Emerging Adults' Negotiation of their Personal and Structural Responsibility in relation to E-commerce-related Plastic Waste.

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Abstract

Plastic packaging waste generated by E-commerce is a growing environmental problem. Addressing the problem requires actors to be responsible for harmful consequences, and this responsibility is often placed on the individual consumer. This study examines how emerging adults in the Netherlands negotiate personal and structural responsibility for plastic waste in their everyday lives, with a focus on plastic waste generated through online shopping. Using a qualitative research approach, fourteen interviews were conducted, preceding a two-week diary method in which E-commerce experiences were documented. Five thematic groups were found: Plastic Framing, Normalisation and Awareness, Intention Barriers, Affective and Behavioural Response, and Responsibility.

The findings show participants accepting responsibility for the correct disposal of packaging waste, while rejecting responsibility for the existence and quantity of the packaging, placing the responsibility on upstream actors, who hold the power to make decisions over the packaging. The participants' negotiation of their responsibility was shaped by structural barriers, which include convenience, price, and a virtually complete absence of consumer choice over packaging in E-commerce. Three theoretical frameworks, the value-action gap (Barr, 2002), the structural debate on responsibility (Evans et al., 2017; Waite, 2025), and moral disengagement (Bandura, 1999), show that the gap between participants values and their actual behaviour is not a product of them feeling indifferent towards the consequences of their actions, yet they show structural conditions that constrain consumer actions. The study concludes that framing the consumer as primarily responsible for the generation of plastic waste through E-commerce is inaccurate and counterproductive from the perspective of the individual consumer, and responsibility should be redistributed across different actors.

Keywords: plastic packaging waste, E-commerce, responsibility, value-action gap, moral disengagement, emerging adults, sustainable consumption

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Plastic is visible everywhere, from food packaging to hygiene products. Some, if not most, of these plastic products have a short lifespan, meaning they soon become useless, after which the item is disposed of and placed out of sight. This disposable culture is fueling a waste crisis that is escalating at a staggering rate, with an annual growth rate of 8.6% since 1950, of which most of the waste consists of single-use plastics. The overall plastic waste generation grew from 1.5 million metric tons in 1950 to a projected 650 million tons by 2050 worldwide. Yet, recycling is expected to process a mere 15% of all plastic waste, with the main disposal method being landfills, with 60% of plastic being left at these disposal sites (Fayshal, 2024). Of this total plastic waste, each person living in the European Union generated 36.1 kilos of plastic packaging waste on average in 2022. Totaling to a total plastic package waste of 16.16 million tonnes, of which just over forty percent was recycled (European Parliament, 2024). This raises the question of who bears responsibility for the plastic waste produced.

A history of plastics

In the nineteenth century, the development of modern thermoplastics began. In 1839, Eduard Simon discovered polystyrene, the first thermoplastic (Andrady & Neal, 2009). In 1855, Alexander Parkes patented “parkesine”, the first cellulose-based plastic, after which John Wesley Hyatt patented Celluloid, which was used to make billiard balls. In 1907, Leo H. Baekeland developed Bakelite, which he claimed was the world’s first durable plastic (Waite, 2025). Development continued through the nineteenth century, but modern plastic expanded massively in the West during the twentieth century, specifically during the Second World War, when plastic was used in military products (Andrady & Neal, 2009).

Plastic proved to be highly useful and versatile for use in a wide range of types and forms (Andrady & Neal, 2009). There are four reasons why plastics have become so widespread: 1) Plastic is easily molded into any product that is desired, whether this is a

durable, cheap product or packaging. 2) There is a wide range of plastics to choose from, meaning that there is always a plastic that can cater to exact manufacturing needs. 3) They are strong, lightweight, and deteriorate slowly, making them a quality material for products themselves, or that protect products if they are used as packaging. Moreover, they can be used at a large range of temperatures, and are resistant to chemicals and light. 4) They are cheap to manufacture (Andrady & Neal, 2009; Waite, 2025).

Plastic as waste

Plastic has always been a byproduct, even before it was considered waste by many. It begins as waste, the chemical components making up plastic - ethylene, benzene, phenol, propylene, acrylonitrile - are byproducts from fossil fuel production (Franklin-Wallis, 2023). Plastics are made up of polymers, a chemical compound whose molecules are very large, resembling long chains of interconnected links. Polymers that are used in plastics can be divided into two groups, thermoplastics and thermosets. Thermoplastics are easily reheated and remolded multiple times, such as polyethylene (PET or PETE) and polystyrene (PS). Thermosets cannot be remolded during reheating. During the initial process, thermosetting plastics undergo a chemical reaction that results in them becoming an infusible plastic (Rodriguez & Ferdinand, 2026). The most used plastics, in no particular order, are (Soliz et al., 2024; Waite, 2025): 1) Polyethylene Terephthalate (PET or PETE), a thermoplastic standard polymer which can be easily remelted and reused, and is commonly used in plastic drink bottles (Wunderlich, 2002). 2) Polystyrene (PS), a thermoplastic polymer characterized by its low melting point and slow degradation, which is commonly used as protective packaging (Rajmohan et al., 2020). 3) Low- and high-density polyethylene (LDPE and HDPE, respectively), a thermoplastic polymer made from monomer ethylene, often used for juice bottles, squeezable bottles, and small plastic bags, such as garbage bags (Lanaro et al., 2018).

The problem, and its value, with plastic is its incredibly long lifespan, with some virtually lasting forever. PETE, the most common thermoplastic, takes 450-1000 years to break down (Plastics Europe, 2023). And LDPE requires between 500 and 1000 years to degrade (Plastics Europe, 2021). Because of this, plastic does not disappear without recycling practices, but the main issue with plastic recycling, according to the European Parliament (2024), is the price and quality of the recycled product, compared to that of unrecycled and new plastic. Moreover, even recycling biodegradable plastic often poses a challenge, as industrial conditions are needed to break down the plastic. And even if we do decide to take the expensive route and recycle, some plastic simply can not be recycled. Furthermore, in the healthcare sector, disposability is crucial to ensure that no contamination can harm in such a sensitive situation (Konrad, 2023). Another challenge is the different polymers used within one product. Take plastic bottles, for example, the caps are made of different polymers, and separating these can be expensive and a technical challenge (Waite, 2025)

Sustainability issues related to plastics

Plastic waste has a massive impact on the environment. Plastic debris accumulates in oceans and ecosystems, where it persists for years before degrading slowly, posing threats to marine life and biodiversity (Barnes et al., 2009). Particularly concerning is the breakdown of plastics into microplastics, which, once ingested by organisms, cause harm to their cells and tissues (Barnes et al., 2009; Thompson et al., 2004). These microplastics enter food chains and ultimately reach human consumption. Furthermore, the vast majority of plastic waste ends up in landfills or the natural environment, representing an ecological and public health crisis, as plastic releases toxic chemicals (Rochman et al, 2013). Because of the sustainability issues connected to plastic use, reduction has been forwarded as one of the Sustainable Development Goals. Reducing plastic is a necessary part of ensuring sustainable consumption and

production patterns. This goal specifically targets reducing waste generation and strives for sustainable practices around the entire chain of consumption and production.

