Understanding Sociodemographic Differences Among the Irish Audience in Relation to Circular Economy Behaviours and Attitudes

A SYNTHESIS REPORT

REDISCOVERY CENTRE

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This report is based on research carried out in April 2024 to March 2025. More recent data may have become available since the research was completed.

Executive Summary

This study is the first in a series of reports to be produced by the Rediscovery Centre (RDC) as part of the Circular.ie Communications Project. This first investigation reviews Irish audience attitudes and behaviours toward the circular economy (CE) in order to elucidate significant differences between sociodemographic groups that may be useful for CE communicators in determining the most appropriate targeting strategy for a CE communication. In accordance with this aim, this report consists of a targeted review of research carried out in an Irish context to date. The overall objective of this exercise is to establish key insights for effective communication strategies for engaging audiences with the CE and identify current gaps in the research.

Methods:

1. **Literature Review:** A literature review of 159 studies exploring behavioral tendencies, capacities, and awareness related to the CE, with a focus on Irish contexts.
2. **Demographic Analysis:** Analysis and comparison of 23 Irish-specific studies to discern variations in CE behaviours, engagement, attitudes and skills across sociodemographic characteristics (age, gender, economic status, etc.).
3. **Peer review and workshop** with experts regarding findings and future directions.

Selected Key Findings:

- Gender has been found by many studies to be a key predictor of environmental attitudes and behaviours, particularly in relation to clothing consumption and repair behaviours.
- Care should be taken when highlighting differences between sociodemographic groups, as this may weaken belief in the power of collective action, reducing engagement.
- Some differences between groups observed in existing work may stem from differences in baseline consumption rather than willingness to change behaviours.
- Trust in sources of information varies largely by age, education, and geographic location.

Identified Gaps in literature :

- More research is needed to understand the cultural acceptability of desirable CE behaviours including repair, reuse and renting.
- There is a need for more direct observations of behaviour to corroborate self-reported data and reduce reporting biases.
- This report highlights the need for further research to experimentally test interventions that reduce the gap between attitudes and Circular Behaviours (CBs) in the Irish context.
- More research is needed to understand product maintenance behaviours, which reduce consumption by prolonging product lifespans.

Contents

Circular Economy Behaviours (CEBs) Definitions

- **Repair:** Operation by which a faulty or broken product or component is returned back to a usable state to fulfil its intended use.
- **Reuse:** The repeated use of a product or component for its intended purpose without significant modification.
- **Waste Prevention:** Measures taken before a substance, material or product has become waste, that reduce: (a) the quantity of waste, including through the re-use of products or the extension of the life span of products; (b) the adverse impacts of the generated waste on the environment and human health; or (c) the content of harmful substances in materials and products;
- **Share:** The use of a product by multiple users. It is a practice that retains the highest value of a product by extending its use period.
- **Rent:** A business model in which products are temporarily accessed rather than owned, enabling shared use, extending product lifespans through maintenance, and reducing waste and resource consumption.
- **Composting:** Microbial breakdown of organic matter in the presence of oxygen. In a CE, composting can be used to convert food by-products and other biodegradable materials into compost, which can be used as a soil enhancer.
- **Maintain:** Keep a product in its existing state of quality, functionally and/or cosmetically, to guard against failure or decline. It is a practice that retains the highest value of a product by extending its use period
- **Recycle:** Transform a product or component into its basic materials or substances and reprocessing them into new materials. Embedded energy and value are lost in the process. In a CE, recycling is the last resort action.
- **Refurbish:** Return a product to good working order. This can include repairing or replacing components, updating specifications, and improving cosmetic appearance.
- **Upcycle:** Transform waste materials or unwanted products into new items of higher quality, value, or functionality, thereby extending their lifecycle and reducing the need for virgin resources.

Abbreviations

CE	Circular Economy
HFP	High Frequency Purchaser
EPA	Environmental Protection Agency
RDC	Rediscovery Centre
NGO	Non-Governmental Organisation
SEAI	Sustainable Energy Authority of Ireland
CCIM1/2	Climate Change in the Irish Mind Wave 1/2
CC4I	Climate Change's Four Irelands
CET	Circular Economy Tracker
SUP	Single Use Packaging
CB	Circular Behaviours
WM	Waste Management
PEB	Pro-Environmental Behaviour
DECC	Department of the Environment, Climate and Communications

Introduction

This synthesis report details work carried out as part of the Circular.ie Communications Project, led by the Rediscovery Centre (RDC) and funded by the Department of the Environment, Climate and Communications (DECC). This work will inform the first annual insights report and presents the results from two main activities:

1. An analysis of behaviours and attitudes among Irish sociodemographic groups in relation to the CE as represented in existing empirical data.
2. A review of literature on behavioural and attitudinal tendencies relating to CE and CE communications.

The literature review established a database of relevant research that will be drawn upon over the course of the project. The demographic analysis involved a detailed investigation of a select number of articles identified in the literature review that specifically relate to the Irish population.

The main objectives of this report are to:

1. Identify significant differences between sociodemographic groups within Ireland in relation to CE behaviours, attitudes, knowledge and engagement.
2. Identify absence of research in relation to particular phenomena;
3. Identify contradictions or inconsistencies between different studies.

By addressing these objectives, this report will enhance understanding of Irish sociodemographic groups in relation to specific communications approaches for increasing awareness and encouraging action in relation to a CE transition.

To date, research focused on attitudes and behaviours of the Irish population in relation to the CE has not been reviewed in a single report. This report fills this gap through a critical and comparative review of past studies which explore the relationship between demographic variables on one hand, and behaviours, attitudes and knowledge around the CE on the other.

The purpose of this report is to serve as a guide for CE communicators, policymakers and researchers seeking to understand where the major demographic differences lie in relation to these themes. Put another way, this report critically reviews and analyses existing literature in the field in Ireland and synthesises data in order to identify gaps and support excellence in communication. The work supports the wider objectives of the project's insights work to build capacity in excellence in communications and public engagement for a CE.

One key element of CE communications which is out of scope for this report is any consideration relating to policy. While policy should and does shape communications strategies

in Ireland and abroad, this review does not include these considerations in order to focus instead on the citizen and bottom-up approaches to the CE. A further review of policy is being carried out in parallel as part of the same project.

Background

This research is positioned within the field of behavioural intervention research, which Bryan et al. define as "research aimed at harnessing basic insights from psychology and behavioural economics to develop interventions that advance policy goals without using mandates or significant changes in economic incentives" (Bryan, Tipton, and Yeager, 2021). Recent research by Ireland's Environmental Protection Agency (EPA) (2024d) highlights that:

> *"Climate change, biodiversity loss, and other environmental threats are directly tied to human behaviour. Hence, the importance of insights from behavioural science to shape environmental policy making has never been greater. It is essential for decision-makers to understand how behavioural insights can inform policy decisions that address these global challenges."*

However, understanding the institutional, regulatory, infrastructural, and financial barriers to engaging in PEBs is also crucial. As Timmons et al. (2024b) suggest, "it is entirely reasonable to view individual climate action as necessary but [to] continue to travel by car where there is no alternative." This is an example of the intention-behaviour gap, defined as "the difference between one's intentions and ability to act in line with them" (Tomkins et al., 2018). Alternatively, ElHaffar, Durif, and Dubé (2020) define it as "the discrepancy between what consumers say about their growing concern regarding the environment and what they actually do to sustain it." This second definition better illustrates that the intention behaviour gap is linked to a broad range of factors, only some of which could be considered infrastructural. This effect is alternatively referred to as the value-action gap or attitude-behaviour gap (Tomkins et al., 2018). This report highlights the need for further research to experimentally test interventions that reduce the gap between attitudes and CBs in the Irish context. Sultan et al. (2020) state that "Many empirical studies have explored the attitude-intention and intention-behaviour relationships; however, studies exploring ways to minimise or explain these gaps are scarce".

Lades et al. (2020) highlight that different policy interventions are needed for low-frequency versus high-frequency decisions. Low-frequency decisions require forethought and deliberation, such as retrofitting a house or switching energy providers. In contrast, high-frequency decisions—such as dietary choices or transportation methods—are often made intuitively "with little or no deliberation" (Lades et al., 2020). The authors suggest that 'nudging' policies are "probably most effective in changing high-frequency decisions" (Lades et al., 2020).

(Timmons et al., 2024c) investigated the effect of 'inoculating' people against greenwashed claims being put forward by brands. They found that while such interventions may increase the

likelihood that people will correctly identify greenwashed claims, it may also make them overly skeptical of genuinely sustainable brands. This highlights a trade-off between protecting consumers and supporting authentic sustainability efforts, and the authors suggest that systemic regulations, like those in the EU Green Claims Directive, may be more effective than individual-level interventions in addressing greenwashing's harms (Timmons et al., 2024c).

While demographic analyses of the Irish population on environmental issues are limited, global studies indicate fairly consistent behavioural trends. For example, Lewis et al. (2019) report that "several studies have shown that liberals express more concern about climate change than conservatives[1] in Australia, Canada, Germany, the UK, and Western Europe generally". While their findings do not reference Irish data, the global trend suggests a similar pattern may exist in Ireland, serving as a foundation for future research. The influence of political ideology on environmental attitudes in Ireland remains largely unexplored. Research outside Ireland has shown that education influences environmental beliefs differently depending on political ideology. Czarnek et al. (2021) found that education correlates with stronger pro-environmental beliefs among left-leaning individuals, whereas this correlation is weaker or even negative among right-leaning individuals. In other words, right-wing ideology diminishes—but does not eliminate—the positive effect of education on climate change beliefs.

Gender is another key factor influencing environmental attitudes. McCright et al. (2016) found that gender is the third most consistent predictor of climate change concern, following pro-environmentalism and political ideology. In their review of 96 studies, they found that 59 studies reported women to be significantly more concerned about climate change than men, while none showed the reverse. At the organizational level, increased gender diversity—both on corporate boards and through internal policies—correlates with stronger environmental performance (Kassinis et al., 2016; Liao, Luo and Tang, 2015). Similarly, female representatives in the European Parliament are more likely than male counterparts to support environmental legislation, even after accounting for political ideology and nationality (Ramstetter and Habersack, 2020). Countries led by women have also been found to advocate more strongly for pro-environmental policies (Mavisakalyan and Tarverdi, 2019). Some research suggests gendered socialisation from a young age may contribute to higher levels of environmental concern in women (Ayalon, 2024).

Despite higher levels of concern and engagement in PEBs among women, studies consistently find that men self-report greater awareness and knowledge of environmental issues than women (IKC3 et al., 2023; Rediscovery Centre, 2023; EPA, 2022c). However, this may reflect overconfidence rather than actual knowledge. A 2006 study found that men are more likely to overestimate their knowledge (Bhandari and Deaves, 2006), suggesting that perhaps objective assessments (e.g., quizzes) should be prioritized over self-reported knowledge when measuring environmental awareness. However, a more recent study actually found that women were more

[1] The terms ‘liberal’ and ‘conservative’ are used here to denote left-wing and right-wing ideologies rather than specific political parties.

overconfident than men in relation to their knowledge of how best to manage their personal finances (Hermansson and Jonsson, 2020). Overconfidence, then, may in fact correlate to gender to different degrees and in different directions depending on the subject matter at hand. Further research could explore whether either men or women are more likely to be overconfident about environmental knowledge in the Irish context.

The EPA report 'A Review of Climate Change Attitudes Using a Person-Centred Framework' (2024a) states that "With the exception of Johansson et al. (2022), all studies looking at age found that participants' views on climate change tended to be associated with the age of the participants. However, the findings are inconsistent as the pattern of this effect was different across studies and the lack of longitudinal research limits the conclusions that can be drawn from the age findings".

There is an argument for using generational categories (e.g., Gen X, Millennials) rather than simple age brackets (e.g., 18–34, 55+) in sociodemographic analyses. Bolgi (2023) suggests that "Assassinations, wars, economic upheavals, significant new technological developments, etc., which are cataclysmic in nature, have been found to create values in people coming of age, or between the ages of 17 and 23, and those values have been found to remain stable throughout the lives of those within a cohort." However, since age brackets also capture shared experiences, the issue lies in determining where to draw the lines. Regarding generational behaviours, Bolgi (2023) notes that "according to some research, Generation Y members spend little time, energy, and emotion on low-commitment decisions like choosing an electricity or house insurance provider, but a lot of time, energy, and emotion on high-commitment decisions" (Bolgi, 2023).

Large environmental benefits can be achieved through behavioural interventions in the sustainable consumption of food (Wynes et al., 2018). As such, it is crucial to understand the drivers and motivations behind dietary choices, and to understand how sociodemographic variables correlate with these choices. Similarly, reduction of food waste through behavioural interventions can reduce the environmental impact of the food and drink sector by reducing the consumption of resources (Pearson and Perera, 2018). In their 2023 study, Kirwan et al. found that "Higher environmental impact diets were significantly associated with demographic factors such as age, education status, residential location, and sex, but these were not consistent across population groups" (Kirwan et al., 2023).

Lavelle and Fahy found that 82% of respondents (N=1,129) believed that their personal behaviour could make a difference to the environment (Lavelle and Fahy, 2016). This can be classed as a 'self-efficacy' belief. Self-efficacy beliefs have been defined as "beliefs in one's capabilities to organise and execute the courses of action required to manage prospective situations" (Burke et al., 2009). There was also a recognition within the respondent group that more needed to be done to preserve the environment, with 58% of the group feeling that they needed to behave in a more environmentally friendly way (Lavelle and Fahy, 2016). Further,

over two thirds of respondents (69%) wanted to be perceived by others as being environmentally friendly (Lavelle and Fahy, 2016). EPA-Plastics found that “Nearly 9 in 10 (86%) [Irish People] are aware their personal actions can reduce plastic waste in the environment.” (EPA, 2022c).

According to Maguire and Fahy, “very little research on repairing as a sociological phenomenon is currently available in Ireland.” (Maguire and Fahy, 2022). Repair is a key circular strategy that can retain materials in the value chain by extending the life of products otherwise destined for disposal. Maguire and Fahy (2022) highlight Ireland’s strong tradition in fashion, clothing, and textiles. Textiles are one of the product groups with the highest environmental impacts (Amicarelli et al., 2022). In addition, they have been identified as a product group for which consumer behaviour interventions hold high impact reduction potential (European Commission, 2014). As such, behavioural interventions are sorely needed to reduce consumption of textiles at the consumer level.

Maguire and Fahy found that the key reasons for engaging in textile repairs were “personal level of repair skill and confidence, the time it would take for them to complete the repair, and what the garment meant to them” (Maguire and Fahy, 2022). They also found that disinclination or laziness was a key reason not to repair a garment. Such disinclination or apathy towards clothing repair was linked to participants having a wide range of similar garments available to them (Maguire and Fahy, 2022). Garments can be valued by consumers in two key ways - first they can value garments in relation to emotional attachment and memory association. Second, they can value garments in monetary or time consumption terms, weighing the initial cost of the garment against the time and money required for a repair (Maguire and Fahy, 2022). Maguire and Fahy found that “in all cases, the emotional attachment to the garment involved swayed the choice to ultimately undertake the repair” (Maguire and Fahy, 2022). This is likely due to the low price of new clothing, and the high price of repair meaning that a monetary value calculation often or always results in divestment coming out as the preferable option over repair.

Methodology

Initial Literature Review

A thematic literature review was conducted through google scholar which sought to collect literature on citizen engagement/awareness/behaviour around the CE in both the Irish and international context. A subset of these articles was then selected for further analysis in order to gain a more comprehensive understanding of the Irish audience in relation to key Pro-Environmental Behaviours (PEBs), with a specific focus on the CE. The criteria for inclusion or exclusion in this further analysis will be elucidated in the following sections. For each search string inputted in Google Scholar, the abstracts of the first 20 results (2 pages) were reviewed for inclusion or exclusion. This limit was imposed in order to ensure a manageable workload

over many searches. In many cases, searches were conducted twice: first to establish the general research landscape, then again to examine literature specifically relevant to Ireland by appending "+ ("Ireland" OR "Irish")" to the search string. All search strings used in the initial literature collection are included in Appendix 1 as a table. The review number was not extended past 20 articles even when significant duplication was found between two searches. Again, this was to limit the scope and reduce the time input required.

A total of 185 articles were selected for inclusion in the literature review conducted for this report, and these were categorised according to theme, circular strategy, scale and sector. Additionally, the relevance of a given article to the Irish context was recorded. A preliminary analysis identified research gaps and trends by counting occurrences of each theme. To improve accuracy, each article was assigned two themes to capture multiple focal points. The thematic framework was refined iteratively, yielding 31 themes, later consolidated into 19. Articles that no longer fit the revised categories were removed, reducing the final sample to 159.

The most common theme identified was ‘Attitudes’, followed by ‘Awareness’ and ‘Motivations and Drivers’. The frequency of each theme in the 159 articles is represented in Figure 1 below:

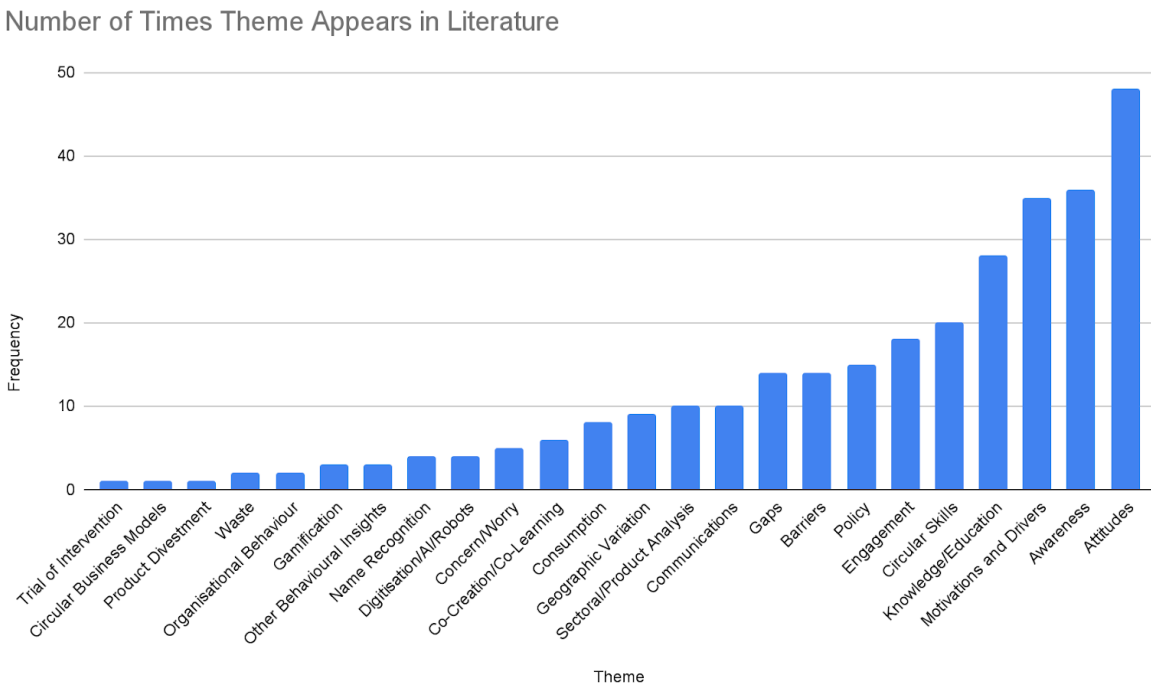

Figure 1: Thematic analysis of collected literature

The publication year was recorded for each article included in the literature review. An automated review sheet counted the number of articles published each year and generated a

graph to visualise trends. This step aimed to assess whether there had been an increase or decrease in publications within the field of CE literature relating to citizen level behaviour change. It is important to note that the literature search was completed in August 2024, meaning the total number of articles for 2024 is likely to be higher than reported. The results are presented in Figure 2 below:

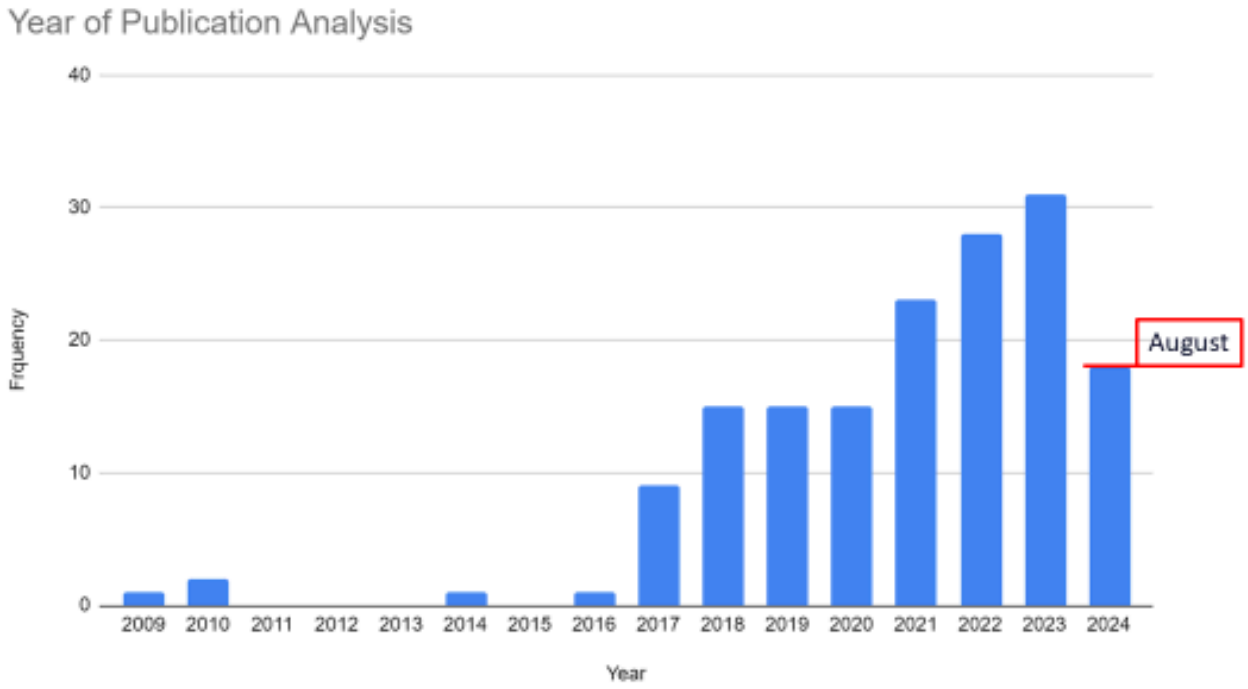

Figure 2: Literature analysis by year of publication

A further analysis was conducted to determine the sector relevant to each article in the literature review. This analysis, illustrated in Figure 3, aimed to identify research gaps and assess which sectors have received the most attention regarding engagement and behavioural studies within the CE. To enhance granularity, each article could be assigned up to two sectors.

