humans' power to destroy or save the environment, while the environment could not exercise agency. The interviewees

nonetheless followed Nash's perspective (2005) on the interconnectedness between humans and the environment. The dichotomy did not exist because the possibility of participation was environment-dependent and context-specific.

Finally, the female-dominant participation in the ZWLM matched the present literature. The interviewees expressed their concern for the health and safety of their children, which was a strong motivation for mothers. Other reasons to explain this gendered participation corresponded with the literature, for women were more concerned by environmental issues, and took up most of household chores where the responsibility of sustainability lied.

The participation in the ZWLM is motivated by a multiplicity of reasons that are intertwined and complex. It is political and nuanced. It serves as a media for the participants to express their perceptions on societal issues, for example, the environmental degradation, the emphasis on economic growth over anything else, and the unproportionate responsibility on the shoulders of women. I hope that this thesis serves as a starting point for the ZWLM to be seen with its political aspects, for these political aspects to be questioned, studied, and answered.

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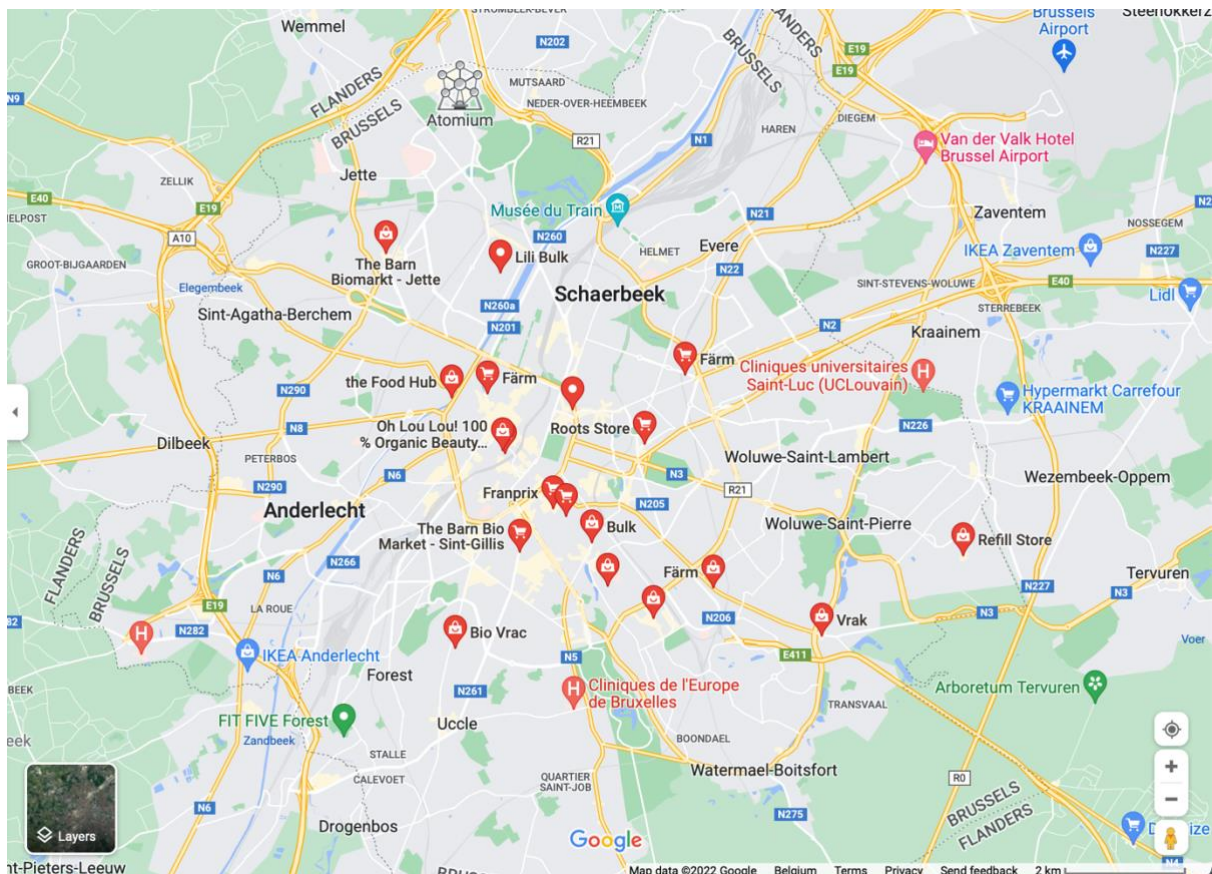
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# Appendices

