

An exploration of the intentions and barriers towards waste reduction practices and how to overcome them from an Irish consumer perspective.

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## **Abstract**

**Background** - Of the many challenges nations deal with, the production of waste have gained strong attention due to the detriment impact in the environment and the reduction of it is on the government agenda. The European Union have set new rules for waste management and targets to be achieved by 2030. With the new targets Irish consumer and their environmental behaviour play a significant role to meet those targets. However the literature suggest that when it comes to pro-environmental behaviour there is a discrepancy between consumer environmental concerns and actual behaviour.

**Purpose** - The purpose of this study is to identify what are the barriers underlying the translation of the intentions to behaviour in waste reduction practices and to identify the solutions to overcome those barriers from a Irish consumer perspective.

**Design/ Methodology/Approach** – The study was qualitative in nature and the findings were obtained through the conduction of 6 semi-structured interviews with pro-environmental consumers. Three objectives were set in order to answer the research question and a thematic analysis was conducted in order to identify the theme for research objectives.

**Findings** – The findings put forward the following barriers: lack of planning, adoption of new habits and routines, support and collaboration from others, lack of convenience, lack of recycling knowledge, retailer's practices. The identified solutions are: provide more waste-efficient mainstream products, awareness and educational campaigns, community movements.

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# Table of Contents

<b>Abstract</b> .....	I
<b>Declaration</b> .....	II
<b>Submission form</b> .....	III
<b>Acknowledgements</b> .....	IV
<b>Table of Contents</b> .....	V
<b>List of Figures</b> .....	VIII
<b>List of Appendices</b> .....	IX
<b>Chapter 1: Introduction</b> .....	1
1.1 Background to research.....	1
1.2 Justification of the study.....	3
1.3 Research question and objectives.....	4
1.4 Organisation of the study.....	4
<b>Chapter 2: Literature Review</b> .....	5
2.1 Introduction.....	5
2.2 Topic Background.....	5
2.2.1 The Irish Context.....	7
2.3 The Green Consumer Profile.....	9
2.4 Review of the theoretical frameworks.....	10
2.5 The Intention-Behaviour Gap.....	11
2.6 Models on pro-environmental behaviour.....	12
2.7 Barriers identified within the literature.....	15
2.7.1 Planning.....	15
2.7.2 Habits.....	16
2.7.3 Situational Context.....	16
2.7.4 Knowledge.....	18
2.8 Chapter Summary.....	18
<b>Chapter 3: Research Methodology</b> .....	18
3.1 Introduction.....	18

3.2 The research question.....	18
3.3 Research aim and objectives.....	19
3.4 Research design .....	19
3.4.1 Research philosophy.....	20
3.4.2 Research approach.....	21
3.4.3 Research strategy.....	22
3.4.4 Data collection.....	23
3.5 Sampling.....	26
3.6 Data analysis and interpretation.....	28
3.7 Ethical consideration.....	29
3.8 Research limitations.....	30
3.9 Chapter Summary.....	30
<b>Chapter 4: Findings.....</b>	<b>32</b>
4.1 Introduction.....	32
4.2 Research objective number one.....	32
4.2.1 Reduce, reuse and recycle.....	32
4.2.2 Replace items with more waste efficient alternatives.....	35
4.2.3 A change of mindset that force a continuous assessment of habits.....	37
4.3 Research objective number two.....	37
4.3.1 Lack of planning.....	38
4.3.2 Adopting new habits and routines.....	39
4.3.3 Lack of support and collaboration from others.....	40
4.3.4 Lack of convenience.....	41
4.3.5 Lack of recycling knowledge.....	42
4.3.6 Retailer's practices.....	43
4.4 Research objective number three.....	44
4.4.1 Provide more waste-efficient and mainstream products.....	44
4.4.2 Awareness and educational campaigns.....	45
4.4.3 Community movements.....	46
4.5 Chapter Summary.....	47

<b>Chapter 5: Discussion</b> .....	49
5.1 Introduction.....	49
5.2 Research objective number one.....	49
5.3 Research objective number two.....	52
5.4 Research objective number three.....	55
5.4 Chapter Summary.....	57
<b>Chapter 6: Conclusions and recommendations</b> .....	58
6.1 Introduction.....	58
6.2 Conclusion of the study.....	58
6.2.1 Exploring intentions and beliefs towards waste reduction....	58
6.2.2 The barrier for translating intentions into behaviour.....	59
6.2.3 The solutions consumer feel could help to overcome the identified barriers.....	60
6.3 Recommendations.....	61
6.3.1 Policy makers and environmental agencies.....	61
6.3.2 Business owners, entrepreneurs and social marketers.....	62
6.3.3 Further research.....	63
<b>Glossary</b> .....	64
<b>References</b> .....	68

## List of Figures

<b>Figure 1:</b> % of people aware of Food Waste in Ireland.....	2
<b>Figure2:</b> Plastic packaging waste in EU countries produced in 2015.....	8
<b>Figure 3:</b> Conceptual Framework Intention Behaviour Gap.....	12
<b>Figure 4:</b> Value-Action gap.....	13
<b>Figure 5:</b> Conceptual Framework of Environmental Behaviour.....	14
<b>Figure 6:</b> The Research Onion.....	20
<b>Figure 7:</b> Summary of Findings.....	47

## List of Appendices

Appendix I.....	64
Appendix II.....	65
Appendix III.....	66
Appendix IV.....	67



# Chapter 1: Introduction

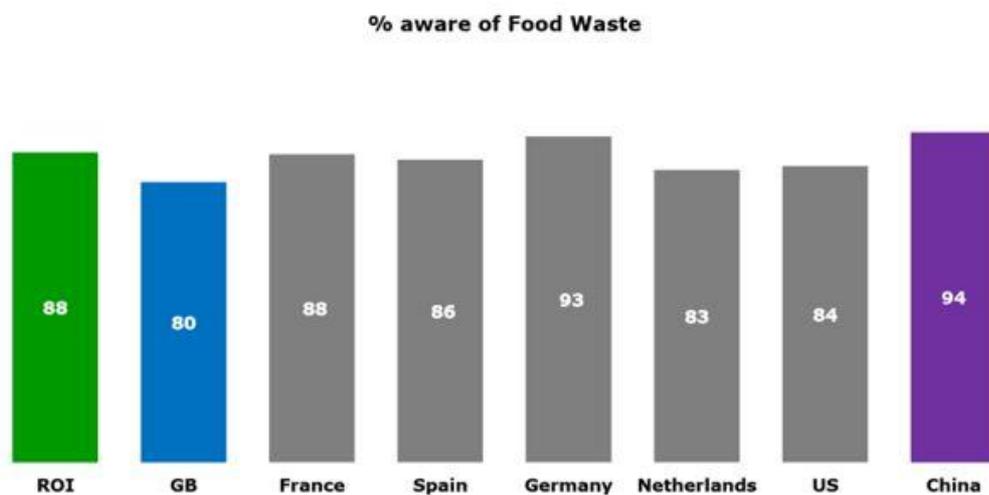
## 1.1 Background to research

In the last three decades, we have seen a progressive increase in consumer environmental consciousness, as we start seeing the environment as a normal issue, with tangible negative impacts (Stravos et al., 1999). The production of waste is an environmental issue that has been increasing for decades, especially around food and packaging, and it has been directly linked with issues such as gas emissions, pollution, loss of biodiversity, pests, and ocean contamination among others, which are in the climate change agenda in many countries. Even though, society has become more aware of the problem and the consequences in the environment, the researcher identified that problems still exist and goes across different categories. For instance, UN environment (n.d) reports that there are 1.3 billion tons of food waste generated by human consumption. In Ireland, for example, it has been estimated by the Environmental Protection Agency (n.d), that there were 983, 380 Kg of packaging waste generated in 2015 and the total amount of waste generated per person was equivalent to 4.3 tonnes, where nearly 25% of household disposal bin was made up of food waste (Environmental Protection Agency, 2018). Globally, most of waste generated has been collected (84%), however, just 15% is recycled, meaning that the major part of collected waste goes into landfills (Zaman, 2016), causing detrimental effects on the environment. In many cases, modern life, levels of consumption, disposal of products, over production practices, or mismanagement of waste have been pointed out as the principle reasons why waste is such an enormous concern in trying to progress to a more sustainable life. However, it has been found within the literature that consumers and their behaviour have an important role to play. In that sense, consumers are aware of the problem, but in many cases, it seems they are hesitant to change consumption patterns and behaviour (Stravos et al., 1999).

Furthermore, looking at the Irish context, when it comes to plastic, China, who takes 95% of the plastic waste from the country, has decided to ban the

importing of plastic from European countries. Ireland is one of the main producers of plastic waste (Finn, 2018), impacting the action plan to meet new waste management and recycling directives by 2030 presented by the European Commission. The new targets can be found in Appendix I.

In a survey carried out in Ireland, where nearly 1,000 consumers participated, 45% agreed that they were concerned about the food they throw away. Irish consumers have high levels of awareness on the impact of environmental issues as figure 1 illustrates, but are we seeing this attitude and concern translated into day to day purchase decisions and behaviour shifts?. The principle reason identified within the literature, is that that consumers are key components of change when it comes to environmental issues, thus play a critical role for managing the waste issue in the country.



Source: PERIscope 2017, Bord Bia

Figure 1: % of people aware of Food Waste in Ireland (Bord Bia, 2017)

The research gap that has been identified around this issue exists due to very little research being conducted around consumer behaviour towards waste reduction practices as an expression of their environmental concerns, along with the barriers that are impeding the shift in their behaviour when it comes

to day to day life purchase decisions. Furthermore, the majority of the literature in waste management is concentrated in recycling practices (Barr, Gilg and Ford, 2001) narrowing the understanding of the issue and the identification of more holistic solutions.

Finally, the lack of knowledge in the literature around consumer behaviour barriers towards waste reduction practices – outside of recycling - remain unexplored in Ireland as well as what are the solutions to overcome the barriers from a consumer perspective where not identified. The literature suggests that there are some factors that impede consumer to act in a pro-environmental manner, which need further qualitative exploration (Hassan, Shiu and Shaw 2016). Thus, the researcher aims to contribute in the form of qualitative data that will complement current empirical studies carried out within the literature when it comes to understanding the intention-behaviour gap in environmental consumption behaviours and waste management practices beyond recycling.

## **1.2 Justification of the study**

In order to achieve the new targets and waste directives from the European Union, it is important to acknowledge that changes in consumer behaviour and purchasing patterns are part of the key challenges for achieving such goals (Pietzsch, Ribeiro and de Medeiros, 2017), with day-to-day consumer behaviour being one of the most challenging matters in this area. Moreover, the literature suggest that consumers have a critical role to play in achieving government targets for the reduction of solid waste, more sustainable waste management practices, and encouraging lifestyles that have a minimal impact on the environment (McDonald et al., 2012). In this study, the researcher aims to collect insights through qualitative research to understand the intentions, barriers, and consumer led solutions for overcoming the barriers in waste reduction practices.

### **1.3 Research questions and objectives**

In that sense, the aim of the research is to provide insights for answering the following research questions:

*When people have intentions towards waste reduction, what are the barriers underlying the translation of the intention into behaviour and what solutions could overcome the barriers to close the gap from a consumer perspective?*

#### **1.3.1 The specific objectives are:**

1. Research objective number one aims to briefly explore the consumer understanding and beliefs towards waste reduction practices.
2. Research objective number two aims to identify the barriers for translating intentions into behaviour in waste reduction practices.
3. Research objective number three aims to identify solutions that consumers believe could help overcome the identified barriers.

### **1.4 Organisation of the study**

The present study is organised in six chapters presented below:

Chapter 1 - Introduction

Chapter 2 - Literature Review

Chapter 3 - Methodology

Chapter 4 – Findings

Chapter 5 – Discussion

Chapter 6 – Conclusion and Recommendations

Each chapter provides an introduction and summary of the content.

## **Chapter 2 - Literature Review**

### **2.1 Introduction**

This chapter aims to provide an in-depth examination of the most relevant theory on consumer behaviour in the context of environmental practices, with regard to waste management, at both local and international level. The objective of such an examination is to give context and background on the subject under study, identifying the gaps in the literature that frame the relevance to conduct this research, as well as reviewing the theoretical model that underpins the overall development of the study.

The review of the literature states there is a green consumer who in many cases does not act according to their intentions when it comes to environmental behaviour. This discrepancy is recognized in the literature as the attitude-behaviour gap. The literature discusses that, in the theoretical models used to understand the barriers at local and international level, they should include social and external factors as a complement to the Theory of Planned Behaviour and Reasoned Action frameworks. Finally, the barriers that some of the studies on pro-environmental behaviour discuss include: planning, habits, retailers' offering, and knowledge.

### **2.2 Topic Background**

Of the many challenges nations deal with includes the production of waste and its impact on the environment, have gained strong attention from governments and society, as the size of global waste is rising, as populations and consumption grow over time (Zaman and Swapan, 2016). It has been argued that waste is an environmental issue, as well as an economic loss (European Environment Agency, 2014). From the economic issue perspective, waste represents the output from an "unidirectional model of production" (Esposito, Tse and Soufani, 2018, p.5) where single goods are disposed after use, rather than brought back into the production cycle, hence representing a loss in value

(Esposito, Tse and Soufani, 2018). From an environmental issue perspective, it is known that although most waste generated globally has been collected (84%), just 15% is recycled, meaning that the majority of collected waste goes to landfills, causing detrimental effects to the environment (Zaman, 2016). The present study takes the environmental issue as one of the lenses used to provide context to the study.