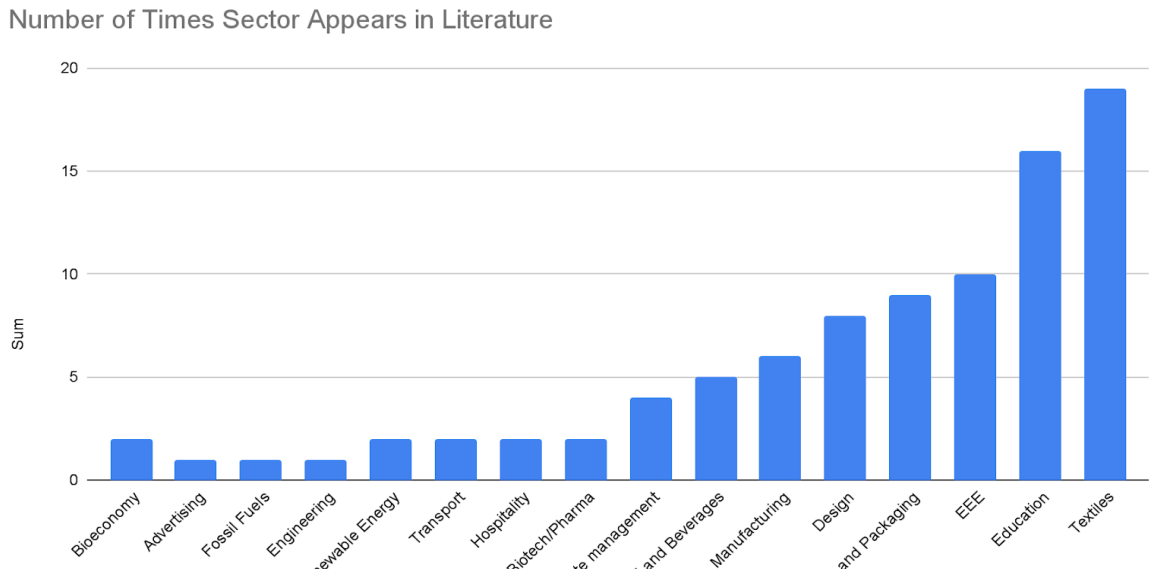

Figure 3: Literature analysis by sector

The analysis found that textiles received the most attention. However, only a small proportion of the total articles identified in the literature search were included in this analysis, as only articles focusing specifically on one or two sectors were categorised. Articles relating to more than 2 sectors were categorised as 'mixed' due to time constraints and a large number of articles being analysed.

Another key data point collected during the initial scoping was the primary circular strategy addressed in each paper. This analysis produced unexpected results. While recycling was anticipated to be the most studied strategy, it was the second most common, with 'green purchasing' being the most frequently examined. The results of this analysis are presented in Figure 4 below.

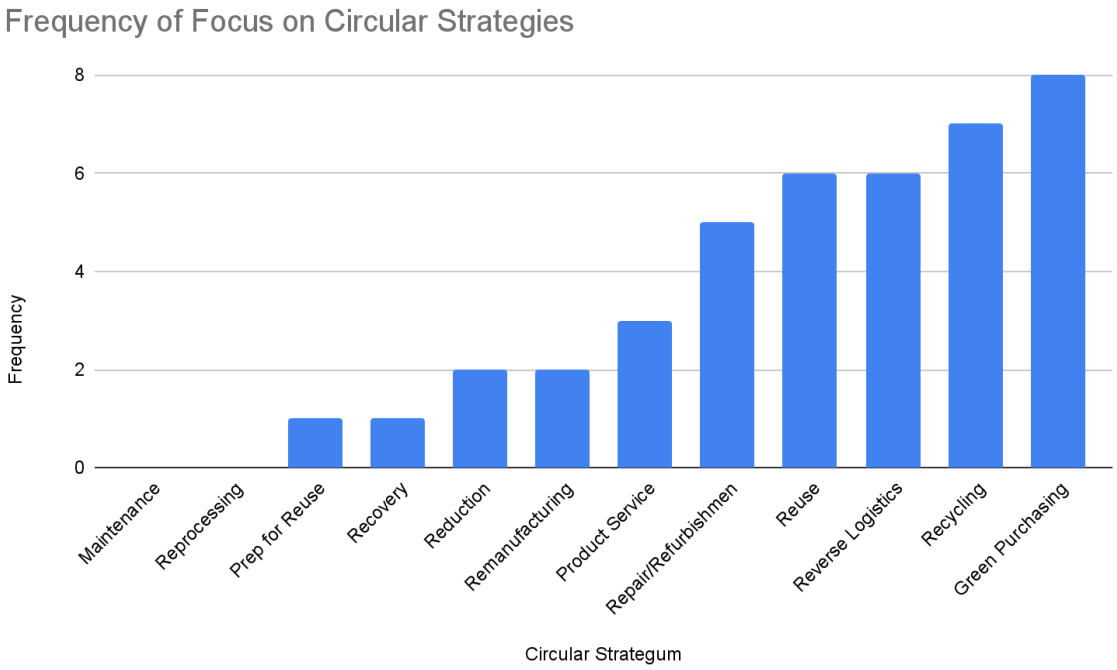

Figure 4: Literature analysis by circular strategy focus

Synthesising Sociodemographic Analyses

From the body of work identified in the initial literature review described above, a subset of articles were selected for inclusion in the primary analysis undertaken for this report. This analysis focused on articles examining the behaviours or attitudes of specific Irish sociodemographic groups regarding the CE. Relevant articles from the literature review

database were marked for further examination on the basis of whether they disaggregated behavioural findings by sociodemographic group. Each was tagged with the country of data collection to facilitate filtering for studies relevant to Ireland.

Additional steps were taken to ensure comprehensive coverage of sociodemographic research:

- *Targeted Searches:* Additional Google Scholar searches using specific terms, such as "("Textiles" OR "Clothes") + ("Demographic" OR "Audience Segmentation") + ("Ireland" OR "Irish")" were performed.
- *Research Rabbit:* AI-based literature mapping software was used to identify connections between researchers and similar studies.
- *Elicit:* Another AI tool was used to search academic literature based on the review's aims and inclusion criteria. This yielded one additional paper (Quintyne et al., 2023).

The bulk of the data included in this report is grey literature, primarily empirical research commissioned by the private sector or state/semi-state public bodies. Indeed, much of the data comes from the 'behavioural insights' series published by the Irish Environmental Protection Agency (EPA), as well as the Climate Change in the Irish Mind (CCIM) work from the EPA, and the Circular Economy Tracker (CET), published by Rediscovery Centre (2021, 2023, 2024).

Of 159 articles identified as relevant in the initial literature search, a total of 23 were categorised as relating to Irish sociodemographic analysis. All sociodemographic studies relating to Irish sociodemographic groupings and environmental issues with potential circular solutions/mitigation strategies were analysed in detail. A selection of apparent sociodemographic differences were extracted from the datasets and collated in a single document. The criteria for inclusion of an individual datapoint were as follows:

- Direct relevance to core CE themes,
- Demonstration of significant sociodemographic variance,
- Practical utility for CE communicators seeking to tailor messaging.

Relevant data points from reviewed datasets were synthesised and categorised to generate insights useful for circular economy communication. Targeted keyword searches (e.g., "Reuse," "Repair," "Second Hand," "Waste") facilitated the identification of pertinent data within datasets. Where substantial variance was observed, statistical significance was assessed at the 5% level ($p < 0.05$) using the Sapio Research online significance calculator. For questions with ordinal response scales (e.g., degree of agreement or frequency of behaviour), chi-square tests of independence were conducted by the authors to evaluate whether the relationship between sociodemographic groups remained statistically significant when considering all response categories. Percentages were converted to counts for these analyses, and assumptions of the chi-square test (e.g., expected cell counts, independence) were considered. Further detail of chi-square test results can be found in Appendix 3, and references to this appendix in the main body of the text appear in the format Appendix 3(X), with X being the specific point within the

appendix relating to the relevant question. Only statistically significant differences are reported in the results. For EPA datasets, deviations highlighted by Ipsos B&A via colour coding guided the selection of differences subjected to testing. To limit scope and reduce multiple testing, this process was applied only to questions containing one or more of the targeted keywords.

Percentage differences and unweighted sample sizes are included in the text of the report where available to allow for replication of significance tests and to facilitate further analysis. In the case of Climate Change in the Irish Mind (CCIM) data, differences between groups were extracted from the 'summary demographic tables' accompanying the main reports. In all cases, when a datapoint in the present report has these demographic tables as its reference, this indicates that the finding is not referenced in the main CCIM report and is instead being highlighted by the authors of the present report as being potentially useful information for CE communicators. One limitation here is that the sample size for certain sociodemographic groups participating (educational attainment, urban/rural, social grade) is not available in CCIM data, and significance could therefore not be calculated. This limits the ability to generalise these specific insights to the population as a whole.

Each data point was categorised according to the relevant theme within the structure of the document, and the sociodemographic grouping to which it related. Data points falling into the same categories were then analysed in tandem in order to assess the similarities and differences between findings from different authors and data sets. For example, all findings on reuse were amalgamated into one section of the working document, then broken down into the relevant sociodemographic grouping to allow for all data points relating to (for example) gender and reuse to be compared and contrasted. The rationale behind this methodology was to identify and understand patterns and trends relating to specific sociodemographic groupings under specific themes.

Presentation of Results

This report aims to present empirical data in a format accessible to communicators, policymakers, practitioners, and useful for researchers in further investigation and exploration. A guiding principle of the work is to support excellence in communications on the subject of the CE. Results are structured around major behavioural tendencies, with sociodemographic-specific findings highlighted within each section.

For clarity, sample sizes are presented as unweighted totals (UNWTD), meaning the number of respondents from a sociodemographic group who answered a specific question. This ensures consistency and comparability across studies, as weighting values vary based on population composition at the time of writing. For consistency, all increases/decreases or differences between groups are presented as percentage point differences, meaning that they are expressed simply as the numerical difference between percentages. For example, if a 10% difference between demographic groups in 2023 is said to have increased by 6% between 2023 and 2024, that means the value in 2024 is 16%.

Table 1: Report acronyms

Report Title	Report Acronym	Longitudinal/Cross-Sectional
Circular Economy Tracker	CET	Longitudinal
Climate Change in the Irish Mind Wave 1	CCIM1	Longitudinal
Climate Change in the Irish Mind Wave 2	CCIM2	Longitudinal
Climate Change's Four Irelands	CC4I	Cross-Sectional
Repair: National attitudes and behaviours survey 2022	EPA-Repair	Cross-Sectional
Reuse: National attitudes and behaviours survey 2023 (Part 4)	EPA-Reuse	Cross-Sectional
Textiles: National attitudes and behaviours survey 2021	EPA-Textiles1	Cross-Sectional
Textiles: Circular retail propositions national survey 2022	EPA-Textiles2	Cross-Sectional
Food Waste: National attitudes and Behaviours survey 2022	EPA-Food-Waste	Longitudinal
Plastics: National attitudes and behaviours survey 2019 - 2021	EPA-Plastics	Longitudinal
Usage and Attitudes towards Single Use Packaging for Fruits & Vegetables 2024	EPA-SUP	Cross-Sectional

Articles Included in Sociodemographic Review

Table 2: Basic information on work included in the report

Article Title	Author(s)	Year
Communicating climate change as a generational issue: experimental effects on youth worry, motivation and belief in collective action	Timmons et al.	2024
What is preventing individual climate action? Impact awareness and perceived difficulties in changing transport and food behaviour	Timmons et al.	2024
Climate Change in the Irish Mind Wave 2 Demographic Table	Environmental Protection Agency (EPA)	2023
Understanding domestic consumer attitude and behaviour towards energy: A study on the Island of Ireland	Brown et al.	2023

Climate Change's Four Irelands: An Audience Segmentation Analysis	Leiserowitz et al.	2023
Sew what for sustainability? Exploring intergenerational attitudes and practices to clothing repair in Ireland.	Maguire & Fahy	2023
Repair: National attitudes and behaviours survey 2022	Environmental Protection Agency (EPA)	2022
Reuse: National attitudes and behaviours survey 2023 (Part 4)	Environmental Protection Agency (EPA)	2023
Textiles: National attitudes and behaviours survey 2021	Environmental Protection Agency (EPA)	2021
Textiles: Circular retail propositions national survey 2022	Environmental Protection Agency (EPA)	2022
Food Waste: National attitudes and Behaviours survey 2022	Environmental Protection Agency (EPA)	2022
Plastics: National attitudes and behaviours survey 2019 - 2021	Environmental Protection Agency (EPA)	2021
Usage and Attitudes towards Single Use Packaging for Fruits & Vegetables 2024	Environmental Protection Agency (EPA)	2024
Creating context for corridors of consumption: the case of Ireland	Lavelle et al.	2021
What's Consuming Ireland? Exploring expressed attitudes and reported behaviours towards the environment, quality of life and sustainable consumption on the island of Ireland.	Lavelle et al.	2017
Sustainable Production and Consumption: The Influence of Social Norms	Fadiran and Onakuse	2022

The Circular Economy Tracker	O'Mahony et al.	2023
Household Environmental Behaviours - Waste and Recycling	Central Statistics Office (CSO)	2021
Irish population knowledge, attitudes, and perception of air pollution	Quintyne et al.	2023
Assessing Sustainable Skills Amongst Irish Citizens,	Bilendi, IKC3, Rediscovery Centre	2024
Sign of the Times	IPSOS B&A	2024
Assessment of the Environmental Impact of Food Consumption in Ireland—Informing a Transition to Sustainable Diets	Kirwan et al.	2023
Current Perceptions of Sustainable Diets in Ireland and the Outlook of Circular Eating Practices	Fox et al.	2023

Methodological Limitations and Considerations

While attempts are made in the next section of the report to report on the methodological differences between papers included in the review, it is important to note that many of the reviewed articles were not published in academic journals and therefore lack a dedicated methods section.

One methodological challenge encountered in the present study is how best to account for baseline behaviour. Different sociodemographic groups are likely to differ in their consumption patterns, at least in certain cases. For example, young people might be found to be much less likely to repair lawnmowers. This does not mean that young people have a less favourable attitude towards repair, merely that young people are less likely to own a lawnmower in the first place. This is because young people are more likely to live in apartments with no garden, or to live at home with their parents. The crucial measure of engagement, then, is how likely a particular sociodemographic group is to engage *given the opportunity.* In order to address this challenge, expert stakeholders have been consulted to ascertain whether a pattern is likely to be the result of differing baselines, and indicate that this is the case where appropriate.

Stakeholder engagement and paper analysis highlighted the importance of using objective data to complement self-reported behaviours and attitudes. For example, rather than relying on self-reports of food waste, methodologies could measure actual waste quantities entering and leaving households. Such approaches help mitigate cognitive biases and improve data

reliability. The study ‘Assessment of the Environmental Impact of Food Consumption in Ireland’ (Kirwan et al., 2023) assessed the environmental impact of dietary choices without directly surveying participants on their attitudes toward food sustainability. Instead, the study utilised existing national dietary survey data, linking food consumption patterns to water usage and GHG emissions, and then disaggregating results by sociodemographic group. Although the data was self-reported, the study prioritised objective dietary patterns over subjective sustainability beliefs, providing valuable behavioural insights.

Another key methodological consideration relating to gender is the identification of gender non-conforming participants. One issue is that the prevalence of individuals identifying as non-binary or gender fluid is usually small enough in the sample that accurately identifying the gender of these participants can potentially put the anonymity of the participants at risk, especially if data is being collected in relation to a specific community or geographical location. However, existing research has suggested that accurate gender information should be collected and reported where possible in order to avoid psychological harm resulting from the systemic and institutionalised misgendering of transgender, non-binary, and gender fluid research participants (Cameron and Stinson, 2019). Researchers should use open-ended (text box) gender questions where possible and transform this into categorical data using statistical code (Cameron and Stinson, 2019). As Cameron and Stinson put it, “This practice will not only honor researchers' ethical obligation to treat participants with respect and dignity, but it will also provide important scientific information about the prevalence of different genders across various populations and locations, knowledge that is currently sorely lacking” (Cameron and Stinson, 2019). Researchers should take care to avoid providing gender information in situations in which this could potentially lead to identification of participants, for example in a qualitative study with a small sample size or a survey of a specific small town which may only be home to a very limited number of non-binary individuals. It should be noted that (Timmons et al., 2024a) included the option of ‘non-binary/other’ for gender, and this group made up 1% of the sample (N=5).

One limitation of the existing literature in this field is the use of inappropriate denominators in certain situations. For example, while it is useful to know the occurrence rate of lawnmower repair among the total population, it would be more useful still to know the incidence among people who actually *own* lawnmowers. This would eliminate the distorting effect of different baseline levels of consumption between sociodemographic groups. In other words, it may appear that older people repair lawnmowers more frequently than younger people, but this may simply be a result of higher lawnmower ownership among older people, and not an indication that age is correlated with repair behaviour among lawnmower owners. Surveys should attempt to isolate the relevant denominator before assessing sociodemographic differences.

One possible limitation of this study is the reliance on self-reported data. This could introduce potential biases which could skew results. ‘Socially desirable responding’ (SDR), for example, is an effect of self reporting research which leads participants to provide answers which present a

favourable image of themselves rather than the answer which best reflects reality (van de Mortel, 2020). Other examples include recall bias, where participants forget or leave out information and confidence bias, where participants believe they are performing better than they are (Lavelle and Fahy, 2016). More studies using objective data relating to both behaviours and knowledge would allow researchers to better understand in which areas strong biases exist.

A final consideration relates to the use of social grading in sociodemographic research. Many of the studies reviewed for this report were conducted by Ipsos B&A, and as a result the social grade system developed by the British National Readership Survey (NRS) is used consistently to denote social grade, making it easier to compare different studies. It should be noted that this measure is distinct from social class, which is a broader concept used across sociological work and can be based on factors like income, education, status, lifestyle, and power. Social grade is a specific classification system which is based on the occupation of the chief income earner within the household being studied. It is important to note that unless otherwise stated, social grade does not directly reflect the income of the participant or indeed the participant's household and is only linked to the type of occupation. Ipsos B&A have indicated that social grade is a particularly useful discriminator when it comes to media consumption (Collis, 2009). If looking for information on socioeconomic differences within this report, social grade should be used as a proxy.

Methodological Differences Between Reviewed Papers

Research has shown that the strength of associations between sociodemographic variables and behaviours can be influenced by methodological choices made during participant selection, survey delivery, data analysis, and experimental design (Sandre et al., 2020). This section highlights key methodological differences between the reviewed studies, which may help explain variations in their findings.

Table 3: Methodological differences between reviewed papers

Reference	Participant Selection	Delivery	Qual or Quant	Survey, Interview or Experimental	Sector Specific
(Timmons et al., 2024a)	2 Market Research Agencies - RED-C Research and Ipsos B&A[2]	Online	Quant	Experimental	No
(Timmons et al., 2024b)	2 Market Research Agencies - RED-C Research and Ipsos B&A	Online	Quant	Experimental	Yes
(EPA, 2021b)	Market Research Agency - Ipsos B&A	Online	Quant	Survey	No

[2] Unlike many studies on youth perceptions of environmental issues, this study did not rely on convenience sampling from climate-engaged individuals or schools.

(EPA, 2024b)	Market Research Agency - Ipsos B&A	Online	Quant	Survey	No
EPA (2021c, 2022a/b/c, 2023a/b, 2024c)	Market Research Agency - Ipsos B&A	Online	Quant	Survey	Mixed
(Brown et al., 2023)	Market Research Agency - Dynata	Online	Quant	Survey	Yes
(Rediscovery Centre, 2021)	Market Research Agency - Ipsos B&A	Online	Quant	Survey	No
(Rediscovery Centre, 2023)	Market Research Agency - Ipsos B&A	In Person	Quant	Survey	No
(Rediscovery Centre, 2024)	Market Research Agency - Ipsos B&A	In Person	Quant	Survey	N(o
(IKC et al., 2023)	Market Research Agency - Bilendi	Online	Quant	Survey	No
(Lavelle and Fahy, 2016)	Multi-stage cluster sampling	In Person (Tablet)	Quant	Survey	No
(CSO, 2021)	Unknown	Online	Quant	Unknown	Yes
(Quintyne et al., 2023)	Targeted sampling (Redline Carr Communications)	Telephone	Quant	Survey	No
(Fox et al., 2023)	Purposeful sampling (Snowball)	Online	Qual	Interview	Yes
(Maguire and Fahy, 2023)	Non-probability, purposive sampling	In Person	Qual	Interview (Wardrobe Study)	Yes

Experiment Designs

Timmons et al. (2024a) employed a multi-phase experimental design, presenting different groups with varied framings of climate change. Initially, all participants received climate change information, with some exposed to a generational framing. The study tested whether this framing influenced young people's perceptions of older generations' concern about climate change. A subset of participants was then randomly shown factual information about older generations' actual levels of concern. The pattern was that increased awareness of older generations' worry would enhance young people's belief in collective action, leading to a greater likelihood of pro-environmental behaviour change.

The experimental approach employed by ESRI allowed researchers to identify effective messaging strategies tailored to specific sociodemographic groups. The study's findings suggest that providing accurate information about older generations' concern for climate change can strengthen young people's belief in collective action (Timmons et al., 2024a). The Sustainable Energy Authority of Ireland (SEAI, 2022) similarly recommends communication strategies emphasizing collective action to encourage energy-saving behaviours.

The present report recommends further experimental studies on sociodemographic-specific attitudes and behaviours to inform future communication campaigns. Such 'active' or 'experimental' social science research is largely absent from the analyzed papers, except those conducted by ESRI. Timmons et al. (2024b) also employed an innovative design. Participants first described their daily activities using open text boxes before being informed of the study's environmental focus. They were then asked to identify the behaviours most impacting their carbon footprint and answer follow-up questions about food and transport choices. This priming technique was intended to improve recall accuracy of past behaviours (Timmons et al., 2024b).

Table 4: Review of statistical methods used

Study	Statistical Methods Used
Timmons et al. (2024b)	Logistic regression, qualitative coding of open-ended responses
Timmons et al. (2024a)	Logistic regression, Wilcoxon Signed Rank tests
CC4I Reports (Leiserowitz, 2022)	Latent class analysis using "poLCA" package in R
Lavelle & Fahy (2016)	Frequency tables, cross-tabulations, Spearman's rho correlation, chi-square tests
Brown et al. (2022)	SPSS analyses: Spearman's rank correlation, Kendall's rank correlation, chi-square tests, Cramer's V tests
Quintyne et al. (2023)	Multiple logistic regression, Spearman's rank correlation, chi-square tests, Fisher's exact tests
Fadiran & Onakuse (2022)	Exploratory & confirmatory factor analysis, path analysis, correlation analysis, Cronbach's alpha, ordinal regression

Results

The following sections present results from an analysis of a total of 23 academic papers investigating differences between sociodemographic groups within the Irish audience as they relate to environmental issues. The rationale for focusing exclusively on data obtained within the Irish context is that a key aim of the report is to understand differences within the Irish population which can inform sociodemographic targeting of CE communications. These papers were categorised on the basis of their primary concern (subject matter), then an analysis was undertaken in order to ascertain which sociodemographic groupings were investigated by each paper. This analysis was used to generate a matrix of sociodemographic groups analysed in

relation to each identified theme. The purpose of this exercise was to identify knowledge gaps in the behaviour and attitudes of Irish people in relation to the CE, and pinpoint areas in which further research would be most impactful.

The section is organised according to the themes identified across all sociodemographic analyses. The themes within this analysis are as follows:

Section 1: Circular Behaviours, Attitudes and Awareness

CE Knowledge and Attitudes	Renting/Sharing/Take-back Scheme
Repair	Waste and Waste Management
Reuse	

Section 2: Other Relevant Environmental Issues

Engagement	Level of Knowledge/Awareness
Motivations/Barriers & Enablers	Transport
Level of Concern/Worry	Consumption and Reduction

Data relating to these themes was then analysed having regard to the following sociodemographic characteristics:

Gender	Education/Employment
Age	Social Grade
Location	Life Stage/Parenthood

The final section of results concerns other findings not elsewhere classified. In this section, findings are not disaggregated by sociodemographic grouping but rather by the question which they seek to address.

Circular Behaviours, Attitudes and Awareness

Circular Economy Knowledge and Attitudes

Only 2 datasets identified for review in this report explored the question of name recognition of the term ‘circular economy’. These were the CET survey (Rediscovery Centre, 2023), and

‘Assessing Sustainable Skills Amongst Irish Citizens’ (IKC3 et al., 2023). This section will discuss in detail the findings from these specific questions broken down by sociodemographic grouping, and this will be supplemented with findings from other studies and datasets where applicable/relevant. Findings will be presented according to the sociodemographic group which they relate to. Table 5 below shows the 3 questions (across 2 studies) which explored the question of CE name recognition. These are presented side by side to demonstrate small differences in phrasing and methodology, as well as a means of comparing results. It should be noted that the column titled ‘Familiarity (2023 Total)’ refers to the total percentage of participants who had *heard of* the CE, regardless of their level of knowledge about the topic. In other words, it is the percentage of people who are aware of the term ‘circular economy’. 2023 was selected as the reference year due to data availability.