E-commerce plastic waste

A large amount of plastic waste is generated by E-commerce through the production of goods and the packaging material used in shipping (*Goal 12 | Department of Economic and Social Affairs*, n.d.). Yet, the responsibility for achieving the goal is not straightforward. The current E-commerce structures leave the consumer with limited choices in their plastic consumption. Online retailers are key players in the decision-making of plastic packaging. This makes it hard for consumers to limit their plastic consumption. Plastic easily caters to the needs of online retailers and the consumer, as its convenient and standardized system. Because of the dependence consumers have on these companies, and no influence on the packaging, do consumers even have a choice, and can we blame them for the plastic waste they generate, or is plastic waste a product of our environment and the rigid social structures?

Literature review

This literature review is organised in five sections. It begins by giving a theoretical view on waste and the evolution of its cultural identity, and examines the shift of waste becoming a moral issue. Secondly, it looks at people's relationships and behaviour towards waste, introducing the gap that exists between people's values and behaviour. Thirdly, it examines individuals' psychological negotiation of responsibility through moral disengagement. Fourthly, it continues to discuss how E-commerce has transformed waste generation because of packaging practices within logistics and design. And finally, it outlines the contested question of responsibility for waste generation, looking at how responsibility is framed through time. The review focuses mostly on plastic packaging waste in general, and in the context of E-commerce, extending the scope to general packaging in certain instances. While there exists extensive literature on waste, this literature review does not engage with other types of waste, such as industrial, food, and municipal waste.

The review adopts a critical stance towards individual responsibility for waste generation, drawing on academic literature problematising responsibility discourses. It is motivated by the tension that plastic packaging waste is increasingly recognized as a problem, while responsibility to manage this threat is continuously framed at the individual level. Moreover, when looking into our relationship and behaviour towards waste, the review does not focus solely on packaging or plastic waste, but instead our general relationship with waste, seeing our relationship with waste is homogeneous; once we deem something waste, its material composition becomes irrelevant. These findings may therefore hold broader relevance, extending to other forms of waste, and are not limited to plastic waste alone.

Theoretical lens on waste: distance, visibility, and valuation

In Konrad's (2023) book, Louise Dennis writes about the evolution of plastic and society's relationship with the technology. Plastic occupies a dual role, being viewed as a high-tech miracle, but also a cheap substitute for quality material. During the Second World War, plastics were essential for technologies, and after the war, it was used in new forms throughout society. Because of this large range of uses, plastic suffered a cultural identity crisis. It was originally used to mimic more expensive materials and was often seen as inauthentic and inferior. Designers advocated embracing plastics because of their own unique qualities, rather than it being an inferior product. During the 20th century, this view shifted quickly due to mass production; plastic was seen as cheap, especially because it was used in many cheap products. By the 1980s, plastic regained its high-tech image due to large improvements, which increased its versatility and ability to support modern-day consumption.

Historically, waste has always been a technical issue, a struggle of effectively dealing with discarded items. Post-war consumerism changed this to a moral issue, an attitude of disposability, which allowed people to discard items without much concern or feeling of responsibility (Hawkins, 2001). Konrad (2023) posits that disposability became a sign of wealth and cleanliness post WWII, as it was valued for its protection from contamination. It created an ethically insignificant attitude towards waste, where disposal was more of a technical issue, not a moral problem. Throwing something away breaks the relationship with the object, creating a disassociation from its waste. Currently, visible waste is evidence of environmental harm, whether out in the open on the street or in a container where it can be seen, and it is no longer just a matter of being out of place, but something that needs managing, as conceptualized by Mary Douglas (1966). Household practices have become more complex. We started sorting waste into categories for recycling, rethinking what items we discard and what we re-use, repair, or repurpose, and buying sustainable products. These practices require time and attention,

resulting in the cultivation of environmental consciousness and a feeling of responsibility towards the products we discard every day. However, our ethical decisions regarding waste can also work counterproductively, provoking uneasiness because of overfilled bins or the mess of sorting, resulting in our decisions also being shaped by aesthetic and emotion. We expect these actions, such as recycling or sorting, to feel positive, yet this uneasiness may override our intended actions (Hawkins, 2001).

Hawkins (2001) draws on an ethical presumption that argues that the self is formed through a relationship with the 'outside'. This includes waste, which creates a different understanding of oneself through one's sensitivity to change. Grounding ethics in responsiveness shows a reaction to unsettling or unexpected situations, rather than guilt or responsibility. This means that moments where waste disturbs, annoys, or triggers any emotion tell us something about ourselves and reveal a part of our relationship with waste. She also explores our relation to waste from a positive perspective rather than guilt. Reusing e-commerce packaging, for example, as repurposed storage boxes, or bubble wrap to use for future shipping of products, shows reusing and repurposing rather than discarding.

How do we decide what becomes waste? Gregson (2023) postulates that waste does not simply appear; instead, it emerges through a process of valuation and decision making, which is a rational approach to waste. The first step is that things become part of the surplus. Goods are no longer needed or wanted because they are rarely used, replaced, or considered useless. Items can move in and out of this surplus, for example, seasonal clothing. Before discarding an item, its worth is assessed, and if it still holds value, it might be decided that the item is given away, sold, or kept in circulation within the individual's direct social network. Value is assessed based on aesthetic, sentimental value, or functionality. If the individual deems the item useless through the process of valuation and decision making, it becomes waste. This is

often seen with packaging waste from E-commerce, as consumers rarely have any use for the cardboard box or plastic packaging. It is deemed invaluable, and becomes waste.

Consumer behaviour and the value-action gap

Barr (2002) found that the relationship between environmental values and behavior is disjointed from each other; there exists a gap between what individuals value and the actions they take; 'the value-action gap'. His research found that environmental behaviour, such as recycling, is not driven by one's values, but by the convenience of an action. This is highly prevalent in E-commerce, which is built on convenience. Although one's values may not align with E-commerce, the convenience of ordering from your phone, getting it delivered to your house, and the time you are saving may result in them acting in contradiction to their values. Barr's value-action gap suggests that if selecting low-waste packaging, or recyclable packaging, is inconvenient, preferences regarding convenience will be prioritised by consumers, regardless of their environmental values.

One of the variables in the value-action gap is context, which shows how spatial and temporal elements affect the convenience of an action. In his research, spatial context was measured by a household's access to street-side bins and the amount of materials that are recyclable at the nearest waste deposit site. E-commerce changes this context; packaging is simply a byproduct of ordering online, creating a temporal distance between buying the product online and the decision of what to do with its packaging. Additionally, as waste generation is usually irregular, packaging instantly becomes waste when the product is delivered. The consumer only interacts with packaging at the end of its lifetime, as it has already served its purpose. This further creates a spatial and temporal distance, increasing the chance that the consumer chooses the convenience of not recycling or properly disposing of the packaging material. However, the absence of the concept of producer responsibility becomes apparent if

we look at E-commerce through the framework of Barr, because consumers are not the sole actors and packaging decisions are made by retailers or logistics companies (Barr, 2002).