The second lens is consumer behaviour. Consumer behaviour, have been pointed out as one of the reasons why waste is such an enormous concern in trying to reduce environmental impact. Sustainable consumption, the role of consumers, and changes in consumption patterns play a key role in tackling the waste problem, hence the importance given to it within academic discussion (McCarthy and Liu, 2017; Kotler, 2011; Fahy and Davies, 2007). In summary, academics acknowledge that changes in consumer behaviour and purchasing patterns are part of the key challenges for achieving environmental goals; the day-to-day consumer behaviour being one of the most challenging areas (Pietzsch, Ribeiro and de Medeiros, 2017). For instance, UN environment (2018) inform us that there are 1.3 billion tons of food waste, generated by human consumption, which accounts for 46% of global waste. Moreover, in the last few years, other types of waste have been gaining attention from governments and from consumers: plastic packaging. The disposal of plastic in the form of packaging, like food waste, causes hazardous effects to the environment (Prendergast and Pitt, 1996). It is argued that global environmental problems can be effectively tackled by alterations in the everyday lives of individual people (Barr, 1985). As a result, the understanding of consumer behaviour around waste management behaviour is pivotal for achieving reduction targets in nations and encouraging lifestyles that have a minimal impact on the environment (McDonald et al., 2012).

There has been abundant research undertaken for understanding environmental behaviour and attitudes within different contexts; for instance, factors influencing environmental attitudes and behaviour (Barr, 2007), a cross-country study around the meaning of waste (Szmigin, Carrigan and Bekin, 2007), actions to tackle food waste (McCarthy and Liu, 2017),

similarities between waste reduction and recycling (Ebreo and Vining, 2001) and the psychological aspect on recycling (De Young, 1986). However, other authors have identified that the attitudes towards green and sustainable consumption differ from the real purchase behaviour, and has been identified as the attitude-behaviour-gap (Follows and Jobber, 2000; Carrigan and Attalla, 2001; Gupta and Ogden, 2009; Auger and Devinney, 2007). Also, when it comes to explaining the barriers that create such gaps, the majority of the international studies concentrate on avoiding food waste, or overall ethical and green purchasing barriers (McCarthy and Liu, 2017; Gleim et al., 2013; Bray, Johns and Kilburn, 2011; Shaw, McMaster and Newholm, 2016; Chatzidakis, Hibbert and Smith, 2006; Johnstone and Tan, 2015; Abdelradi 2018; Rowe, Jessop and Sparks, 2014; Carrington, Neville and Whitwell, 2014), which can be broad enough for understanding the specific behaviour around waste reduction practices.

Similarly, the majority of waste strategies researched within the literature are grounded in recycling, composting, and at-source reduction (O'Connell, 2011; Barr, et al., 2001). Some academics argue that there are other strategies for waste reduction that have been overlooked and under researched (Bekin, Carrigan and Szmigin, 2007), including the adoption of simplified lifestyles and a wider range of pre- and post-consumption behaviours that are different to recycling (Bekin, Carrigan and Szmigin 2007; King et al., 2006). By expanding the scope around practices for waste management, there is a better opportunity to design strategies that incorporate other consumer actions around the problem.

### **2.2.1 The Irish Context**

In a survey carried out in Ireland, where nearly 1,000 consumers participated, 45% agreed that they were concerned about the food they throw away. Also, it is known that Irish consumers have high levels of awareness on environmental issues (Bord Bia, 2017).

However, statistics regarding waste generation in the country tells a different story. The total amount of waste generated per person was equivalent to 4.3 tonnes, where nearly 25% of household disposal bins were made up of food waste (Environmental Protection Agency, 2018). Moreover, Figure 2 illustrates that a European citizen generates an average of 31Kg of plastic waste per year, whereas in Ireland, an average person generates >40Kg of waste per year, positioning the country as a top producer of plastic waste within the European Union (Statista, 2018).

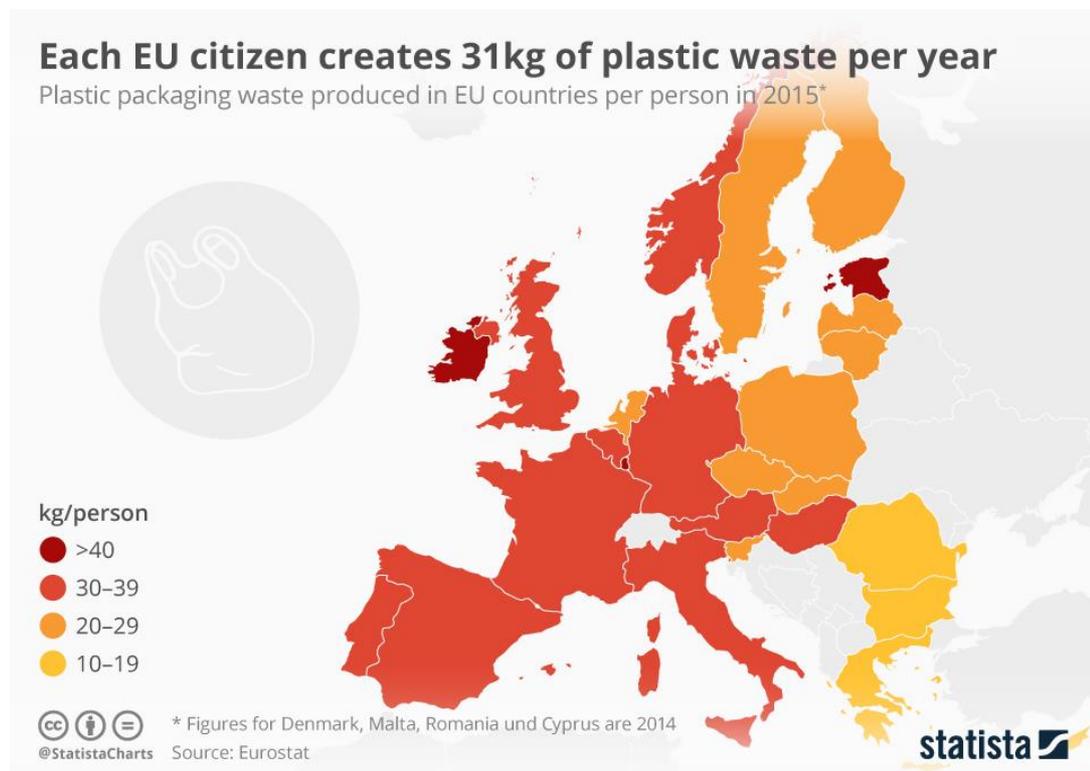


Figure 2: Plastic Packaging Waste in EU countries produced per person in 2015 (Statista, 2018)

Previous empirical research studies in the form of quantitative techniques were conducted in Ireland in order to understand attitudes and behaviours, as well as barriers, towards more sustainable waste management practices and why such discrepancy exists. Drury Research conducted a national survey with regard to attitudes and actions in recycling. The main finding was that *“in theory they [the public] would be willing to recycle, if recycling infrastructure*

*like household collections or bring banks were available in their area*” (Drury Research cited in Fahy, 2005, p.554 ) However, the survey also revealed that when those facilities were in place, a vast majority of people still did not practice recycling. (Fahy, 2005) explored this issue in its study *The Right to Refuse: Public Attitudes and Behaviour towards Waste in the West of Ireland* and the biggest barrier for managing waste amongst professionals was found to be the “lack of time” (Fahy, 2005, p.562 ). In a further action research study conducted over a 4 week period in the country, Fahy (2007) explored these barriers in detail using qualitative methods: action research. Despite the initial instruction given to the participants in relation to keeping other waste management practices in mind, participants did not have to keep record of other waste management practices in order to participate and keep tasks at a minimum. In this sense, the researcher believed that there could be emerging waste management practices outside recycling and composting that remain unexplored and which can be of significant importance for encouraging the public to take action in waste management. As mentioned in previous literature, there is still an opportunity to explore other waste initiatives that emerge from the consumer in their attempt to reduce waste, as well as to initially explore the barriers for translating their intentions regarding these initiatives into long-term behaviour. Finally, it is important to highlight that the literature suggests that qualitative studies on all the different factors that might have an impact on the intention-behaviour gap, and specifically in Ireland (Purcell and Magette, 2010), suggest that if the waste management issue are not further investigated the issue will continue to grow.

The following sections provides further insights and explanation of the theoretical model that underpins this study and the most relevant studies conducted on pro-environmental behaviour.

### **2.3 The Green Consumer Profile**

In the previous section, it was discussed that global environmental problems can be effectively tackled by alterations in the everyday lives of individuals

(Barr, 1985). But, who are these individuals? For the purpose of this paper, the researcher will stick to 'green consumer' as a consumer who is predominantly driven by environmental concerns and their attempt to reduce or limit their environmental footprint, including efforts to make their own, reduce, reuse, and recycle consumer goods and products (Moraes, Carrigan and Szmigin, 2012).

## **2.4 Review of theoretical frameworks**

Over the last few decades, a vast number of theoretical models and frameworks have been presented to explain the consumer attitude-behaviour gap (Johnstone and Tan, 2015). The 'reasoned action' and 'planned behaviour' theories are the most applied for understanding the ethical purchase-decision making process and which are built on cognitive process (Carrington, Neville and Whitwell, 2010). The theory of planned behaviour supports the idea that behaviour intentions are shaped by attitudes and subjective norms, while also emphasizing the impact of perceived barriers to successfully translate attitudes into behaviour (Ajzen, 1991; Newholm and Shaw, 2007). On the other hand, the theory of Reasoned Action, which has been pointed out as an extension of Theory of Planned Behaviour, explains that attitudes toward buying and subjective norms are the originators of any performed behaviour (Chong, 1998) However, Barr (2004) concluded that behaviour is a result of intentions which are modified by attitudes and subjective norms. These theories grounded in social psychology (Armitage, Conner and Norman, 1999) have changed the early stages models, where intentions were not considered as a bridge between attitudes and beliefs and behaviour (Hassan, Shiu and Shaw, 2016).

However, these theories have been vastly discussed and criticised despite its prominence amongst researchers for providing a numerical model to gain a better understanding the creation of an intention (Hassan, Shiu and Shaw, 2016). One of the most mentioned critiques of these theories is the rational decision making process (Armitage, Conner and Norman, 1999). These

theories reinforced the idea that human behaviour is a linear process without considering external factors (Carrington, Neville and Whitwell, 2010), social and cultural elements (Moraes, Carrigan and Szmigin 2012), leading to the conclusion that these theories are only taking the human cognitive process into consideration.

## **2.5 The Intention-Behaviour gap**

The intention-behaviour gap has been discussed by Carrigan and Attalla (2001), Auger and Devinney (2007) and Carrington, Neville and Whitwell (2010). Some of these authors express that the attitude-behaviour gap fails to explain the discrepancy in behaviour regarding social desirability bias, which alters the measurement of the consumer's intentions (Carrington, Neville and Whitwell, 2010). In that sense, Carrigan et al. (2001) developed a new model that considers three factors which they claim play a role between intentions and behaviour and, in contrast to the theory of planned behaviour and reasoned action, does incorporate other factors. The integrated model incorporates three independent concepts: implementation intention actual behavioural control, and situational context and these concepts are presented as "mediating factors" between intention and behaviour (Carrington et al., 2011, p. 140).

Even though the intention behaviour gap model above does incorporate factors that the theory of planned behaviour and reasoned action do not, and need to be considered for studying ethical consumption behaviour, other authors argue that when it comes to pro-environmental behaviour as a complex task, it cannot be framed by one single model (Kollmuss and Agyeman, 2002). In that sense, the researcher wanted to explore and understand what other models the literature discussed in an attempt to find a suitable framework that underpins a study around pro-environmental behaviour.

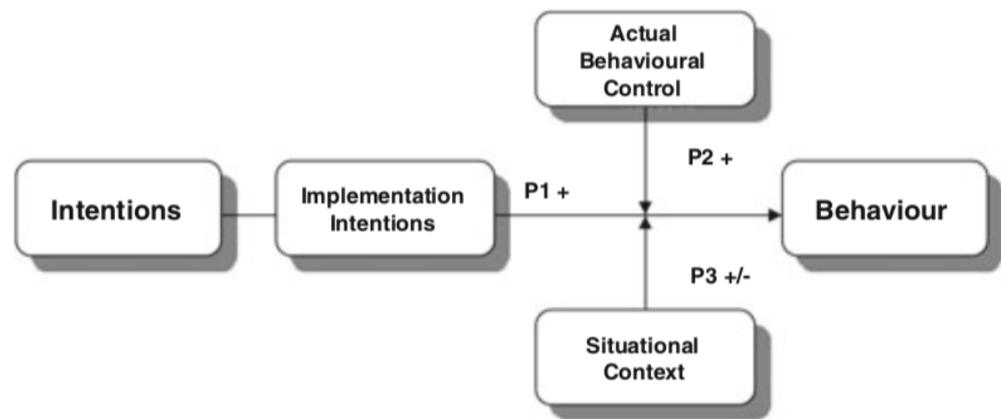


Figure 3: Conceptual Framework Intention-Behaviour Gap (Carrington, et.al., 2010)

## 2.6 Models on pro-environmental behaviour

The most common models reviewed in the literature are the Value-Action Gap (Blake, 1999) illustrated in figure 4, and the Conceptual Framework of Environmental Behaviour (Barr, 2007) illustrated in figure 5, which were also used to understand the gap in waste management practices both internationally (Barr, 2007) and locally (Fahy, 2005). Blake's Value-Action gap model explains that most pro-environmental models developed did not succeed in their attempts to explain such gaps because they do not consider individual (referring to the personal barriers such as attitude and cognitive structure), responsibility (regarding "people's perception of institutions and responsibility" for fixing the problem), and practicality (practical, social and institutional limitations including lack of time, knowledge and money) factors that mediate in the action of behaviour (Blake, 1999). Some critique of Blake's model are around the fact that they do not include social factors such as family influence (Kollmuss and Agyeman, 2002). However, Blake's model also does not consider the implementation of intentions or planning (Kollmuss and Agyeman, 2002) presented in Carrigan's integrated model, and also measured in a waste management context (recycling) by Rise, Thompson and Verplanken, (2003). These authors suggest that the Theory of Planned

Behaviour could provide a more comprehensive understanding of the process of translating intention into action when including implementation of intentions; the study found a direct effect between planning and recycling behaviour.