Table 5: Differences in phrasing of questions about CE awareness

Question	Code	Options	Citation	Familiarity (2023 Total)
Which of the following terms have you heard of? ...Circular economy	Q1	1. Yes 2. No	(Rediscovery Centre, 2023)	41% (N=1006) *Includes Option 1*
Before today how familiar were you with the meaning of the term Circular Economy?	Q2	1. This is the first time I have heard of it 2. I have heard the name but do not know anything else 3. I have heard of it before and know a little about it 4. I have heard of it before and know a lot about it	(Rediscovery Centre, 2023)	48% (N=1006) *Includes Options 2-4*
Are you familiar with the term circular economy?	Q3	1. This is the first time I have heard of it 2. I have heard of it but don't know about it 3. I have heard of it and know a little 4. I have heard of it and know a lot about it	(IKC3 et al., 2023)	74.1% (N=1000) *Includes Options 2-4*

Circular Economy Waste Management & Recycling - Below are some common mitigation and adaptation strategies. Please number them according to your familiarity with them.	Q4	1. I regularly engage with this category of strategies, for work or in my personal life 2. I have engaged with this category before 3. I am familiar with the category but have never enacted a strategy from it 4. I am familiar with the name but don't know more 5. I have never heard of this before	(IKC3 et al., 2023)	84.2% (N=1000) *Includes Options 1-4*

Key Findings: Circular Economy Knowledge and Attitudes

- Familiarity with the term ‘circular economy’ has grown significantly in recent years, from 25% in 2021 to 55% in 2024 (see Figure 5 below).
- Men are more familiar with the term ‘circular economy’ than women, and this gap is growing over time.
- Interest in the CE does not differ by gender once the concept is explained.
- Awareness of the term ‘circular economy’ is growing faster among older people.
- Younger people are more likely than older people to trust CE information coming from influencers, celebrities, and media personalities.
- People in urban areas are more likely to be aware of the term ‘circular economy’, although this gap has recently reduced.
- People in higher social grades (ABC1) are more familiar with the term circular economy, and more likely to think that it is a good idea once it has been explained.
- People in higher social grades (ABC1) are also more likely to trust information conveyed by educators and the government.
- The greatest yearly increase in awareness is also seen in relation to social grade, with recognition among ABC1 participants rising from 32% in 2021 to 66% in 2024.

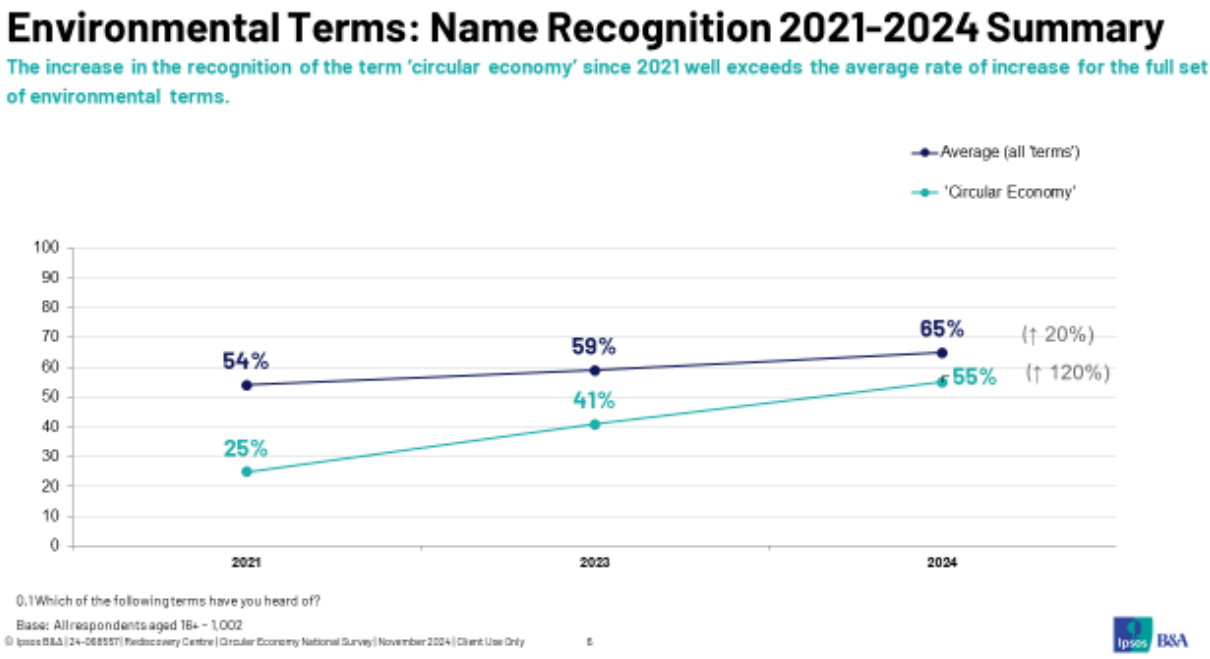

Figure 5: Increase in name recognition of circular economy (Rediscovery Centre, 2024)

Recognition of the Term 'Circular Economy' Across the Board

Familiarity with the term ‘circular economy’ has grown significantly in recent years, from 25% in 2021 to 55% in 2024.

Both the CET survey (Rediscovery Centre, 2023) and the IKC3 survey (IKC3 et al., 2023) examined public familiarity with the term 'Circular Economy,' yielding results of 48% and 74%, respectively[3] (Q2 and Q3). The CET survey asked participants: (Q1) "Which of the following terms have you heard of? ...Circular Economy" and (Q2) "Before today, how familiar were you with the meaning of the term Circular Economy?" Conversely, the IKC3 survey asked (Q3) "Are you familiar with the term Circular Economy?" Additionally, IKC3 investigated familiarity with broader strategies by asking (Q4) "How familiar are you with the category of strategies comprising Circular Economy, Waste Management & Recycling?" (IKC3 et al., 2023).

In Q3 of the IKC3 survey, 25.9% of respondents (N=1000) reported, "This is the first time I have heard of it" when asked about the Circular Economy (IKC3 et al., 2023). However, in response to Q4, only 15.8% of the same participants selected "I have never heard of this before" when

[3] These figures indicate the proportion of the total population indicating that they had heard the term ‘circular economy’ prior to being surveyed, regardless of their level of knowledge about the subject.

referring to 'Circular Economy, Waste Management & Recycling' (IKC3 et al., 2023). The difference in responses likely results from the broader scope of Q4, where individuals may recognise 'Waste Management & Recycling' but not 'Circular Economy.' Responses to Q4 may not be useful, as a result of being a ‘triple barrelled’ question, meaning that it explores familiarity with 3 different concepts as a monolith, potentially leading to ambiguity or inaccuracy in responses.Given the similarity between Q2 and Q3 but their use with different participants, the primary analysis in this section will compare these two questions.

According to the CET survey (2023), 41% of Irish citizens recognised the term 'Circular Economy' (Q1). In contrast, 84.2% of respondents in the IKC3 survey (Q4) claimed familiarity with 'Circular Economy, Waste Management & Recycling' (IKC3 et al., 2023; Rediscovery Centre, 2023).

In 2024, a repeated CET survey showed familiarity with the term 'Circular Economy' increased to 55%, marking a 14% rise in one year and a 30% increase since 2021 (Rediscovery Centre, 2023). This suggests that nearly one in three Irish citizens first encountered the term between 2021 and 2024, with an estimated 2,267,000 individuals recognizing the term in 2023, based on CET data, or 3,914,626 individuals according to IKC3 data (IKC3 et al., 2023; Worldometer, 2025).

Gender Differences in Circular Economy Awareness

Men are more familiar with the term ‘circular economy’ than women, and this gap is growing over time. Interest in the CE does not differ by gender once the concept is explained.

Both the CET (RDC) and IKC3 studies indicate that women are generally less likely to report being familiar with the term 'Circular Economy' than men. In 2021, the RDC CET survey found that 24% of women (N=523) and 27% of men (N=480) recognised the term, a non-significant 3% difference (Q1). By 2023, awareness among women (N=523) had risen to 36% (a 12% increase), while awareness among men (N=483) had grown to 46% (a 19% increase). This resulted in the emergence of a statistically significant gap in awareness (Rediscovery Centre, 2023). In 2024, awareness levels reached 49% for women (N=521) and 61% for men (N=481), maintaining the significant difference (Rediscovery Centre, 2023). Over this period, name recognition increased by 15% for men but only 13% for women, further widening the gender gap to a 12% percentage point difference in 2024.

Despite this disparity in name recognition, interest in the CE was found to be equal between men and women once the concept was explained (Rediscovery Centre, 2023). The IKC3 survey (Q3) also found a significant gender gap in awareness: 78.5% of men (N=490) had heard of the term 'circular economy', compared to 69.8% of women (N=510) (IKC3 et al., 2023). In Q4, 88% of men (N=490) reported familiarity with 'Circular Economy, Waste Management & Recycling,' compared to 80.6% of women (N=510) (IKC3 et al., 2023).

Age Differences in Circular Economy Awareness

Awareness of the term ‘circular economy’ is growing faster among older people. Younger people are more likely than older people to trust CE information coming from influencers, celebrities, and media personalities.

The IKC3 survey found that familiarity with 'Circular Economy, Waste Management & Recycling' (Q4) varied by age, with lower familiarity among middle-aged respondents (30-59 years old, N=590) (IKC3 et al., 2023). The highest familiarity was reported among 60-74-year-olds (88.7%, N=200), followed by 18-29-year-olds (85.4%, N=210), while the lowest was among 30-59-year-olds (82%, N=590) (IKC3 et al., 2023). The CET survey did not identify significant age-related differences in name recognition (Q1), though the largest increase between 2023 and 2024 occurred among participants aged 50+, rising from 37% (N=456) to 54% (N=473), a 17% increase (Rediscovery Centre, 2023).

The IKC3 data showed that recognition among 70-74-year-olds (N=60) spiked at 84.8%, compared to a low of 70.9% in the 30-39 age group (N=190) (IKC3 et al., 2023). Additionally, when asked ‘What elements of the circular economy resonate with you?’, 34.4% of 70-74-year-olds selected "Building a new economy based on reusing, repairing & recycling," compared to just 23.3% of 18-29-year-olds (N=210). However, given the small sample size (N=60), this result should be treated with caution. It is worth reiterating that this particular sociodemographic group within this survey was an outlier in relation to a number of different questions. Additionally, this question can also be considered to be ‘triple-barrelled’, as it is unclear whether the element resonating with respondents is reuse, repair, or recycling.

Trust in “Online influencers, celebrities, or media personalities” as a source of information on the CE was significantly higher among younger participants in 2024, with 42% of people under 34 (N=243) trusting this source of information compared to 22% of people over 50 (N=473) (Rediscovery Centre, 2024).

	Circular Economy		
	2021	2023	2024
	%	%	%
'Heard of circular economy'	25	41	55
Know a little/ know a lot	23	31	38
Understand well (score 7-10)	35	39	46
Overall support (score 7-10)	57	64	61
Average familiarity (7-10)	50	58	57
Average Interest (7-10)	58	70	70
Priority for Government (high/ very high)	66	69	68
Priority for Irish Business (high/ very high)	67	71	70

Figure 6: (Rediscovery Centre, 2024)

Figure 6 shows a summary of overall responses to the questions indicated in the left-hand column. Crucially, this data shows that average name recognition, as well as self-reported knowledge and understanding of the CE across sociodemographics is growing year on year at a significant rate. For clarity, this table does not show differences between sociodemographics in relation to the relevant questions.

Urban vs Rural Understanding of the Circular Economy

People in Dublin are more likely to recognise the term 'circular economy', although this gap has recently reduced. People in Dublin are also more likely to trust NGOs as a source of information on the CE.

The CET found a significant increase in Circular Economy name recognition in Dublin. In 2021, recognition was similar between Dublin (25%, N=278) and non-Dublin areas (26%, N=725). By 2023, name recognition outside Dublin had increased to 37% (+11 percentage points), while in Dublin, it surged to 49% (+24 percentage points) (Rediscovery Centre, 2023). What caused this doubling in the number of people familiar with the CE in Dublin in 2 years requires further explanation (Rediscovery Centre, 2023). Between 2023 and 2024, recognition rose further to 59% in Dublin (+10 percentage points) and 53% outside Dublin (+16 percentage points), narrowing the gap (Rediscovery Centre, 2023). It is interesting to compare this to Q3 from the IKC3 data, which found that people in Dublin were marginally less likely to have heard of the CE in 2023, with 71.8% of Dubliners (N=290) having heard the term, compared to an average of 74.5% of people across all other regions (N=710) (IKC3 et al., 2023).

In terms of trusted sources of information, people in rural areas were found by the CET survey to be less likely to trust Environmental Non-Governmental Organisations (ENGOs) as a source of information about the CE. In 2021, 75% of urban participants (N=669) trusted ENGOs as a source of information, compared to just 66% of rural participants (N=334) (Rediscovery Centre, 2021). By 2023, however, the difference between these groups had significantly reduced in relation to this question, with 80% of urban participants (N=664) trusting ENGOs compared to 79% of rural participants (N=342), meaning that the relationship was no longer statistically significant (Rediscovery Centre, 2023). These statistics also show that general trust in ENGOs as a source of information about the CE grew from 72% of the total population (N=1003) in 2021, to 80% of the population (N=1006) in 2023 (Rediscovery Centre, 2023; Rediscovery Centre, 2021). In 2024, trust in NGOs as a source of information on the CE was higher among Dubliners (N=576) at 84% than among people from outside Dublin (74%, N=398) (Rediscovery Centre, 2024).

Social Grade and Circular Economy Knowledge/Attitudes

People in higher social grades are more familiar with the term 'circular economy', and more likely to think that it is a good idea once it has been explained. This group is also more likely to trust information conveyed by educators and the government.

The CET survey observed the largest increase in name recognition among participants of a high social grade (ABC1). Recognition among this group rose from 32% in 2021 to 48% in 2023 (+16%) and then to 66% in 2024 (+18%) (Rediscovery Centre, 2023). By contrast, recognition among lower social grade (C2DE) participants increased from 19% in 2021 to 46% in 2024, more than doubling over three years (Rediscovery Centre, 2023). Despite this substantial absolute increase, the recognition gap between social grade groups remains substantial, with a 20% difference in 2024 (66% for ABC1 vs. 46% for C2DE). Once the concept of CE had been described to participants, people in the higher social grade were more likely to agree that moving to a CE is a good idea. In 2023, 34% of ABC1F+ participants rated the degree to which it is a good idea as '9-10', compared to 24% of C2DEF- participants (Rediscovery Centre, 2023). This trend has remained relatively consistent across all 3 iterations of the survey (Rediscovery Centre, 2021; Rediscovery Centre, 2023; Rediscovery Centre, 2024). Average interest across a variety of features of the CE was found to be lower among C2DE participants (64%) than ABC1 participants (76%) in 2024 (Rediscovery Centre, 2024). In terms of trusted sources of information, ABC1 participants (N=576) were found to be more likely than C2DE participants (N=398) to trust educators as a source of information (87% of ABC1 compared to 79% of C2DE), and were also more likely to trust the government as a source of information (56% of ABC1 participants compared to 45% of C2DE) (Rediscovery Centre, 2024).

Consumption and Reduction

In this section, we will examine the level of willingness among the Irish population to reduce consumption. This includes any findings relating to both the level of consumption (high/low) and

the means/mode of consumption (e.g. online/in-person) and how these factors have changed over time. Finally, this section will discuss findings relating to product longevity and durability. This is included on the assumption that increased durability will result in reduced consumption due to an increase in product longevity.

Key Findings: Consumption and Reduction

- Women report being more likely to keep products for a long time, but are not more likely than men to be willing to pay more for durability.
- Women have lower confidence in their ability to judge product durability.
- Men and older people are more likely to value durability of clothes and wear them until they wear out.
- People in rural areas are generally more likely to value durability.
- Over one third of Irish people feel entitled to use as much water and energy as they wish, and installation of intelligent metering systems can potentially help households to control and reduce energy consumption.
- Women are more likely to be frequent purchasers of textiles, with 1 in 3 women under the age of 50 buying clothes often on a weekly basis in stores or online.
- Women are more likely to buy clothes that they never end up wearing or only wear a few times.
- Men report eating more meat than women, particularly beef and lamb, and are less likely to identify eating meat as having a large impact on GHG emissions.
- Women are more likely to plan shopping and meals, and to organise food in the fridge, as well as being more likely to recognise the benefit of these practices for food waste reduction.
- Younger people tend to be high consumers of textiles, and the age difference is more pronounced among men.
- Young people are more likely to buy clothes online, and 45% of 16-34-year-olds send back products that they bought online.
- Younger people appear to be less likely to eat beef and lamb, while older people generally report wasting less food and being better at food management practices like keeping track of food in their fridge and looking at labels.
- Young people tend to be more likely to see a broad range of products as a necessity rather than a luxury, with the exception being televisions.
- People with higher educational attainment tend to report eating meat more frequently, but are also more likely to have changed their behaviours to reduce the impact of their diet.
- People on higher incomes may waste more food as a result of higher baseline consumption.
- People in higher social grades also tend to purchase greater quantities of textiles, and are less likely to waste no fruits and vegetables.

- Families with children tend to purchase greater quantities of textiles, and appear to waste more food than families without children.

Do Irish People Think About the Durability of Products?

Women report being more likely to keep products for a long time, but are not more likely than men to be willing to pay more for durability. Women have lower confidence in their ability to judge product durability. Men and older people are more likely to value durability of clothes and wear them until they wear out. People in rural areas are generally more likely to value durability.

EPA-Repair data shows a statistically significant association between gender and agreement with the statement 'I always keep things I own for a long time', with 58% of women (N=561) strongly agreeing with this statement compared to 47% of men (N=483) (EPA, 2022c) and men more likely to select 'somewhat agree' or lower. See appendix 3(1) for further details of the analysis carried out by the authors.

However, men and women were found by the same survey to be equally likely to agree with the statement "I am willing to pay more for products with higher durability" (78% each) (EPA, 2022c). 55% of women agreed with the statement "I find it difficult to judge how durable products will be" compared to 46% of men. However, despite a lower confidence in their knowledge of product durability, 84% of women (N=561) agreed with the statement "Older generations of products were more durable than newer generations", compared to 79% of men (EPA, 2022c).

EPA-Textiles1 found that men value the durability of clothing during purchasing to a greater extent than women, with the data showing that 85% of men agree with the statement 'I buy items that are durable and that I expect to wear for a long time', compared to 77% of women (EPA, 2021c). Similarly 77% of men agree with the statement 'I don't stop wearing my clothes until they wear out', compared to 64% of women (EPA, 2021c). 23% of women over 50 disagree with this statement, compared to just 12% of men in the same age range (EPA, 2021c). Men over 50 are most likely to purchase clothes that are designed for durability (59%) and women aged 35-49 are least likely to purchase durable clothes (37%) (EPA, 2021c). The above findings are supported to an extent by EPA-Reuse, which found that 12% of men (N=170) cited the typical durability of clothing as a reason to buy or receive clothing second-hand, compared to 9% of women (N=293) (EPA, 2023a).

EPA-Textiles1 data suggests that older people are more influenced by the durability of clothing at the point of purchase (EPA, 2021c). Specifically, 81% of people aged 65+ (N=173) disagree with the statement 'I buy items that are fashionable that I don't expect to keep wearing for long' compared to just 48% of 16-24-year-olds (N=97) (EPA, 2021c).

EPA-Repair found that people in rural areas (N=351) are more likely to strongly agree with the statement ‘I always keep things I own for a long time’, with 62% of rural participants agreeing with this statement compared to 48% of people in urban areas (N=698) (EPA, 2022c).

Saving Water and Energy

Over one third of Irish people feel entitled to use as much water and energy as they wish, and installation of intelligent metering systems can potentially help households to control and reduce energy consumption.

Water and energy conservation is a potential area in which education/behavioural change interventions may be particularly useful in an Irish context. Indeed, Lavelle and Fahy found that “over one third of respondents (37%, N=558) felt entitled to use unrestricted amounts of resources and concurred with the statement: ‘I have the right to use as much water and energy as I wish’” (Lavelle and Fahy, 2016). 91% of respondents stated that they would be prepared ‘to buy more energy-efficient appliances’, suggesting a high willingness to reduce energy consumption (Lavelle and Fahy, 2016). (Brown et al., 2023) found that “ One of the most effective ways to conserve energy in the residential sector is through behavioural changes”. Further, they suggest that “Installation of intelligent metering systems can help households to control and reduce consumption by providing feedback and suggestions to consumers based on their short term and long term consumption patterns” (Brown et al., 2023).

Gender Differences in Approaches to Consumption

Women are more likely to be frequent purchasers of textiles, with 1 in 3 women under the age of 50 buying clothes often on a weekly basis in stores or online. Women are more likely to buy clothes that they never end up wearing or only wear a few times. Men report eating more meat than women, particularly beef and lamb, and are less likely to identify eating meat as having a large impact on GHG emissions. Women are more likely to plan shopping and meals, and to organise food in the fridge, as well as being more likely to recognise the benefit of these practices for food waste reduction.

The categorisation of participants in the EPA study on textiles into ‘high’, ‘low’, and ‘medium’ frequency purchasers revealed that women (N=526) account for 65% of the high frequency purchaser (HFP) group in relation to textiles, which itself makes up 21% of the total Irish population (EPA, 2021c). Men (N=483) make up the remaining 35% of high frequency purchasers in relation to textiles (EPA, 2021c). 1 in 3 women under the age of 50 buy clothes often on a weekly basis in stores or online (EPA, 2023b). Qualitative work carried out by the EPA found that “Online shopping has trained women among the 18-34 years age group to expect choice, convenience and ease” (EPA, 2022d). EPA-Textiles1 data shows that women are significantly more likely to agree with the statement ‘I buy items that I never end up wearing’ (38% of women (N=526) compared to just 14% of men) (EPA, 2021c). Further details can be

found in Appendix 3(2). Similarly, 43% of women agree with the statement 'I buy items that I end up wearing only a few times' compared to 18% of men (N=483) (EPA, 2021c).

(Timmons et al, 2024b) found that men reported eating all forms of meat more than women (53.7 per cent of men eat beef or lamb more than once per week, compared to 38.2 per cent of women). According to the authors, "The difference is slightly less extreme for eating other meat more than twice per week: 60.3 percent of men compared to 49.9 percent of women." (Timmons *et al.*, 2024b). Women were found by this study to be more likely to have changed their diet in order to reduce their carbon footprint (29.7% of women compared to 21.6% of men) (Timmons *et al.*, 2024b). This is reinforced by data from CCIM2 demographic tables, which shows that 9% of women (N=606) never eat meat, compared to 4% of men (N=724) (EPA, 2024e). Additionally, this data showed that 17% of women 'often' choose not to eat meat for environmental reasons, compared to just 6% of men (EPA, 2024e). A chi square test was carried out on this data, revealing a strong gender difference in environmentally motivated dietary behaviour. Further details can be found in Appendix 3(3).

Men were also found to be less likely to (correctly) identify 'eating less meat' as having a large effect on GHG emissions (21% of men compared to 33% of women (EPA, 2024e). Fadiran and Onakuse found no statistically significant correlation between gender and "the variables constituting the constructs of environmental awareness and sustainable food purchasing" (Fadiran and Onakuse, 2022). However, they did find that women were more likely to purchase goods produced by local farmers. In general, women were found to be more sustainable food consumers than men, based on the likelihood that they will plan grocery shopping and waste food after a meal (Fadiran and Onakuse, 2022).

EPA-Food-Waste data shows that 27% of women self-reported that they considered themselves to be 'very good' at 'organising food in their fridge', compared to just 17% of men (EPA, 2022a). Similarly, 23% of women reported being 'very good' at 'organising food in the cupboard', compared to 13% of men (EPA, 2022a). The gender relationship in relation to this question was found to be significant when other responses were taken into account. Further details can be found in Appendix 3(4).