This aligns with a study conducted by Davies et al (2002), in which they examined models that predict behavior. They found that there was a mismatch between an individual's intention and their behaviour by looking at a kerbside recycling programme in the UK, similar to the study conducted by Evans et al (2017). Davies et al (2002) found that this 'intention-behaviour' gap shows that an individual's stated intention does not lead to behaviour accordingly due to several reasons. Firstly, they found contextual and practical obstacles, such as a lack of information, forgetting collection days, and not wanting their neighbours to see their waste. Secondly, intentions may be mistaken by the individuals themselves when they have not given substantial thought to their own values, which makes them more prone to misalign with their actions. Lastly, recycling is often a habitual task that has to be replaced by the habit of simply discarding items in the bin, which is often overlooked in the models that predict behaviour. Most likely, this same gap exists for E-commerce packaging. Consumers likely hold values about the importance of recycling, yet due to convenience or a lack of time, their actions misalign with these values.

In line with this, Elizabeth Shove (2010) brings up the ABC framework, which posits that environmental damage is thought to be a consequence of individual behaviour, and that damage can be negated through better information, appropriate incentives, and behavioral intervention, underpinning the responsibility the consumer holds for their plastic waste generation. However, Shove identifies several crucial limitations to this model, arguing against this ABC framework. Two of these limitations are 1) contextual factors, which reveal that infrastructure can shape an individual's behaviour. Barriers that create systematic complexities in decision-making can alter one's choices. And 2) the model ignores that governments,

institutions, and companies can structure possible courses of action, limiting one's choices. Using these limitations to look at plastic waste generation from E-commerce, Shove argues that unsustainable consumption and the responsibility of plastic packaging waste do not necessarily lie with the consumer; unsustainable consumption stems from contextual factors and infrastructures.

Yet, Evans, Welch, and Swaffield (2017) state that the ABC framework critiques have some flaws themselves. In other words, the criticisms, including those put forward by Shove (2010), that responsibility is placed predominantly on individuals, do not hold water. While they do successfully challenge assumptions on an individual level, they fail to explain the mechanisms by which governments, institutions, or companies attempt to construct and mobilize consumers. Moreover, they often neglect that responsibility may be reframed as shared over time.

Moral Disengagement

Within the context of E-commerce, Bandura's (1999) theory of moral disengagement is another central theoretical framework for understanding how individuals negotiate responsibility for plastic waste. Bandura posits that individuals possess internal psychological processes that help prevent them from behaving harmfully. They make themselves experience guilt or shame when acting against their own moral standards, yet continue to do so because these processes are not always active. Firstly, individuals may morally justify actions, in which harmful conduct is reframed as serving a socially or morally acceptable purpose. Secondly, individuals may displace their responsibility by attributing their behaviour to the dictates of parties with authority. This is closely related to diffusion of responsibility, in which harmful outcomes are the product of collective action, resulting in the individual who only undertook one harmful action not feeling fully responsible. Lastly, individuals may discard or diffuse the consequences that are a result of

their actions, which may happen when the effects of those actions are physically or temporally distant.

Plastic waste, which is created by e-commerce, creates the same conditions Bandura (1999) describes as moral disengagement. Within the supply chain, no single actor has full visibility of the harm that is produced. Consumers place the online order, retailers choose which and how much, materials are used for packaging, logistics providers may choose to use more packaging material and ship the product, and waste management systems manage the discarded plastic waste. This diffuses the responsibility of the consequences across different actors, creates physical and temporal distance from the consequences, and allows for the possibility of actors to displace the responsibility onto the next actor.

Plastic waste in relation to E-commerce

E-commerce has rapidly expanded all over the world during the past decade. Moving from in-store shopping to E-commerce changed how waste is generated and managed, as plastic remains a dominant material in shipping, specifically in protective layers (Escursell et al., 2020). It greatly increases product packaging, and thus extra packaging waste, such as buffer material, such as bubble wrap, air pillows, or mailers. The increasing packaging waste is a growing threat to the environment as plastic waste is resistant to degradation, accumulating in ecosystems, contaminating soil, and breaking down into microplastics (Kim et al., 2022; Rajmohan et al., 2020).

Research shows that E-commerce generates 4.8 times more packaging waste compared to ‘offline’, in-store shopping. Moreover, spending a hundred dollars online instead of in-store creates an additional 3.4kg of packaging waste, for a total of 4.24kg of packaging waste, which accounts for 1.06% of total waste per capita per year (Kim et al., 2022). Research highlights that overpackaging and material inefficiency are among the key drivers for plastic

waste generated by E-commerce, further adding to waste generation from product packaging. Due to standardized box sizes, excessive plastic protection is often added, and due to consumer expectations, such as aesthetically pleasing packaging, more plastic is often used than necessary (Escursell et al., 2020). As a result, plastic waste is not merely an issue of the material itself, but becomes a design and logistical problem.

Responsibility in E-commerce

While the previous passage shows that E-commerce heavily relies on plastic and has become a structural problem, the responsibility of plastic waste generation is often projected on the consumer. Initially, companies emphasize the role of the individual consumer and their responsibility to reduce waste (Evans et al., 2017), for example, through recycling or purchasing environmentally friendly products. As an example, Amazon is trying out new reusable cardboard boxes, made from recycled material, that need to be shipped back by the consumer, and can be used multiple times by Amazon (Clancy, 2024). Notably, it is the responsibility of the consumer to reuse the boxes by sending them back. The consumer has to go out of their way and spend time and effort on returning the box for reuse, while they still do not have any say in the packaging material Amazon uses.

Evans et al (2017) draw on a case study of policies for UK food waste reduction. In line with the ABC framework, individual responsibility was emphasized in the initial policy responses, and blame was assigned to the consumer for the generation of food waste. However, over time, actors articulated a discourse of distributed responsibility, in which the consumer was not solely to blame. A shared understanding arose that food waste is a systemic issue, and responsibilities are distributed across the food chain. At the same time, the consumer became an abstract actor through whom supermarkets justified their responsibility for waste. This demonstrates that framing of consumer responsibility for plastic packaging waste, such as recycling and

responsible purchase behaviour, can be a starting point for understanding shared responsibility. Once we are not able to place responsibility with the consumer, we are forced to reevaluate the different parties' responsibility, looking at the entire system of plastic production and disposal, which is a starting point for looking into the systemic nature of the problem.

On the contrary, Waite (2025) posits that the producer should be responsible for the waste they create by producing a product. He argues that while consumers do have a role, the problem of plastic waste generation can not be solved solely by stressing the responsibility of the consumer. Finding a solution by looking merely at the end-of-use product is “looking through the wrong end of the telescope” (Waite, 2025, p. 139), because this is treating the symptoms rather than the underlying cause of product design. Currently, Waite argues that products are not designed for recycling. Instead, producers should be forced to design with the end-of-life of the product in mind, meaning that the product and packaging must be easily repurposed, reused, repaired, or recycled, rather than leaving the individual to deal with the material. If a material isn’t recyclable, producers should not use it. He posits an increase of moral and practical responsibility for producers to design for circularity, and that the ability for consumers to recycle relies on the producer's actions in designing the product and packaging. While this does rest an increased responsibility on the producer, it does not take away the responsibility of the consumer, seeing that they must correctly handle the waste.

In line with this, Konrad (2023) argues that the end-of-life practices are shaped by the designer, giving them an increased responsibility for the environmental impact of these products. Environmental problems with plastic products become apparent at the end of their life. Recycling can be hindered by complex, multi-material product design, contaminated plastic, or a lack of knowledge on how to effectively dispose of plastic. Because of this, designers play a crucial role by designing a product with recyclability in mind, through the materials they use, the ease of disassembly, and information given on how to properly dispose of it.