## Appendix I: BCR case study of spatial inequality in the ZWLM

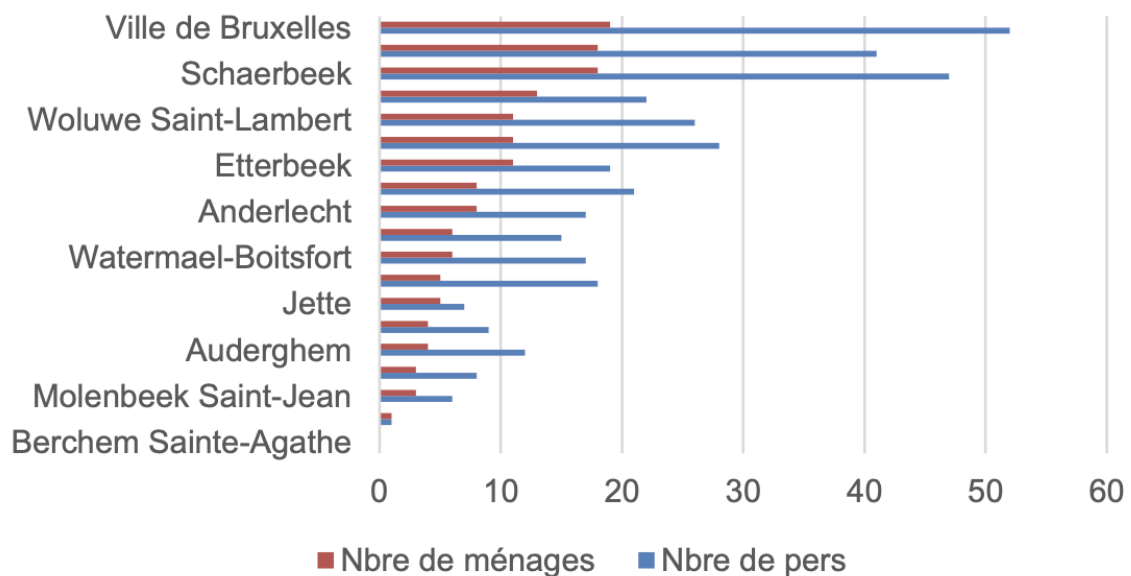
I have performed a case study for the BCR through two representative parameters of participation in the ZWLM to test the equality. The first parameter is the infrastructures supporting the ZWLM represented by bulk stores. The second parameter is the number of participants in the Zero Waste Challenges organized by Brussels Environment.

Even though bulk shops cannot represent the entirety of the infrastructure of the ZWLM, they are nonetheless a big part of many people's zero-waste journey and could therefore be representative in a preliminary way. The result shows that the popular neighborhoods such as Molenbeek-Saint-Jean and Anderlecht, are less equipped with stores that could support the zero-waste lifestyle. There is a self-perpetuating cycle of the poor not participating in the zero-waste movement due to its difficulty of access, the lack of infrastructures since there are not enough participants in a neighborhood, more unequal access to the movement due to the inexistence of infrastructures, and so forth.



**Figure 1:** A screen capture of Google maps for the distribution of bulk shops in the Brussels Capital Region.

Other than the lack of infrastructure, there is a lack of participation in the zero-waste challenge organized by Brussels Environment. From Figure 2, we can see an unequal distribution of participants from different communes of the Brussels region. The quantity of households participating in the challenge from the top three communes constitute of 55 households while the bottom three communes only have about 10 participating households. This inequality in terms of geographical participation could be due to multiple reasons: the lack of promotion and advertisement of the zero-waste challenge in certain communes; the lack of enthusiasm from the inhabitants to participate; unequal access to the challenge because there is a selection process; the feeling of not belonging and the sense of being “not in my place” could also deter people from signing up to the challenge. It would be an interesting thesis topic for others in the future to find out the reasons of the lack of participation for people, but I cannot claim which reason it is here.