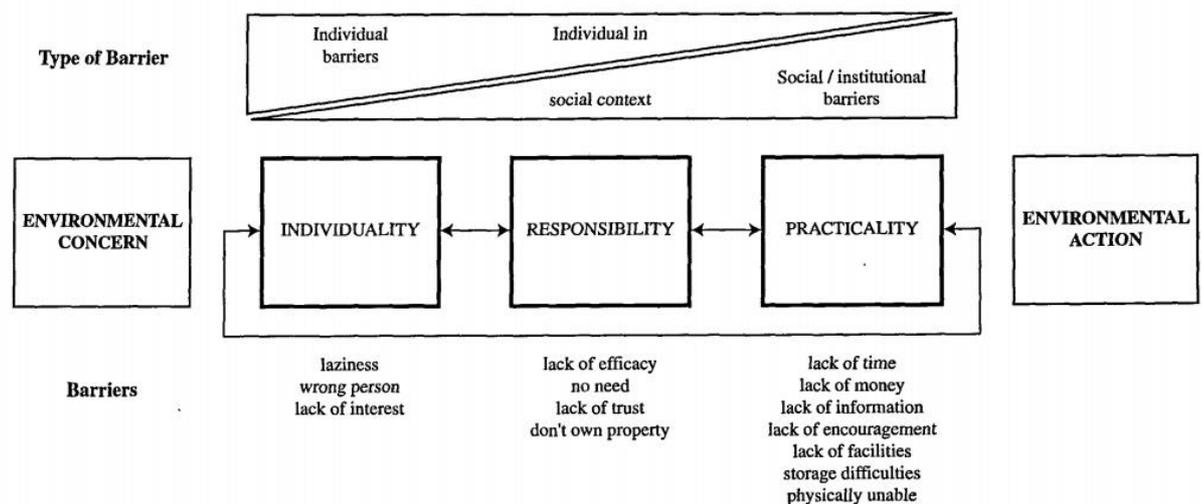


FIGURE 2. Barriers between environmental concern and action.

Figure 4: Value-Action Gap (Blake, 1999)

On the other side, the Conceptual Framework of Environmental Behaviour grounded in Fishbein and Azjen's (1975) Theory of Reasoned Action, includes both situational variables and psychological variables. Situational variables are those variables that define the individual's situation in relation to the behavioural context, individual's characteristics, and knowledge of experience of the behaviour. The psychological variables incorporate different factors found within the literature of waste management behaviour, including: altruism, response efficacy, intrinsic motivation, subjective norms, logistics, environmental threat, and citizenship (Barr, 2007). In his study, Barr concluded that the Theory of Reasoned Action does help to study waste management behaviour, and also infers that re-use and reduce waste practices are different

from recycling, as the last one is more likely to be imposed by governmental institutions. (Barr 2007)

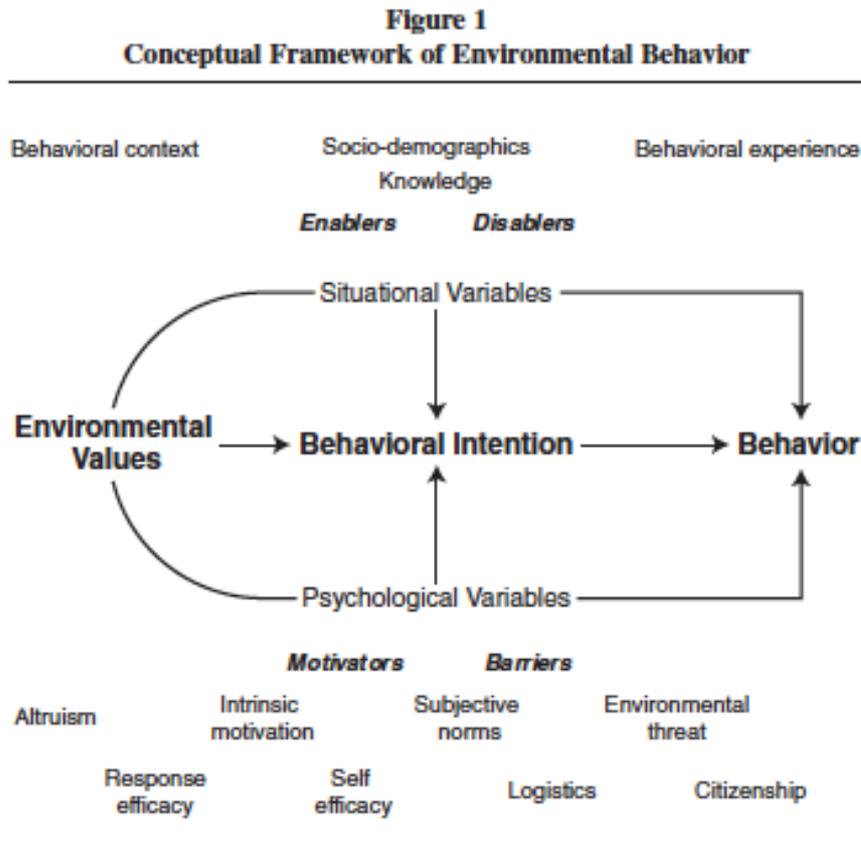


Figure 5: Conceptual Framework of Environmental Behaviour (Barr, 2007)

Although both frameworks do incorporate external and social variables, the models still do not account for social factors that may influence behaviour, such as the people consumers live with, as presented in an exploratory study on consumer's perception on green consumption (Johnstone and Tan, 2015). Furthermore, they do not include habits which were found to negatively influence consumer green behaviour (Vermeir and Verbeke, 2006; Padel and Foster, 2005).

In order to further understand the barriers and impeding factors that the literature has discovered within the context of green behaviour and waste management behaviour, the researcher has compiled the most salient themes when examining the pro-environmental behaviour literature, including waste management practices.

## **2.7 Barriers identified within the literature**

### **2.7.1 Planning**

Action planning, as previously discussed, has been found to be one of the key mediating factors between intention and behaviour and it has been reinforced by Ajzen (2002), in his review on the Theory of Planned Behaviour, maintaining that critiques within the literature around the lack of power to predict behaviour may be related to the poor planning required from the individual for a positive implementation of the behaviour. However, in a study done in the context of physical activity, action planning can predict behaviour only when intentions are high (Scholz et al., 2008). In addition to this, research underlines the need to differentiate between the implementation of the intention, as presented in Carrington et al.'s (2010) holistic model, and action planning. These terms are discussed within the intention-behaviour gap literature but have different meanings that need to be clarified for the purpose of this study. Implementation intention is a self-regulatory strategy that increases the probability to act according to certain intentions and helps to link an anticipated critical situation to a directed response that has been previously identified as a goal (Gollwitzer, 1999) and even though it can be as a cognitive planning the output is different. In contrast, action planning is what comes next; is a consequence of the implementation of intentions by addressing the when, where, and how to implement the behaviour and have been found to explain variances between intentions and behaviour (Hassan, Shiu and Shaw, 2016).

### **2.7.2 Habits**

Habits have been defined as the extent to which people tend to perform a behaviour as a response from learnt experiences (Limayem, Hirt and Cheung, 2007). In other words, “an act that is acquired by repetition and occurs without conscious thought” (McBroom, 2015). If habits are unconscious, it can be assumed that any behaviour ingrained in habits is difficult to change, as the person may not be aware of the intended action. This argument has been discussed within the literature specifically within environmental behaviour that parallels the idea that habits are a very resilient barrier in pro-environmental behaviour and have been under researched in the literature (Kollmuss and Agyeman, 2002).

### **2.7.3 Situational context**

Situational Contexts are discussed in the intention-behaviour conceptual framework (Carrington, et al., 2010) and is grounded in Belk (1975) theory that states the environment has an effect upon behaviour. The situational context in the conceptual model represent the shopping environment that the shopper faces in a specific moment of time, and it includes factors such as proximity, visibility, price, the presence of people in the shopping moment, time relevance, the mission or occasion, and momentary mood such as cash on hand (Carrington, et al., 2010). In this sense, when it comes to day-to-day items, especially around food and grocery products, considering what retailers offer and the environment is an important external factor to understand waste reduction practices as it may impact the purchase decisions of the consumer. Furthermore, some authors suggest that retailer practices and their offerings can help shape consumer behaviour regarding waste reduction (Porpino et al., 2015; Verghese et al., 2015). This idea is reinforced when a mainstream supermarket sells the majority of its products as packaged, hence it becomes evident that any pro-environment initiative undertaken by them is more likely to be influential (Jones, Comfort and Hillier, 2005). Also, other authors suggest that retailers can support food waste reduction by providing bulk offers that

help consumers manage portions and have more control on what is actually purchased (Porpino et al., 2015; Verghese et al., 2015).

#### **2.7.4 Knowledge**

There are two types of knowledge that the literature suggests are moderators of pro-environmental behaviour, especially in waste management behaviour (Barr, 2007). The first one is the overall knowledge of the environmental issue (Schahn and Holzer, 1990), which is grounded in the overall idea that information influences the decision-making process (Sproles, Geistfeld and Badenhop, 1978). However, this type of knowledge have been criticised for its lack of influence in the purchase intention (Joshi and Rahman 2015; Connell, 2010; Padel and Foster, 2005). The second type of knowledge is what the literature calls the “knowledge of action”, which refers to the information that an individual has on how to perform the behaviour (Schahn and Holzer, 1990). It can be assumed that knowing how to do an action is a pre-requisite for behaving in a proper way.

#### **2.8 Conclusion**

This chapter presented a detailed review on the background of the study, the relevance and importance of this research based on the gaps found in the literature review conducted at local and international level, as well as providing a theoretical framework to answer the research question. The conclusion from this chapter is that the researcher believes the intention-behaviour gap is a suitable framework for this study as the theories presented above parallel above led to the idea that intentions precede behaviour, however it is also aware that there may be other factors not mentioned in this framework that could represent a barrier for the translation of an intention into pro-environmental behaviour and waste management as the other models suggest.

## **Chapter 3: Research Methodology**

### **3.1 Introduction**

This chapter describes the research process used to achieve the research objectives, and the considerations undertaken by the researcher when designing the study methodology. By understanding the research methodology concepts, the researcher is able to decide the most appropriated procedure for the study ahead and then effectively pull together the information required in a logical process to answer the research question (Adams, 2007)

In this chapter, the researcher draws a clear picture of what to do in order to answer the research question, which includes detailing the research philosophy, approach, strategies, and data collection methods. It also states what the specific objectives are, and the sample that would suit best the purpose of the study and the sample selection criteria. Finally, the methods for gathering and analysing the data are outlined, taking into consideration the limitations and ethical issues involved.

### **3.2 The Research question**

The researcher aim to answer the following research question:

*When people have intentions towards waste reduction, what are the barriers underlying the translation of the intention into behaviour and what solutions could overcome the barriers to close the gap from a consumer perspective?*

### **3.3 Research aim and objectives**

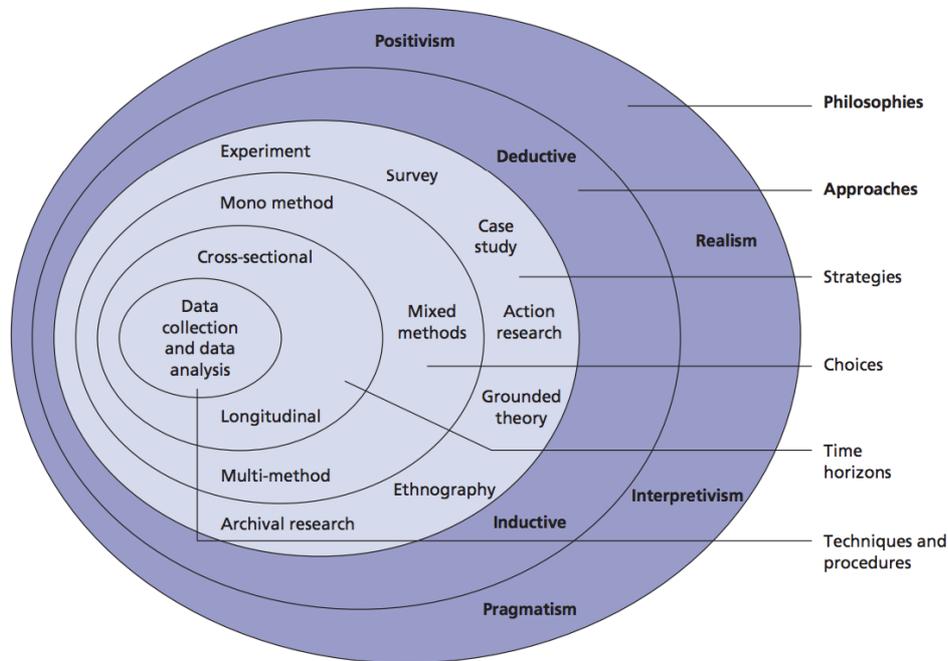
In this study, the researcher aims to collect insights through qualitative research to understand the intentions, barriers, and consumer led ideas for overcoming the barriers to close the gap between intentions and behaviour in waste reduction practices. In order to achieve this goal, a group of specific research objectives are set up and explained below.