Women were found to be far more likely to make shopping lists, with 32% of women saying that they 'always' do this, compared to 21% of men (EPA, 2022a). Similarly, women were also significantly more likely to plan their food shop and record their food list, with 31% of women saying that they 'always' do this, compared to 19% of men (EPA, 2022a). Women were also more likely to agree with the statement "I feel changing how I manage my food will have a real impact on the amount of food I waste at home", with 34% of women agreeing compared to 25% of men (EPA, 2022a). 65% of women stated that they regularly/always plan what they are going to cook by including foods they already have at home, compared to 54% of men (EPA, 2022a). Interestingly, women were more likely to say they 'never' measure out ingredients for each person when preparing a meal, with 30% of women selecting this option compared to 19% of

men (EPA, 2022a). Another gender difference was observed in relation to the statement 'I like the idea of regularly using up the food stored in my freezer', with 86% of women (N=527) agreeing compared to 78% of men (N=486) (EPA, 2022a). Women were also much more likely to like the idea of 'setting up an 'Eat Me' shelf or space in my fridge for food with fast approaching use-by dates', with 69% of women (N=527) agreeing with this statement compared to 56% of men (N=486) (EPA, 2022a).

Kirwan et al. found that the diet of male teenagers (N=409) in Ireland is associated with higher GHG emissions than their female counterparts (N=389) (Kirwan et al., 2023). A large gender difference was observed in EPA-Food-Waste in relation to the statement 'I would be willing to plan meals with similar ingredients e.g. include spinach in a curry for dinner and in a salad for lunch.', with 82% of women (N=527) agreeing with this statement compared to 72% of men (N=486) (EPA, 2022a). The same trend was observed in relation to the statement 'I would be willing to plan meals I'm going to cook by including food I already have at home (in fridge, freezer, cupboards).', with 88% of women agreeing compared to 80% of men (EPA, 2022a). Similarly, women were more likely to agree with the statement 'I would be willing to check what food I have at home (fridge, freezer, cupboards) before I go shopping', with 89% of women agreeing compared to 82% of men (EPA, 2022a).

Generational Shifts in Consumption

Younger people tend to be high consumers of textiles, and the age difference is more pronounced among men. Young people are more likely to buy clothes online, and 45% of 16-34-year-olds send back products that they bought online. Younger people appear to be less likely to eat beef and lamb, while older people generally report wasting less food and being better at food management practices like keeping track of food in their fridge and looking at labels. Young people tend to be more likely to see a broad range of products as a necessity rather than a luxury, with the exception being televisions.

High Frequency Purchasers identified by EPA-Textiles1 tend to cluster in younger generations. This is particularly evident among men, with 60% of male HFPs falling into the 16-34 year old (N=275) age range, with only 11% of male HFPs over 50 years of age (N=408) (EPA, 2021c). Similarly, female HFPs tend to cluster among younger generations, although the distribution is less dramatic than with men. Approximately 50% of female HFPs are in the 16-34 year old age range while 30% are over the age of 50 (EPA, 2021c). One major difference is that 35-49-year-old women are more similar to the youngest cohort than the same age cohort of men. Specifically, 38% of female HFPs fall into the 35-49 age group, while just 28% of male HFPs fall into the 35-49 age group (EPA, 2021c). People aged over 65 (N=173) were found by the EPA-Textiles1 to be more likely to disagree with the statement 'I buy items that are fashionable, even if they're not a perfect fit or not quite my style' (EPA, 2021c).

According to the B&A Ipsos 'Sign of the Times' survey, "45% of 16-34-year-olds send back products that they bought online nowadays" (Brennan, 2024). EPA-Textiles2 found that 43% of 16-24-year-olds (N=70) purchase clothes monthly in shops compared to 18% of people over 65 (N=160) (EPA, 2023b). This difference is even more pronounced in relation to the purchase of clothing online, with 43% of 16-24-year-olds (N=70) purchasing clothes online every month compared to just 5% of participants over 65 (N=160) (EPA, 2023b).

Almost twice as many people under 40 never eat beef or lamb when compared to people over 60 (12.4% of under 40s compared to 6.7% of over 60s) (Timmons *et al.*, 2024b). There is some evidence that younger people have substituted beef or lamb in their diet with other forms of meat (Timmons *et al.*, 2024b). According to EPA-Food-Waste, 88% of people aged 55 and over said they wasted 'none' or 'a small amount' of food (EPA, 2022a). The incidence of 'large' or 'moderate' food waste peaks among the next youngest generation (32% of those aged 35-44) (EPA, 2022a). One relatively minor reason why people throw away food, according to the EPA study, is that they have cooked too much, and this peaks at 33% of 55-64-year-olds, compared to just 19% of 25-44 year olds (EPA, 2022a). 16-24-year-olds were most likely by a significant margin to waste food because they had served too much (EPA, 2022a). The same trend holds true for the answer 'we don't like what we prepared'; 16% of 16-24-year-olds selected this option, compared to an average of 7% across all other age ranges (EPA, 2022a).

13% of 16-34-year-olds say that they are very good at organising food in their cupboards, compared to 26% of people 55 and over (EPA, 2022a). The same trend holds true in relation to how good participants were 'realistically' at keeping track of food in the fridge, with a steady increase seen from 14% of 25-34 year olds saying they are very good at this to 30% of people 65 and over (EPA, 2022a). Finally, older participants also reported being better at checking food packaging to find out how long items can be frozen for, with 11% of 16-34-year-olds saying they are very good at this compared to 23% of 55-64-year-olds (EPA, 2022a). The EPA study examined the percentage of different types of food that were thrown away the last time they were bought. This revealed that older groups (55-65+) were in almost every case the age group most likely to say that 0% of the food was wasted (EPA, 2022a). This finding was reinforced by findings from EPA-SUP, which found that 86% of over 55s waste a 'small/none' amount of fruit and vegetables, compared to 65% of 16-34-year-olds (EPA, 2024c).

People aged 65 and over were the most likely age group to buy food from local shops and food producers, with 34% of this age group saying that they 'regularly' do this, compared to 20% of 25-34 year olds (EPA, 2022a). Older people were also found to be more likely to check what food is needed prior to shopping, with 87% of 65+ participants saying they always/regularly do this, compared to 57% of 16-24-year-olds (EPA, 2022a). 70% of people aged 65+ stated that they regularly/always plan what they are going to cook by including foods they already have at home, compared to 43% of 16-24-year-olds (EPA, 2022). Older people were also more likely to check use by or best before dates on food, with 83% of 65+ year olds regularly/always engaging in this behaviour, compared to 60% of 16-24-year-olds (EPA, 2022a).

Kirwan et al. found younger adults to have higher GHG emissions associated with their diets than older adults (Kirwan et al., 2023). This effect was particularly strong for young men, with 18-35 year old men found to have a diet with a mean impact of 9.20 kgCO2e (± 6.90 - standard deviation) compared to 6.80 kgCO2e (± 4.42) for men aged 65-88 years old (Kirwan et al., 2023). While it relates to the bioeconomy more generally rather than food, it is interesting to note that the IKC3 study found that, when asked to rate green technologies on opportunity and access, 10% of 18-29-year-olds (N=210) reported having purchased 'bio-based materials and the bioeconomy (eg renewable and biological resources)', compared to just 2.8% of people over 50 (N=380) (IKC3 et al., 2023).

Lavelle and Fahy found that younger people were more likely to see items such as microwaves, power showers and/or electric showers, personal computers or laptops and mobile phones as necessities (Lavelle and Fahy, 2021). The only exception to this was the television, which older cohorts were more likely to see as a necessity than younger (Lavelle and Fahy, 2021), perhaps explained by lower use of mobile phones, tablets, and computers which can fulfil the same function as a television. The designation as necessity or luxury can have a significant impact on the parameters of 'consumption corridors' (Fuchs, 2019), which aim to set a minimum and maximum national consumption level. As Sahakian puts it, "Living in consumption corridors is a representation of everyday life whereby people live within limits, so that all people – now and in the future – can access what is needed to live a good life." (Sahakian *et al.*, 2021).

16-24-year-olds were more likely than any other age group to use the most plastic while 'on the move', with 22% of this group selecting this option compared to 9% of over 65s (EPA, 2022b). Conversely, the oldest participants were most likely to think they use the most plastic at home, with 68% of over 65s selecting this option compared to 36% of 16-24s (EPA, 2022b). Younger people were found by EPA-SUP to be more likely to purchase fruit and vegetables loose and put them into a paper/plastic bag, with 84% of 16-34-year-olds 'always/sometimes' engaging in this behaviour compared to 76% of over 55s (EPA, 2024c). EPA-SUP found that when asked to identify the benefits of purchasing pre-packaged fruit and vegetables, 26% of over 55s selected the option that it 'Helps me avoid food waste/ throwing away uneaten food', compared to 15% of 35-54 year olds (EPA, 2024c). 49% of men over the age of 55 identified 'safety/cleanness' as the primary advantage identified to purchasing pre-packaged, compared to a low of 32% among women aged 35-45 (EPA, 2024c).

The Role of Education in Consumption

People with higher educational attainment tend to report eating meat more frequently, but are also more likely to have changed their behaviours to reduce the impact of their diet.

People with higher educational attainment reported eating meat more frequently than those with below-tertiary level education (49.5% of people with tertiary education eat meat at least twice a

week compared to 41.6% of people with below-tertiary level education) (Timmons *et al.*, 2024b). It is important to note that this paper controlled for social grade and still found significant differences between higher and lower education groups (Timmons *et al.*, 2024b). However, those with higher educational attainment also reported changing their behaviours in relation to food more often (29.8% in the highest group compared to 20.6% in lowest) (Timmons *et al.*, 2024b). This suggests that people with higher levels of education are doing more to reduce the impact of their diet, but are starting from a higher baseline. Kirwan et al. found a statistically significant association between higher GHG emissions from the diets of children and lower educational attainment of the children's parents (Kirwan et al., 2023). Notably, this correlation was not present in teenagers whose parents had lower educational attainment, and the authors suggest that this may be due to diminishing parental control over food choices (Kirwan et al., 2023).

Regional Differences in Consumption Habits

People in urban areas are more likely to purchase fruit and vegetables loose.

Rural participants were found by EPA-SUP to be less likely to purchase fruit and vegetables loose, with 40% of rural participants stating that they 'Rarely/Never' engage in this behaviour, compared to 30% of urban participants (EPA, 2024c). (Timmons *et al.*, 2024b) found no relationship between whether people lived in urban or rural areas and their food consumption. This study generally found little difference between urban and rural areas in relation to sustainable food choices, "implying that beef or lamb consumption is not driven by connection to farming or agriculture" (Timmons et al., 2024b).

The Cost of Conscious Consumption

People on higher incomes may waste more food as a result of higher baseline consumption. People in higher social grades also tend to purchase greater quantities of textiles, and are more likely to waste at least some fruits and vegetables.

People on a higher income (> €3500 per month) were found by Fadiran and Onakuse to be more likely than those on a lower income (€1500–2499 per month) to understand the terms "sustainable" or "sustainable development goals" (Fadiran and Onakuse, 2022). At the same time, people on lower incomes (€1000–1999 per month) were found to actually have more sustainable food purchasing practices, particularly in relation to eco labels on products (Fadiran and Onakuse, 2022). A key finding here is that "purchasing power, driven by income level, can play a role in purchase quantity and ultimately household waste levels." (Fadiran and Onakuse, 2022). In other words, people on higher incomes may waste more food simply because they buy more food.

This is in line with findings from EPA-Food-Waste, which found that people in a higher social grade (ABC1F) were more likely to agree with the statement "When I think about it I probably

waste more food than I should", with 52% of ABC1F participants agreeing with this statement compared to 41% of C2DE participants (EPA, 2022a). Additionally, data from EPA-SUP shows that 21% of C2DEF participants reported wasting no fruit and vegetables at all, compared to just 12% of ABC1F50+ participants (EPA, 2024c). The ABC1 cohort is also strongly overrepresented in the EPA-Textiles1 classification of participants into High Frequency Purchasers, with 59% of HFPs belonging to this cohort compared to 41% of HFPs being C2DE participants (EPA, 2021c).

How Parenthood Shapes Consumption

Families with children tend to purchase greater quantities of textiles, and appear to waste more food than families without children.

Wider environmental research recognises that parenthood is a significant factor that shapes green consumption (Migheli, 2020). While the literature has been mixed in relation to both the degree and direction of this influence, it has been argued that "potential mediators and moderators need to be taken into account to get a clearer picture of how parenthood influences pro-environmental engagement" (Shrum *et al.*, 2023). For example, the cited paper explores how the time and budgetary constraints imposed by parenthood can reduce the potency of the so-called 'Green Parenthood Effect' (Shrum *et al.*, 2023).

A relationship was found between family status and the incidence of High Frequency Purchasers in EPA-Textiles1. Specifically, families with children of preschool age were found to constitute 30% of all HFPs, compared to families with teens which were found to constitute just 5% of the HFP group (EPA, 2021c). The lifestage most likely to buy fruit and vegetables in a pre-packaged form "(e.g. in a Plastic tray with soft plastic film covering/ Plastic bag/ Cardboard/ paper / marked as 'Compostable'/ Netting etc.)" is families with children of primary school age ('pre-teen'), with 94% of these participants 'always/sometimes' purchasing fruit and vegetables in pre-packaged form, compared to 85% of 'single' participants (EPA, 2024c). The EPA found that the incidence of participants saying that they waste a 'large' or 'moderate' amount of food in 2022 peaked among parents at 34% compared to the national average of 25% (EPA, 2022a). Parents were also more likely to do one large weekly shop a week (73% of parents compared to 62% of people without children (EPA, 2022a). 16% of parents also do food shopping online, compared to 9% of people without children (EPA, 2022a). This study also found that parents were more likely to agree with the statement "When I think about it I probably waste more food than I should", with 55% of parents agreeing with this statement compared to 43% of people without children (EPA, 2022).

Repair

Key Findings - Repair

- Awareness of repair cafés varies by age and gender, but interest once the concept has been explained is the same across sociodemographic groups. This suggests that greater promotion/marketing of repair cafés would increase attendance among currently under-represented cohorts.
- Women are more likely to repair clothes, while men are more likely to repair electronics.
- Men report greater familiarity with repair terminology and are more likely to fall into the 'high repair' group as identified by the EPA.
- Younger people report being more likely to have repaired electronics and clothes in the last 5 years.
- Younger people report higher awareness of key repair services/resources and having greater interest in attending a textile repair workshop.
- Dubliners report greater awareness of repair terminology and services, and higher interest in attending repair cafés than other areas of the country.
- Families with young children report repairing more electronics, families with teenagers report repairing more textiles and large appliances, and 'empty nesters' report repairing more lawnmowers and garden equipment.
- There is an apparent lack of research on product maintenance as a circular strategy in Ireland. Of the studies reviewed for this report, only EPA-Repair explores this strategy.

Repair Behaviours and Attitudes by Gender

Women are more likely to repair clothes, while men are more likely to repair electronics. Men are more likely to have attended a repair café, but interest is the same between men and women once the concept is explained.

EPA-Reuse found that a higher percentage of men (6%, N=170) than women (1%, N=293) cited the availability of repair services as a motivator for purchasing second-hand clothing (EPA, 2023a). It is interesting that men report repairability of clothing as being more important at point of purchase, despite men being significantly less likely to repair clothing according to EPA-Repair (EPA, 2023a; EPA, 2022c). Women aged 35-49 were found by EPA-Textiles1 to be the group most likely to agree with the statement 'I would use clothing repair business where reduced VAT incentive applies' (63%) (EPA, 2021c).

EPA-Repair categorised Irish respondents into 'high repair' (16% of population) and 'low repair' (28% of population) groups, with the remaining 56% of the population falling between these two extremes. A key finding was that 69% of the 'high repair' group were men (EPA, 2022c). Despite a low baseline, men were also more likely to have attended a repair café (7% of men (N=488) vs. 3% of women (N=561)) (EPA, 2022c). However, when asked about their interest in attending a repair café if one were available locally, there was little difference between genders (61% of men vs. 62% of women) (EPA, 2022c). Additionally, 46% of women (N=526) expressed strong interest in attending textile repair and repurposing workshops, compared to 27% of men (N=483) (EPA, 2021c). Men were more likely to report being aware of iFixit[4] - 20% of men (N=488) vs. 9% of women (N=561)) (EPA, 2022c). 38% of Irish men (N=488) are familiar with the term 'Right to Repair', compared to 25% of women (N=561) (EPA, 2022c).

Significant gender differences exist in repair behaviours among the Irish population. According to EPA-Repair, 53% of Irish women (N=520) have repaired clothing in the past five years, compared to just 34% of men (N=445) (EPA, 2022c). In support of this finding, men were also found by EPA-Textiles1 to be less likely to 'repair clothes if they are damaged' (33% of men (N=483) vs. 43% of women (N=526)) (EPA, 2021c). Men, however, are more likely to have repaired electronic goods in the last five years (49% of men (N=445) vs. 30% of women (N=520)) (EPA, 2022c). Specifically, men are significantly more likely to have repaired TVs, monitors, or displays (21% vs. 9%) and lawnmowers or garden equipment (39% vs. 22%) (EPA, 2022c). Additionally, 46% of men who had repaired something had worked on small electronics, compared to just 22% of women (EPA, 2022c). Men were also found by EPA-Textiles1 to be more likely to 'ask friends or family members to repair/alter their clothes for free' (41% of men (N=483) agreed with this statement compared to 28% of women (N=526) (EPA, 2021c). There are also notable gender differences in the types of repairs individuals perform themselves. The most common repair is sewing or stitching clothing (69% of all repairs (N=1049)). Women are

[4] iFixit is an organisation which enables consumers to repair their own electronics through the provision of repair information and tools.

far more likely to do this (85% of women who had repaired something (N=561) vs. 52% of men (N=488)) (EPA, 2022c). Conversely, men are more likely to engage in carpentry repairs (54% vs. 29% of women) (EPA, 2022c).

How Different Generations Approach Repair

Younger people report being more likely to have repaired electronics and clothes in the last 5 years. They also report higher awareness of key repair services/resources and having greater interest in attending a textile repair workshop.

Age-related differences in repair habits are significant, particularly for electronic repairs. 51% of 16-34-year-olds (N=263) have repaired electronics in the past five years, compared to just 27% of people over 55 (N=332) (EPA, 2022c). However, the opposite trend is seen for lawnmowers and garden equipment, where 40% of over-55s have repaired such items compared to only 14% of younger individuals (EPA, 2022c). 35-54-year-olds (N=370) most commonly repair large household appliances at 50%, compared to 32% of 16-34-year-olds[5] (N=263) (EPA, 2022c). Older individuals were found by EPA-Repair to be more likely to have sewn or stitched clothing at some point in their lives (77% of over-55s (N=369) vs. 60% of 16-34s (N=293)) (EPA, 2022c). However, younger people are more likely to have had clothing repaired in the past five years (50% of 16-34s vs. 38% of over-55s) (EPA, 2022c).

Awareness of repair resources also varies by age. More young people (16-34, N=293) are aware of repairmystuff.ie (18%) compared to over-55s (6%, N=369) (EPA, 2022c). The same trend applies to iFixit (25% vs. 3%) and repair cafés (18% vs. 8%) (EPA, 2022c). Younger people were also more likely to have attended a repair café (10% of 16-34 year olds, compared to 3% of over-55s) (EPA, 2022c). However, once the concept was explained, interest levels in repair cafés were similar across age groups. This trend reflects the findings in relation to gender, suggesting that greater awareness of repair cafés in Ireland would lead to greater interest in attending repair cafés among sociodemographic groups with currently lower engagement with these events. Young people were the most familiar with the 'Right to Repair' movement, with 48% of under-35s recognizing the term compared to the national average of 31% (EPA, 2022c). In contrast, 41% of people over 55 reported being completely unfamiliar with the term (EPA, 2022c). EPA-Textiles1 found that 42% of 16-24-year-olds (N=97) expressed interest in attending textile repair workshops, compared to 25% of people over 65 (N=173) (EPA, 2021c).

Maguire and Fahy, in their qualitative study on intergenerational differences in clothing repair practices, found that younger cohorts were more likely to use professional clothing repair services for occasionally worn or high value garments like debs dresses, suggesting that Professional Repair Services (PRS) may not be utilised for everyday repair of commonly worn

[5] For this and the previous datapoint relating to lawnmowers and garden equipment, it should be noted that differences in repair behaviours likely result from differing levels of ownership of the relevant products

items in Ireland (Maguire and Fahy, 2022). They also found that among younger cohorts (18-24), wearing clothes that had been repaired is seen to be an acceptable practice (Maguire and Fahy, 2022). Key barriers to repairing clothes included lack of time, lack of confidence, and fear of making a mistake, a concern supported by previous research (Maguire and Fahy, 2022). Older individuals, who tend to have stronger clothing repair skills, noted that sourcing spare parts and materials has become more difficult (Maguire and Fahy, 2022). Greater sewing skills among older people is likely largely due to sewing previously being more deeply embedded in the school curriculum. Specifically, sewing was previously part of the National School Curriculum, meaning that many students would have been exposed to this and other crucial home economics skills at primary level, as is still the case in some other EU countries. While sewing is still part of the current optional home economics curriculum at post primary level in Ireland, a greater percentage of the curriculum was devoted to sewing skills in the past.

Geographic Differences in Repair Culture

Dubliners report greater awareness of repair terminology and services, and higher interest in attending repair cafés than other areas of the country.

In Dublin, 38% of residents (N=293) are familiar with the term 'Right to Repair,' compared to the national average of 31% (N=1805) (EPA, 2022c). Dubliners are also more likely to have had watches or jewelry repaired in the last 5 years (43% in Dublin (N=270) vs. 28% in the rest of Leinster (N=252)) and to be aware of repair cafés (18% of Dubliners (N=293) vs. 5% in rest of Leinster (N=275)) (EPA, 2022c). People in rural areas are more likely to have repaired lawnmowers or garden equipment (41% of rural (N=331) vs. 24% in urban areas (N=634)) (EPA, 2022c). Dubliners (N=293) also showed higher interest in attending repair cafés (68% vs. 54% in Connaught/Ulster (N=198)) and were more familiar with repairmystuff.ie (17% vs. 4% in the rest of Leinster (N=275)) (EPA, 2022c). Similarly, awareness of iFixit was highest in Dublin (23%, N=293) compared to Munster (10%, N=283) (EPA, 2022c).

How Life Stage Influences Repair Culture

Families with young children report repairing more electronics, families with teenagers report repairing more textiles and large appliances, and 'empty nesters' report repairing more lawnmowers and garden equipment.

Notably, 48% of people in families with pre-school aged children (N=128) have had electronics repaired in the past 5 years, compared to just 29% of 'Empty nesters' (N=271) (EPA, 2022c). Conversely, 43% of empty nesters have repaired a lawnmower/garden equipment in the past 5 years, compared to 20% of single people[6] (N=285) (EPA, 2022c). Families with teenagers were the most likely to repair large household appliances (60%, N=61) compared to single individuals (33%, N=285) (EPA, 2022c). They were also the most likely group to sew clothing repairs

[6] Again, care should be exercised when drawing conclusions from this datapoint, as it may be the result of differing baselines in terms of lawnmower ownership rather than propensity to repair in general.

themselves (79% of families with teenagers (N=62) vs. 55% of pre-family individuals (N=81)) (EPA, 2022c). A qualitative study found that 4 out of 5 young adults (18-24) had clothing repairs carried out by their mothers, including both minor fixes and alterations (Maguire and Fahy, 2022).