**Figure 2:** Number of households and participants in the zero-waste challenge 2021 organized by Brussels Environment, per commune (Bruxelles Environnement, n.d.).

## Appendix II: Top five motivations for the four age groups

The number in the parenthesis shows the number of respondents. For example, the 20-29 age group had 9 respondents, out of which 8 picked environmental concerns as one of their main motivations for participation, 7 picked their role in transforming the industry, etc. When several motivations had the same number of votes, the order is arbitrary (e.g., Children & Reactions to Policies in the 30-39 age group).

**Main motivation per age group (number of answers)**

| 20-29 (9)                             | 30-39 (15)                            | 40-49 (9)                             | 50-59 (5)                             |
|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| Environmental concerns (8)            | Environmental concerns (15)           | Environmental concerns (9)            | Environmental concerns (5)            |
| Role in transforming the industry (7) | Role in transforming the industry (9) | Role in transforming the industry (6) | Role in transforming the industry (4) |
| Guilt (3)                             | Children (4)                          | Children (4)                          | Children (2)                          |
| Family and friends support (2)        | Reactions to politics (4)             | Identity (2)                          | Reactions to politics (1)             |
| Children (1)                          | Guilt (3)                             | Guilt (1)                             | Identity (1)                          |

**Figure 3:** Ranking of top five main motivations for the four age groups.

### Appendix III: Demographics of interviewees

**Table 1:** Demographics of interviewees

| Participant   | Gender | Age   | Commune              |
|---------------|--------|-------|----------------------|
| Participant 1 | Female | 40-49 | Woluwe-Saint-Lambert |
| Participant 2 | Female | 50-59 | Brussels             |
| Participant 3 | Female | 40-49 | Molenbeek-Saint-Jean |
| Participant 4 | Female | 50-59 | Forest               |
| Participant 5 | Female | 20-29 | Etterbeek            |
| Participant 6 | Female | 30-39 | Etterbeek            |
| Participant 7 | Female | 30-39 | Schaerbeek           |
| Participant 8 | Female | 30-39 | Saint-Gilles         |



## Appendix IV: Geographics of the questionnaire respondents

Out of the 19 communes in BCR, the questionnaire respondents only represented 13 communes, meaning that there was a complete lack of response from 6 communes. Furthermore, there were 19 respondents from the top three communes versus 3 from the last three communes (or 0 if we take the absent ones). There was a large gap of representativity between communes. Therefore, the questionnaire results would be difficult to be generalized for the entirety of the BCR.

**Table 2:** Geographics of the questionnaire respondents ranked by number of respondents per commune

| Commune              | Number of respondents |
|----------------------|-----------------------|
| Schaerbeek           | 7                     |
| Etterbeek            | 6                     |
| Brussels Center      | 6                     |
| Ixelles              | 4                     |
| Woluwe-Saint-Lambert | 3                     |
| Woluwe-Saint-Pierre  | 3                     |
| Auderghem            | 2                     |
| Anderlecht           | 2                     |
| Uccle                | 2                     |
| Molenbeek-Saint-Jean | 1                     |
| Laeken               | 1                     |
| Ganshoren            | 1                     |
| Forest               | 1                     |
| Total                | 39                    |

## Appendix V: English version of the online questionnaire

# Motivations for participation in zero waste movement

Pour la version française, merci de cliquer ici: <https://forms.gle/R9JXjg6VLPQybtAt9>

Hi, thank you for your curiosity and passion about the zero-waste movement. I am Xiaoxi, a second-year master's student in environmental management at ULB. I would like to get to know a bit about you, and what have driven and are still driving you to participate in the zero-waste movement. Personally, I have learned about the movement through social media three years ago. It took me about a year to really get into it. From time to time, I drift out and back in. It can be challenging in certain phases of our life to constrain our actions because of it. However, I am still here, trying to understand better why we practice zero waste actions despite all the difficulties. What supports us? What drives us?

---

\* Required

### Geography

1. Do you live in the Brussels capital region? \*

Mark only one oval.

Yes.

No.