- Research objective number one aims to briefly explore the consumer understanding and beliefs towards waste reduction practices. The rationale behind this objective is to uncover insights around the individual's intentions. It is important to stress that the overall aim of the project is to uncover insights into consumer intentions regarding behaviour.
- Research objective number two aims to identify the barriers for translating intentions into behaviour in waste reduction practices. These barriers form the gap between intention and behaviour, thus identifying them is essential for answering the research question.
- Research objective number three aims to identify solutions that consumers believe could help overcome the identified barriers. Identifying these consumer-led solutions will contribute to a conclusion for closing the gap between intention and action.

### **3.4 Research design**

In order to have a systematic and logical approach for explaining the research design, Saunders, Lewis and Thornhill (2015) suggest that the research methodology can be compared to the layers of an onion, which is commonly known in research methodology as the research onion. The authors note that this analogy is a visual approach for describing the research process and it is explained by six different layers that help the researcher to decide the best methodology for their study. The layers presented by the author are: research philosophies, approaches, strategies, choices of methods, time horizons,

techniques and procedures. In the following sections, a detailed definition and justification of the methodology used by the researcher, in lieu of the above, will be discussed.



**Figure 4.1**  
The research 'onion'  
Source: © Mark Saunders, Philip Lewis and Adrian Thornhill 2008

Figure 6: The Research Onion (Saunders et al., 2015).

### 3.4.1 Research philosophy

The research philosophy details the perspective the researcher takes in relation to the construction of the reality that is subject to investigation (Bryman, 2008). The research methodology literature discusses two aspects for research philosophy: ontological aspects, which include approaches such as objectivism and subjectivism, and epistemological aspects, which include positivist and interpretivist approaches (Saunders, Lewis and Thornhill, 2015; Neuman, 2006; Bryman, 2008; Crossan, 2003). For the purpose of this study, the researcher explores the epistemological aspects as the starting point for

justifying the methodology of the study. It is important that the researcher identify at an early stage what the most appropriated philosophy is, as it also provides justification for how the research will be undertaken (Flick, 2011).

There are two paradigms that the literature presents in the area of knowledge assumptions: positivism and interpretivism. The positivism philosophy explains that reality has an independent existence from the object being studied (Neuman, 2006) and that it favours the natural science (Saunders, Lewis and Thornhill, 2015); where the researcher's assumptions can be considered as knowledge only if are validated or are considered facts (Bryman, 2008). One of the key principles of the positivist philosophy is that its main objective is to generate and test hypotheses that are going to concede the explanation of laws. Criticism of the positivism approach found in the literature claim that its narrowed approach and generalization of society represents a barrier for generating insights around complex societal studies (Saunders, Lewis and Thornhill, 2015).

The interpretivist approach, in contrast, defends that reality is constructed by the object being studied and it looks for meaning, motives, and ideas behind people's interpretation of the reality being the most appropriate philosophy for understanding human action (Saunders, Lewis and Thornhill, 2015). One of the key principles of interpretivism is that behaviour is a result of ideas and meaning, and not by independent facts about reality. This research follows a **interpretivist philosophy** as the research will identify meaning of the waste reduction, perceived barriers and solutions from people's interpretations of their realities around this context.

### **3.4.2 Research approach**

The research approach is the next layer of the onion to be addressed. The two research approaches that are mainly discussed in the literature are Deductive and Inductive approaches (Saunders, Lewis and Thornhill, 2015). The deductive approach aims to draw conclusions by testing a theory, hypothesis, or premise that is mainly deducted from the literature reviewed by the

researcher and drawn using a logical approach (Saunders, Lewis and Thornhill, 2015). One of the key principles for deductive research is that the hypothesis is true or false when the conclusion of the study verifies or not the premise of the hypothesis stated. In contrast, the inductive approach looks for patterns and themes that emerge from observations or those induced by the researcher to explain the phenomena under investigation (Awasthy and Gupta, 2015; Bryman, 2008).

For the purpose of this study, the researcher used a joined approaches in a sequential way. First of all, the literature around ethical and environmental consumption and the intention behaviour gap well as other environmental behaviour frameworks were reviewed in order to identify a theoretical framework that provided a greater understanding of the phenomena being studied at a very top-line level. Secondly, because of the human and exploratory nature of the research, an inductive approach was also applied in order to identify themes around the three objectives set for this study.

Furthermore, **inductive approach** is the most suitable for understanding the meaning or constructed reality that the object of study has in relation to a specific phenomenon starting (Bryman, 2008; Saunders, Lewis and Thornhill 2015). In addition to this, this study explores the idea that barriers are perceived and identified by the individual, hence the individual builds their own reality around what stops them performing waste reduction practices, the result of which is the intention-behaviour gap described in the theoretical framework.

### **3.4.3 Research strategy**

Following the research onion framework, the next layer to be discussed in this chapter is the research strategy. According to Saunders et al., (2007) the research strategy is the definition of how the researcher is going to approach the work ahead, which in some cases can be a mixture of different strategies in the design of the methodology. There are different strategies that can be

applied to a research study, with experiments, surveys, case studies, grounded theory, ethnography, interviews, and action research being the most common (Saunders and Tosey, 2012). In the following sections, the researcher will explain the strategies used in this study and give an overall justification for such choices.

**Grounded Theory** is the strategy selected for this particular study. Grounded theory is a qualitative research design in which the inquirer generates a general explanation of a process, action, or interaction shaped by the views of a larger number of participants and the intention is to “move beyond description” (Creswell, 2007, p.63) Grounded theory was selected because it is the strategy that is most commonly used in qualitative research (Johnson, 2015; Awasthy and Gupta, 2015; Johnson, 2015; Myers, Creswell, 2007, ) for identifying higher concepts attached to the views of the particular object of study (Johnson, 2015). This study aims to discover what are the barriers which widen the intention-behaviour gap in waste reduction practices in an Irish context. The researcher also acknowledge the fact that there are different combinations in the strategy, where the multi-method approach is commonly used. By using a multi-method approach (Saunders, Lewis and Thornhill, 2015), the researcher analyses the data obtained using different techniques that come from qualitative and quantitative data collection procedures. However, the researcher considered the time limitations involved in using both methods, and thus decided on a **mono** method in the end – qualitative.

#### **3.4.4 Data collection**

There are different approaches for gathering data in any research study. Deciding how the data is going to be collected is a vital step that allows the researcher to answer the research question and objectives. As such, the effectiveness of the results will be determined by how effective the data collection is in the overall research process and design(Adams, 2007)

### a) Primary and Secondary data collection

There are different approaches for collecting data. Primary data is the collection of data by the researcher themselves, and is normally used when the researcher cannot answer the research question and meet the objectives by only using secondary data sources; or if secondary resources are not available. Primary data collection can be a very expensive and time-consuming way for data collection, but it ensures the right answers for specific research questions are collected (Saunders, Lewis and, Thornhill 2015; Cooper and Schindler, 2008; Adams, 2007)

Primary data in qualitative research can be obtained through different techniques. Interviews, focus groups, ethnography and observation are the most common data collections techniques used in qualitative research (Saunders, Lewis and Thornhill, 2015). Although the majority of the environmental and ethical consumer literature is in favour of quantitative methods, the decision-making process of this group of consumers and the translation between intentions and buying behaviour is complex, hence the quantitative approach could fail in the understanding of this complexity (De Pelsmacker et al., 2005; Freestone and McGoldrick, 2008; Shaw, Newholm, & Dickinson, 2006; Szmigin et al., 2009; Carrington, Neville and Whitwell, 2014). In the local context of environmental behaviour (Fahy and Davies, 2007), in their study about waste management in Ireland, concluded that quantitative approaches used to understand waste management attitudes and behaviours are conceptual without representing the reality and do not provide nuances for boarding the issue.

Based on the literature reviewed, the researcher favours the **primary data collection**, in the form of **interviews** as the data collection technique for this study. The interview is a technique of data collection in which there is an interaction between two people, where one person has the role of the interviewer and aims is to ask specific questions around the topic of research (Cooper and Schindler, 2008). There a different vehicles for performing an

interview, with telephone, online, and face to face being the most commonly used. In that sense, the following paragraph will explain the process used for this study for the data collection:

Initially, the researcher carried out the first semi-structured interview with an Irish entrepreneur, owner of Minimal Waste Grocery, an online shop established in 2017. The purpose of this initial interview was to inform the researcher of this topic from an expert point of view, through a business owner involved in the area of zero waste. This interview also sought to identify initial inconveniences that consumers were sharing with this particular person when it came to buying zero waste products and their purchase behaviour. In addition, the interview helped the researcher to design the interview guide for carrying out further interviews and were not included in the findings chapter as the purpose of the interview was different to the purpose of the study. However, the researcher also looked at the moderator's guide by Johnstone and Tan (2014). The interview was conducted on July 15<sup>th</sup> over a Skype phone call and a duration of 39 minutes.

It is important to highlight that, even though primary research, in the form of interviews, was the data collection method selected, the researcher, in their attempts to get a more immersive approach into green consumption, waste reduction and phenomena in the intention-behaviour gap, also explored industry reports, official data on governmental websites, and academic studies in order to inform the literature review and gain an in-depth understanding for the research problem, which allowed for a better design of methodology and data analysis.

Finally, when it came to the design of the consumer interview, certain considerations were taken into account in order to maximise the results. As the literature suggests, the researcher had to carefully consider a series of steps in order to obtain the richest and most accurate data (Bryman, 2008; Morgan and Smircich, 1980; Saunders, Lewis and Thornhill, 2015). One of these steps is the interview type. There are three types of interview: structured, semi-structured, and unstructured. For the purpose of this research, **semi-structured** interviews were chosen. Semi-structured interviews combine the

best of both structured and unstructured types and allows the interviewee to start with certain questions and then let the interviewee openly discuss it, allowing the conversation take another path, if necessary (Cooper and Schindler, 2008). An example of the interview guide can be found in Appendix number II.

### **3.5 Sampling**

Regarding the demographics of an ethical consumer, previous research indicates that "the new consumer is typically educated, urban, part of the AB social group" (Strong, 1996, P.5 ). Initially, the researcher considered following this demographical approach and selected a sample based only around these specific demographics. However, the researcher, while designing the methodology, questioned whether the selection of this demographic was too narrow for the sample, thus limiting the richness of the study by excluding other demographics. As such, a new approach was selected and explained further below.

Some authors (Hair, et al., 2008) explain that there are different sampling techniques that can be applied when a census is not a viable option. The sampling techniques evaluated for qualitative research were, convenience sampling, and purposeful sampling. Convenience sampling is a type of sampling where the researcher identifies and selects the members of the population that meet certain practical criteria, those being accessibility, geographical proximity, availability at a given time, or their overall ability to cooperate with the research study (Saunders, Lewis and Thornhill, 2015; Hair.et al., 2008). Convenience sampling is commonly used in areas such as consumer behaviour and marketing. However, despite the fact of not being 100% representative of the population, there could be some difficulties in trying to link the results between cause and effect in the study topic (Bryman, 2008).

In purposeful sampling, the researcher selects the sample based on their knowledge of the topic of study and the researcher's experience with the group being sampled. A combination of both **(convenience and purposeful)** were the approaches considered for this study. In qualitative research, the objective is to find in-depth insights and understanding of purposively chosen individuals, hence selecting a purposeful sampling technique is expected when conducting qualitative research, as the sample should meet the criteria that will lead to the type of information the researcher requires (Lunenborg & Irby, 2018).

Firstly, the researcher identified a clear criteria for selecting the sample, based around specific individual's responses towards their own evaluation for being environmentally conscious consumers, to see if they considered themselves environmentally responsible and if , compared to their peers the meet the criteria. This was evaluated through an investigation into whether they had to agree or disagree on the following statements:

- they incorporate environmentally friendly products into their routine.
- they were aware of the impact that their purchase decisions have on the environment, such as waste of purchased items.
- they were willing to incorporate more waste reduction or zero waste practices and purchases into their day to day routines.

Secondly, the researcher asked colleagues from work and friends, previously identified as individuals who would be interested in participating in the study, to fill out the form and validate if they considered themselves pro-environmental consumers as well as to identify if they were practising such actions currently: waste reduction or zero waste practices. The approached individuals had to strongly disagree, disagree, neither agree nor disagree, agree and, strongly agree with the points listed above. If the individual strongly agreed or disagreed, they were invited to formally participate in the study. It is important to highlight that the green consumer, as explained in the literature, has a wide range of expressions in consumer behaviour thus it was pivotal to

determine if the individuals met the criteria specifically around zero waste practices regarding environmental concerns.

In total, the researcher carried out 6 semi structured interviews, lasting between 30 and 45 minutes (depending on time constraints expressed by interviewers). These were recorded for further data analysis. The semi-structured interviews were conducted in two weeks period, between the 15<sup>th</sup> of July and the 3<sup>rd</sup> of August 2018. The six participants were interviewed in different places based on their convenience, including offices and coffee shops. The interviews were recorded using a mobile phone and the data was transferred and filed for security and privacy reasons. The consent form can be found in Appendix III.