Reuse

Key Findings - Reuse

- Low reusers cite the availability and cost of second hand items as barriers.
- People with greater trust in second hand products are more likely to reuse.
- Women are more likely to trust the quality of second hand products, are more likely to cite cost as a motivator for reuse, and are more likely to own reusable cups.
- Women are more likely to be high reusers and to be willing to sort clothes for reuse.
- Young people are more likely to report engaging with reuse, particularly through online platforms, and are more likely to trust the quality of second hand products.
- Parents tend to report higher reuse, particularly in relation to informal swaps.
- Environmental considerations are a greater motivator for reuse among parents of young children than 'empty nesters'.
- People in higher social grades report being more likely to reuse water bottles and being more likely to use water refill stations.
- People in lower social grades are more likely to cite cost savings as a motivator for reusing.
- Certain sociodemographic groups (e.g. 35-54 year old age group and households with children) are already actively reusing and perhaps require less targeted communication
- Individuals aged 55+ may require targeting, particularly males.
- Communications should attempt to reduce the incidence of textile waste being disposed of in general waste, and this should be targeted towards men.
- Trust in the quality of second hand products is associated with higher reuse (EPA, 2022c, 2023a).

Barriers to Reuse Across Sociodemographic Groups

Low reusers cite the availability and cost of second hand items as barriers. People with greater trust in second hand products are more likely to reuse.

Data from EPA-Reuse suggests that cost and availability of second-hand options are crucial factors in driving reuse among segments of the population who currently engage less with reuse than others (EPA, 2023a). Other findings from this section are that trust in quality affects reuse behaviours, and that many Irish people own reusable water bottles, but do not know where to refill them in a public place. EPA-Reuse categorised the Irish audience into 'high', 'medium', and 'low' reuse groups. A critical finding from this survey is that about half (49%) of the segment of the population classified as 'low' reusers (47% of population) agreed that they "would buy

second-hand items more frequently if they were more readily available", while 48% of people in the low reuse category agreed that "If second-hand is cheaper it is a good option for me" (EPA, 2023a).

Another general finding from this survey is that people in the 'high' reuse category were more likely to agree with the statement "Borrowed/ leased products are usually good quality", suggesting that trust in quality affects reuse behaviours (EPA, 2023a). EPA-Plastics found that "69% [of Irish people] reported having a reusable coffee cup with nearly half using it 2-3 times a week. 81% reported having a reusable water bottle but 80% don't know where to refill it in a public place" (EPA, 2022b).

Gender Differences in Second-Hand Consumption

Women are more likely to be high reusers and more likely to be willing to sort clothes for reuse. Women are also more likely to cite cost as a motivator for reuse. Women are also more likely to have reusable cups, and to have greater trust in second hand products.

According to EPA-Reuse, 60% of individuals classified in the 'high' reuse group were women (N=137) (EPA, 2023a). In contrast, men were more prevalent in the 'low' reuse group, making up 55% of this category (N=327) (EPA, 2023a). This trend is further supported by other studies. For instance, the CSO found that 36% of women (N=2447) reported 'sometimes' or 'often' receiving used furniture through private gifts, donations, or swaps, compared to just 20% of men (N=2194) (CSO, 2021). Men were also more likely to report 'never' engaging in this behaviour. Further details can be found in Appendix 3(5)

Additionally, women were significantly more likely than men to 'often' purchase second-hand clothing from charity or second-hand shops (11% vs. 5%) (CSO, 2021). Similarly, 42% of women reported 'sometimes' purchasing clothing from these sources, compared to 28% of men (CSO, 2021). The gender relationship was found to be significant in relation to this question when all possible responses were taken into account. Further details can be found in Appendix 3(6).

Findings from EPA-Textiles1 also indicate that women are more likely to actively seek second-hand clothing, with 30% of women (N=526) stating they have tried to purchase clothing second-hand rather than new, compared to 14% of men (N=483) (EPA, 2021c). It should be noted, however, that this difference may be the result of significantly higher clothing consumption among women. Qualitative work by the EPA found that 18-34 year old women "typically exhibit an initial 'default' to buy new clothes instead of considering buying Second Hand" (EPA, 2022d).

Women were also more likely to cite cost savings as a key reason for purchasing second-hand items in the past 12 months, with 72% (N=623) giving this reason compared to 55% of men

(N=641) (EPA, 2023a). This difference was even greater regarding second-hand clothing purchases, where 71% of women cited cost savings as a motivation compared to 49% of men (EPA, 2023a). When asked what would encourage them to choose a previously owned product over a new one, 56% of women (N=623) selected "The cost of reuse being less than buying new," compared to 45% of men (N=641) (EPA, 2023a). The qualitative study on second hand clothing carried out by the EPA also found that consistency of product, greater range of available options, and ease of searching were other reasons cited by women for prioritising new clothes over second hand clothes (EPA, 2022d).

EPA-Textiles1 found that 84% of women (N=526) agreed with the statement: "I would be willing to sort my unwanted clothes into 'good for resale/reuse' or 'good for recycling' before donating/collection," compared to 72% of men (N=483) (EPA, 2021c). Men (N=483) were about as likely to report bringing unwanted clothes to a bring bank (47%) or a charity shop (45%), whereas women (N=526) were more likely to bring clothes to a charity shop (68%) than a bring bank (48%) (EPA, 2021c). EPA-Textiles2 found that 51% of women (N=542) were likely to try purchasing second-hand clothes from brands compared to 40% of men (N=527) (EPA, 2023b). Additionally, EPA-Textiles2 found that 39% of women (N=542) agreed that environmental considerations have a large influence on whether they would buy second-hand clothes online from brands, compared to 26% of men (N=527) (EPA, 2023b).

Findings from EPA-Plastics indicate that women are more likely than men to own reusable coffee cups and water bottles, with 74% of women reporting ownership of a reusable coffee cup compared to 64% of men, with similar trends observed for bottles (EPA, 2022b). EPA-SUP found that women over 55 were the most likely group to bring reusable cloth bags when shopping, with 71% of women over 55 bringing a bag compared to 57% of women aged 16-34 (EPA, 2024c). For men, this age-related difference was much smaller, with a variance of just 3%, ranging from 60% in the youngest cohort to 63% in the oldest (EPA, 2024c).

According to EPA-Repair, women appear to have more trust in the quality of second-hand goods, with 61% (N=561) agreeing with the statement "Second-hand products are usually good quality" compared to 51% of men (N=488) (EPA, 2022c). Women were also found by the EPA-Textiles1 to be more likely to pass on unwanted clothes to others (51% of women (N=526) vs. 33% of men (N=483)) (EPA, 2021c) and more likely to recycle or donate to clothing banks (78% of women vs. 58% of men) (EPA, 2021c).

How Age Affects Reuse behaviours

Young people are more likely to report engaging with reuse, particularly through online platforms, and are more likely to trust the quality of second hand products.

The most likely age group to fall within the ‘high’ reuse category in the EPA 2023 reuse survey was the 35-54-year-old group (N=497) at 49% (EPA, 2023a). The age group most likely to fall

into the ‘low’ reuse group were people aged 55+ (N=389) at 24%, with men in this age group particularly likely to fall into the low reuse group (EPA, 2023a). The CSO study found that 36% of 18-34-year-olds claimed that they ‘sometimes’ purchase second-hand furniture online compared with 7% of those aged 65 and over (N=864) (CSO, 2021), although this may be a result of differing baselines around general furniture purchasing behaviours rather than propensity to reuse. The age difference in the incidence of second-hand furniture purchasing from second-hand or charity retailers is less pronounced, but was still found to be significant, with 36% of 18-34-year-olds ‘sometimes’ engaging in this behaviour, compared to 24% of people aged 65 and over (CSO, 2021). Further details of this analysis can be found in Appendix 3(7). Additionally, 1% of people over 65 state that they ‘often’ engage in this behaviour, compared to 0% of this age group in relation to online purchases (CSO, 2021).

People over 65 were found by the EPA-Textiles1 to be more likely to recycle/donate unwanted clothes to clothes banks (80% of people aged 65+ compared to 48% of 16-24-year-olds) (EPA, 2021c). EPA-Repair found that 64% of 16-34 year-olds (N=293) agreed with the statement “Second-hand products are usually good quality”, compared to 52% of people over 55 (N=369) (EPA, 2022c). CSO data shows that people in the 18-34 age range are much more likely to report that they ’often’ purchase/receive second-hand clothing through an online platform (16% of 18-34-year-olds compared to 2% of people aged over 65) (CSO, 2021). This relationship was found to be significant when all possible responses were taken into account, and further details of this analysis can be found in Appendix 3(8).

This age difference is less pronounced in relation to clothes purchased through second-hand or charity retailers, with 10% of 18-34-year-olds stating that they often engage in this behaviour, compared to 5% of those aged 65 and over (CSO, 2021). This is in line with findings from a qualitative study by the EPA, which found that younger women tend to be more engaged with second hand clothing purchasing through online platforms like Depop rather than through charity or vintage retail (EPA, 2022d). This study also found that a sense of belonging within one’s friend group was a common motivator for engaging with second hand clothing consumption, particularly among younger women (EPA, 2022d). Crucial for communications, the EPA study also found that “the idea and language of thrifting has real purchase amongst the younger audience” (EPA, 2022d).

Younger people were found by the EPA to be more likely to bring a plastic mesh bag shopping, with 38% of 16-34-year-olds bringing one compared to 22% of people over 55 (EPA, 2024c). This peaks among young men, with 46% of 16-34 year old males bringing these bags (EPA, 2024c). Conversely, the group least likely to bring a plastic mesh bag shopping was women over 55 (19%) (EPA, 2024c). Over 55-year-olds were far more likely to say that they never use public water refill stations, with 59% of over 55s selecting this option compared to just 20% of 16-34-year-olds (EPA, 2024c). This trend holds true for men and women, with women slightly less likely to use water refill stations across the board. Younger generations appear to be more likely to use reusable cups and bottles, with 77% of under 35s claiming to own a reusable cup

compared to 60% of over 50s (EPA, 2022a). Similar trends can be seen in relation to reusable water bottles. EPA-SUP also found that 48% of participants over 55 never use a reusable coffee cup compared to 25% of 16-34-year-olds (EPA, 2024c). Again, similar trends were found in this survey in relation to reusable water bottles.

Hand-Me-Down Habits: Parenthood and the Reuse Economy

Parents tend to report higher engagement with reuse behaviours, particularly in relation to informal swaps. Environmental considerations are a greater motivator for reuse among parents of young children than 'empty nesters'.

EPA-Reuse found that people who were single and aged over 45 were the least likely to be categorised in the 'high' reuse group (8%), while the lifestage most likely to fall into this group was 'empty nesters' (22%) (EPA, 2023a). The high reuse group are also more likely to be parents of children aged between 5 and 17 years old (EPA, 2023a).

Whether or not people had children was found to be a consistent predictor of reuse behaviours by the CSO (2021). The largest difference was observed in relation to the informal exchanges of textiles (10% of people with children (N=1691) compared to 2% of people without children[7] (N=2,950) (CSO, 2021). Similar trends were seen across the product categories of electronics and furniture, with parents being at least marginally more likely to purchase/receive reused products across all questions.

Similar findings can be observed in EPA-Textiles1 data. For 16 different textile product categories, participants were asked "For each of the following clothing items, what do you tend to do once you have decided to remove them from your wardrobe/household?". Participants with children in their household (N=360) were at least very marginally more likely to "Pass on (to friend, family etc.)" than participants without children in their household (N=649) in relation to 15 of the 16 clothing items (EPA, 2021c). In the final case - household textiles (e.g. towels, cushions), participants with and without children were equally likely to pass on items (16% each) (EPA, 2021c). 25% of participants with children (N=360) were found to pass on 'Uniforms' compared to 12% of people without children (N=649), representing the largest difference between households with and without children (EPA, 2021c). People without children (N=649) were more likely to 'Reuse for unrelated purpose' 14 out of 16 of the clothing items, and the only clothing items for which this trend did not hold up were 'Uniforms' and 'Bags/Handbags' (EPA, 2021c). EPA-Textiles2 found that 26% of empty nesters (N=284) agreed that environmental considerations have a large influence on whether they would buy second-hand clothes online from brands, compared to 40% of families with pre-school aged children (N=175) (EPA, 2023b).

[7] It was highlighted by expert review that both of these figures are perhaps surprisingly low.

Social Grade and Reuse

People in higher social grades report being more likely to reuse water bottles and water refill stations. People in lower social grades are more likely to cite cost savings as a motivator for reusing.

Of the participants in EPA-Reuse who indicated that they had bought or received second-hand textiles in the last 12 months, 58% of C2DE participants (N=48) cited 'Cost saving from buying used/second-hand' as a reason for doing so, compared to just 41% of ABC1F participants (N=39) (EPA, 2023a). The survey also found that people in a higher social grade were more likely to use their reusable water bottles daily, with 51% of ABC1F participants (N=703) engaging in this behaviour compared to 41% of C2DE participants (N=561) (EPA, 2023a). C2DE participants were also significantly more likely to state that they 'never' use water refill stations, with 52% of C2DE participants (N=561) selecting this option compared to 38% of ABC1F participants (N=703) (EPA, 2023a).

Renting/Sharing/Take-Back Schemes

This short section touches on the demographic differences relating to the renting/sharing/take-back of products. The main differences are generally seen in relation to the demographics of gender and age. Findings will be presented according to these two demographic groupings.

Key Findings: Renting/Sharing/Take-Back Schemes

- Women report greater awareness and acceptance of clothing rental and take-back schemes.]
- Contradicting the above, the level of actual renting/sharing appears to be similar among men and women.
- Younger people tend to be more open to the idea of sharing, and tend to engage in renting/sharing/leasing behaviours more than older people.

Gender and the New Economy

Women have greater awareness and acceptance of clothing rental and take-back schemes. Men, however, are marginally more likely to report having rented at least one product type in their life.

EPA-Textiles1 found that 26% of women (N=526) agreed with the statement, "I am willing to rent clothes instead of buying them," compared to only 11% of men (N=483) (EPA, 2021c). This is supported by EPA-Textiles2, which found that 49% of women (N=542) stated that they would be likely to try a rental service for occasion wear and designer items, compared to just 31% of men (N=527) (EPA, 2023b). Overall, women are also more likely to have heard of rental services, with 51% having prior knowledge compared to 35% of men (EPA, 2021c). EPA-Textiles2 found

that awareness of take-back schemes for clothing is highest among women under 35 (N=165), with 52% being aware of these initiatives compared to just 19% of men over 50 (N=213) (EPA, 2023b). Similarly, 58% of women under 35 (N=165) are aware of clothing rental services compared to 31% of men over 50 (N=213) (EPA, 2023b).

The primary motivation for using a clothing rental service is to avoid purchasing an item that will only be worn once. This reason is particularly influential among women aged 35-49, with 56% citing it as a key factor, compared to the national average of 46% (EPA, 2023b). Additionally, cost savings are a significant motivator for this age group, with 49% identifying it as important, compared to the national average of 38% (EPA, 2023b). Women are also more likely to be influenced by environmental concerns, with 40% stating this would strongly impact their decision, compared to just 25% of men (EPA, 2023b). Notably, women are in general more likely than men to report being strongly influenced by all potential motivating factors, possibly indicating a generally higher level of engagement with the practice.

Men were also much less likely to cite being able to wear more expensive brands as a motivator, with only 24% of men citing this as a large influence, compared to 39% of women (EPA, 2021c). 71% of women aged 35-49 years report being likely to try clothing take-back schemes and clothes made from recycled fibres (EPA, 2023b). However, when asked “For which, if any, of the following types of product have you ever rented or leased items?”, 72% of women (N=623) responded ‘none of these’, compared to 59% of men (N=641) (EPA, 2023a). While there was no significant difference between men and women in relation to any one product category, then, men were more likely to have rented/leased at least one of the products listed. The mean number of items that participating men had rented/leased in their lives was 0.58 compared to 0.38 for women (EPA, 2023a).

Are Younger Generations More Open to Sharing?

Younger people tend to be more open to the idea of sharing, and tend to engage in renting/sharing/leasing behaviours more than older people.

When asked, "What elements of the circular economy resonate with you?" only 6.4% of 60-69-year-olds (N=140) selected "Opportunities for new business models like sharing or renting," compared to 16.7% of 18-29-year-olds (N=210) (IKC3 et al., 2023). This suggests that renting and sharing are becoming more culturally acceptable among younger generations. Data from EPA-Textiles1 (EPA, 2021c) and EPA-Textiles2 (EPA, 2023b) further support this trend. For example, EPA-Textiles1 found that 30% of 16-24-year-olds (N=97) agreed with the statement, "I am willing to rent clothes instead of buying them," compared to only 10% of individuals over 65 (N=173) (EPA, 2021c). Similarly, 8% of 16-24-year-olds (N=97) reported having used a clothing rental service in the past 12 months, compared to 0% of individuals over 50 (EPA, 2021c). “Being able to try a variety of styles without having to purchase them outright” was found by EPA-Textiles2 to be a much more important motivator for 16-24-year-olds (N=69) for using a

clothing rental service, with 41% of this young group stating that this factor has a large influence compared to 27% of people over 65 (N=158) (EPA, 2023b).

Findings from EPA-Repair further support this trend. In the product category of "coat/jacket," 8% of 16-34-year-olds (N=293) reported having rented or leased a product, compared to just 1% of individuals over 35 (N=756) (EPA, 2022c). This pattern extends across other product categories, including vacuum cleaners, dishwashers, TVs, and mobile phones (EPA, 2022c), suggesting that younger individuals are generally more open to renting and sharing products. Among 16-34-year-olds (N=293), mobile phones were the most commonly rented or leased item, with 11% reporting having done so (EPA, 2022c). A difference is also seen between age groups in relation to receiving furniture as a gift, donation or swap, with 35% of 18-34-year-olds (N=586) 'sometimes' or 'often' engaging in this behaviour, compared to just 16% of those over 65 (N=864) (CSO, 2021). This relationship was found to be significant when other responses were taken into account, however it should be noted that the need for furniture may simply be higher overall for younger age groups. Further details of the analysis can be found in Appendix 3(9)

EPA-Reuse provides further support for the observation that younger people engage more with renting/leasing. The survey found that 44% of 16-34-year-olds (N=378) had rented/leased at least one of the products listed compared to just 27% of people over 55 (N=389) (EPA, 2023a). Further research is needed to understand whether the motivations behind these differences are cultural, financial, or related to other unknown factors.

Waste and Waste Management

Key Findings: Waste and Waste Management

- There is still a high level of confusion re household WM which requires further emphasis and clarification in future communications
- People do not know how to correctly dispose of netting for fruit and vegetables
- Men appear to be generally more likely than women to dispose of a variety of waste types in the general waste bin.
- Older people display more sustainable attitudes towards food WM and reduction practices.
- Older people are more likely to be influenced by politicians in relation to WM, while younger people are more likely to be influenced by advertisements.
- People in rural areas are more likely to dispose of food and garden waste through home composting rather than their brown bin, likely due to differing availability of brown bins.
- There is a rural/urban discrepancy in relation to WM that may not exist for other CE behaviours, and this may require a careful approach in future messaging.

Sorting the Waste Divide: Gender and Waste Management Behaviours

Men appear to be generally more likely than women to dispose of waste in the general waste bin.

Men (N=641) were found by EPA-Reuse to be more likely than women (N=623) to dispose of a broad range of items in the general waste (EPA, 2023a). The product categories which men were more likely to dispose of in general waste were small electronics, small furniture, and building/construction materials (EPA, 2023a). Women were not found to be more likely than men to dispose of any product category in the general waste. Men were also found by EPA-Textiles to be more likely to dispose of textiles in household general waste (21% of men vs. 13% of women) (EPA, 2021c). This last figure has been highlighted in expert review as a concerning statistic and an important focus for future communications.

Generational Shifts in Waste Management

Older people display more sustainable attitudes towards food waste management and reduction practices. Older people are more likely to be influenced by politicians in relation to WM, while younger people are more likely to be influenced by advertisements.

EPA-Food-Waste found that 85% of over 65s (N=175) agree with the statement 'I am willing to reduce my food waste as an action to help fight Climate Change' compared to 68% of 16-24-year-olds (N=120) (EPA, 2022a). A similar but even more stark difference was observed in relation to the statement 'I like the idea of regularly using up the food stored in my freezer', with 93% of over 65s agreeing compared to 63% of 16-24-year-olds[8] (EPA, 2022a). Older cohorts were also more likely to agree with the statement 'I would be willing to check what food I have at home (fridge, freezer, cupboards) before I go shopping', with 96% of 55-64-year-olds (N=133) agreeing compared to 65% of 16-24-year-olds (N=120) (EPA, 2022a). EPA-Reuse found that the youngest cohort of participants were most likely to have ever put WEEE in with household waste (31% of 16-34-year-olds (N=378) compared to just 11% of people over 55 (N=389) (EPA, 2023a).

Purcell and Magette found that the likelihood that people will be influenced by advertisements regarding WM decreases by approximately 15% for each decade increase in age (Purcell and Magette, 2010). In other words, the older participants were, the less likely they were to report being influenced by advertising on WM. In relation to the influence of political parties on WM behaviours, the opposite was found to be true, however,with the odds of a positive response to this source increasing by 48% for each decade increase of age (Purcell and Magette, 2010).

[8] It should again be noted here that the differences observed in this case may be related to differing baselines in relation to how much food the participants have accumulated in their freezers.

How Waste Management Differs by Region

People in rural areas are more likely to dispose of food and garden waste through home composting rather than their brown bin, likely due to differing availability of brown bins.

The Central Statistics Office (CSO) conducted a sociodemographic analysis of Irish WM practices at the consumer level (CSO, 2021). They found interesting differences between urban and rural participants in relation to household WM. They found that people in urban areas were much more likely to dispose of food waste in their brown bin (64% of urban households compared to 24% of rural households) (CSO, 2021), likely due to urban participants being much more likely to have access to a brown bin in the first place. People in rural areas, on the other hand, were much more likely to dispose of food waste through home composting (29% of rural households compared to 10% of urban households) or to feed the food waste to animals (28% of rural households compared to 6% of urban households) (CSO, 2021). Rural households were also more likely to dispose of food waste in general waste bins (34% of rural households compared to 25% of urban households) (CSO, 2021). These differences can likely be attributed to differences in the availability of brown bins, land for home composting, and the presence of animals. Similar trends can be observed in relation to garden waste, with rural households more likely to home compost than use the brown bin (CSO, 2021). This finding is supported by 2024 data from EPA-SUP, which found that 43% of rural participants currently engage in home composting compared to 28% of urban participants (EPA, 2024c).

The EPA study also found that people in rural areas were more likely to make a shopping list, with 33% of rural participants saying that they always do compared to just 23% of urban participants (EPA, 2022a). Additionally, rural participants were most likely to disagree with the statement “I am too busy to worry about food waste” - 70% of rural participants compared to 59% of urban participants (EPA, 2022a). Another EPA study found that people in rural areas are more likely to do ‘one main weekly shop (+top up)’, with 71% of rural participants saying this was their ‘typical approach to grocery shopping’, compared to 56% of urban participants (EPA, 2024c). People in Dublin were identified by EPA-Plastics as being much more likely to check labels on plastic packaging for information on which bin to use, with 49% of this group ‘always’ checking compared to just 35% of people in Connaught/Ulster (EPA, 2022b).

Climate and Other Environmental Issues

Engagement

In this section, we explore in detail findings from Irish sociodemographic studies relating to the extent to which different segments of the Irish audience engage with a variety of environmental issues and considerations. This includes data on how likely Irish citizens are to discuss environmental issues with others, and how comfortable they feel in doing so, as well as the

extent to which different sociodemographic groups engage with or are influenced by different sources of information.

Key Findings: Engagement

- Most Irish people regularly discuss climate change with family and friends, and regularly hear about climate change in the media.
- While there is some contradiction between studies on the question of which gender is more comfortable discussing climate change, it appears that women are becoming more comfortable doing so over time while men's engagement remains static.
- Younger people are more likely to discuss food waste both online and with their friends/family.
- Older people are more likely to get their food waste information from TV/news/adverts.
- Higher educational attainment is linked to higher confidence levels when communicating about climate change.
- People with lower educational attainment are less likely to hear about climate change in the media they consume, and less likely to trust information on climate change coming from NGOs, scientists, politicians, community leaders and educators

Public Engagement with Environmental Issues Across the Board

Most Irish people regularly discuss climate change with family and friends, and regularly hear about climate change in the media.