Researcher: Xiaoxi Liu  
Contact: [xiaoxi.liu@ulb.be](mailto:xiaoxi.liu@ulb.be)  
Supervisor: Maria Mancilla Garcia  
Contact: [maria.mancilla.garcia@ulb.be](mailto:maria.mancilla.garcia@ulb.be)  
Institutions: Institut de Gestion de l'Environnement et d'Aménagement du Territoire (IGEAT)  
Université Libre de Bruxelles

Before jumping into the survey questions, I kindly ask you to please take some time to read the following information carefully. You may ask questions about anything you don't understand or want to know more about.

What is this research about?

This online survey will capture the motivations of why people participate in the zero-waste movement in the Brussels Capital Region. It will provide an overview of the drivers and reasons, which could serve to promote the movement by organizations, the public, and the government.

What will I be asked to do?

Should you agree to participate, you will be asked to complete a single online survey. We anticipate the survey should take approximately 10 minutes to complete.

How do I consent to participate?

Plain  
Language  
Statement

By completing the online survey, you are consenting to participate in the study. Completion of the survey will be taken as agreement from you that the information you provide in the survey can be used in this study and any future, closely related studies of the zero-waste movement. The results of the study will be used in a master's thesis.

What are the possible benefits?

You will be helping a young researcher in her first field research. You will also help understand the movement of which you are a part. Therefore, you will potentially contribute to the promotion and fostering of the zero-waste movement.

What are the possible risks?

We do not expect there to be any risks associated with this study.

Do I have to take part?

No. Participation is completely voluntary. You are able to withdraw at any time. Also, if you decide to take part but later change your mind, you are free to withdraw any unanalysed data that you have previously supplied. Your decision about whether to participate or continue in the study will not affect your relationship with the researchers involved in this study or the University Libre de Bruxelles.

Will I hear about the results of this project?

Once we have analysed the data, we can send you a summary of the overall study results if you wish.

What will happen to the information about me?

All aspects of the project, including results will be strictly confidential and only researchers involved with the study will have access to your information. Your identity will remain anonymous in data storage systems and in any presentation or publications produced. A report of the study may be submitted for publication, but individual participants will not be identifiable in such a report. Data collected may be accessed for possible future related studies.

Can I access research information about me?

As all data collected is anonymous, information about individual participants will not be available, only the collated group data which will be presented in the report as detailed above.

Can I ask other people I know to participate?

Yes, the success of this research project relies on large numbers of participants who are a part of the zero-waste movement. We welcome and encourage you to transfer the survey in your circle. As all information is anonymous, we request that you inform anyone who you think may be interested in participating in this project.

Who is funding this project?

No funding has been provided for this study.

Who can I contact for further information?

If you would like to know more about this research or have any questions regarding this study please feel free to contact the following researchers:

Mrs. Xiaoxi Liu: [xiaoxi.liu@ulb.be](mailto:xiaoxi.liu@ulb.be)

Dr. Maria Mancilla Garcia: [maria.mancilla.garcia@ulb.be](mailto:maria.mancilla.garcia@ulb.be)

Consent  
Form

I consent to take part to the research project entitled "Motives of participation in the zero-waste movement in Brussels Capital Region", carried out by Xiaoxi Liu under the supervision of Maria Mancilla Garcia, whose email is [xiaoxi.liu@ulb.be](mailto:xiaoxi.liu@ulb.be) and whose phone number is +32495176950.

By signing this form, I acknowledge that:

1. I voluntarily take part to this project.
2. The researcher has informed me in writing of the goals of the research project, its development, and of its possible advantages and downsides.
3. I will be given no payment for taking part to the research project.
4. I can refuse to answer certain questions.
5. Quotations from the survey can be used in later written publications and oral presentations resulting from this project. Still, my identity, my function, or any other information that can help identifying me will be kept secret at all time.
6. I can, at any moment, take back my consent without reasons and without being penalised.

2. Do you consent to participate in this project? \*

*Mark only one oval.*

- Yes, I consent.
- No, I do not consent.

Demographics

3. How old are you?

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4. What is your gender?

*Mark only one oval.*

- Female
- Male
- Non-binary
- Prefer not to say

5. What is your occupation?

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6. What is the size of your household, including you?

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7. Which commune do you live in?