Current gap

Taken together, the literature gives a strong foundation for critiques of individual responsibility in the context of E-commerce related plastic waste. While Evans et al. (2017) have proposed distributed and shared models of responsibility, it remains unknown how individuals as consumers themselves experience and negotiate this responsibility, specifically in the context of E-commerce. There has been little attention paid to the reasoning through which emerging adults construct their own sense of responsibility, how they perceive, justify, attribute, and accept or resist responsibility for the generation of plastic waste within the limitations of consumption and social structures. That is why this study tries to answer the following research question: How do emerging adults negotiate personal and structural responsibility for plastic waste in their everyday life, specifically that which is produced by E-commerce habits?

Theoretical frameworks

This study draws on three theoretical frameworks to interpret emerging adults' accounts of plastic waste responsibility. Firstly, the value-action gap framework (Barr, 2002), which contextualises the tension between participants' stated values and their actual actions. Secondly, the literature from Evans et al. (2017) and Waite (2025), which frames the structural debate about which actors bear responsibility for plastic packaging waste. And, finally, Bandura’s (1999) theory of moral disengagement, which provides explanations through psychological mechanisms that participants use to disengage themselves from their actions that result in harmful outcomes.

Methods

This research aims to explore the way that emerging adults in Leeuwarden negotiate their personal and structural responsibility for plastic waste in their household life, specifically that which is produced by E-commerce habits. The study adopts an interpretivist standpoint, which aims to understand how people actively make sense of the world around them through their lived experiences (Bryman, 2016). Related to this is the social constructivist position, which holds that social phenomena are constructed through social interaction and the reasoning of an individual (Cresswell, 2013)

Participants

All participants are chosen because they are a part of the group of emerging adults. According to the American Psychological Association, they are in a developmental stage, which is neither classified as adolescence nor young adulthood, and focuses on ages ranging from 18 to 25. Emerging adults engage in the exploration of their identity, in which they form their own opinions and values (*APA Dictionary of Psychology*, n.d.). Participants were not excluded based on their geographical location or background.

Potential participants were approached over text with information about the research and asked whether they were willing to participate. Some participants were recruited through personal network referrals, while others were contacted via student community group chats across Leeuwarden, Groningen, and Amsterdam. Purposive and the snowball methods were used to gather participants. Purposive sampling made sure that the participants approached were suitable for the type of research (Coast, 2017). The snowball method was used to gather more participants through the communication channels of already recruited participants. Because of the small time frame of the research, this allowed for more participants to be

interviewed, resulting in a more representative sample and thus a more reliable result (Coast, 2017).

The study consisted of fourteen participants; this sample size was selected based on the estimated information that would be gathered from the research before data saturation occurred. Research from Hennik (2022) shows that studies with a homogenous participant pool and a narrowly defined objective reach data saturation between nine and seventeen participants.

Diary and interviews

Each participant was requested to keep a diary for two weeks prior to the interview, documenting the date they received a package, which product they received, how this product was packaged, the actions they undertook after receiving the package regarding the packaging material, and, optionally, any other remarks about the package (see Appendix B). The diary entries were digitally attached by the participants through a WhatsApp group. The WhatsApp group members consisted solely of the participant and the researcher, ensuring the privacy of each participant. This method was selected because of its accessibility and ease of use, encouraging participants to consistently keep their diary. Physical diaries were considered, but rejected due to the possibility of the diary not being kept, as there are additional steps required to keep the diary.

The diary method helps record context-specific information about the E-commerce behavior of the participants. It moreover allows the participants to reflect on the packaging material they received as a result of E-commerce. This can be referred to in the semi-structured interviews.

The interviews were structured according to a flexible interview guide, which was divided into multiple sections: their values and opinions about plastic, their daily lives regarding plastic, their E-commerce habits, their diary entries, their view on responsibility, the value-action gap, and closing questions. These sections were chosen based on the theories and frameworks outlined in the literature review, allowing for the results of the interviews to be supported by existing theories and frameworks.

Most interviews were conducted in person, but due to some geographical constraints, three of the interviews were conducted online. The approximate time for each interview was thirty minutes. The interviews were conducted in a semi-structured form. Prepared questions are supported by the opportunity to ask follow-up questions, which results in more detailed responses and thus more in-depth data collection (George, 2023). The interview was structured according to a flexible interview guide, which was divided into multiple sections: their values and opinions about plastic, their daily lives regarding plastic, their E-commerce habits, their diary entries, their view on responsibility, the value-action gap, and closing questions. These sections were chosen based on the theories and frameworks outlined in the literature review, allowing for the results of the interviews to be supported by existing theories and frameworks. Twelve out of the fourteen interviews were conducted in Dutch, while the other two were conducted in English, which were later translated into Dutch for coding.

Transcription and coding

The interviews were transcribed with the use of Whisper, an automatic speech recognition system, which allowed precise transcription in different languages (*Introducing Whisper*, 2022). The model was run in a local Python environment, ensuring confidentiality. Afterwards, the transcribed texts were checked and cleaned, and any mistakes the model made were corrected.

A general inductive approach was taken for the data analysis, as outlined by Thomas (2003), for which ATLAS.ti was used to structure the coding process. Inductive coding allowed for themes to emerge directly from the data in relation to the research objective, which is well-suited to the study, as the way emerging adults negotiate personal and structural responsibility for plastic waste from E-commerce is not predetermined, and instead should emerge from participants' own views on navigating this responsibility.

Ethical Considerations

Since I did not work with sensitive data or a sensitive target audience, the ethical considerations were minimal. All data was stored on a password-secured Google Drive, which could only be accessed by the researcher and the supervisor at Campus Fryslân. All data will be deleted after the grading of the assignment. Furthermore, I believe there is no power dynamic between the interviewer and interviewee, hence a power analysis was not necessary. I acknowledge that waste can be a personal topic; the participants always held the right to refuse to answer any questions without repercussion. Moreover, to avoid any risks, no personal questions were asked, and were not provoked or discussed, unless the participant initiated this themselves. To ensure anonymity of the participant, no identifying questions were asked in the audio recording, and afterward, the recording was transcribed, with any identifying details removed if they happened to appear in the participant's answer. Before the participants agreed to participate in the study and keep a diary, they were made aware of their right to withdraw from the study, their right not to answer any questions for the diary without repercussion, and their right to ask questions about the study. Moreover, before the interview, the participants signed an informed consent form, which ensured that the participants were once more informed about their right to withdraw from the study, their right to refuse to answer any questions without

repercussions, their right to ask questions about the study prior to the interview, and that the participants would not directly benefit from the research.

In case the research had changed in any way, participants would have been notified through the WhatsApp group, which was created for keeping the diary. All participants would be asked for approval, and any dissenting participants would have had all their data removed, maintaining the principle of having the right to withdraw from the research without repercussions. The outcome of this research will be a bachelor's thesis, which will be handed in as the final assignment for the bachelor's Global Responsibility and Leadership.