CCIM2 found that 78% of Irish people report that they "often" or "occasionally" discuss climate change with family and friends (EPA, 2024b). Another key finding from that report is that "about three-quarters [of the population] reported that they hear about climate change in the media once a week or more often, an increase in engagement with media on climate change of 23 percentage points, from 51%, since 2021" (EPA, 2024b). EPA-Plastics found that "TV programmes about plastic waste and the environment are seen to be one of the most influential mediums to encourage people to reduce plastic (30%)" (EPA, 2022b).

Gender and Climate Conversations

While there is some contradiction between studies on the question of which gender is more comfortable discussing climate change, it appears that women are becoming more comfortable doing so over time while men's engagement remains static.

Women were found by IKC3 to be significantly less comfortable discussing climate change with colleagues than men - 88.2% of men (N=490) were 'comfortable' or 'very comfortable' doing so, compared to just 81.9% of women (N=510) (IKC3 et al., 2023). This difference was not significant when it came to discussing climate change with family members (just a 2% difference), but was significant in relation to discussing climate change with community groups, strangers, and political representatives (8.2%, 6%, and 5.6% difference, respectively) (IKC3 et

al., 2023). Data from the CCIM2 demographic tables shows that women are more likely to discuss climate change with family and friends, with 39% of women (N=606) 'often' doing this compared to 27% of men (N=724) (EPA, 2024e). Women were also less likely to report 'never' doing this, suggesting a gender difference in climate change communication with family friends. Further details can be found in Appendix 3(10).

It is also interesting to compare the above question to the same question in the wave 1 demographic table data, which shows that in 2021, 32% of women (N=1876) 'often' discussed climate change with family and friends, compared to 26% of men (N=2124) (EPA, 2021d). In other words, while women report discussing climate change with family and friends more often in 2024 than they did in 2021, very little change is observed among men in this period. In 2021, the difference between men and women was not statistically significant, but became significant in the second iteration of the survey. Data from the CCIM1 demographic tables also shows that 56% of men (N=2124) had heard about climate change 'in the media, such as TV, movies, radio, newspapers, magazines, online, etc' 'at least once a week', compared to 47% of women (N=1876) (EPA, 2021d).

Patterns of Influence by Age Group

Younger people are more likely to discuss food waste both online and with their friends/family. Older people are more likely to get their food waste information from TV/news/adverts.

In relation to information about food waste, the most common source was found to be 'Television programmes/news/adverts' across the board, however this peaked significantly among over 65s, with 24% having heard information from this source compared to 7% of 16-24-year-olds (EPA, 2022a). EPA-Food-Waste found that 28% of 16-24-year-olds agreed with the statement "I have commented or shared my views on food waste online via social media/blogs", compared to just 3% of 65+ year olds (EPA, 2022a). The youngest cohort (16-24) was also found by EPA-Food-Waste to be the most likely to discuss food waste with family/friends/colleagues, with 48% engaging with this behaviour compared to 24% of 55-64-year-olds (EPA, 2022a).

Patterns of Influence and Engagement by Educational Attainment

Higher educational attainment is linked to higher confidence levels when communicating about climate change. People with lower educational attainment are less likely to hear about climate change in the media they consume, and less likely to trust information on climate change coming from NGOs, scientists, politicians, community leaders and educators

The IKC3 study found that the group least likely to be 'comfortable' or 'very comfortable' discussing climate change with friends was people whose highest educational attainment was

the junior cert (N=37), with 81.7% of these participants comfortable discussing climate change, compared to 100% of participants who had attained a PhD (N=138) (IKC3 et al., 2023). This suggests that higher levels of education are correlated with higher confidence levels when communicating about climate change. CCIM2 demographic table data appears to show that how important climate change is to people personally steadily increases with additional educational attainment, starting from a low of 9% of 'primary' participants saying that it is 'extremely important', and increasing to 27% of 'postgrad' participants (EPA, 2024e).

The difference between participants whose highest educational attainment was 'Junior Certificate' and participants whose highest attainment was 'PhD' is largest in relation to communicating about climate change with 'Community Groups' - 52.7% of 'Junior Cert' (N=37) were comfortable doing this, compared to 80.6% of 'PhD' (N=138) (IKC3 et al., 2023). However, no statistically significant difference was found between 'Junior cert' participants and 'PHD' participants in relation to discussing climate change with *strangers*. CCIM2 demographic data also shows that postgrads reported being more likely to discuss climate change with friends and family, with 42% of postgrads (N=Unknown) 'often' doing this compared to 21% of 'primary' participants (N=Unknown) (EPA, 2024e).

The CCIM2 demographic table data also shows a significant difference between participants with different educational attainment in relation to the presence of climate change in media they consume. 82% of postgrad participants (N=Unknown[9]) had heard about "climate change in the media, such as TV, movies, radio, newspapers, magazines, online, etc" at least once a week, compared to just 53% of primary school participants (N=Unknown) (EPA, 2024e). The CCIM1 demographic table data shows that a significantly smaller share of both groups heard about climate change in the media at least once a week in 2021 than 2024, at 57% of postgrads and 37% of primary school participants (EPA, 2021d).

CCIM2 demographic table data shows that 27% of primary participants report distrusting climate information from NGOs, compared to just 6% of postgrads (EPA, 2024e). Similarly, only 47% of primary participants strongly trust climate information relayed by scientists, compared to 74% of people who attained a postgraduate degree (EPA, 2024e). Trust in politicians as a source of climate information was low across the board, but the largest difference was found between educational attainment groups, with 29% of primary school participants strongly distrusting this source compared to 19% of postgrads (EPA, 2024e). Similarly, 21% of primary participants strongly distrust community leaders as a source of climate information compared to 5% of postgrads (EPA, 2024e). 14% of primary participants also strongly distrust educators compared to just 1% of postgrads (EPA, 2024e). It should be noted that in the absence of disaggregated participant information detailing the breakdown of participants by education level, the statistical power of these correlations cannot be determined.

[9] While a breakdown of participant numbers within most sociodemographic groupings is reported in the CCIM 'Fieldwork Technical Report', the data is not disaggregated in this document by educational attainment or social grade.

Motivations/Barriers & Enablers

In this section, we examine literature review findings relating to the level of motivation, willingness, and rationale to act among the Irish population in relation to PEBs. This section also presents findings relating to barriers and enablers to PEBs across different segments of the population. Findings here highlight the importance of avoiding disillusionment, particularly among younger cohorts. Findings suggest the importance of positive messaging which encourages small steps in the right direction and does not dissuade people by presenting the problem as so wicked or insurmountable that they do not know where to begin.

Key Findings - Motivations/Barriers & Enablers

- Most Irish people believe their personal behaviour can make a difference to the environment.
- Most Irish people are willing to take steps to reduce plastic waste, but report facing barriers like access and cost of alternatives.
- Women are more likely to report that climate change is extremely important to them, and better understand the co-benefits of taking action.
- Women report being more likely to take personal actions to combat climate change, but 'don't know where to start' when it comes to adopting green technologies.
- Men are more likely to view clothes shopping as a chore which they do not enjoy, perhaps partly explaining lower baseline consumption.
- Young people are willing to pay more for a lower environmental impact, but are more likely to report being too busy for climate action and food waste reduction.
- Younger people are also more likely to feel hopeless, or like their actions can make no difference (powerless).
- Older generations are more likely to think that green technologies may have unintended side effects.
- People in urban areas are more likely to see climate change as being important to them personally.
- People in rural areas are more likely to report lack of alternatives as a barrier to reducing plastic waste, and no incentives to invest/cost as barriers to adopting green technologies.
- Higher educational attainment is associated with greater confidence in knowing which actions would make a meaningful difference, and people with higher educational attainment are more likely to think that Ireland's actions will make a difference.
- Irish people in lower social grades consume less as a result of budget constraints.

Barriers to Reducing Plastic Waste Across Sociodemographic Groups

Most Irish people are willing to take steps to reduce plastic waste, but face barriers like access and cost of alternatives.

EPA-Plastics found that “81% [of Irish people] are willing to take steps to reduce their plastic waste even if it impacts on convenience and costs them” (EPA, 2022b). Further, they found that “85% said they have encountered barriers to reducing plastic waste. Access to alternatives (51%) and perceived high costs of buying products with sustainable packaging (45%) were the primary barriers reported” (EPA, 2022b).

How Men and Women Differ in Environmental Motivations

Women are more likely to report that climate change is extremely important to them, and better understand the co-benefits of taking action. Women also report being more likely to take personal actions to combat climate change, but ‘don’t know where to start’ when it comes to adopting green technologies. Men are more likely to see clothes shopping as a chore which they do not enjoy, perhaps partly explaining lower baseline consumption.

CCIM1 demographic table data shows that 24% of women (N=1876) stated that climate change was ‘extremely important’ to them personally, compared to 19% of men (N=2124) (EPA, 2021d). CCIM2 demographic data shows that women were more likely to see climate action as something that will “Improve economic growth and provide new jobs”, with 63% of women (N=606) selecting this option compared to 50% of men (N=724) (EPA, 2024e). Women are also more likely to see food waste as an important national issue, with 83% of women (N=527) agreeing with this statement, compared to 73% of men (N=486) (EPA, 2022a).

Women are more likely to take personal actions to combat climate change, but are also less likely to know where to start. Men are more likely to require an incentive to personally invest in green technology. When asked ‘What barriers or challenges do you face in adopting green technologies?’ by IKC3, 28.8% of men (N=490) selected the option ‘No incentives to personally invest’, compared to just 18.6% of women (N=510) (IKC3 et al., 2023). Women, on the other hand, were much more likely to say I am ‘Interested but I don't know where to start’, with 32.8% of women selecting this option compared to 25.3% of men (IKC3 et al., 2023). This pattern holds true across other questions within this survey, with 50.8% of women (N=510) either frequently or very frequently taking personal actions to combat climate change, compared to 43.6% of men (N=490) (IKC3 et al., 2023). This is despite men consistently self-reporting greater knowledge or awareness of climate mitigation policies and strategies across different studies (IKC3 et al., 2023; Rediscovery Centre, 2023; EPA, 2022c).

A finding from EPA-Textiles1 which may prove useful for CE communications is that men tend to view shopping for clothes as a ‘chore for me that I try to avoid’ more frequently than women, with 49% of women (N=526) disagreeing with this statement compared to just 27% of men (N=483) (EPA, 2021c). 35-49-year-old men were most likely to agree with this statement (57%) (N=146) (EPA, 2021c). Similarly, men were much more likely to disagree with the statement ‘I really enjoy browsing to see the latest clothing trends’ (49% of men (N=483) compared to 27% of women (N=526)) (EPA, 2021c).

Eco-Intentions Across Generations: Who's Leading the Charge?

Young people are willing to pay more for a lower environmental impact, but are more likely to report being too busy for climate action and food waste reduction. Younger people are also more likely to feel hopeless, or like their actions can make no difference. Older generations are more likely to think that green technologies may have unintended side effects.

B&A Ipsos Sign of the Times found in 2024 that 15% of people in the youngest cohort (16-24-year-olds) strongly agreed with the statement 'I will choose more environmentally friendly products/services even if they cost me 10%-15% more', compared to just 1% of 55-64-year-olds (Brennan, 2024). While the general level of disagreement with this statement ('disagree' + 'strongly disagree') is similar between the youngest and oldest cohorts (34% of 16-24-year-olds compared to 37% of people over 65), the level of overall agreement is significantly different (38% of 16-24-year-olds compared to 24% of over 65s) (Brennan, 2024). This is due to a significantly higher incidence of older participants choosing the option 'Neither agree nor disagree' - 38% of participants aged 65+ compared to 29% of participants aged 16-24 (Brennan, 2024).

The IKC3 survey asked participants 'What barriers or challenges do you face in adopting green technologies?'. This question revealed that older generations are more likely to agree with the statement 'I think there are unintended or indirect consequences of new green technologies', with an average of 6.1% of 18-49 year olds (N=620) agreeing with this statement compared to an average of 17.2% of people 50 and over (N=380) (IKC3 et al., 2023).

Older age groups are more likely to see food waste as an important national issue, with 86% of 65+ year olds (N=175) agreeing that this is the case, compared to 72% of 16-24-year-olds (N=120) (EPA, 2022a). The oldest generation was also the most likely to agree with the statement "Food waste is a serious environmental issue like climate change", with 84% of 65+ year olds agreeing with this, compared to 63% of 16-24-year-olds (EPA, 2022a). Similarly, older generations were more likely to agree that 'minimising food waste is one of my top priorities', with 75% of 65+ year olds agreeing with this statement compared to a low of 52% of 25-34-year-olds (N=196) (EPA, 2022a). 79% of 65+ year olds agree with the statement "I have been making more of an effort lately to reduce my food waste" compared to 67% of 16-24-year-olds (EPA, 2022a). Older people were also more likely to disagree with the statement "It is not possible for me to reduce the amount of food that I waste", with 72% of 65+ year olds disagreeing with this statement compared to 49% of 16-24-year-olds (EPA, 2022a). Crucially, the youngest cohort were the most likely to agree with the statement "I would like to reduce my food waste but I don't know how", with 43% of this cohort agreeing with the statement compared to 14% of 65+ year olds (EPA, 2022a).

The youngest cohort were most likely to agree with the statement “I am too busy to worry about food waste” - 23% of 16-24-year-olds (N=120) agreed with this statement compared to 4% of people aged 65 and over (N=175) (EPA, 2022a). The youngest cohort was the most likely to agree with the statement “I feel my actions will not have any real impact on food waste”, with 37% of 16-24-year-olds agreeing with this statement compared to 18% of people aged 55 and over (EPA, 2022a). This is an area in which objective or observed data on the actual quantities of food wasted by each sociodemographic group would be useful, as this would allow researchers to determine whether the above findings are the result of differences in attitudes or engagement on one hand, or simply a matter of differing baselines on the other. If young people actually generate less food waste, they have less opportunity to reduce their food waste. EPA-Food-Waste found that 16-24-year-olds were by far the most likely age group to be surprised by the level of savings that could be achieved by reducing food waste, with 76% of this cohort being surprised compared to a low of 56% of 45-54 year olds (EPA, 2022a).

18-29-year-olds were also found to be the most likely to state that a barrier to taking climate action was that they do not have time to act, with 14.5% of this age group selecting this option, compared to just 2.1% of 70-74-year-olds (IKC3 et al., 2023). Interestingly, this study also found that the 18-29 year old cohort (N=210) were most likely to cite ‘feeling burnt out’ and that ‘nothing changes’ as a barrier to taking climate action (IKC3 et al., 2023). 26.5% of 18-29-year-olds selected this option, compared to just 7.5% of 70-74-year-olds (N=60) (IKC3 et al., 2023). This is interesting when taken in conjunction with the above findings relating to food waste.

EPA-Plastics found that older people (65+) were most likely to agree that they would prefer if there were alternatives to single use plastics available (94%), with the youngest cohort (16-24) the least likely to agree with this statement (78%) (EPA, 2022b). This is supported by a further question, which showed that over 65s were most likely to strongly agree with the statement that they are “willing to take steps to reduce their plastic waste even if it impacts on convenience and costs them” (50% among over 65s compared to average of 38%) (EPA, 2022b). Another interesting finding from EPA-Plastics in relation to age was that over 50s were far more likely to feel that more education is needed on the plastics issue (91% compared to just 78% of 16-24-year-olds). This could be an effective intervention, given that the same study found that people who were less confident in their knowledge of plastic waste were also less likely to attempt to reduce their plastic use (EPA, 2022b).

Younger participants were also more likely to see the high price of products in eco-friendly packaging as a barrier to purchasing them, with 50% of under 35s selecting this option, compared to 38% of over 50s (EPA, 2022b). 16-24-year-olds and over 65s were found to be significantly more likely to ‘always’ look at labels on plastic packaging for information on which bin to use (49% and 50% respectively) than other age groups, with an average of 36% across all other ages (EPA, 2022b). In other words, EPA-Plastics found that the youngest and oldest age groups were most likely to check the labels, with 24-65 year olds lagging behind. This

‘U-shaped’ relationship between age and pro-environmentalism is also seen in relation to climate concern, with the youngest and oldest cohorts expressing the highest concern about climate change (EPA, 2022b, IKC3 et al., 2023). EPA-Textiles1 data shows that 42% of 16-24-year-olds (N=97) always/often ‘look out’ for ‘Low environmental impact (caused minimal harm to the environment during its production)’ when purchasing clothes for themselves, compared to 22% of 35-64 year olds (N=561) (EPA, 2021c). This relationship was found to be significant when all possible responses were taken into account, and further details of this analysis can be found in Appendix 3(11).

Location-Based Barriers to Action

People in urban areas are more likely to see climate change as being important to them personally. People in rural areas are more likely to report lack of alternatives as a barrier to reducing plastic waste, and no incentives to invest/cost as barriers to adopting green technologies.

Both CCIM1 and CCIM2 demographic table data shows that 58% of rural participants report that climate change is ‘very/extremely important’ to them personally, compared to 68% of city dwellers in CCIM1 and 71% of city dwellers in CCIM2 (EPA, 2021d, 2024e). EPA-Plastics found that people in rural areas are more likely to identify not ‘having access to options which help them reduce plastic waste’ as a barrier to reducing plastic waste, with 57% of rural participants selecting this option compared to 48% of urban participants (EPA, 2022b). In relation to the adoption of green technologies, people in rural areas were more likely to cite having ‘No incentives to personally invest’ as a barrier, with 28.1% of people in rural areas (N=324) selecting this option compared to 21.5% of people in urban areas (N=675) (IKC3 et al., 2023). Similarly, 80.2% of participants in rural areas cited the technologies being ‘too expensive’ as a barrier to adoption, compared to 71.6% of urban participants (IKC3 et al., 2023).

Motivations and Barriers by Educational Attainment

Higher educational attainment is associated with greater confidence in knowing which actions would make a meaningful difference, and people with higher educational attainment are more likely to think that Ireland’s actions will make a difference.

34.2% of people whose highest educational attainment was primary school level (N=13) stated that one of the barriers to climate action is that they ‘don't know what would make a meaningful contribution or where to start’, compared to 19.1% of people whose highest attainment was the leaving certificate (N=191) (IKC3 et al., 2023). CCIM2 demographic table data shows that 32% of people whose highest educational attainment was primary level agreed with the statement “Ireland is too small to make a difference in climate change; we should let other countries take the lead on reducing GHG emissions”, compared to 9% of people whose highest educational attainment was at the postgraduate level (EPA, 2024e).

Level of Concern/Worry

The level of concern about climate change in the Irish population differs between sociodemographic groups. In this section, we will examine in detail the level of concern or worry among the Irish population in relation to any and all environmental issues, regardless of the overall classification of the source article. A significant amount of this section is taken from a report by the EPA entitled 'Climate Change's Four Ireland's: An Audience Segmentation Analysis' (Identifier - 'CC4I'). This report uses the same data as 'Climate Change in the Irish Mind', but segments the data differently. There are a number of ways in which this segmentation exercise can be useful for the purposes of the present report. To give context on the EPA report, Irish audiences were segmented in this study into 4 key categories: 'Alarmed, Concerned, Cautious, and Doubtful'. These categories represent the level of concern about climate change among the participants.

Key findings - Level of Concern/Worry

- Most Irish people are worried about climate change, with 34% describing themselves as "very worried." However, some data show that concern about environmental issues and plastics has reduced across the board in recent years.
- Women consistently express higher concern about environmental issues across studies and topics.
- A U-shaped relationship can be seen in relation to climate change/plastic concern and age, with the youngest and oldest Irish people more concerned than the middle-aged.
- More educated people are sometimes found to be more concerned about climate change, but not always.
- People with higher educational attainment tend to be more worried about individual climate impacts like flooding and air pollution.
- People classified as 'alarmed' about climate change are most likely to live in an urban area. People living in cities are more worried about flooding and rising sea levels, and are more likely to see extreme weather as posing a moderate/high risk to their community in the next 10 years.

Key Considerations in Climate Concern

81% of Irish people are worried about climate change. However, concern about environmental issues and plastics has reduced across the board in recent years.

Some key considerations about sociodemographic analysis in relation to the level of concern/worry are raised by Timmons et al. in their 2024 paper "Communicating climate change as a generational issue: experimental effects on youth worry, motivation and belief in collective action" (2024a):

- Feeling that ‘humanity is doomed’ due to climate change is linked to feelings of ‘betrayal’ and belief that government response is insufficient (Timmons et al., 2024a).
- “Successful policy communications about climate change might be those that highlight, not differences, but similarities in concern about climate change between socio-demo-graphic subgroups” (Timmons et al., 2024a).

CCIM2 found that “a large majority of people in Ireland (81%) are worried about climate change, including 34% who describe themselves as “very worried”” (EPA, 2024b). However, the Ipsos B&A ‘Sign of the Times’ surveys have found that overall worry about the environment has been decreasing steadily for the last 4 years (Brennan, 2024). In 2020, 68% of participants (N=1,005) agreed with the statement ‘I am extremely concerned about environmental issues’, with that figure dropping sharply to 57% in 2021, perhaps due to the onset of the COVID-19 pandemic. The level of concern has continued to drop by 3-4% per year and in 2024 sits at 46% of participants agreeing with the above statement (Brennan, 2024). This decline in concern is also seen in relation to plastics; EPA-Plastics found that “95% are concerned about the amount of plastic that we use as a society.” (EPA, 2022b). However, the study also found that “those reporting that they were ‘very concerned’ declined between 2019 and 2021 (55% 2019, 50% 2020, 47% 2021)” (EPA, 2022b). Further work is needed to understand the drivers of declining concern for environmental issues in Ireland, and identify ways to slow or reverse this trend.

Gender Differences in Environmental Concern

Women express higher concern about environmental issues across studies and topics.

Multiple studies have found levels of concern or worry around climate change and other environmental issues to be higher for women than for men (Lavelle and Fahy, 2016; EPA, 2021b, 2024b; IKC3 et al., 2023; EPA, 2022b). Lavelle and Fahy find a large gender difference on this question, with 27% of women in their study describing themselves as ‘very concerned’ about climate change, compared to only 17% of men (Lavelle and Fahy, 2016). It should be noted that in this study, more women were represented (N=240) than men (N=108). It is supported, however, by data from the CCIM1 demographic tables, which shows that 41% of women (N=1876) were ‘very worried’ about climate change in 2021, compared to 33% of men (N=2124) (EPA, 2021d). Additionally, this data shows that 52% of women (N=1876) think that Irish people are being harmed by climate change right now, compared to 43% of men (N=2124) (EPA, 2021d).

The CC4I report found that women (N=606) are more likely to be categorised as ‘Alarmed’ than men (N=724), which represents the highest degree of concern about climate change (Leiserowitz, 2022). Of those categorised as ‘Alarmed’, 57% were women whereas 43% were men. Conversely, men are much more likely to be ‘Doubtful’ about climate change, representing 74% of the ‘Doubtful’ segment. Participants in the ‘Concerned’ segment are equally likely to be male or female (50%). These findings are further corroborated by evidence from the ‘Assessing

Sustainable Skills Amongst Irish Citizens' survey carried out by Bilendi with the Rediscovery Centre. This survey found that 33% of Irish women (N=510) classify themselves as feeling 'very concerned' about climate change compared to 26.1% of men (N=490) (IKC3 et al., 2023). This relationship was found to be significant when other possible responses were taken into account, and further details can be found in Appendix 3(12).