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#### Survey Questions

8. How long have you been participating in the zero-waste movement? \*

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9. Which level of expertise do you consider to have in zero waste practices?

*Mark only one oval.*

Beginner

Competent

Expert

10. Are environmental concerns something that you try to deal with through participation?

*Mark only one oval.*

It's the reason why I participate.

I am aware of the problems, but that's not why I participate.

I am not aware of the environmental concerns.

11. Do your friends or family also participate?

*Mark only one oval.*

Yes

No

12. If so, do they influence you in participating?

*Mark only one oval.*

They support and encourage me.

I am doing it by myself.

13. Are others' opinions on the participation important to you?

*Mark only one oval.*

They matter to me.

I don't care what other people think of the zero-waste movement.

14. Do you feel a sense of community and connection through the movement?

*Mark only one oval.*

No, I don't feel it.

Yes, it brings us together.

15. Do you follow any social media?

*Mark only one oval.*

Yes

No

16. If so, which Youtubers, Instagram accounts, Facebook groups, or others?

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17. Do you have children?

*Mark only one oval.*

Yes

No

18. If so, how old are they?

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19. If so, do you participate in the zero-waste movement for your children?

*Mark only one oval.*

Yes, they inspire me.

No, I am doing it for other reasons.

20. Are you happy with Brussels's waste treatment?

*Mark only one oval.*

- I am not happy about it.
- I am satisfied with the waste treatment.
- I am not familiar with it.

21. Do you participate to respond to the region's policies?

*Mark only one oval.*

- Yes
- No

22. If so, what goal(s) are you trying to achieve?

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23. Would you feel guilty when you didn't achieve zero-waste?

*Mark only one oval.*

- Yes, I feel that.
- No, I will just try again.



24. If so, how this guilt affect you?

*Mark only one oval.*

- It motivates me to keep trying.
- It makes me less enthusiastic.
- It doesn't affect me.

25. Does living a zero waste lifestyle bring you personal victory or feelings of achievement?

*Mark only one oval.*

- Yes.
- No.

26. Are the financial advantages a motivation for you?

*Mark only one oval.*

- Yes, it's great to save money.
- No, it actually costs more.
- I am not sure whether it's a financial advantage.
- I do not care whether it's a financial advantage.

27. Would you say zero waste is a part of your identity?

*Mark only one oval.*

- Yes
- No
- Not sure

28. Do you think that you, as an individual, plays a role in changing the consumer industry by refusing to purchase wasteful products?

*Mark only one oval.*

- I think I play a role in changing the industry.
- I don't think that I am making a change by myself.

29. In all the reasons above, which one(s) are the most important ones that motivate you in zero-waste movement?

*Check all that apply.*

- environmental concerns
- family and friends
- other people's opinions
- community and connection
- social media
- my children
- response to the policies
- guilt
- financial advantage
- identity
- role in transforming the industry

30. Are there any other motivations that are not mentioned above?

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End of survey - I really appreciate you having taken the time to complete the survey. It plays important role in advancing in my thesis. Thank you.