Results

This chapter will present the findings of the fourteen semi-structured interviews conducted, which resulted in forty-two codes that were organised into five thematic groups: 1) Plastic Framing, 2) Normalisation and Awareness, 3) Intention Barriers, 4) Affective and Behavioural Response, and 5) Responsibility. This chapter presents each thematic group in turn, using quotations to illustrate the patterns that emerged throughout the interviews. Any quotations that were originally in Dutch have been translated into English, ensuring that the literal phrasing and intended meaning were preserved.

Plastic Framing

The first thematic group captures the way participants conceptualize plastic, making sense of plastic in different contexts, including their daily lives, nature, and its place within society. Understanding the way participants conceptualize plastic allows for the interpretation of the way they negotiate their responsibilities toward it.

The utility of plastic (*n* = 27) was recognised universally by participants, with them underlining its uses within their daily and professional lives. Furthermore, they understood the economic logic behind the widespread use of plastic, recognising the reasons for its use by producers, reflecting the economic value of plastic (*n* = 12).

> “I think it's very valuable. Plastic is probably cheap to make, so from a business perspective, why not use it? It preserves food and items, it makes packaging look better, and it makes sense financially.” (Interviewee 1, 11/05/2026)

> “[Plastic] is cheap to produce. Naturally, there has been massive mass production of it over the years. Apart from the material itself, it’s simply a question of efficiency: how easy it is and how cheap it is to make.” (Interviewee 11, 16/05/2026)

Besides the utility and economic benefits that plastic brings, most participants acknowledged its problematic nature, framing it as something useful but problematic (*n* = 14). This dual identity of plastic, described by, for example, Interviewee 11, shows the split of being useful and an inferior material as posited by Konrad (2023). The environmental problem (*n* = 22) and social impacts were mentioned often. There was a general concern for the impact plastic had on the environment, with participants mentioning the 'plastic soup' and microplastics. In line with this, many posited plastic as a social issue (*n* = 20) as well, talking about seeing plastic being discarded on the street, which also speaks to plastic in public spaces (*n* = 3).

Notably, some participants located the problem in the behaviour around plastic, while some outlined its barriers as a material itself. Seven participants framed plastic not as a material problem but as a behavioural one, captured in the code behavioural problem rather than material (*n* = 7). This tended to appear when participants brought up public littering. They mentioned that our behaviour around plastic would need to change. On the other hand, participants viewed the material as the main problem and talked about the substitution of the material itself, reflecting the code replaceability (*n* = 15). This belief that plastic could be substituted appeared across multiple interviews, and participants argued that the widespread use reflects the economic interest of producers, rather than the necessity for change.

Normalisation and Awareness

The second theme addresses the normalisation of plastic for most participants, while most are aware of the environmental impact it has, the problem does not feel urgent for them. It

shows a gap between the participants knowing plastic is a problem, and them actually experiencing it as one.

Almost all participants described plastic as a normalised feature of their daily life (*n* = 39), talking about how it is present everywhere, that nobody notices it, and that it requires no decision.

> "Generally speaking, it's just a normal part of my life, and I don't really give it much thought. It's just an everyday thing. You always have plastic, and you always throw it away; it's the most normal thing in the world." (Interviewee 10, 15/05/2026)

While awareness (*n* = 17) about the consequences of plastic consumption was almost universal, it rarely translated into behavioural changes. The following quote captures how this awareness blurs into normalisation of the problem, which is not a failure of values, but of maintaining attention to the problem.

> "But when you see certain things that show just how bad it is for the environment, you do find yourself thinking: wow, it does make a difference. But then two days later, you're just throwing something away again [without thinking about the problem]..." (Interviewee 4, 15/05/2026)

Eight participants mentioned something about the distance to the problem (*n* = 8). They expressed a sense of geographical or temporal distance to the problem, mentioning that plastic pollution is real, but not visible in their daily lives, and that the consequences play out elsewhere. This relates directly to Banuda's (1999) disregard or distortion of consequences and

Barr's (2002) spatial and temporal context. The distance to the problem, whether it is geographical or temporal, creates the conditions for moral disengagement.

> "…, it's very simple: if I receive something made of plastic, it goes in the bin, and you never see it again. But it's not as if that's the end of the plastic's journey." (Interviewee 12, 13/05/2026)

This observation shows that the bin functions as a cognitive endpoint, which breaks the connection between plastic as the participants' problem and its consequences. What happens after is unknown, and this invisibility is a structural feature, resulting in the plastic being placed out of sight and out of mind (Hawkins, 2001). This translates into an information barrier (n = 10); multiple participants mentioned their uncertainty about what happens to the plastic waste after disposal. Furthermore, they experience an information gap about what recycling labels mean and what materials can be recycled.

> "I also find it bothersome not knowing what happens with the trash afterwards. Is it recycled or not? That's not quite clear to me. If I knew the paper I threw out would be reused to make new paper, I'd be much more conscious about doing more paper-focused sorting." (Interviewee 1, 11/05/2026)

> "The convenience of it, and the fact that you throw it away and never see it again, also means we have little idea of what actually happens to it in the end. A long time ago, there was a lot of talk about the plastic soup in the sea, but I don't hear anything about that anymore these days." (Interviewee 12, 13/05/2026)

This knowledge barrier undermines the intrinsic motivation for conscious actions, as seen in the quotes above. If participants believe their actions have an impact because they can see the meaningful outcome of the action, the effort to separate waste becomes easier to sustain.

Intention barriers

The third theme outlines the obstacles participants face that prevent them from acting on their intentions. Most of the participants mention they try to avoid plastic when possible, yet they face many structural barriers that make it difficult to achieve their desired behaviour, even when the motivation exists to do so.

One of the most mentioned barriers is convenience (*n* = 28), with participants mentioning that they choose the easiest option over the option that aligns better with their values. This aligns with Barr's (2002), behaviour being driven by convenience rather than values. They describe plastic-heavy options, such as buying pre-cut vegetables packaged in plastic, online ordering, and buying products packaged in plastic. They mention that avoiding plastic requires them to actively choose a different option. This translates into the other barriers, such as price differences between more sustainable alternatives and their plastic-packaged counterparts, reflected in the code price barrier (n = 24), or the price difference from getting the same product cheaper when ordered online compared to being bought in a physical store. These are important factors for students, as they have a limited budget, limited mobility, and limited time.

> "There are alternatives, but they take extra effort to find. The fact that dealing with them properly takes a great deal of extra time, effort, and work is what puts me off."
> (Interviewee 12, 13/05/2026)

> “Price [is a barrier], I suppose. If cardboard packaging costs three times as much, that’s just not feasible as a student. But if the price were the same, I’d definitely go for the cardboard option.” (Interviewee 9, 16/05/2026)

Other practical barriers, such as accessibility (*n* = 18), time (*n* = 13), and location (*n* = 7), also constrained participants' actions. They described that other options, which aligned with their values, existed; however, these were less accessible and required them to travel and spend time, which not all participants could commit to. These barriers compound each other, with participants noting that they live some distance away from the farmers' market, that they have a limited budget and limited time to spend, which makes sustainable consumption difficult for them.