Participants were asked to talk about what they believe waste reduction or zero waste practices were, give examples of current practices as well as give examples of current incidents they have experienced in the past and elaborate on those, including grocery products as well as other items. Finally, the participants were asked to discuss on how they think waste reduction should be promoted, give examples on what they would promote in order to overcome those incidents identified. This research can be considered a small study and sample; hence, it is not representative for the entire population and is not generalizable.

### **3.6 Data analysis and interpretation**

There is a vast amount of information collected when conducting qualitative research, which leads the researcher to carefully select the best approach and methodology for managing and analysing the data. The literature suggests that the selection of the data analysis methodology will be defined by that type of data itself (Hair, et al., 2008).

In inductive data analysis, the literature favours towards thematic analysis (Saunders, Lewis and Thornhill, 2015). The data analysis methodology

selected for this study was **thematic analysis**. This methodology is used in qualitative research in order to identify patterns or themes and do not require a framework, which gives flexibility to the researcher and is open to a researcher with any level of expertise in conducting research (Miller, 2016). The literature also suggests that this methodology represents the foundation for analysing data in qualitative research (Braun and Clarke, 2006). Thematic analysis can be used for building theoretical frameworks or for when the researcher is trying to find a solution for a given societal problem (Miller, 2016). In this study the researcher identify themes around a theoretical framework as well as try to identify solutions for the waste issue with consumers.

There are six proposed steps when conducting an analysis of qualitative data (Braun and Clarke, 2006):

1. Familiarising oneself with the data,
2. Generating Initial Codes,
3. Searching for Themes,
4. Reviewing themes,
5. Defining and naming themes,
6. Creating the report.

Firstly, the researcher transcribed all the interviews and in some instances used voice transcription software that helped the researcher manage their time more effectively. The researcher familiarized with the data, which was critical after doing the transcriptions, as the researcher took a more reflexive approach for identifying what was presented. After reading the data a couple of times, the researcher was able to start coding the data and identify themes. A technique used for searching out themes was categorization and coding (Hair, et al., 2008). In this step, the researcher categorized sections of the transcripts and labelled each category with general names, which were called "codes", and which were defined in the form of colours. When data was identified and met a category, the researcher added a code to that piece of information. Subsequently, after all the data was coded, the researcher started searching for themes. Repetitive themes were grouped in accordance with each research objective and were named in order to facilitate discussion and

validation. Finally, themes were reviewed against the codes in order to validate them and ensure the identified themes coincided with the overall research objectives. Appendix number IV provides an screenshot of part of the raw data coded.

### **3.7 Ethical Considerations**

It is important that the researcher identify what the ethical considerations that are linked to the study are (Bryman and Bell, 2015). The aim of this study was to carry out the research in a respectful and ethical manner, where the interviewees and participants did not feel any negative effect, felt uncomfortable, nor had a sense of harm throughout the process.

All personal data such as name, age, address, frequent locations visited, and any other data that can be related to the individual was kept in totally confidentiality. In addition, all the participants were asked to fill out consent forms and were properly informed about the research study, the duration of the interview, and how the data collected and recorded was going to be used, which was only for academic purposes. Finally, the participants had the opportunity to drop out during the interview process if they wanted to.

### **3.8 Research limitations**

It is important to stress that there were some limitations found in this study. One of the main limitations for this research was time for conducting and writing the project. Another limitation was the size of the sample (only six interviews conducted), which was a result of the limited time the researcher had. Within the realization of the interviews and the analysis of the results, the researcher also considered social desirability bias as a limitation (Randall and Fernandes, 1991). Finally, the researcher suggest that a segmentation of the sample by carrying out a survey in the first instance, is needed to determine the most salient practices as waste reduction is a broad subject in waste

management practices.

### **3.9 Chapter Summary**

This chapter provided details on the research methodology utilised in the study. The first part of the chapter outlined the research question, the aim and the objectives that were framed to answer the research objective. The second part of the chapter outlined the steps taken for the research design by following the research onion framework proposed by Saunders et al., (2015) The research design section included the research philosophy, the approach, strategy, data collection approach and techniques used. The last section explained what the ethical considerations for the study were, as well as the limitations the researcher faced throughout the execution and design of the study. The next chapter presents the findings.

## Chapter 4: Findings

### 4.1 Introduction

This chapter aims to explore in detail the findings obtained from the data gathered from the interviews. The methodology used for data analysis was thematic analysis, where the researcher identified patterns and major and minor themes, based on analysis of the raw data. This thematic analysis was done as per the research objectives. The researcher has also included the raw data, through quotes, that support the thematic findings. Sequentially, after the analysis, the researcher identified connections with the literature to provide an in-depth analysis and commentary. The findings are outlined below and are presented with the research objectives in mind.

### 4.2 Research objective number one – Exploring consumer understanding and beliefs towards waste reduction practices

Research objective number one aimed to briefly explore the consumers' understanding and beliefs towards waste reduction or zero waste practices. The analysis of the data led the researcher to the identification of three themes which are examined in the following paragraphs, with examples of participants' reflections also included.

#### **4.2.1 Reduce, reuse and recycle**

Reduce, Reuse, and Recycle are the most salient practices for waste reduction from consumers. A salient theme that emerged from the data was that interviewees are aiming to *reduce* the excessive consumption of plastic packaging. The theme, which came from all participants, related to things they intend to reduce:

*“I am trying to buy things with less packaging and just overall be more conscious of what you're purchasing”*

In this particular quote, the interviewee clearly states that her current behaviour towards waste reduction is achieved through being more conscious of the items being bought, especially the ones that come with plastic packaging. Plastic packaging is one of the main causes of environmental issues, cutting back on plastic packaging may not be an easy task, as the participant expressed their intentions without any affirmative action statement.

On the other hand, practices such as these are linked with behaviours that are engrained in day to day life that require a change in habits and routine, reducing or removing an act that was developed by reiteration and which happens unconsciously (McBroom, 2015). A change of habit suggests that people need to be aware (conscious act) of what they are actually throwing away, which does not happen frequently, as the following interviewee explained when asked what waste reduction meant:

*“Zero Waste for me is stripping as much as is possible plastic from what we can see on a daily basis”*

It is important to notice that in the previous quote, the interviewee also provided intentions (“as much as possible”). On the other hand, plastic packaging is not the only thing the participants are cutting out. Female participants gave examples on how aware they are when buying clothing items and how they have a different approach to the amount of clothes they need and buy, hence they consider themselves reducing the amount of clothes they have:

*“I used to loved going to Zara on my lunch and pick a top just because I could but now I'm looking like I don't need that you know so definitely with clothes I feel like I probably come further along that journey with the zero waste aspect”*

One interviewee was asked about her shopping behaviour and how they are in line with their beliefs around waste reduction, especially in relation to cutting

down on plastic. The first insight was to acknowledge the fact that these decisions are not always done, so they need to change some sort of habit (for example, going into a different shop), as per the following quote:

*“Tonight I’m going to be a little bit better and skip Aldi and go to the hop sack they have just like just shelves of loose veg, loose broccoli, garlic, no plastic whatsoever, they have got paper bags you can put your stuff in or bring your own bags”*

However, reducing the consumption or purchasing of certain items was not the only alternative they provided when the researcher explored the meaning of waste reduction and their current intentions around it. The majority of the interviewees explained that it is also about finding ways of reusing items and repurposing them, as a way to avoid putting them in the bin and further avoiding waste. Below, is an example regarding this:

*“I always try to save containers from other items I shop so I reuse those for going into those shops [referring to shops with loose items]”*

Another participant mentioned that when she started to become more aware of the waste she was generating, specifically at home, she started repurposing items such as glass jars bought, so they could be used again:

*“I started repurposing jars, started keeping my jars and then using them again”*

The same participant reaffirmed this insight when explained that the purpose of waste reduction is to keep things out of the bin. When asked what advice she would give to someone when trying to reduce waste:

*“basically, it’s all about trying to keep things out of any bin”*

From the quote above, it seems that the participant believe that the less waste put in the bin the better for waste reduction it is, which helps the individual to measure their intentions.

Finally, *recycling* was another significant practice that all participants mentioned when they were asked about their beliefs and practices in waste reduction and zero waste. Recycling, as identified in the literature, has been a

practice that consumers are paying more attention to because of the impact of packaging on the environment (Prendergast and Pitt, 1996).

Despite the recent news around the need to improve recycling facilities in Ireland, the way waste is processed in the country; participants still believed this is a way of reducing waste to a certain extent. Some reflective quotes around this are presented below:

*“For me it's to reduce the amount of product we are putting in the black bin”*

Reducing the amount of things that goes into the black bin, not only implies the repurposing of items that may end up in a bin, but also some sort of segregation of the waste, as not all the items can be brought back to use.

#### **4.2.2 Replace items with more waste efficient alternatives**

It was identified as a strong belief that switching to alternative items that are used on a daily or highly frequency basis, represents to certain extent, a way to reduce waste. The participants provided different examples that went from, switching to alternative containers for serving coffee and food on the go, durable containers to transport food in outdoor activities, and the use of bottled water to avoid purchasing plastic bottles. One example given by a female participant was around wasting too much sanitary products:

*“so it's trying to make switches where I can, I found the other day that women throw away 11000 sanitary products in their lifetime and how can you switch that and make an impact and you can very easily by buying a moon cup for example”*

Another example is the well-engrained consumer behaviour in the Irish population of reusable bags for carrying shopping. A clear example of this switching behaviour is presented in the following quote:

*“take reusable bags to pack shopping instead of plastic bags”*

A mother with three kids also explains how she is replacing Ziploc bags; now she is using Tupperware:

*“I don't pack up Ziploc or tin foil for sandwiches, we use Tupperware, something I have reinvested in is buying Tupperware that will last and we can reuse it”*

Furthermore, another participant pointed out how she has switched to reusable cotton rounds for her eyes rather than face clothes, which is a clear sign of a switching action towards a more waste efficient solution for face hygiene, as she was using organic cotton pads that were still going into the landfill, as they weren't compostable:

*“I was using organic cotton pads with compostable packaging, so I didn't feel too bad about that.... but you cannot put it in the compost bin, so it was still going into the landfill, so I changed over using face clothes and using reusable cotton rounds for my eyes”*

Finally, the idea of replacing day to day items with more durable ones was evident when a participant expressed that an easy solution when it comes to waste reduction is to replace coffee cups with 'keep cups':

*“I think an easy day to day would be coffee cup I guess is substituting that with keep cup”*

The same participant further explained how recyclable coffee cups are no longer an alternative:

*“I think the big thing with coffee cups is that they aren't generally recyclable so if someone is making a step towards recyclable cups we are just jumping straight to keep cups”*

The data explains that individuals, apart from reducing certain items, reusing, and recycling, are also replacing day to day items that could be reused later or has a longer life cycle. This is because individuals are more likely to identify which items they could replace rather than avoid in the first place, when purchasing an item.

### **4.2.3 A change of mindset that force a continuous assessment of habits.**

When analysing the data from the interviews, another predominant theme was the idea of habit and mindset change. There was a general belief from all participants that when they are trying to reduce waste, and were more conscious around it, they are forced towards mindset, habits, and routines changes, which in many cases could lead people to drop their intentions:

*“I think that going more than zero waste is a mindset change, you start seeing things a little bit different and things start to last longer”*

What the previous quote explains is that the act of going towards zero waste is not only an act; it involves a change of mindset and how people experience the world around them also reinforced below:

*“to me it means living a conscious life like being aware in every moment of your choices and how they affect the world at large”*

Finally, another participant stated that, for her, zero waste and waste reduction means re-assessing habits to be more in line with her beliefs:

*“for me is trying to be more conscious and to re-assess habits ... and start to live a life that's more in line with my ethics and we care for the environment and the animals on it and for people as well”.*

### **4.3 Research objective number two – to identify the barriers for translating intentions to behaviour in waste reduction practices**

Research objective number two aims to understand the barriers for translating intentions to behaviour in waste reduction practices. The researcher identified different themes that emerged from the interviews that were refined three times in order to represent the most salient ones. The major themes identified were: lack of planning, adopting new habits and routines habits, support and collaboration from others, convenience, lack of recycling knowledge, and retailers' practices. The listed barriers are the ones that form the gap between intention and behaviour, thus identifying them was essential for answering the research question.

### **4.3.1 Lack of planning**

The ability for individuals to plan in advanced was a major theme that emerged from the data and one which creates an obstacle for the translation of an intention into behaviour. Planning was expressed as the ability to identify in advance the circumstances the individuals were going to face at a particular time and that would eventually help them to act according to their initial intentions.

One participant stated that planning was a difficult task at the beginning of her journey:

*“I found planning at the start very difficult, if I didn’t get to the farmers market on a Saturday I had to go to SuperValu beside my house to get my food stuffs which is 5 minutes away, but it was an absolutely nightmare for plastic free items”*

Another participant also referenced that planning and being prepared were key for committing to their initial purchase intention:

*“if you are not prepared you would need to buy something and that something and is going to be in a package mostly”*

In the two previous insights, planning becomes pivotal when it comes to managing waste. In addition to this, both examples also imply that planning is important because retailers’ practices also represent a barrier, as their selection of plastic-free items is quite limited.