31. If you are interested in potential in-depth interviews in the future, please leave your contact information below.

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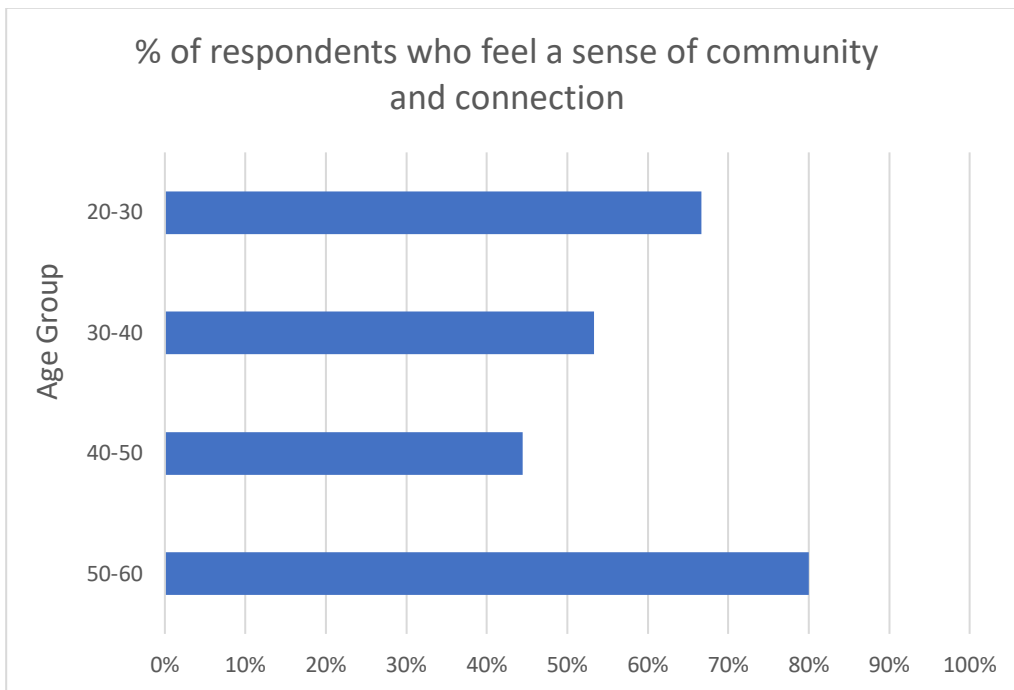
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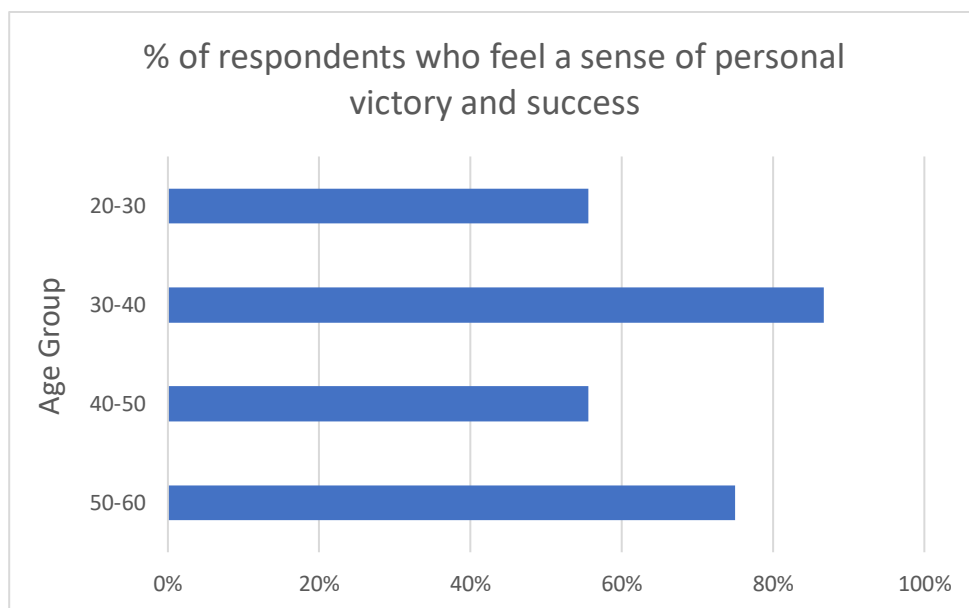
## **Appendix VI: Interview guide**

1. Could you please tell me why you participate in the zero-waste movement?
2. What do you enjoy from the participation?
3. What are some difficulties? Are they resolved? If so, how?
  - a. Were there any moments when you wanted to stop? Why did you or why didn't you stop?
4. Do you remember any important events that have happened during your participation? Why are they important to you? Or what do these events mean to you?
  - a. For example, the Brussels zero waste challenge, community compost, friends, children, etc.
  - b. What are some important times/locations/people to you?
5. What do people around you, such as your friends and family, think about the zero-waste movement?
6. What actions are provided by the zero-waste community to support new members and existing ones? What do you think are great and what are lacking?
7. Do you think that your motivations for participation have changed during the past years?
8. If the interviewee has children, then ask does having children change anything in your participation? And how?
9. If the interviewee has mentioned their environmental concerns, then ask how have the environmental concerns influenced you?
10. What do you think about the current waste management system of the Brussels Capital Region?