Besides this, there was a massive notion that participants wanted to behave differently, but could not because of a structural lack of options (*n* = 24) and an absence of consumer choice (*n* = 30). They described there being no plastic-free packaging alternatives to the products they consumed, and felt like decisions were made upstream, resulting in them having no choice or control over the plastic waste they generate.Structural lack of options describes the feeling participants had of a physical absence of alternatives. Absence of consumer choice describes the absence of decision points for the consumer; most participants mentioned that they experienced no agency over the plastic entering their household. This was very prevalent when asked about E-commerce, as they mentioned that there was no choice given for different packaging options; the parcel is a result of the choices made by the producer, while the consumer has no choice in how it arrives. Both point to the lack of agency of the participants over which plastic waste they generate, regardless of their values. This links to Shove’s (2010) critique of the ABC framework, arguing that institutions and companies structure the available course of action, and that individual choice is limited.

> “That’s how it’s sent, and that’s what you have to make do with. There’s no option anywhere to choose eco-friendly packaging.” (Interviewee 12, 13/05/2026)

> “No, because there are no choices on the websites. You just order it, and they decide how to package it. I’d like to see some options — do you prefer cardboard, or this type of packaging?” (Interviewee 14, 13/05/2026)

It is worth reflecting on these quotes; participants frame themselves as the recipient of packaging decisions made upstream, while at the same time, they are the ones initiating those decisions by ordering packages in the first place. Their decision to order packages through E-commerce, rather than purchasing in a physical store or buying second-hand, determines how much packaging material enters circulation.

Affective and Behavioral Response

The fourth theme covers how participants feel and how they behave in relation to plastic. This theme describes the behaviour of participants and how this is constrained by external and internal factors.

Most participants stated that they tried to avoid plastic (*n* = 19) where possible, and some reported that their attempts at avoiding plastic frequently failed, captured under tries to avoid plastic but can't (*n* = 12). Some mentioned that the failure to avoid plastic is not an attitudinal problem, but that they feel like they are systematically prevented from doing so because of the structures of supermarkets and (online) retail environments. Besides this, some of the participants described that their behaviour does not align with their ideal values, wanting to behave differently, but continuing to behave in ways they themselves would consider

suboptimal, reflecting the value-action gap (*n* = 34). Most participants who described this value-action gap had developed accounts that justified this for themselves, and made them feel like the gap was acceptable (Barr, 2002). Most justified this gap by mentioning upstream barriers, which are outlined in the theme 'Intention barriers' above, aligning with Bandura's (1999) argument for justification.

> "If I really had the chance to use less plastic, I would do so to a certain extent. But for a lot of people, including me, it's simply a matter of convenience. I wouldn't switch to a different supermarket just because it uses more cardboard packaging." (Interviewee 8, 16/05/2026)

Furthermore, many participants expressed being bothered by plastic (*n* = 21) in some form, one of which was the overuse of packaging material (*n* = 21) in the context of E-commerce. Many participants shared experiences of ordering products, which arrived in a disproportionately large box, with unnecessary plastic protection and wrapping.

> "The things I order are often tiny items that get sent in a huge box packed with loads of plastic. It's annoying — a box crammed full of plastic when you've only ordered something small." (Interviewee 3, 15/05/2026)

This frustration is partly driven by environmental concerns, but some mention that they are annoyed by the practical burden of waste management of the materials. While five participants mentioned that they actively try to avoid ordering online (*n* = 5) in order to avoid plastic waste generation, they all mentioned that the convenience of E-commerce resulted in them still doing so.

Responsibility

The fifth and last thematic group covers how participants negotiate responsibility for plastic packaging waste. It shows different opinions around the responsibility of themselves as consumers, producers, and the government.

Among participants, there was a large consensus that their responsibility towards plastic waste was divided into two groups: the consumer responsibility (n = 16) for the correct disposal of the waste, and the disavowal of personal responsibility (n = 31) for the existence and quantity of plastic packaging waste to begin with, which the majority accepted and rejected, respectively, linking to Bandura's (1999) displacement of responsibility. Most mentioned feeling responsible for the correct disposal of the plastic waste, as they were the ones who ordered the item, and ultimately chose what happened with the plastic waste after the package arrived. Some of them saved the packaging material to later be reused to ship a package themselves, or used cardboard boxes as storage. At the same time, most rejected their responsibility for the existence of the plastic waste, because decisions for packaging are made upstream by producers and retailers, and the participants stated that they could not make meaningful input in those decisions, thus they are not responsible for the outcome. In other words, because they see themselves as the end recipient, as a result of a decision that they have not made or had any influence on, they do not feel responsible for the existence and quantity of plastic packaging.

> "To be honest, [I do] not really [feel responsible]. I do feel a sense of responsibility for what I do with it — putting it in the right bin. But if I order something I think I need, and I don’t know in advance how it will be packaged, I might feel a bit annoyed about it afterwards. But if, as a consumer, you have imperfect information, I find it hard to say that it’s the consumer’s fault." (Interviewee 10, 15/05/2026)

The participants narrowly defined their own accountability and responsibility, limiting it to disposal, rather than extending it to the purchasing decisions they made, while they attributed the responsibility mainly to the responsibility of producers (*n* = 20) and retailers. Multiple participants described this as a shared responsibility (*n* = 13) across multiple parties, primarily the consumer, producer, and retailer, with the main responsible parties being the producer and retailer. linking directly to Evans and colleagues (2017), distributed responsibility. However, three participants mentioned that responsibility was also, if not mainly, held by the government, reflecting the responsibility of government (*n* = 6). One of the participants had experience in E-commerce and noted that plastic is economically by far the most logical option for producers.

> “As a retailer, you have the choice between cardboard packaging and plastic packaging. Plastic is, so to speak, 10 to 30 times cheaper than cardboard. If you only have a margin of 1 or 2 euros on some products, that 10-cent difference represents a huge percentage. It’s a race to the bottom: who can offer the cheapest option? ...If you’re competing on price, choosing plastic doesn’t feel like a free choice. That encourages the use of plastic enormously, and that’s something I think people on the receiving end often don’t realise." (Interviewee 8, 16/05/2026)

They argued that retailers and producers, because of the price competition with other retailers and producers, will always choose the cheapest option. Because of this, the participant mentioned that the responsibility for plastic waste generation is held by the government, as they are the ones who have to intervene, and should limit plastic usage in E-commerce.

Another reason mentioned by some participants was the feeling of fatalism (*n* = 10), the feeling that their individual actions were ineffective because of the immense scale of the problem or the behaviour of others, rendering their own actions meaningless. This perceived futility appeared to weaken their motivation to act in line with their values, as participants

questioned whether their efforts made a meaningful difference against a problem of this magnitude.

Discussion

The results show a consistent pattern in which participants accept and reject certain responsibilities for plastic waste regarding E-commerce. This section interprets those findings through the theoretical frameworks outlined in the literature review. The value-action gap (Barr, 2002), the structural debate on responsibility (Evans et al., 2017; Waite, 2025), and moral disengagement (Bandura, 1999) will situate the findings within the broader literature on waste, behaviour, and responsibility.