The EPA report 'A Review of Climate Change Attitudes Using a Person-Centred Framework', which reviewed 66 papers, found that "women consistently exhibit greater concern about climate change than men" (EPA, 2024a). That women believe climate change to be an important concern, according to the report, is one of the most consistent findings across sociodemographic studies (EPA, 2024a). This finding from the EPA is supported by the present report, which brings together evidence from a number of sources all in agreement as to the direction of this trend. Irish women have also been found to be more concerned than men in relation to a number of other environmental issues, with the trend holding true for the issues of extreme heat, flooding, wildfires, droughts, water shortages, rising sea levels, agricultural pests and diseases, severe storms, invasive species, bog bursts/landslides, air pollution, water pollution, and plastic consumption (EPA, 2022b; EPA, 2024b).

Young and Anxious? Climate Worry Across the Generation

A U-shaped relationship can be seen in relation to climate change/plastic concern and age, with the youngest and oldest Irish people more concerned than the middle-aged. Young people are more divided in relation to climate concern, with a lower level of ambivalence. Young people tend to underestimate the level of concern among older people, and correcting this misconception may improve belief in collective action and consequently encourage more engagement from young people.

The CC4I report found that participants in the 'Alarmed' category are more likely to be young (18-29 years old - 23%) (Leiserowitz, 2022). Participants in the 'Concerned' category were close to the national average in relation to age. 30% of the participants within the 'Cautious' category are over 60 years old. The 'Doubtful' segment are most likely to be 45-59 years old (31%). This is in line with findings from Brown et al., who also found the level of concern around climate change to be higher among younger cohorts of the Irish population, although it should be noted that in this case the difference was only statistically significant for respondents from Northern Ireland, and not for respondents in the Republic (Brown *et al.*, 2023).

In relation to the EPA question around whether participants considered themselves to be 'very concerned' about plastic pollution, the age group most likely to be very concerned was found to be the oldest cohort (65+), 63% of whom reported being very concerned compared to 55% of the full Irish population (EPA, 2022b). This report also found that the youngest cohort (18-24) were most likely to be 'extremely concerned' about the climate impacts of plastic (58% compared to 46% inclusive of full population) (EPA, 2022b). Older cohorts were found to be

more concerned about single use plastics (86% of those over 50s were concerned compared to 75% of under 34s (EPA, 2022b).

The age data on climate change concern from the IKC3 study shows that 80.6% of 18-29-year-olds (N=210) say that they are concerned or very concerned, compared to 70.1% of people aged 70-74 (N=60) (IKC3 et al., 2023). However, the incidence of people saying they are 'very concerned' is actually higher among the older cohort (33.9% of 70-74-year-olds compared to 28.9% of 18-29-year-olds) (IKC3 et al., 2023). Overall, however, the data suggests that climate concern is higher among younger adults. The age group which were most likely to say 'I am not at all concerned' is the 40-49 group (N=220) (IKC3 et al., 2023). Further details of the analysis of this question can be found in Appendix 3(13).

CCIM1 demographic table data shows that 45% of 18-29-year-olds (N=Uknown) are very worried about climate change, compared to 35% of people over 65 (N=Unknown) (EPA, 2021d). The difference is slightly less pronounced when 'somewhat' worried is considered, with 86% of the younger cohort either 'very' or 'somewhat' worried about climate change, compared to 83% of the oldest cohort (EPA, 2021d). A chi square test could not be carried out to confirm the statistical significance of this relationship, since the data available on sample sizes for age groups in CCIM1 data differs slightly from the age categorisation used in the demographic table.

There is evidence that younger people may be more divided on climate change, with a lower level of ambivalence towards the issue than older cohorts. The EPA report 'A Review of Climate Change Attitudes Using a Person-Centred Framework' found that "younger people are more likely to fall into the 'climate concerned' or 'climate engaged' categories" (EPA, 2024a). Another study reviewed for this paper, however, found that "older participants (55+ years) were less sceptical about the human impact on climate change" (EPA, 2024a). In general, it appears that while a correlation appears to exist between age and climate concern in the Irish audience, this correlation may be weaker than many people might assume, and additionally does not appear to be as straightforward or linear as people might assume.

Timmons et al. (2024a) found that most young people in Ireland underestimate older generations' concern about climate change. They caution that highlighting generational differences in climate communication increases young people's worry but does not motivate action, potentially undermining collective efforts if groups perceive each other as unwilling to act. Instead, they recommend emphasizing humanity's shared concern, engaging older generations, and avoiding divisive narratives. Their findings show that young people exposed to a generational narrative[10] report higher worry levels, while those given accurate information about older generations' concern have greater belief in collective action. They suggest policymakers

[10] This was a specific generational narrative developed by the authors which was inspired by the speeches of youth activists and was designed to "to reflect the kinds of narratives that young people are exposed to during media coverage" (Timmons et al., 2024a).

communicate concern in general terms, correcting misperceptions without fueling anxiety or discouraging cooperation.

The Role of Education in Climate Anxiety

More educated people are sometimes found to be more concerned about climate change, but not always. People with higher educational attainment tend to be more worried about individual climate impacts like flooding and air pollution.

Lavelle and Fahy found that those who had achieved third level education were more likely to be concerned about climate change (89%, N=813) when compared to those who had completed their formal education at primary level (82%, N=66) and those who had completed their education at secondary level (83%, N=613) (Lavelle and Fahy, 2016). This finding is not consistent across all studies, with the EPA report 'A Review of Climate Change Attitudes Using a Person-Centred Framework' finding that "educational level was found to be unrelated to climate change attitudes in some studies (Czarnek at al, 2021) or positively associated with stronger belief in anthropogenic climate change and moderated by political beliefs" (EPA, 2024a).

Large differences appear to exist between participants of differing educational attainment in the CCIM2 data, and these are described below. However, it should be again noted that unweighted sample size numbers are not available for the CCIM data, and this limits the ability of the present work to assess the statistical significance of the relationships shown in the demographic tables. The data appears to show that people with higher educational attainment tend to be more likely to be worried about rising sea levels, with 67% of people with postgraduate degrees 'very' or 'somewhat' worried about this climate impact compared to just 48% of people who selected primary school as their highest educational attainment (EPA, 2024e). There is even a large jump in concern between people whose highest attainment is primary level (48%) and people whose highest attainment is secondary level (60%) (EPA, 2024e).

Similarly, there is a large gulf between the level of worry seen among 'primary' participants and 'postgrad' participants in relation to severe storms, with 77% of postgrad participants very/somewhat worried compared to just 54% of primary participants (EPA, 2024e). Interestingly, this gulf again appears between the primary and secondary level participants, with 76% of participants whose highest educational attainment was secondary level worried about this impact (EPA, 2024e). This trend is most apparent in relation to flooding. 39% of 'primary' participants were very/somewhat concerned about this impact, compared to 60% of 'secondary' participants, and 68% of postgrad participants (EPA, 2024e). There is very little difference between participants with different levels of education in relation to concern about wildfires, with 'primary' participants actually reporting a slightly higher level of concern than 'postgrad' participants (33% compared to 30%) (EPA, 2024e). The difference is much more pronounced in

relation to air pollution, with 69% of postgrads very/somewhat worried about this impact compared to 56% of 'primary' participants (EPA, 2024e).

Concern and Employment

People classified as 'alarmed' about climate change are more likely to be in full time employment, and people classified as 'doubtful' about climate change are the most likely to be unemployed.

In relation to employment, the CC4I report found that 'Alarmed' participants are more likely to be in full time employment (59%) than 'Cautious' or 'Doubtful' participants (Leiserowitz, 2022). The 'Cautious' group are more likely to not have paid employment (48%) than the 'Alarmed' or 'Concerned' groups. The 'Doubtful' are the group most likely to be unemployed (18%). The IKC3 survey found that the 'Stay-at-home mother/father' group (N=65) were the least likely to be concerned about climate change, with 71% of this group either concerned or very concerned, compared to a high of 84% of people working in the public sector (N=217) (IKC3 et al., 2023).

How Location Affects Environmental Worry

People classified as 'alarmed' about climate change are most likely to live in an urban area. People living in cities are more worried about flooding and rising sea levels, and are more likely to see extreme weather as posing a moderate/high risk to their community in the next 10 years.

The CC4I report found that participants in the 'Alarmed' category are most likely to live in an urban area (69%). Participants in the 'Concerned', 'Cautious', and 'Doubtful' segments are close to the national average in relation to residence (urban residence - 65%, 62%, 64% respectively). Additionally, CCIM2 demographic data shows that 65% of people living in a city reported being 'very worried' or 'somewhat worried' about flooding, compared to 56% of rural participants (EPA, 2024e). City dwellers appear to be more likely to be worried about water shortages, with 60% either 'very worried' or 'somewhat worried' about this risk, compared to 52% of rural participants (EPA, 2024e). 71% of city dwellers were very worried or somewhat worried about rising sea levels, compared to just 55% of rural participants (EPA, 2024e). People in rural areas appear to be more likely to be concerned about agricultural pests/diseases (60% of rural participants compared to 49% of urban participants) (EPA, 2024e). City dwellers appear to be more likely to view extreme weather as posing a moderate/high risk to their community in the next 10 years, with 81% selecting these options compared to 73% of rural participants (EPA, 2024e). Again, it should be highlighted that sample sizes are unavailable, and this means that the statistical power of these relationships could not be assessed.

Level of Knowledge/Awareness

In this section, we will explore papers which examine the level of environmental knowledge and awareness of various environmental issues in isolated sociodemographic groupings. This section will include any findings relating to awareness of environmental issues other than CE, which has already been explored in a previous section. The reason for including this section is that a significant amount of work has been undertaken to understand knowledge/awareness of environmental issues other than CE, and exploring this work can provide insights about the Irish audience which may be useful for CE communicators.

Key Findings - Knowledge and Awareness

- Most Irish people believe that climate change is happening and is at least part caused by human activity.
- Many people do not see air pollution as a national issue, and do not know where to go to find information on air quality.
- Men report having greater familiarity with the term ‘just transition’, and claim to know more about climate change.
- Women report greater awareness of air pollution, but are more likely to see waste as the ‘largest source of the pollution that causes climate change’.
- There appears to be a U-shaped relationship between age and familiarity with environmental policies and concepts, with the oldest and youngest more familiar than the ‘squeezed middle’.
- Younger people tend to be more confident about their knowledge of the causes and effects of climate change.
- People in Dublin are more aware of air pollution as a local issue than people in other areas, and are more likely to agree that climate change is human-caused.
- Awareness of air pollution as a national issue is highest among the highest social grade, whereas awareness of air pollution as a local issue is highest among the C social grade.
- Higher educational attainment is associated with greater belief that climate change is happening, greater belief that it will harm plants and animals and is currently harming Irish people, higher confidence in knowledge of climate change, and stronger belief that climate change should be a high priority for the Irish government.
- Higher educational attainment is also associated with significantly better performance in objective measures of environmental knowledge across a number of questions, with the exception being knowledge that food waste minimisation has a high impact on greenhouse gas emissions, which is higher among participants whose highest attainment is at primary level.
- It is important to distinguish between studies which ask participants to self-report knowledge levels on one hand, and studies which quiz participants to determine their actual knowledge level. While both are important, there is a dearth of the latter type in the Irish context.

Knowledge and Awareness Across Sociodemographic Groups

Most Irish people believe that climate change is happening and is at least part caused by human activity. Many people do not see air pollution as a national issue, and do not know where to go to find information on air quality.

CCIM2 found that "nearly all Irish people (95%) think climate change is happening and is caused, at least in part, by human activities" (EPA, 2024b). This study also found that "most people in Ireland (78%) say they know at least a moderate amount about climate change" (EPA, 2024b). One general gap in Irish knowledge and awareness of environmental issues was identified by Quintyne et al., who claim that "Despite air pollution being an issue across the country, only 66.5% of survey participants identified it as a national issue and only 35.1% identified it as a local issue" (Quintyne et al., 2023). Further, this study found that 58.6% (N=589) of participants did not know where to access information about air quality (Quintyne et al., 2023).

Knowledge Gaps by Gender

Men report having greater familiarity with the term 'just transition', and claim to know more about climate change. Women, however, report greater awareness of air pollution, but are more likely to see waste as the 'largest source of the pollution that causes climate change'.

IKC3 data shows that more men (N=490) were familiar with the term 'just transition', with 19% of men (N=490) either familiar or very familiar, compared to 10.4% of women (N=510) (IKC3 et al., 2023). 68.6% of women had never heard of the term, compared to 52.1% of men (IKC3 et al., 2023). Quintyne et al. found that women have a higher awareness of air pollution as a national problem, with 71.9% of women aware of this issue compared to 60.4% of men (Quintyne et al., 2023).

CCIM1 demographic table data shows that 26% of men (N=2124) self-reported that they 'know a lot about' climate change, compared to 18% of women (N=1876) (EPA, 2021d). This relationship held for the second wave of the report, with both figures rising by 2% (28% of men (N=724) compared to 20% of women (N=606)) (EPA, 2024e). IKC3 found that 39% of men (N=490) agreed with either the statement "I have expertise in the area" or "I am very well informed" about the causes and effects of climate change compared to 24% of women (N=510) (IKC3 et al., 2023). CCIM2 demographic data shows that women report being more likely to misidentify waste as the sector which is the 'largest source of the pollution that causes climate change', with 16% of women (N=606) choosing the waste option compared to 10% of men (N=724) (EPA, 2024e).

Knowledge and Age

There appears to be a U-shaped relationship between age and familiarity with environmental policies and concepts, with the oldest and youngest more familiar than the 'squeezed middle'. Younger people tend to be more confident about their knowledge of the causes and effects of climate change.

Familiarity with environmental policies in Ireland appears to be highest among young people. There is also some evidence supporting a 'U-shaped' relationship between age and familiarity, with the youngest and oldest participants more familiar than middle aged participants. The IKC3 survey found familiarity with the EU Green Deal to reduce in proportion to the age of the participants, with 41.5% of 18-29-year-olds (N=210) familiar with this policy compared to just 21.7% of 70-74-year-olds (N=60) (IKC3 et al., 2023). Similar trends were seen in relation to the UN Sustainable Development Goals (SDGs), with 46.7% of 18-29-year-olds (N=210) familiar compared to a low of 21.9% of 60-69-year-olds (N=140) (IKC3 et al., 2023). Familiarity jumped back up to 29.1% among 70-74-year-olds (N=60) (IKC3 et al., 2023).

Interesting trends can be observed in the relationship between age and the level of self-reported knowledge about 'the causes and effects of climate change' in the IKC3 data (IKC3 et al., 2023). 6.1% of 18-29-year-olds (N=210) claim 'I have expertise in this area', which reduces to 3.7% among the 30-39 year old group (N=190), then reduces to 2.3% for the 40-49 year age group (N=220), finally reducing to 0% of people aged 50 and over (N=380) (IKC3 et al., 2023). This clear trend shows that confidence in knowledge about the causes and effects of climate change is inversely related to age in the Irish population. However, it should be noted that this does not actually measure participants' knowledge about climate change, but rather their self-reported confidence in their level of knowledge. The age group with the least confidence in their knowledge about the causes and effects of climate change is the 40-49 age group (N=220), 15.6% of whom agreed with either the statement 'I am not that informed on the topic' or 'I am not at all knowledgeable about the topic', compared to just 6% of 70-74-year-olds (IKC3 et al., 2023).

How Geography Shapes Environmental Knowledge

People in Dublin are more aware of air pollution as a local issue than people in other areas, and are more likely to agree that climate change is human-caused.

People in Dublin were found by Quintyne et al. to be more aware of air pollution as a local issue than in other more rural areas, with 44% of Dubliners (N=259) aware of this compared to 22.6% of participants in Connaught/Ulster (N=177) (Quintyne et al., 2023). The authors suggest that this supports previous research which found that proximity to industrial activity heightens awareness of air pollution (Quintyne et al., 2023).

People in rural areas (N=Unknown[11]) were found by the EPA to be slightly more sceptical about whether climate change is happening, with 5% thinking that it is not happening compared to just 1% of city dwellers (EPA, 2024e). This difference has increased since the first wave of the CCIM data, which found almost no difference in relation to location, with 97% of city dwellers believing that climate change is happening, compared to 96% of people in rural areas (EPA, 2021d). However, it should be noted that in 2021, 65% of city dwellers believed that climate change is caused by human activities, compared to 55% of people in rural areas (EPA, 2021d).

Economic Status and Awareness of Air Pollution

Awareness of air pollution as a national issue is highest among the highest social grade, whereas awareness of air pollution as a local issue is highest among the C social grade.

Awareness of air pollution as a national issue was found by Quintyne et al. to be associated with social grade, with 85.2% of people in the 'A' social grade (N=27) being aware of this, compared to just 60% of participants in the 'F' social grade (N=20) (Quintyne et al., 2023). Notably, people in the 'C' social grade (N=567) were more likely to see air pollution as a local problem, with 37.4% of C1 participants (N=342) being aware of this compared to 29.6% of A participants (N=27) (Quintyne et al., 2023). This indirectly suggests that air pollution impacts may be localised and concentrated in areas associated with a lower social grade. It is worth noting, however, that there were far more participants in this study from the 'C' social grade than from others. In particular, the sample sizes for the 'A' and 'F' groups are very small, indicating that further work is needed in order to make robust inferences. Other researchers have noted that "although there is no recent research on inequalities of exposure to air pollution in Dublin, it is likely that this follows the typical pattern whereby air pollution disproportionately burdens those suffering other forms of deprivation including poor quality housing and low-income" (Tubridy *et al.*, 2022).

Does Higher Educational Attainment Mean Higher Environmental Knowledge?

Higher educational attainment is associated with greater belief that climate change is happening, greater belief that it will harm plants and animals and is currently harming Irish people, higher confidence in knowledge of climate change, and stronger belief that climate change should be a high priority for the Irish government. Higher educational attainment is also associated with significantly better performance in objective measures of environmental knowledge across a number of questions, with the exception being knowledge that food waste minimisation has a high impact on greenhouse gas emissions, which is higher among participants whose highest attainment is at primary level.

[11] The number of participants from this grouping is unavailable in the technical fieldwork documents.

CCIM2 demographic data shows that people with higher educational attainment are more likely to self-report that they know ‘a lot’ or ‘a moderate’ amount about climate change, with 89% of ‘postgrad’ participants choosing one of these options compared to 62% of participants whose highest educational attainment was primary level (EPA, 2024e). Whether people believe that climate change is happening also appears to be linked to educational attainment in this data, with 98% of postgrad participants believing in climate change compared to just 88% of people whose highest educational attainment was primary level (EPA, 2024e).

Educational attainment also appears to be linked to the degree to which participants believe that climate change will harm plant and animal species, with CCIM2 demographic data showing that 96% of postgrads believe that it will cause a ‘great deal’ or a ‘moderate amount’ of harm, compared to just 80% of people whose highest educational attainment is primary level (EPA, 2024e). This pattern holds for the question of whether people believe that Irish people are ‘ebing harmed now’ by climate change, with 57% of everyone with a ‘higher cert or equivalent’ believing it is harming Irish people now, compared to just 35% of those whose highest educational attainment is primary level (EPA, 2024e). Only 27% of the ‘primary’ group believe climate change should be a very high priority for the Irish government, compared to 53% of postgrads (EPA, 2024e).

The following questions can be thought of as providing an objective measure for environmental knowledge rather than asking participants to self-report their level of knowledge. These kinds of questions which test participants’ actual knowledge are rare within the papers studied for this review, and provide a useful counterpoint to surveys which ask participants to self-report their level of knowledge. CCIM2 demographic data shows that 92% of postgrad participants correctly identified that the greenhouse effect refers to ‘gases in the atmosphere that trap heat’, compared to 52% of the primary school group (EPA, 2024e). There was also a huge gulf in relation to the successful identification of carbon dioxide (CO_2) as a GHG, with 80% of postgrads correctly identifying it as such compared to just 35% of the primary group (EPA, 2024e). 72% of postgrads correctly identified methane compared to 18% of the primary group, with 65% of the primary group stating that they did not know (EPA, 2024e). Interestingly, participants whose highest educational attainment was at primary level were more likely to correctly identify the minimisation of food waste as an action which has a large effect on GHG emissions, with 54% of this group identifying it as such compared to 43% of participants whose highest educational attainment was at postgraduate level (EPA, 2024e). This is perhaps an unexpected finding, given the large difference between groups with different educational attainment in relation to other objective measures of environmental knowledge described above.

Transport

In this section, findings from sociodemographic studies which focused on sustainable travel will be amalgamated to understand how different segments of the Irish population perceive travel options

Key Findings: Transport

- Men are more likely to cycle than women.
- Young people cycle and use public transport more, but older people are more likely to have changed their transport behaviours to help the environment.
- People living in rural areas are more likely to use private transport, while people in Dublin are more likely to use public transport than people outside Dublin.
- People in Dublin are also more likely to have purchased an electric car.
- People in urban areas including Dublin are also more likely to have increased their use of public and active transport, and are more likely to say their next car will be electric.
- People with children are more likely to frequently use private transport.
- People with higher educational attainment are more likely to use public transport, but no less likely to drive. Employed people are more likely to have reduced driving in favour of active/public transport.
- Homeowners are more likely to see a car as a necessity, whereas renters are more likely to see a bicycle as a necessity.

General Transport

Timmons et al. (2024b) explored the frequency of use of different modes of transport among the Irish population, finding that "The most common response for using public transport, cycling or walking in a typical week is 'never' (36 per cent, 84 per cent and 24 per cent, respectively)."

How Travel Choices Differ Between Men and Women

Men are more likely to cycle than women.

The ESRI study reinforced existing research which suggests that men are more likely than women to cycle. In this study, it was found that 12.5% of men cycle once per week, compared to just 4.9% of women (Timmons *et al.*, 2024b)

Age and Sustainable Transport

Young people cycle and use public transport more, but older people are more likely to have changed their transport behaviours to help the environment.

Younger adults (below 40) were found by the ESRI study to use public transport much more frequently than 40-60 year olds (19% difference) (Timmons *et al.*, 2024b). Younger adults were also found by this study to cycle more frequently than older adults (over 40), with a difference of about 7% (Timmons *et al.*, 2024b). They also found, however, that people over 60 were more likely to have changed their transport behaviours to reduce their impact on the environment (45.5% of over 60s compared to 37.1% of under 40s). The authors suggest that this is largely due to a modal shift from private to public transport. It should be noted that this second finding

may be due to older people having greater opportunity to reduce the impact of their transport behaviours as a result of starting from a higher baseline of private transport use.

How Geography Shapes Transport Habits

People living in rural areas are more likely to use private transport, while people in Dublin are more likely to use public transport than people outside Dublin. People in Dublin are also more likely to have purchased an electric car. People in urban areas including Dublin are also more likely to have increased their use of public and active transport, and are more likely to say their next car will be electric.

It is unsurprising that whether someone is living in an urban or rural area has a large impact on their transport choices. This assumption is corroborated by evidence from a study by ESRI, which found a difference of 22 percentage points between people living in urban and rural areas in relation to the frequency with which they travel by private vehicle (Timmons *et al.*, 2024b). Conversely, people inside Dublin were found to be far more likely to use public transport (30% difference) when compared to those living outside of Dublin (Timmons *et al.*, 2024b). People from Dublin were also found by IKC3 to be more likely to have purchased an electric car, with 18.4% of Dubliners (N=290) having purchased one, compared to an average of 11.6% across all other regions (N=710) and 9.2% of people in rural areas (N=324) (IKC3 et al., 2023).

The ESRI study found that people in urban areas were more likely to have increased their level of active transport (16.9% of people in urban areas compared to 9.9% of people in rural areas) (Timmons *et al.*, 2024b). Similarly, public transport adoption was found to be highest in Dublin (25.6%) compared to other regions (10.3% - 11.3%) (Timmons *et al.*, 2024b). This data is backed up by findings from the ‘Sign of the Times’ research carried out by Ipsos B&A, which found that 53% of Dubliners say they are using public transport more often than they were a year ago, compared to just 26% of people in Connaught/Ulster (Brennan, 2024). In a similar vein, the study also found that “Dubliners are twice as likely to say their next car will be an EV compared to those from Connacht/Ulster” (Brennan, 2024)

How Parenthood Affects Transport Choices

People with children are more likely to frequently use private transport.
One common indicator of whether someone is likely to travel by private vehicle is whether they have children. The ESRI study found that having a child at home is associated with more frequent use of private transportation (18% difference) (Timmons *et al.*, 2024b).