One participant, noted:

*“there is nothing stopping me, I just actually have to plan, and I haven’t actually genuinely thought on it”*

Finally, one participant mentioned that having a good plan and routine were key to successfully starting reducing waste:

*“it’s really like getting a good routine going and having a good plan... I buy organic product and if I was busy and didn’t had chance to cook*

*them all they would go to waste so easy, you wouldn't believe how much food I throw out"*

As discussed in the literature review, planning is a mediating factor that affects the translation of intention into behaviour in the context of physical activity and that only when the intention is high does planning represent a way for individuals to regulate themselves.

#### **4.3.2 Adopting new habits and routines**

A major theme that emerged from the data explored the idea that waste reduction practices imply a change of old habits, which leads into difficulties for performing these practices at optimal levels. As discussed in the previous section, participants believed that waste reduction practices imply a re-assessment of habits and mindset, yet this represents a barrier also for committing to those practices. In this theme, the researcher addressed examples of the changes in habits that participants experienced. The changes in habits came in many forms, from changing purchasing habits, the creation of routine and the incorporation of new products such as a 'keep cup' or bottled water into their routine and which were not present in past behaviours.

While explaining the current practices in their day to day routine, one participant revealed that bringing around a 'keep cup' is something that she is currently doing but took her a considerable amount of time to learn:

*"I now bring my cup everywhere I go but that's taking me a year to learn to do that"*

One interviewee even identified that individuals are going to face many challenges for committing to waste reduction practices and realised that routine creation would facilitate the change in the behaviour of buying products with less packaging:

*"so like anything is going to be more challenging but once it has become a routine probably I think 3 weeks is what they say for the*

*routine to form then is no more difficult than it would've been to consume or purchase one product with high packaging levels”*

Another participant also confessed that, when she started to be more aware about waste reduction and started to take action, it took time to become part of her routine:

*“it requires a little bit of adaptation at the beginning but then after you learn the basics you would be much better and feel happier”*

Finally, a participant spoke about it being a challenge to change so much things at once, which implies a barrier for people to translate their intentions into actual behaviour:

*“I think it's hard because you're trying to change so much and as an individual I think it can be hard for people to see that”*

#### **4.3.3 Lack of support and collaboration from others**

One participant mentioned that he would limit the amount when buying for himself:

*“when I am buying myself I would keep two jars so that is a reduction of maybe like 90% at least”*

The same participant expressed that, on some occasions, it is difficult when someone else is involved because there may be tension between one's person beliefs and the other person's belief:

*“if is me, I mostly would do that but when you are involved with other people is more tricky because you will look weird, then you can cause some friction with people so you need to be flexible”*

One participant with kids and family explained how the their kids are not collaborating with recycling because the lack of knowledge which is a barrier identified further:

*“my own kids and my husband keep throwing soft packs (where the apple come form and you cannot get around unless you buy units) in a recycle bin which is not recycled”*

One participant was asked if flatmates were conscious around the waste issues and what the person manage the situation she confessed that the entire house is conscious on the issues it would be easier:

*“I think it would really help us as a house where we are more conscious so maybe I need to sit down and have a few words”*

#### **4.3.4 Lack of convenience**

A theme that emerged from the interviews was the convenience aspect of reducing waste. Within this theme, the researcher encountered ideas around time efficacy, proximity, transportation of loose items, amongst others. The relevance of convenience as a barrier for waste reduction is expressed in the following quote:

*“sometimes zero waste shops are far away”*

Another participant explained that the issues they experienced the most were around convenience, in the form of proximity to specific shops:

*“most of the issues are about convenience because if you need something now you just can go to the shop besides ... there are still items that will have packaging and that is the only problem about convenience”*

Travelling, transportation, and time spent were concepts related to the convenience aspect of trying to reduce waste through the selection of certain items. This issue is also related to the lack of alternatives regarding shops and the proximity of such shops to where the individual is based:

*“ the green door market was around back in that time but it was quite far to go on foot and carry on all my shopping all the way, so it just wasn't convenient”*

Despite the fact of being aware of shopping alternatives that would involve less packaging when it comes to shopping groceries, the proximity of the

farmers markets around Dublin would involve getting a bike, limiting the amount of products a person could transport:

*“It comes down to convenience, I know that there are farmers markets around Dublin city centre but for me to actually go there would involve a bike then how much can I actually buy and travel on a bike”*

Time was another inconvenient barrier that came out of the interviews. Based on the lack of convenient-based shops in the city, grocery shopping for buying products without packaging or less packaging involves more time being spent, which is an inconvenience:

*“I think there is a huge inconvenience there for people and it comes down to just their own time and spending it like do you want to stand 3 hours on a Sunday travel around two different stores if you want to reduce XYZ”*

The perception of time spent on zero waste shopping vs convenience shopping was another insight that came about when the researcher explored what the inconveniences experienced in zero waste grocery shopping were:

*“It takes more time to shop in that way because you are not just going into the regular supermarket and putting all the things in the trolley, pay and leave, in the other way you have to put things in containers, and bags, etc”*

*“If you are buying small pieces of beef that is not an issue you can put that in the Tupperware, I am just thinking how would you transport home bigger pieces of meat?”*

#### **4.3.5 Lack of recycling knowledge**

As discussed in the previous sections, recycling is one practice that participants expressed as a way of reducing waste. However, the knowledge around how to do this is still a barrier:

*“I’m not sure if I’m recycling things correctly ... or what do I need to do to ensure is 100% going in the right place”*

*“I supposed to be have a recycling bin that we put all of our packaging in even that is confusing in itself as to what you can and can’t recycle”*

*“We are more conscious now in terms of cleaning things out and making sure it will recycling in property I'm still not sure if we are doing it right”*

Having the right information helps consumers make better purchase decisions and choices (Sproles, Geistfeld and Badenhop, 1978), and this theme shows that consumers have a lack of information on how to recycle, hence making the decision making process more complex.

#### **4.3.6 Retailer's practices**

A major theme that emerged from the interviews relates to the retailers' offering. In recent years, retailers have started incorporating sustainable operations and supplying chain practices as part of their sustainability strategy (Sullivan and Gouldson, 2017). However, when it comes to the incorporation of a wider plastic-free product offering, the practice still remains an opportunity. Some participants expressed their concern around contradictory retailer practices such as covering single vegetables in plastic, or grouping loose vegetables in nets, when it may not be necessary, and using plastic bags instead of paper bags for weighting loose product in the till.

Further examples from the interviews clearly illustrate that other momentary characteristics such as retailers' placing loose vegetables in plastic bags reinforces the intention-behaviour gap and reinforces the idea that consumers, not only experience internal barriers, but also external ones related to the environment (Belk, 1975).

*“the thing that probably needs to change is if you are buying loose they have to weight it and they prefer to weight it from a hygiene perspective in the store they prefer to use the plastic bags”*

Another participant wondered why so many vegetables were covered in plastic in mainstream retailers:

*“why so much vegetables are covered in plastic”*

On the other hand, researchers stressed the importance that mainstream retailers have in consumer behaviour. Mainstream retailers are able to foster changes in consumers thanks to the power they have on supply chain, consumers, and operations (Jones, Hillier and Comfort, 2011), which makes them an important influencer when it comes to consumer behaviour.

#### **4.4 Research objective number three – to identify what solutions consumers feel could help overcome the identified barriers.**

Research objective number three aims to explore what initiatives consumers feel will help overcome barriers. Four themes emerged from the analysis of the data: Design waste-efficient and mainstream product, awareness and educational campaigns, and community movements. It is important to highlight that identifying these activities provide an understanding on how waste can be tackled in Ireland, from a consumer perspective as part of the research objectives.

##### **4.4.1 Provide more waste-efficient and mainstream products**

The theme that emerged from the data was around the lack of solutions that aim to facilitate consumers in reducing waste at a product level. Consumers believed that the proliferation of, for example, zero waste products or unpacked groceries in mainstream retailers would definitely encourage people to consider those alternatives:

*“maybe what we haven't yet seen in Ireland is what is widely available in the UK is certain loose rice and beans and grains and stuff that you bring your own jars I think that's what we would support if is available in local supermarkets”*

This insight is directly linked to the barrier “retailer’s practices”, when it comes to environmentally friendly offerings, showing the lack of alternatives in Ireland

that would facilitate the purchase of waste-efficient products without sacrificing consumer lifestyle.

Another participant mentioned that other changes could be forced when options need to become “mainstream”:

*“like everything it needs to become more mainstream and accessible to people....needs to be put in in a really accessible way”*

*“And the same participants realised that there are still items, in grocery items that are plastic-free alternatives”*

*“there are some options of free plastic shops but there is always something that you need to get that is not”*

Finally, one participant mentioned that there is no encouragement to entrepreneurs in Ireland to find solutions on how to reuse plastic in Ireland:

*“For consumers to start changing, there needs to be more options out there and to be more ready available”*

#### **4.4.2 Awareness and educational campaigns**

All of the participants agreed with the idea that more educational campaigns and activities are needed to tackle the waste problem in Ireland but at school level:

*“Get into the educational system and make them aware and give them tools so they can bring home and teach their families”*

Participants also expressed the need for general education in the population around the waste issue and the implications it has for the environment:

*“There is plenty of information on the media around the issue but I think they need to show tangible things to people and they can see how to feed into the solution”*

Some participants felt the need for companies and retailers to educate consumers, as they might feel “inspired” and encouraged to incorporate good practices around waste reduction:

*“I think it should start first with the government and second from the company is the most important because of one, when I see the company doing the right thing and promoting we are here and we are also zero waste .... I will go and support them and buy from them”*

When one participants was asked about who should be promote this practices and how, the person express the idea that companies should educate and inspire their customers:

*“If you don't inspire people, they don't care but when the company actually educates the consumer to do that”*

Educational campaigns would certainly help, but the efficiency in changing behaviour has been questioned. One participant even acknowledged this:

*“If a shop push a program or an awareness piece I would be far more likely to shop there maybe not all the time but certainly consume there over somewhere”*

Educational and awareness campaigns need to be redirected towards encouraging people to understanding themselves and being conscious of their actions.

#### **4.4.3 Community movements**

The last most salient theme that emerged from the data was around community movements. Community movements are perceived to have a better sway on politics and policy makers and this would create change, as they would have a snowball effect on other individuals, causing them to change their actions and attitudes. An example came from one participant who explained how he was a participant in one of these movements:

*“The social movement will do a lot, there was a change.org petition that someone did on Lidl as they were putting plastic on every single aubergine and I think 30,000 people sign it myself included and then they removed the packaging”*

Another participant expressed that the *“the power is with people”* and individuals can be the force that actually creates change. The same participant further explained:

*“I think a drive from individuals that turns into groups who lobby against the big corporations to make it part of their agendas”*

Another participant believed that solutions for environmental issues should come from people and believed that the government has the last word:

*“I feel anything to do with the environment It comes from consumers it comes from a grassroots movement moving up but it's the government have the end say with like you know policies and laws”*

Finally, one participant believed that consumers have an active role when it comes to creating change around waste:

*“what we can do as consumers is demand more from retailers and then they demand more from their suppliers like us and that’s the only way we can get what we want”*

#### 4.5 Chapter Summary

The graphic below summarises the findings presented in this chapter:

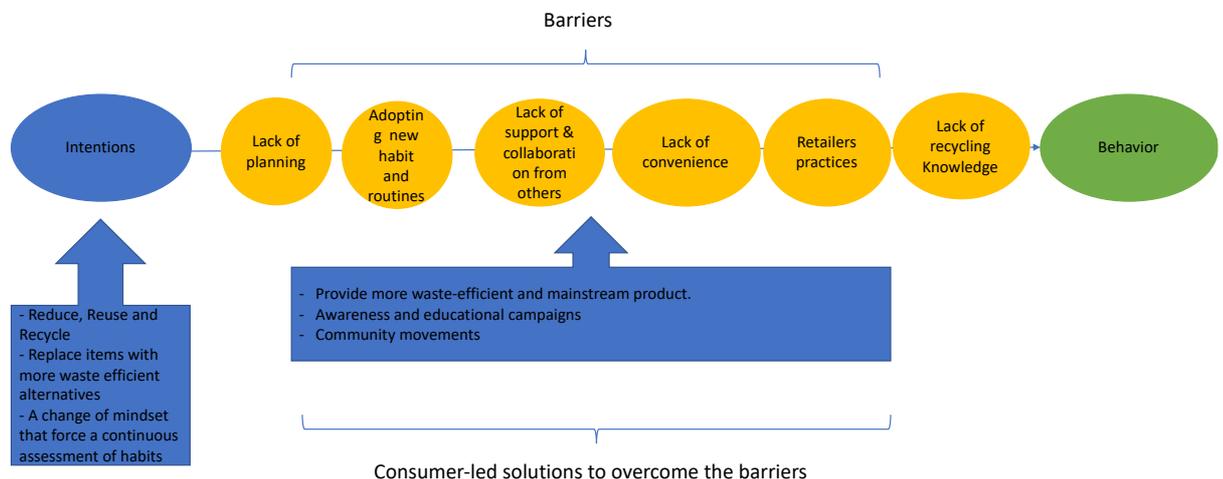


Figure 7: Summary of the findings

The findings were presented following the research objectives to facilitate their presentation and link with the research’s end goal.

- Objective 1: reduce, reuse, and recycle are the most salient practices, which participants believe they practice to a certain extent. Replace items with more waste efficient alternatives was the second theme and a change of mindset that force a continuous assessment of habits, was the third one. Also participants expressed that they are “trying to” or reduce “as much as possible”.
- Objective 2: lack of planning, adopting new habits and routines habits, lack of support and collaboration from others, lack of convenience, lack of recycling knowledge, and retailers practices were the identified barriers.
- Objective 3: to provide more waste-efficient and mainstream product, awareness and educational campaigns, and community movements were the consumer-led solutions themes.