The value-action gap within E-commerce

Barr's (2002) framework of the value-action gap was clearly visible throughout the interviews, with most participants expressing their concern for the environment, stating a desire to reduce their plastic waste generation. However, most acknowledged that their behaviour did not always reflect these values. This was captured in the value-action gap code (*n* = 34), under which the participants described their desire to behave differently, while continuing to act in ways they themselves considered suboptimal. In the context of e-commerce, this gap was most visible; while participants were aware of the impact of E-commerce packaging waste, they continued to order packages, rationalising their action through convenience (*n* = 28), price (*n* = 24), and time constraints (*n* = 13). Even participants who actively tried to avoid ordering packages (*n* = 5) noted that convenience changed their behaviour. This pattern confirms the value-action gap, showing that environmental behaviour is not primarily driven by values, but by the convenience of an action.

Within the context of E-commerce, there are temporal and spatial distances, which Barr (2002) identifies as contextual variables. When receiving a package, the packaging material instantly becomes redundant. For the consumer, it is a byproduct of their earlier purchasing decisions, which creates a disconnect between the moment of purchase and the moment of

waste generation. Participants described this distance to the problem (*n* = 8), which suggests this disconnect exists, as they mentioned they view the packaging materials as something that is simply there, which they had no control over. This leads them to discard the material without giving it much thought, as further shown by the normalisation of plastic code (*n* = 39). However, this framing is in tension with participants' own role; they view themselves as the end recipient of packaging decisions made upstream, while their decisions to order online are what ultimately set those decisions of the upstream actors in motion.

Moral disengagement

The value-action gap discussed in the part above raises the question of how participants justified the difference between their values and actions. The way participants manage the tension between their values and their behaviour can be viewed through the lens of Bandura's (1999) theory of moral disengagement. Several mechanisms were identifiable in the responses of the participants. Bandura outlines displacement of responsibility, which was described by many participants. They attributed the existence of packaging waste to upstream actors and viewed themselves as the receiver of the product, which was the result of a decision over which they had no power. This was reflected in the disavowal of personal responsibility code (*n* = 31), where participants rejected responsibility for correct disposal, while rejecting the responsibility for the existence and quantity of the packaging waste. Diffusion of responsibility was equally prevalent in the answers of the participants, as the E-commerce supply chain involves many actors; the participants mentioned they did not feel fully responsible for the harmful results.

The mechanism of discarding or diffusing consequences is consistent with participants mentioning their responsibility ending after disposing of the plastic waste. The bin serves as a cognitive endpoint, and participants mentioned that they cease to engage with the waste after it's discarded. Lacking information on what happens to the plastic after it's disposed of amplifies

this effect, as shown by the information barrier (*n* = 10). The consequences of their actions remain invisible, which results in lesser motivation for sustainable actions. This aligns with Hawkins' (2001) argument that ethical actions around waste are influenced by visibility, and placing waste out of sight breaks the relationship and connection between the individual and the discarded object.

Furthermore, a notable number of participants described a feeling of fatalism (*n* = 10), which can be viewed through the moral disengagement lens. If individuals perceive their actions as meaningless, they disengage from the relationship between their behaviour and consequences, making efforts to make less harmful choices difficult to sustain. This is a rational response to a situation where individuals' efforts appear structurally ineffective (Bandura, 1999).

Shared responsibility and individual blame

The framework of Evans and colleagues (2017) is visible through the findings, participants feel a sense of distributed responsibility. They did not deny all responsibility, yet they drew a distinction between what was within their control and what was not. This was reflected in the split between consumer responsibility (*n* = 16), which most accepted, and the disavowal of personal responsibility (*n* = 31), for the existence and quantity of the waste, which most rejected. Again, they accepted responsibility for disposal, while rejecting responsibility for the production and design decisions that resulted in the material they were discarding. This aligns with the analysis of the UK food waste policy from Evans et al., where responsibility was distributed across multiple actors, rather than held merely by the individual consumer. Many participants explained this through the shared responsibility code (*n* = 13), attributing the main responsibility to producers and retailers (*n* = 20).

This distribution of responsibility reflects Waite's (2025) argument that the producers, instead of the individual consumer, should bear the responsibility for the waste a product

creates. One participant in particular, with a background in E-commerce, instead captured a different perspective when they described the choice of producers using plastic as being forced, with E-commerce being “a race to the bottom” regarding pricing (Interviewee 8, 16/05/2026). Choosing a more sustainable option is not a choice possible for retailers, which led them to place responsibility on the government (*n* = 6), as they should be the actor that is able to intervene. Mirroring the claim that solving plastic waste by focusing on the end-of-use product treats the symptoms rather than the cause, and, from this perspective, lies in the policies around production and design.

Moreover, challenging the ABC framework (Shove, 2010), the participants were reasoning in these distributed terms. Challenging the idea that individuals naturally seek to excuse their actions, implicit in the ABC framework. Participants were not trying to avoid all responsibility, yet they were trying to distribute responsibility where they believed it was most appropriately held.

Conclusion

This study set out to answer the question of how emerging adults negotiate personal and structural responsibility for plastic waste in their everyday lives, specifically that which is produced by E-commerce habits. The findings show that emerging adults neither simply accept nor reject responsibility, but most of the time, they draw a reasoned and consistent boundary of what they feel like they can meaningfully control. Participants widely accept the responsibility for the correct disposal of packaging waste, while rejecting the responsibility for the existence and quantity of plastic waste generated. Instead of trying to avoid blame, it reflects a genuine engagement with the systemic nature of the problem. They recognise that decisions are made upstream, leaving them as the end recipient of choices they had no influence on. Their reasoning aligns with the distributed model of responsibility, in which no single actor bears the full responsibility of plastic waste generation (Evans et al., 2017).

Furthermore, the value-action gap (Barr, 2002) was clearly present, while holding environmental values, participants continued to shop online and generate plastic waste. This gap was not the result of them failing to uphold their values; instead, it was driven by convenience, price, accessibility, and the structural lack of alternative options. This supports the critiques made by Evans et al. (2017) on Shove's (2010) ABC framework, reinforcing the argument that placing responsibility on the consumer to reduce plastic waste generation misrepresents where meaningful change can occur, and should instead be redistributed across multiple actors.

Bandura's (1999) moral disengagement framework helped explain the tension between participants' values and behaviour. Displacement of responsibility, diffusion of responsibility across the supply chain, and the invisibility of consequences all contributed to a reduced sense of responsibility across participants. These psychological mechanisms reflect the structural

conditions of E-commerce, where responsibility is distributed across many actors, and consequences remain distant.

Concluding, the findings suggest that plastic packaging waste primarily being the responsibility of the consumer is inaccurate and counterproductive from the standpoint of the consumer. Emerging adults are reasoning their responsibility and distributing it to its most appropriate place. They face structural barriers that keep them from acting in line with their values.

Implications

This study ultimately contributes to the literature on waste responsibility by giving a perspective on how consumers reason about their responsibility. Where existing work has proposed distributed and shared models of responsibility at the level of policy (Evans et al., 2017; Waite, 2025, this study shows that emerging adults reason in distributed terms of responsibility themselves. They locate responsibility where they believe it is most appropriately held, suggesting that interventions around individual consumer responsibility may not only be ineffective, but also misread how consumers understand the problem. Grounding these accounts in the everyday context of E-commerce, this study offers an empirical counterpoint to the assumption that consumers simply seek to excuse their own behaviour.