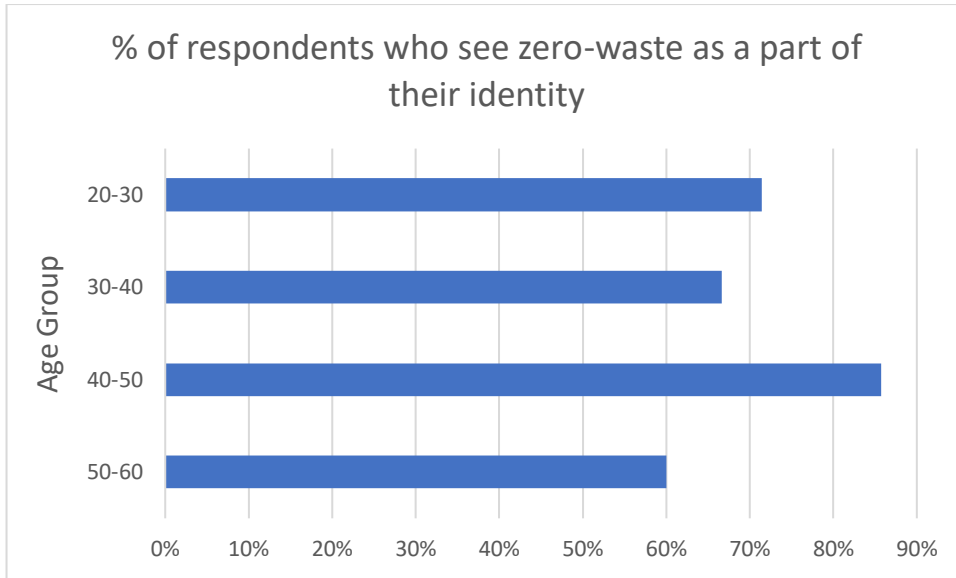
## Appendix VII: Extra questionnaire results



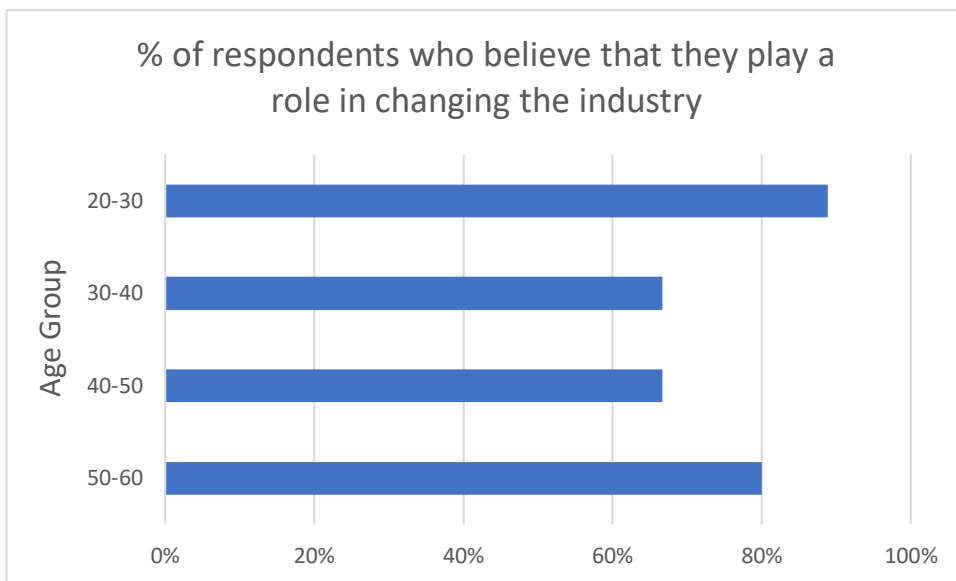
**Figure 4:** Ratio of questionnaire respondents who feel a sense of community and connection through the participation in the ZWLM



**Figure 5:** Ratio of questionnaire respondents who feel a sense of personal victory and success in the ZWLM



**Figure 6:** Ratio of questionnaire respondents who see the participation in the ZWLM as a part of their identity



**Figure 7:** Ratio of questionnaire respondents who believe that they play a role in changing the industry