In the next chapter, the researcher will discuss the findings in relation to the current literature reviewed, with the objective of identifying gaps for future research.

## **Chapter 5 - Discussion**

### **5.1 Introduction**

In this chapter, the researcher aims to provide further commentary on the findings presented, as well as a detailed comparison and analysis of the findings in relation to the current literature. The discussion is presented around each objective identified for this study: exploring consumer understanding and beliefs towards waste reduction practices, to identify the barriers for translating intentions into behaviour in waste reduction practices and to identify what solutions consumers feel could help overcome the identified barriers.

### **5.2 Research objective number one – Exploring consumer understanding and beliefs towards waste reduction practices**

Behavioural intentions are indicators of how hard people are willing to try and how much of an effort they plan to exert. In relation to this study, the participants quoted in most cases phrases such as “trying to” or “as much as possible” when explaining what they are currently doing when it comes to waste management and waste reduction practices. Although these expressions do not represent a statement of fact in relation to their intentions, it gives some indication as to their willingness to do so and which the researcher suggests could be identified in further quantitative research to complement this study.

In addition to this, the most salient practices these participants are “trying to” do or practising “as much as possible” were: the voluntary reduction of plastic packaging items, reuse of certain items, and recycling. As discussed in the literature, these findings are in line with what the literature suggested in relation to other unexplored waste reduction strategies (Bekin, Carrigan and Szmigin 2007); in this case, reduction as a single behaviour for waste management, as this study suggests too.

The reduction of plastic packaging was the most salient item all participants touched upon and expressed their concerns on the amount available out there. It can be assumed that the recall on plastic packaging is coming from the most recent campaigns such as “Don’t be a Dick”, which is encouraging individuals to avoid non-recyclable coffee cups and use keep cups instead for their morning on the go coffee, as the literature suggests it has been gaining attention because of the detrimental impact it has on the environment.

The majority of the interviewees also explained that there are other ways for trying to keep things out of the bin, such as reusing items or for example repurposing glass jars. This finding is in line with what Bekin, Carrigan and Szmigin (2007) found in their study “Beyond recycling”, where communities were re-using containers for the storage of food and found new uses for products. Regardless, these behaviours have been positive for waste reduction goals, and the researcher suggests that further research needs to be undertaken in order to determine the implications that reusing and repurposing items in Irish modern life has; Fahy (2007) acknowledged that waste management entails a modification of people’s lifestyles.

Finally, the last behaviour reported for waste reduction was recycling. Recycling, as identified in the literature, has been a practice that consumers are paying more attention to because of the impact of packaging on the environment (Prendergast and Pitt 1996). As identified previously in the literature chapter, the majority of people do not practice recycling in the country (Drury Research, 2000) and some insights around this discrepancy is explored in the following objective. Although this study did not quantify the frequency of re-use, reduce, and recycle, as it is a qualitative study, other studies found within the literature did. In a study conducted in Exton in the UK Barr (Barr, Gilg and Ford, 2001), the authors concluded that these three behaviours are different, therefore, it was expected those three behaviours would emerge from the data as waste reduction practices; the study is also in line with Belkin et al., (2007) who also concluded that recycling, and reduce and reuse behaviour are different. The UK study also indicated that, while recycling behaviour appeared to be practiced “more definitely”, “reduction is undertaken

least often, with fewer people ‘always’ undertaking it”, while reuse is practiced more regularly (Barr, Gilg and Ford, 2001). Both insights and validation from academics have valuable implications in an Irish context, as the majority of the efforts are put towards encouraging recycling behaviour, yet further research, both qualitative and quantitative is needed to determine the frequency and the amount of willingness people have to incorporate these practices. The implication would be to determine if reuse and reduce are viable alternatives for informing people and about them, which could potentially help to achieve new European targets by 2030 in waste management.

The second theme identified in the findings chapter is that participants are making voluntary decisions to replace day to day items with more waste efficient alternatives as a way to reduce the waste they produce. These voluntary decisions were especially around switching to alternative items that are used on a daily or high frequency basis, which represented to a certain extent, a way for reducing waste, which explicitly came out from the interviews: *“so it's trying to make switches where I can”*. These voluntary switches are also mentioned within the literature as the adoption of simplified lifestyles and a wider range of pre- and post-consumption behaviours that are different to recycling (Bekin, Carrigan and Szmigin 2007, King et al. 2006). More insights were found around this theme. For instance, one participant explained how he was setting targets himself for keeping waste up to the size of a mayonnaise jar, meaning that the participant was having less of certain products/material and rather than being an imposed action it was a free choice, as McDonald et al. (2006) highlight when explaining the imperative characteristics of voluntary simplicity.

Within the literature of voluntary simplicity, the authors also discussed consumers favouring certain products that were more long-lasting and with lower environmental impact (McDonald et al., 2006). Favouring certain products with less environmental impacts came out of the interviews in the form of buying loose fruit and vegetables or using Tupperware instead of Ziploc bags for kid’s lunch.

The data explains that individuals, apart from reducing, reusing, and recycling, are also *replacing* day to day items. The researcher believes that replacing it is an action that can be considered in the prevention stage in the waste management hierarchy (not buying packaged fruit and vegetables for example). It is also true that participants expressed their voluntary decisions to actively replace certain items: “*so I changed over using face clothes and using reusable cotton rounds for my eyes*”; the implications of this insights is valuable for conducting promotional campaigns that encourage individuals to identify which items they could actively replace as an straightforward action for tackling the waste reduction issue. Further discussion around this insight will be presented in the second objective, as there are some barriers linked to it.

Lastly, in relation to the last theme identified (a change of mindset that forces a continuous assessment of habits), the majority of the psychology literature describes habits as a consequence of previous or past behaviours, the automatic reaction to a certain motivational cue (Limayem, Hirt and Cheung, 2007). For instance, habits are considered important factors when it comes to incorporating new practices in day to day routines. The participants showed this when they expressed that the reduction of waste requires a change of mindset and habit. This this is in line with previous literature (Aarts, Verplanken and Knippenberg, 1998; McBroom, 2015; Orbell and Verplanken, 2015).

### **5.3 Research objective number two – to identify the barriers for translating intentions into behaviour in waste reduction practices**

As the literature suggests, when it comes to pro-environmental behaviour, there are internal and external barriers, as well as social factors, that might represent complex pro-environmental consumer behaviour.

As the literature suggests, planning was found to be a mediating factor between intention and behaviour which validated the conclusion in the health study presented in the literature review chapter. Despite the fact that the

previous study was done within health context it can be argued that planning as a self-regulatory activity can, at a certain extent, prevent the translation of an intention into behaviour (Scholz et al., 2008). In this study, all participants declared that the lack of planning was a key obstacle in their decisions around waste reduction. Planning was expressed as the ability to identify in advance the circumstances the individuals were going to face. The circumstances presented in the findings chapter are linked to what the literature suggests, as action planning addressed the when, the where, and the how an action is going to be implemented in relation to a goal (Hassan, Shiu and Shaw, 2016). The implications of knowing this barrier for waste reduction practices are valuable, especially when it comes to food waste reduction, especially for those people who have other ethical cues such as buying organic vegetables whose shelf life is lower than non-organic products.

The second barrier was around habits and routines. The changes in habits came in different forms: changing purchasing habits, changes in routine (setting a routine around buying loose product in farmer when these markets are open), incorporate new items such as a keep cup or bottle (which in many cases are forgotten), and the overall feeling of having to change so many things at the same time were the most relevant areas of discussion during the interviews. Habits were not considered within the intention-behaviour framework nor were pro-environmental frameworks, which some authors claimed to be one of the most difficult barriers when it comes to pro-environmental behaviour (Kollmuss and Agyeman, 2002). The implications lie in the fact that, if a habit happens unconsciously, people need to realise what their habits and routines are in the first instance in order to change them; which can be achieved through being more conscious in their actions (e.g. their habitual purchasing of items). This idea of conscious living might have a positive correlation between “be conscious of day to day purchases and the ability to change an habit”. However, further research needs to be undertaken, as this is just an assumption the researcher opined.

The third barrier was around support and collaboration from others. Not having the support of others was discussed in previous studies as well and it emerged

as a barrier related to the social factors discussed in the literature. Other authors have also mentioned the influence of families and others or the community the individual belongs to (Barr, 1985).

Convenience and retailer's practices can be considered external and situational factors that the literature has identified and there are some elements grouped here that were discussed in the intention-behaviour gap (Carrington, et al., 2010). In relation to convenience, the most salient areas of discussion were: time efficacy, proximity, and transportation of loose items. The lack of time was reported in Fahy's (2005) study by being one of the most relevant barriers when it comes to recycling practices. Time efficacy according to the findings, means the time spent trying to find products with less plastic packaging, which is directly linked to the lack of waste-efficient product alternatives from retailers. These themes have been discussed in the literature as an indicator of barriers, as consumers are always looking for convenience favouring products that are readily accessible (Tanner and Kast, 2003; Young et al., 2010); it has also been found that consumers do not engage in behaviours that require high levels of effort (Goslinga et al., 2005). A vivid example from the analysis is the following expression: "*I think there is a huge inconvenience there for people and it comes down to just their own time and spending it like do you want to stand 3 hours on a Sunday travel around two different stores if you want to reduce XYZ*". The researcher agrees with the literature that external and situational factors need to be considered, especially for products with less or no packaging, as it is something that it is only found in niche and independent markets in Dublin, for example.

In relation to the retailers practices; when it comes to a regular shopper, who is trying to incorporate new habits to reduce waste, the situational context (Carrington, Neville and Whitwell, 2010) represents a barrier, as there is a limited product availability in mainstream shops without plastic packaging for example and which compromise the initial intentions of the consumer in the purchase moment.

Finally, the last barrier presented in the findings was the lack of recycling knowledge. It was expected that a factor around recycling might come out of

the data, as recycling was a declared behaviour explored in the first objective. This finding complements what Fahy (2005) and Drury (2000) concluded in their studies in relation to recycling. The lack of knowledge on how to perform the behaviour Schahn and Holzer, (1990), and not having proper recycling facilities are barriers that widen the intention-behaviour gap. People expressed that, while they are recycling at home and have all the facilities (which was a main barrier in previous studies), not knowing how to recycle still remains an important factor for discussion, especially when there is confusion (on what can be recycled or not).

#### **5.4 Research objective number three – to identify what solutions consumers feel could help overcome the identified barriers.**

The last objective aimed to identify what solutions consumers feel could help overcome the identified barriers. Although the researcher did not conduct an extensive literature review in the strategies applied for waste management behaviour in this chapter, some references to the literature are presented. The three themes that emerged from the data as presented in the previous chapter were: provide more waste-efficient and mainstream products, awareness and educational campaigns and community movements. The first theme is directly linked to the barriers of retailer's practices and product offering and the need for more waste-efficient product alternatives. While this solution can be assumed straight away, it is important that its implications and meaning are addressed. In the first objective, the researcher identified that there is an overall intention to replace certain day-to-day items for more waste-efficient products and the lack of these alternatives was discussed in objective number two. One of the key implications sits outside policy makers and government action, what the researcher infers is the business opportunity for companies (including retailers) and product designers in providing more solutions that incorporate a proposition of waste-efficient alternative; for instance, the incorporation of unpacked products into more mainstream retailers. However, as presented in the methodology chapter, this study was conducted with a small sample and the findings cannot be generalised, thus further research in

this area is needed to conclude this assumption as an actual opportunity. In addition to this, the implementation of pro-environment solutions to the public must be viewed in a holistic way, where all the stakeholders are contributing to the solutions; otherwise, the implementation of this type of solution will not succeed. This idea is discussed when Steg and Vlek (2009) conclude that the cost of activating pro-environmental solutions is high, as it may require multiple strategies and different stakeholders, in order to encourage a change in behaviour.

When it comes to awareness and educational campaigns, all of the participants agreed with the idea that more educational campaigns and activities are needed to tackle the waste problem in Ireland. However, previous literature suggested an overall knowledge of the issue lack of influence in purchase intentions (Joshi and Raman, 2015; Connell, 2010; Padel and Foster, 2005); in this case, the researcher assumes that this conclusion would apply for waste reduction behaviour. Furthermore, McKenzie-Mohr (2000) note that several studies have concluded that standalone information does not change behaviour. What the researcher briefly discussed in the findings chapter and what emerged from the interviews is the need for implementing educational modules in primary and secondary school for raising awareness around the issue, plus providing younger generations the tools that are more likely to create new habits at an early stage.

Finally, the last theme was community movements. This theme was briefly discussed in the previous chapter and is grounded in the idea that, in order to overcome some of the waste reduction barriers, creating community based movements - which start from one individual – may have positive outcomes when it comes to changing behaviour. In that sense, it can be argued that the first step is identifying who these individuals in a specific community are, who are more likely to influence and support others. The literature provides some guidance on different individuals and their profiles that can be further used for piloting the implementation of this strategy (McDonald et al., 2012). Finally, the community-based social marketing approach found in the literature can be used for framing the overall community based movement, which maintains that

sustainable behaviour change is effective when it is executed by communities (McKenzie-Mohr, 2011). Community Based Social Marketing has been presented as an alternative to activities that rely on information and media for changing behaviour and has been proven to help on sustainable behaviour modifications (McKenzie-Mohr, 2011).