Limitations and future research

This study has several limitations that should be acknowledged. The sample, while meeting the estimated saturation threshold, consists mostly of students in the Netherlands. Students face constraints such as a limited budget, limited mobility, and may have a dependence on E-commerce. These constraints may not be as prevalent in employed emerging adults. Moreover, different national contexts with different social structures may experience

different barriers. Additionally, because of the limited time frame in which this research took place, the diary method may not have captured the full range of participants' E-commerce behaviour, as online purchases are irregular. A longer timeframe in which participants collected more data about their purchasing habits would have been valuable for grounding the interviews in concrete behaviour.

Future research could examine how responsibility is negotiated from the perspective of retailers or logistics providers, to compare how different actors across the supply chain frame their own responsibility. There is also room for exploring how policy implications of distributed responsibility might be designed to reflect the multi-actor nature of E-commerce packaging waste.

AI Disclosure

I hereby confirm that the present work is my original work. I declare that I have used AI tools only as allowed for this work according to the UG policy on AI in teaching. AI tools that were used to assist me with the present work: OpenAI Whisper was used for transcribing in a local Python environment. Claude was used for refining my research question and helped brainstorm for the outline of the paper. Claude was used to structure all (anonymised) quotations from Atlas.TI. Grammarly was used for spelling and grammar checks.

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Appendix A - Codebook

Code	Grounded	Code Groups
○ Absence of consumer choice	30	Intention barriers
○ Accessibility barrier	18	Intention barriers
○ Aware of E-commerce plastic waste	5	Affective and behavioural response
○ Awareness	17	Normalisation and awareness
○ Behavioural Problem rather than material	7	Plastic framing
○ Bothered by plastic	21	Affective and behavioural response
○ Company solutions	2	Responsibility
○ Consumer responsibility	16	Responsibility
○ Convenience	28	Intention barriers
○ Disavowal of personal responsibility	31	Responsibility
○ Distant to the problem	8	Normalisation and awareness
○ Economic value of plastic	12	Plastic framing
○ Environmental problem	22	Plastic framing
○ Fatalism	10	Responsibility
○ Guilt	5	Affective and behavioural response
○ Indifferent	5	Normalisation and awareness
○ Information barrier	10	Normalisation and awareness
○ Infrastructure problem	2	Intention barriers
○ Is not bothered by plastic	10	Normalisation and awareness
○ Location barrier	7	Intention barriers
○ Normalisation of plastic	39	Normalisation and awareness
○ Overuse of packaging material	21	Affective and behavioural response
○ Personal solutions	7	Affective and behavioural response
○ Plastic in public spaces	3	Plastic framing
○ Price barrier	24	Intention barriers
○ Replaceability	15	Plastic framing
○ Responsibility of government	6	Responsibility
○ Responsibility of producer	20	Responsibility

○ Responsible packaging	1	Affective and behavioural response
○ Seperating waste	9	Affective and behavioural response
○ Shared responsibility	13	Responsibility
○ Social Issue	20	Plastic framing
○ Structural lack of options	24	Intention barriers
○ Throwing away plastic	23	Affective and behavioural response
○ Time barrier	13	Intention barriers
○ Tries to avoid ordering online	5	Affective and behavioural response
○ Tries to avoid plastic	19	Affective and behavioural response
○ Tries to avoid plastic, but can't	12	Affective and behavioural response
○ Useful but problematic	14	Plastic framing
○ Utility of plastic	27	Plastic framing
○ Value action gap	34	Affective and behavioural response
○ Values align with their own perceived actions	12	Responsibility

Appendix B - Diary questions

Diary

Participants were asked to write in their diary for two weeks, recording the following when they received a package as a result of E-commerce:

- Date of receiving the package
- What product was received
- How this product was packaged, preferably with a picture
- What you did with the packaging
- Any other comments

Appendix C - Informed consent form

Researcher: Jesse Trap
Institution: Rijksuniversiteit Groningen
Supervisor: Moos Koning
Contact email: J.trap@student.rug.nl

Purpose of the study
This research aims to explore the negotiation of responsibility by emerging adults in relation to plastic waste generated by E-commerce.

Name of participant:

Assessment

- I have read the information sheet and was able to ask additional questions to the researcher.
- I understand that I may ask questions about the study at any time.
- I understand that I have the right to withdraw from the study at any time without giving a reason.
- I understand that I may refuse to answer questions at any time.
- I understand that I have no direct benefit from participating in this study.

Confidentiality and data use

- I understand that none of my personal data will be disclosed to anyone other than the researcher and supervisor, and that my name will not be published.
- I understand that the information provided will only be used for this research and publications directly related to this research project.
- I understand that the data (consent forms and anonymised interview transcripts) will be stored on a password-protected Google Drive, accessible only to the researcher and supervisor.

Future involvement

- ☐ I wish to receive a copy of the scientific output of the project.
- ☐ I give permission to possibly be contacted again for participation in future studies related to this project.

After reading and understanding all of the above, I agree to participate in the study: ***Yes / No***

Date:
Signature:

To be completed by the researcher

- I declare that I have informed the research participant about the study and answered all remaining questions to the best of my knowledge.
- I agree for this person to participate in the study.

Date:

Signature:

Appendix D - Interview guide

Plastic

- How do you generally feel about plastic?
    - Do you view it as a problem, something useful, or somewhere in between?
- Do you view plastic waste as an issue in your daily life?
    - To what extent do you see plastic as a problem in society?
- Do you recognise the value of the current widespread use of plastic?

Daily lives

- Do you feel like you produce a large amount of plastic waste?
- What goes through your mind when you have plastic waste and throw it away?
- Are there moments when you want to avoid producing waste, but can't?
    - What are the barriers for you to avoid plastic waste?
    - Is there anything stopping you from dealing with plastic the way you want to?
- Does plastic waste bother you?
- Do you feel guilty about the plastic waste you produce?

E-commerce

- Tell me about your shopping habits. How often do you find yourself ordering things online versus going to a physical store?
    - Has that changed in recent years? Why?
- What would be a reason for you to order something online, rather than buying it in a physical store? (Convenience / Values)
- Do you see a difference in your online shopping habits compared to others around you?

Diary

- When you receive a package, what usually happens with the packaging material?
    - Do you separate different materials?
    - Are there types of packaging that you find hard to recycle? What makes it hard?
- Referring to the entries in your diary, how were the products you ordered packaged? Did it include plastic packaging, and did you expect this amount of plastic?

- Do you feel like you have a choice over the plastic that enters your household as a result of online shopping?

Responsibility

- Do you feel responsible for the plastic waste produced by online shopping? Or would you say that responsibility lies with the online retailer or manufacturer?
    - Why does that party come to mind first?
    - Do you think responsibility can be shared? How would you divide it, and who is responsible for what?

- Some say that it is the consumer's responsibility to recycle, choose sustainable brands, or reduce their consumption. Do you agree?
    - Does it change anything if the product is hard to recycle?

Value-action gap

- Do you feel that the way you actually behave with packaging waste matches how you would ideally like to behave? Can you give me an example?
    - What usually gets in the way of acting the way you'd ideally like to?
    - Does the convenience of online shopping play a role in that?

- Would you want to change your behaviour in relation to plastic packaging waste?

Closing

- Is there anything about this topic you feel we have not covered, but you think is important?

- Is there anything you would like to go back to or say differently?

- Do you have any other comments or questions?