## **5.5 Chapter Summary**

This chapter presented a detailed analysis of the findings and set the tone for further investigation and academic discussion, as well as addressing a critical analysis of the findings based on a comparison to the literature reviewed. The researcher found that the themes identified were in line to what previous literature suggest, however, deeper insights and discussion in waste reduction were presented and discussed as well as the consumer-led solutions to overcome the barriers which are straightforward. The next chapter will conclude the present study.

## **Chapter 6 – Conclusion and recommendations**

### **6.1 Introduction**

The purpose of the final chapter is to provide a summary of the findings and discussion chapter with a conclusion on the premises of this study. First of all, there is an initial recapitulation on the aim of the study. Subsequently, the conclusions are presented as per research objective and the recommendation to different stakeholders and further research are listed.

### **6.2 Conclusion**

The purpose of this study was to identify the barriers underlying the translation of the intentions to behaviour in waste reduction practices and identify solutions to overcome those barriers from a consumer perspective in the Irish context. The present study also contributes to research by furthering understanding the intention-behaviour gap in pro-environmental behaviour, in environmental consumption behaviours.

One of the overall conclusions of this study is that waste reduction is a complex task that requires the consideration of cognitive factors as well as societal and external factors for designing solutions that can lead consumers to a more sustainable behaviour, as they play a critical role in achieving the environmental agenda. This conclusion reinforces what existing literature have previously exposed; waste management behaviour needs to be looked in a holistic way (Fahy, 2005)

The conclusions for each objective are presented below:

#### **6.2.1 Exploring intentions and beliefs towards waste reduction practices**

The most salient activities the participants believe are contributing to this task were: reduce excessive consumption of plastic packaging, reuse items to keep them out of the bin in general and recycling were activities the participants are at a certain extent practising in their day to day life. Furthermore, replace daily item for more waste-efficient products and/or with longer life cycle, represent to certain extent, a way for reducing waste commented by the participants. These practices should be considered altogether in order to tackle the waste problem in the country and the researcher believes that replacing is a way that should be considered when promoting waste reduction initiatives.

Finally, participants strongly believed that waste reduction is a matter of change of mindset that force them to continuous assessment of their habits which leads them to live a more conscious life. The researcher can conclude that living a more conscious life can be considered a behavioural intention when it comes to embrace pro-environmental practices and identifying how able people is willing to try this can be fundamental in understanding not only waste reduction behaviour but also pro-environmental practices.

### **6.2.2 The barriers for translating intentions into behaviour in waste reduction practices**

The summary of the barriers identified are listed below:

- Lack of planning was a key barrier for practising waste reduction. The need for planning what, how and when to purchase is something they do not always do affecting the way the purchase and commit to initial intentions.
- Adopting new habits and routines was the second barrier identified. Participants strongly believed that waste reduction imply a change of mindset that force them to re-assess habits and routine, where past human behaviour, becomes difficult to change representing an important barrier for committing to waste reduction practices.

- Lack of support and collaboration from others. In some cases not having the support from the people who live with this individuals represented a barrier for them as in many cases this practices need to be embraced and agreed by the household and not just for one individual for a successful implementation.
- Lack of convenience in buying unpackaged products or less packaged products was a key barrier. In conclusion changing purchasing habits aiming to reduction waste is perceived to be less convenient than convenience shopping and representing a barrier to commit to this practice.
- Retailers practices was a barrier that came in two forms: the lack of waste efficient products offering (less packaging, plastic-free products or more reusable items). Also, there was an overall perception that retailer have some contradictory practices as well as using unnecessary plastic packaging or nets for loose vegetables, plastic bag for weighting loose products, etc. In conclusion, this are situational context as discussed, affect their purchasing patterns and behaviour.
- The lack of recycling knowledge. Recycling was a practice that participants embrace for waste reduction, however the lack of knowledge around what plastic can be recycle or not was something that the expressed as confusing and which can lead them to make wrong decisions. Action knowledge needs to be looked in order to implement waste management and reduction practices and not only recycling practices. How am I expected to reduce waste if I do not how to?

### **6.2.3 The solutions consumers feel could help overcome the identified barriers.**

The consumer's solutions to overcome those barriers were very straightforward and are in line to the barriers previously identified:

Provide more waste-efficient and mainstream product, in order to embrace waste reduction in a more holistic way and not only with certain staple products such as vegetables and fruits is a solution to be considered for environmental

agencies but also for retailers and business. By becoming these type of products more mainstream is a way to also become the purchasing of pro-environmental products and the reduction of waste a more mainstream activity overcoming the barrier of lack of convenience and retailer's offering.

Awareness and educational campaigns need to be embrace at school level where young kids and teenagers can learn about the waste and environmental issue but on how to prevent or implement at home and incorporate this habits at early stage.. As, the literature critique the efficiency of standalone campaigns for changing behaviour, educational campaigns and tools at school level become more relevant to explore. This solutions can also help to overcome the barrier of lack of support from others if the issue is approached by households and not only individually.

Finally, community movements was a theme that all participants agreed with. The principle around community movements is that an individual can start a snow ball effect when it comes to taking action toward the waste issue. The power of people and communities for creating social and economic change is critical. Identifying key leaders in communities to embrace small changes is a valuable action that can certainly incorporate the community to change specific behaviours, for instance recycling practices, supporting local shops and local farmer markets, etc.

### **6.3 Recommendations**

As discussed previously, the waste reduction problem in Ireland must be look in a holistic ways. In that sense the recommendations below are aimed to different stakeholders, including recommendations for further research.

#### **6.3.1 Policymakers and environmental agencies:**

- Embrace other waste management practices outside recycling.

- Support the education of recycling practices, what can be recycled and what can't it is important to address as there is a lack of knowledge around it.
- Encourage and provide resources to business, retailers and entrepreneurs for designing waste-efficient products, and design taxes schemes that favour this types of products vs non-environmental products/packaging.
- Support communities in the identification of key leaders committed to making a change and provide resources to incentive waste reduction practices at community level. For example, Tidy Town competition in the context of waste reduction.
- Provide information on the government agenda and incorporate the society on how to tackle the waste problem can lead to a greater understanding of the issue, yet this needs to be in parallel with behavioural change campaigns.
- Community based social marketing can be applied in the context of community movements.

### **6.3.2 Business owners, entrepreneurs and social marketers**

- The voluntary efforts that people are doing for reducing waste represent an opportunity for business owners; local shops and entrepreneurs to tailor their specific solutions around waste reduction.
- Consumers are concern around retailers practices and it is important to provide relevant information example, zero waste shops or aisles could represent an opportunity or initiative in mainstream supermarkets.
- Consumers are cutting on plastic, wider plastic-free product offering the practice still remain as an opportunity for product designers, retailers and business owners.

### **6.3.3 Further research**

Although the present study has significantly added value and insights to the current intention-behaviour in Irish consumers towards waste reduction, there are other areas for research that could complement this study as well as consideration for implementing further studies.

- Consider to carry out the study with a larger sample size, comparing different counties, and determine the differences between each.
- Consider a breakdown of the categories on which people can reduce waste would also provide further insights for changing behaviour in specific categories.
- Complement this qualitative study with quantitative methodologies for measuring the strength of the intentions and the co-relations between the barriers and the intentions identified in this study. The researcher believe that by measuring the higher is the strength of the intentions in waste reduction the situational barriers might not have a direct effect in behaviour
- It is also important to consider variables such as age and life stage for segmenting the population as this characteristics may affect the approach for practising waste reduction. A segmentation of the sample can be considered.

## Glossary

### Appendix I: New Recycling Targets European Union

#### Recycling targets for municipal waste:

By 2025	By 2030	By 2035
55%	60%	65%

In addition, stricter rules for calculating recycling rates will help to better monitor real progress towards the circular economy.

#### New recycling targets for packaging waste:

	By 2025	By 2030
All packaging	65%	70%
Plastic	50%	55%
Wood	25%	30%
Ferrous metals	70%	80%
Aluminium	50%	60%
Glass	70%	75%
Paper and cardboard	75%	85%

## **Appendix II: Interview Guide**

### **Interview Protocol**

Before start, the researcher will give an introduction about the subject and inform the interview is recorded and it will be used only for academical purposes.

#### **SECTION 1 – Intentions and Beliefs**

- What do you understand about Zero Waste waste. Probe: environmental action, lifestyle, trend, a new way of living
- What does it mean to you? Can you give examples
- Probe: limiting consumption, re-suing, sharing, repairing, DIY, non-disposable items, second hand, recycling composting
- Tell me about your interests for Zero Waste shopping
- Which one do you practice?
- Tell me about your experiences when you started practicing xxx?
- Can you describe your day as a Zero Waste person
- What are the things that you like most about practicing Zero Waste lifestyle?
- What are the things that you dislike most about practicing Zero Waste lifestyle?
- Can you describe how do you shop?
- Do you have a particular routine. Probe: moments, situations, people
- If you were to give advice to your friend who wants to start practicing Zero Waste, what would you say?

#### **SECTION 2 – Identifying the Barriers**

- Can you explain what incidents you have experienced when you started in Zero Waste lifestyle?
- Probe: availability, price, time, support, information, inconsistency in maintaining the behavior.
- Do you experience the same incidents now? How have they changed?
- What do you think are the reason why those incidents keep happening?
- Can you think of a time when you or a specific past incident when you were unable to shop accordingly to your beliefs?
- What do you think was preventing you?
- What did you dislike about the incident?
- What would you change for preventing the incident to happen again?
- In general, what do you think are the downsides of Zero Waste practices?
- Do you think other people have the same incidents as you? Why?
- What would encourage other people to practice waste reduction practices?

#### **SECTION 3 – Exploring the Solutions**

- Do you think Zero Waste/waste reduction should be promoted?
- If yes, who is responsible for doing this? Why do you think they are the responsible and not someone else?
- If you were going to give a conference about Zero Waste Lifestyle, what are the main things would you recommend?
- Why did you choose that particular recommendation?
- If you were to design an ad that promotes Zero Waste, what are the things you would promote?

## Appendix III: Consent Form

### Consent Form for Interview Participation

Student name (Researcher): Indira Fernandez  
College: National College of Ireland - Dublin  
Thesis Subject: Consumer Behaviour in Waste Management Practices

#### Purpose

The interview is part of a Master Thesis and its objective is to identify what are the barriers that consumers face for reducing waste and to explore what could be the solutions to overcome those barriers from their perspective.

You will be asked to participate in the Interview where the researcher will have a question guide with open questions. The questions are structured in three sections:

- To explore your beliefs and current practices in waste reduction and waste management.
- To identify which barriers, you are faced on a daily basis that impede a successful behaviour in waste reduction.
- To explore which solutions can help to overcome those barriers.

#### Time for the Interview

The interview will take approximate between 30 and 45 minutes.

#### Location

A convenient location will be arranged in order to conduct the interview. The location may vary depending on availability. However, the researcher will secure the space is comfortable and with the less noise possible.

#### Recording

It is important that the participant is aware that the interview is going to be recorded in a mobile phone and then transferred to the researcher personal laptop in order to conduct the analysis.

#### Use of the Data

All the data used is for academical purpose only. All the personal information is strictly confidential. It is important to note that the files are going to be deleted in 12 months.

#### Financial

There is no cost for participating in the interview and no remuneration of any type is provided

#### Participant's right

Your participation is voluntary; however, you have the right to withdraw the interview at any time or skip any question or task

#### Consent

I understand I am participating in an academic interview and my responses will be kept by Indira Fernandez in a recorded file for her use for 12 months. My personal information and responses are confidential. I have no financial benefit for participating in the interview.

Print Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## Appendix IV: Raw data coded screenshots

Q: Can you describe a day when you are doing your shopping, just by your own and forget about the roommates around food or any other grocery item that you think you normally buy. So tell me all about it. When do you go, what shops do you visit, what are you considering?

A: So basically I found like I packed my weekends full of activities that I am always left short and I am like, **crap I never did the shop so more often than not I do like you know I go to the shop each evening on the way home** so I go to Aldi and like normally **I am vegetarian I feel like that really does help when it comes to reducing waste because you know with meat, immediate it is packaged like that so and there's options for loose veg** I would often purchase of my main things will be like broccoli, butternut squash, tomatoes salad ,**you know a lot of these things are covered in plastic Aldi the one that would say that Aldi is even though a lot of packaging is recycled they at least tell you that on the back of pack like** they have the information there there is so many retailers that just don't have information and then you think what am I supposed to do with this jso you know that's one thing that's good,**I have actually myself skyping Aldi in rathmines and going to the health food store which is in the swan centre because sometime I'm like, you know what tonight I'm going to be a little bit better and in the hop sack they have just like just shelves of loose veg, loose broccoli, garlic, no plastic whatsoever, they have got paper bags you can put your stuff in or bring your own bags** so I feel like sometimes my conscious will get the better of me and I would kind of head there knowing I'd paying a little bit more also know that in Tesco they have broccoli without plastic

Q: Are you practising this at the moment and for how long have you been doing it or trying to incorporate this thing into your routine?

A: Predominantly over the last 6 months to 8 months I **think an easy day to today would be coffee coffee cup I guess is substituting that with keep cups and almost a guilt association when I don't have a kick up** which I think **is an important emotion to have where your drive to a forced change** so it takes a little more planning that need to bring a bag a keep cup, or a tupperware for a lunch point of view and I think slowly what we're seeing from those convenient elements that people consume on a daily basis are that they're reducing packaging and then I'm **more inclined support those people** if they a financial incentive is nice that's not the main driver for why I will consume in taking coffee shop as an example of why we would consumer in one over the other but I like to see them being progressive in Where are conscious about these environmentally conscious.

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