Education, Employment and Eco-Transport

People with higher educational attainment are more likely to use public transport, but no less likely to drive. Employed people are more likely to have reduced driving in favour of active/public transport.

(Timmons *et al.*, 2024b) found that people with a degree are more likely to use public transport than those without a degree (12 percentage point difference). However, “there is no difference in their current driving frequency compared to groups with lower levels of educational attainment” (Timmons et al., 2024b). Employed people were found by ESRI to be more likely to have reduced driving in favour of public/active transport than unemployed people (37.3% of employed people compared to 23.6% of unemployed people) (Timmons *et al.*, 2024b). Similarly to the finding related to age, this may be explained by a higher baseline level of private transport among employed people due to higher income.

Housing Tenure and Transport

Homeowners are more likely to see a car as a necessity, whereas renters are more likely to see a bicycle as a necessity.

In relation to housing tenure, an interesting correlation was found by Lavelle and Fahy between perceptions of transport options. Homeowners were significantly more likely to view a car as a necessity, whereas renters were significantly more likely to see a bicycle as a necessity (Lavelle and Fahy, 2021).

Other Findings

This section will contain any other findings which are not easily categorised into the other sections contained within this report. The section headings will be organised according to the question or theme in this section, and differences between sociodemographic groups will be highlighted.

Who do Irish People Trust to Reduce Plastic Waste?

People who had not tried to cut down plastic use are less likely to trust others to do so. Older people are more likely to trust other individuals to cut down plastic waste, and people in higher social grades are more likely to agree with banning the production and sale of single use plastic items.

EPA-Plastics found that people who had not tried to cut down on their plastic use were less likely to trust ‘individuals like me’ to reduce plastic waste (58% compared to 79% of those who had tried to cut down in the last 12 months) (EPA, 2022b). This suggests that taking action can foster a greater sense of collective action and improve trust in others. 69% of under 35s trust ‘individuals like me’ to play their role in reducing plastic waste, compared to 80% of over 55s (EPA, 2022b). EPA-Plastics found that in 2019, ABC1 participants were more likely to agree with the statement that there should be a ‘ban on the production and sale of single use plastic items’ (72% ABC1 vs 64% C2DE) (EPA, 2022b).

Who Do Irish People Think are Responsible for Reducing Impacts?

When it comes to making repair easier, men are more likely to hold the government accountable, while women are more likely to hold retailers accountable. Women are more likely to report making an effort to reduce food waste. Women and older generations are more likely to think reducing food waste is everyone's responsibility.

This section includes information on who different segments of the population believe to be responsible for environmental action, which has been linked to engagement (Bateman and O'Connor, 2016). As Bateman and O'Connor put it, "The more personal responsibility one feels, the harder it is to remain passive on the paths to future harm, and the more inviting the paths are to climate action." (Bateman and O'Connor, 2016).

Men were found to be more likely than the national average to say that the government and its agencies should be responsible for making repair easy (38% of men (N=488) compared to 26% of women (N=561)), while women were more likely to think that retailers should be responsible (74% of women compared to 63% of men) (EPA, 2022c). Women are more likely to see the reduction of food waste as everyone's responsibility - 92% of women agree with this statement compared to 83% of men (EPA, 2022a). 20% of men (N=486) disagree with the statement "Minimising my food waste is one of my top priorities" compared to 11% of women (N=527) (EPA, 2022a). 80% of women agree with the statement "I have been making more of an effort lately to reduce my food waste" compared to 68% of men (EPA, 2022a). Older generations were found by EPA-Food-Waste to be more likely to see the reduction of food waste as everyone's responsibility; 92% of 65+ year olds agree with this statement compared to 79% of 16-24-year-olds (EPA, 2022a).

EPA-Plastics found that "Manufacturers are seen as the stakeholders 'most responsible' for reducing plastic waste (33%)" (EPA, 2022b). In terms of sociodemographic differences, they found that over 55s were the most likely to think that 'manufacturers' are most responsible for the reduction of plastic waste in Ireland, with 38% of people over 55 selecting this option, compared to 29% of under 35s (EPA, 2022b). The under 35 group were the most likely to think the 'government' was most responsible, with 19% of this group selecting this option compared to 12% of over 55s (EPA, 2022b). Another finding was that people in Dublin are far more likely to think that the 'Irish Government and its agencies' are responsible for reducing plastic waste (23% in Dublin compared to average of 12% in other regions) (EPA, 2022b). They also found that C2DE participants (lower social grade) were more likely to think that manufacturers are most responsible for the reduction of plastic waste in Ireland at 36% compared to 29% of ABC1 participants (higher social grade) (EPA, 2022b). ABC1 participants, meanwhile, were more likely to think that 'government and its agencies' are most responsible (18% ABC1 vs 13% C2DE) (EPA, 2022b).

What Examples of Intention-behaviour Gap are Seen in the Irish Context?

Some examples of the intention-behaviour gap in the Irish context are WEEE collection, uptake of electric vehicles, and women's engagement with renting/sharing.

Ryan-Fogarty et al. (EPA, 2021a) note an "apparent difficulty so far in establishing consistent sociodemographic characteristics across different studies" in relation to WEEE. A focus group conducted in October 2023 found evidence of a clear action-intention gap regarding WEEE collection in Ireland. Participants cited the inconvenience of traveling to recycling centres and demonstrated mixed awareness about where and how to recycle WEEE. Additionally, moving house and clearing space were identified as key triggers for WEEE recycling.

Brown et al. found that "a large majority of the cohort favoured EVs, yet only a small portion actually owned one" (2023), and posited that this "suggests that the public are accepting of the idea of low carbon vehicles, however, the inhibiting factor to actually owning one is the price and the availability of charging infrastructure". This is a clear example of the attitude-behaviour gap highlighted earlier in the report.

Finally, despite women expressing a higher general interest in and acceptance of renting/sharing practices in self-reported data, EPA-Repair found that men were equally or more likely than women to have rented or shared all of the product categories explored by the survey (Vacuum cleaner, Dishwasher, TV, Mobile Phone, Coat/ jacket) (EPA, 2022c).

Collective Environmental Actions

There is a U-shaped relationship between age and engagement with collective environmental actions, with the youngest and oldest having the highest engagement.

The 18-29 year old cohort (N=210) were found by IKC3 et al. to be the most likely to frequently or very frequently engage in collective actions to combat climate change, at 27.2% (IKC3 et al., 2023). This engagement decreases with age to a low of 12.6% of 60-69-year-olds (N=140), then increases again to 21.2% of 70-74-year-olds (N=60) (IKC3 et al., 2023), although it should be noted that the sample size for the oldest cohort was significantly smaller than other groups (60 participants in the oldest age group compared to an average of 187 participants in other age groups), which could be skewing these results (IKC3 et al., 2023).

Previous EPA-funded research carried out by the ESRI has summarised and systematically reviewed research on collective action, identifying a number of factors which contribute to people's decision to cooperate or 'free ride' in relation to collective action problems like climate change (Martin, Timmons and Lunn, 2024).

Holistic Understanding of Linkages

Women are more likely to holistically understand links between activities and environmental impacts. There are also correlations in relation to education and age.

CCIM2 demographic table data shows that a significant proportion of the population believe climate action will improve Ireland's quality of life, with 79% of women (N=606) selecting this option compared to 68% of men (N=724) (EPA, 2024e). Young women (16-34) were found by EPA-Textiles1 survey to be less likely than the average to see the link between sustainable clothing and quality of life (62% compared to 69% average), but were found to be more likely to think sustainable clothing would bring about economic benefits (68% of young women compared to 57% average) (EPA, 2021c).

Women were found by EPA-Food-Waste to be more likely to see the link between climate change and recycling, with 72% of women saying 'I can see a clear link', compared to 59% of men (EPA, 2022a). Similarly, women were more likely to understand the link between climate change and using reusable shopping bags, with 66% of women seeing a 'clear link' compared to 56% of men (EPA, 2022a). Women were also found by EPA-Food-Waste to be more likely to understand the link between climate change and 'Recycling food waste (e.g. home composting, brown bin collection etc)', with 57% of women seeing a 'clear link' compared to 46% of men (EPA, 2022a). Women also appear to demonstrate a greater understanding that reuse can result in emissions savings, with CCIM2 demographic table data showing that 52% of women (N=606) believe that using a reusable shopping bag has a large effect on GHG emissions, compared to 36% of men (N=724) (EPA, 2024e). 18-34-year-old women are most likely to understand the link between clothing consumption and climate change according to EPA-Textiles (42% compared to national average of 31%) (EPA, 2021c). Older women, however, are more likely to see the link between climate change and reducing the temperature of clothes washes (61% of women over 50 compared to national average of 47%) (EPA, 2021c).

CCIM2 demographic table data shows that people with higher educational attainment are more likely to think that climate action will improve Ireland's quality of life, with 78% of postgrads (N=Unknown) selecting this option compared to 56% of the primary group (N=Unknown) (EPA, 2024e). The primary group were also significantly more likely than others to say that climate action will have no effect on quality of life, with 29% of this group selecting this option compared to 11% of the postgrad group (EPA, 2024e).

The oldest cohort in EPA-Food-Waste was also most likely to understand the link between food waste and climate change, with 78% of 65+ participants agreeing with the statement "I believe that reducing the amount of food I waste is an action I can take to reduce GHGes and climate change" compared to 64% of 16-24-year-olds (EPA, 2022a). 93% of 65+ year olds agree that "Throwing away uneaten food is the same as throwing money in the bin", compared to 71% of 16-24-year-olds (EPA, 2022a). Similarly, people aged 65 and over were more likely to

understand the link between climate change and ‘throwing away food that could have been eaten’, with 53% of this group seeing a ‘clear’ link, compared to just 30% of 25-34 year olds (EPA, 2022a). Over 65s were also found by the EPA to be more likely to understand the link between climate change and ‘Recycling food waste (e.g. home composting, brown bin collection etc)’, with 66% of over 65s seeing a ‘clear link’ compared to 44% of 16-24-year-olds (EPA, 2022a).

The EPA also identified a large difference between age groups in relation to understanding the link between climate change and ‘Washing clothes at 30 degrees instead of 40/60 degrees’, with 55% of people over 65 (N=173) seeing a ‘clear link’, compared to 27% of 16-24-year-olds (N=97) (EPA, 2022a). Another relevant finding from EPA-Repair is that 34% of 16-34-year-olds (N=293) “can see a clear link” between “Renting or leasing a product rather than buying new” and climate change, compared to 23% of respondents over 55 (N=369) (EPA, 2022c). Older cohorts were found by the EPA to be more likely to see the link between climate change and ‘Not driving to work/town (e.g. taking public transport, walking, cycling)’, with 58% of people aged 65 and over saying that they ‘can see a clear link’ compared to 42% of people aged 16-24 (EPA, 2022a). Older people were found by EPA-Food-Waste to be more likely to see the link between climate change and recycling, with 74% of participants aged over 65 saying ‘I can see a clear link’, compared to just 46% of 16-24-year-olds (EPA, 2022a). Similarly, older people were more likely to understand the link between climate change and using a reusable shopping bag, with 73% of people aged 65 and over seeing a ‘clear link’, compared to 46% of 16-24-year-olds (EPA, 2022a).

Identified Gaps in the Irish Sociodemographic Analysis Literature

One of the primary goals of this study was to identify the gaps in existing knowledge on the differences between sociodemographic groups within the Irish population in relation to environmental issues in order to inform the approach to CE Communications. In order to achieve this, a literature review was conducted. These papers were then categorised according to their primary theme as well as the specific sociodemographic groups which were isolated and analysed by the paper. These categorisations were then combined into a matrix table (fig. 2 below). Literature review analysis also revealed gaps, particularly in studies on behaviour change related to maintenance, a crucial strategy for extending product lifespans. Reprocessing was another underexplored area, likely because studies on the behavioural aspects of reprocessing were categorised under ‘reverse logistics,’ where consumer involvement is critical.

Until recently data on how attitudes and behaviours toward the CE are changing over time and across sociodemographics has been limited. Current work being undertaken by the EPA Behavioural Insights work, the RDC’s CET and DECC’s CE awareness tracker highlight a move in the right direction.
Key gaps identified by this review include:

- **Lack of observed (or objective) data** - Surveys can be used alongside objective data collection methods (such as sensor data, transactional records, or observational studies) to triangulate findings. Greater access to observed data which does not rely on self-reporting would allow researchers to remove certain psychological biases such as socially desirable reporting from the equation, providing a more holistic view of how structural and psychological variables impact real-world behaviour. By comparing self-reported behaviours with objective metrics, discrepancies can be identified and understood, leading to more nuanced insights.
- **Awareness of useful resources:** There is an opportunity to improve awareness of useful resources through targeted communications, particularly in the area of repair (e.g. repair cafés, repairmystuff.ie, iFixit etc.). Awareness of rental services and take back schemes could also improve engagement with these CBs, particularly if targeted to older people and men, respectively.
- Research into the link between awareness of the term “circular economy” on one hand, and attitudes and behaviour on the other – i.e. is unifying behaviour under this theme in communications effective for driving behaviour change or is it more useful to focus on specific product types/behaviours separately? There is also a need for more research into the behavioural factors influencing CEBs – e.g. social norms, identity/signalling.

Key Findings (Full)

- **Need for tailored comms:** Large differences are observed between sociodemographic cohorts in relation to a broad range of CEBs, underscoring the need for tailored communications and interventions to maximise impact.
- **Increase in CE awareness is uneven:** A rapid increase is observed in awareness of the CE concept over the last several years. However, marked differences can be seen between different sociodemographics, particularly by gender, age, social grade, and location.
- **Enhanced survey design:** An opportunity exists to enhance survey design in such a way that self-reporting biases such as recall bias and socially desirable reporting could be minimised or eliminated. For example, instead of asking participants how frequently they engage in repair or reuse behaviours, surveys could instead ask participants to report specific instances of actions taken during a specified period. Additionally, double-barrelled and triple-barrelled questions should be avoided at all times to remove ambiguity from responses.

- **Longitudinal studies:** Repeated surveys can help track changes over time. While self-reporting has its limitations, consistent longitudinal surveys can reveal trends and shifts in behaviour that are valuable for evaluating the effectiveness of interventions.
- **Complementary qualitative work:** Including open-ended questions or embedding short qualitative modules in surveys can provide context to the numbers. These insights can help explain why discrepancies between self-reported and observed behaviours exist, guiding more targeted follow-up studies or interventions.
- **Overall support:** While there are some sociodemographic trends in pro-environmental attitudes/behaviours (women more engaged than men, u-shaped engagement by age group) all cohorts are engaged to a degree depending on product type in question
- **Regression modelling:** It may be useful to increase the use of regression analysis in further work in order to better show which factors driving attitudes/behaviour (e.g. age differences might really be driven by income differences). Parsing these cause and effect relationships will allow for more effective targeting of communications
- **Gender differences count:** Messaging should be adapted when targeting communications by gender. The findings reviewed for this report demonstrate that men may be more influenced by information framing, whereas women demonstrate stronger practical engagement with CE.
- **Consider baselines:** Care must be taken when stating that people of higher social grades are more likely to engage in PEBs, since this cohort often has a higher baseline level of consumption and thus more opportunity to reduce their impact. It should be noted also that even with greater impact reduction behaviours, people of higher SES may still end up with a higher footprint overall. For this reason, it is recommended that further work be undertaken to better understand baseline consumption patterns between sociodemographic cohorts.
- **Dubliners are Receptive:** The findings suggest that urban audiences, particularly Dubliners, are currently more receptive to CE communications. This represents a significant opportunity for targeted outreach.
- **Education Increases Concern:** People with higher educational attainment appear to be significantly more concerned about a broad range of environmental impacts.

Discussion

In the Irish context, it has been observed that there is a relatively weak correlation between political ideology and attitudes towards issues that are commonly politicised abroad (Laurence, McGinnity and Murphy, 2024). There is evidence, however, that political leaning is becoming an increasingly important factor influencing voter choices (Laurence, McGinnity and Murphy, 2024). While political leaning may not have hitherto been an important demographic variable to understand in the Irish context, it may be advisable to collect and report this information in future work in order to better understand how the influence of political ideologies on PEBs is changing over time.

Data reviewed in this report on the relationship between age and concern has revealed a 'U-shaped' relationship between the two factors, with the highest concern being found among the youngest and oldest cohorts, and the lowest concern being found among the middle-aged. That said, the level of concern is found by all studies to be consistently high among all age groups. Additionally, one study reviewed for this report found that communications which highlight age differences in concern actually diminish the belief in collective action among the audience of the communication, which likely reduces their propensity to engage in PEBs (Timmons et al., 2024a).

Engagement with expert stakeholders undertaken for this report has highlighted the possibility that psychological variables may be better predictors of PEBs than sociodemographic groupings. Further work, then, may attempt to understand in the Irish context the links between psychological variables like conscientiousness, openness, and self-efficacy beliefs on one hand, and propensity to act in a pro-environmental manner on the other.

There is a general willingness to engage in circular and PEBs across all sociodemographic groups, with infrastructural and technical barriers constituting the main reasons why people do not engage with certain behaviours. In other words, while people are often motivated to act, there is nonetheless a relatively low level of engagement with certain practices due to people lacking the capacity or opportunity to act on their motivation. This is particularly true in relation to differences between urban and rural citizens, which largely come down to differences in infrastructure and living context. As a general finding, communications which facilitate people to act on their existing motivation may be more effective than communications which attempt to motivate people to act. Additionally, it is not recommended that communications encourage engagement with behaviours for which major structural barriers exist, as this may lead to frustration among citizens who know what needs to be done, but cannot do it for reasons beyond their control. Identifying and mapping which behaviours face structural barriers, and which can be encouraged under current circumstances may be a useful direction for future work to take.

This review has highlighted barriers to circularity which are generalisable across all sociodemographic groups and domains. For example, one barrier that emerged as a recurring theme across product categories and sociodemographic groups is the intention-behaviour gap or attitude-behaviour gap (Brown et al., 2023; Lavelle and Fahy, 2016). Bridging this gap is a limitation noted by researchers across multiple fields of environmental research, and this report has contributed to understanding of how the gap shapes Irish audiences' engagement with CEBs across sociodemographic groups.

Conclusion

This research contributes significantly to the wider Irish knowledge base by mapping detailed sociodemographic differences in attitudes and behaviours related to the CE. It provides a critical

evidence base for policymakers and communicators to design targeted, equitable interventions and campaigns

This review seeks to collate behavioural insights which could play a role in informing and influencing communications about the CE in Ireland. The report highlights significant variance between sociodemographic groups in relation to key themes such as reuse, repair, and knowledge of the CE. It has revealed certain sociodemographic influences such as age and gender, to be well understood in the Irish audience, and revealed the impact of other sociodemographic differences such as political ideology and education remain underacknowledged, at least in relation to the themes discussed. It has highlighted key gaps within the literature, such as a lack of focus on the circular stratagem of product maintenance.

The review has highlighted that there appears to be consistent differences between men and women in relation to a broad range of CBs and attitudes towards environmental issues. Further work is needed to understand the drivers of these differences. In particular, there is a need to establish which co-benefits are most motivational for men, particularly in domains in which men tend to be higher consumers. Further work is also needed to understand how to change women's attitudes and behaviours in the specific domain of textiles, where large gender differences exist in relation to overall consumption.

Finally, the predominance of certain methodologies, such as surveys, questionnaires and interviews, and the underutilization of objective data collection methods present opportunities for methodological diversification in future research. Participants in behavioural insights research may have inaccurate perceptions of the barriers and enablers of more effective environmental behaviours (Timmons et al., 2024b). Further, as Timmons et al. (2024b) put it, "respondents could not include impediments to behaviour change that they themselves are not aware of". Further, the use of such objective datasets may reduce the likelihood of cognitive biases such as SDR influencing the veracity of the data. Experimentally testing interventions can also enhance the validity of insights and inform more effective policy design.

Primary Concern	Age	Gender	Urban Or Rural	Employment	Education	Social Grade	Region	Family Status	children	Nationality	Household	Shopper Or Earner	Other 1	Other 2
Climate Change	5	4	4	4	2	3	3	1	2	3	1	1	1	0
Repair Or Reuse	3	2	2	1	0	2	2	2	1	0	0	0	0	0
Textiles	2	2	2	1	0	2	2	1	1	0	0	1	0	0
Bioeconomy	3	3	2	1	2	2	2	0	1	1	1	1	2	2
Plastics Or Packaging	2	2	1	1	0	1	2	1	1	1	1	0	1	1
Consumption	3	3	2	2	3	3	0	3	0	0	3	0	1	0
Circular Economy	1	1	1	0	0	1	1	1	1	0	0	1	1	1
WM	1	1	1	1	0	0	1	1	1	0	1	0	1	1
Skills	1	1	1	1	1	0	1	0	0	0	0	0	0	0
Total	21	19	16	12	8	14	14	10	8	5	7	4	7	5

Figure 7: Number of papers conducting analysis of sociodemographic grouping (X axis) in relation to specified theme (Y axis).
This table shows the number of Irish sociodemographics (horizontal) that have been analysed in relation to each of the themes identified in the sociodemographic analysis literature (vertical). *Example:* According to the chart, there are 5 identified articles with Climate Change as their primary concern which analyse different age sociodemographics.

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Appendix 1 - Search Terms Used in Literature Review

The following table presents the search terms used in the literature review.

Search Term	Articles Returned
Articles (including grey literature) Identified in Proposal	19
("Circular Economy" OR "Circular" OR "Circularity") + ("Engagement" OR "Engage" OR "Engaged")	16
("Circular Economy" OR "Circular" OR "Circularity") + ("Engagement" OR "Engage" OR "Engaged") + ("Ireland" OR "Irish")	14
("Circular Economy" OR "Circular" OR "Circularity") + ("Behaviour" OR "Behavioural" OR "Behavioural Insights")	20
("Circular Economy" OR "Circular" OR "Circularity") + ("Behaviour" OR "Behavioural" OR "Behavioural Insights") + ("Ireland" OR "Irish")	4
("Circular Economy" OR "Circular" OR "Circularity") + ("Skills" OR "Circular Skills" OR "Skillsets")	20
("Circular Economy" OR "Circular" OR "Circularity") + ("Skills" OR "Circular Skills" OR "Skillsets") + ("Ireland" OR "Irish")	4
("Circular Economy" OR "Circular" OR "Circularity") + ("Attitude" OR "Attitudes" OR "Attitudinal")	17
("Circular Economy" OR "Circular" OR "Circularity") + ("Attitude" OR "Attitudes" OR "Attitudinal") + ("Ireland" OR "Irish")	7
("Circular Economy" OR "Circular" OR "Circularity") + ("Awareness" OR "Name Recognition" OR "Term Recognition")	15
("Circular Economy" OR "Circular" OR "Circularity") + ("Awareness" OR "Name Recognition") + ("Ireland" OR "Irish")	1
("Circular Economy" OR "Circular" OR "Circularity") + ("Behaviour" OR "Behavioural" OR "Behavioural Insights") + ("Demographic" OR "Age Groups" OR "Socieconomic")	16
("Circular Economy" OR "Circular" OR "Circularity") + ("Behaviour" OR "Behavioural" OR "Behavioural Insights") + ("Demographic" OR "Age Groups" OR "Socieconomic" OR "Gender") + ("Ireland" OR "Irish")	4

Table 4: Search Strings used in original literature search

Appendix 2 - Articles Included in Sociodemographic Review

Article Title	Author(s)	Year	URL	Sample Size (N)
Communicating climate change as a generational issue: experimental effects on	Shane Timmons et al.	2024	https://www.tandfonline.com/doi/full/10.1080/14693062.2024.2341080#abstract	**(N = 500)**[12]

[12] Despite the relatively small sample size, this study remained nationally representative by focusing on individuals aged 16-24

youth worry, motivation and belief in collective action				
What is preventing individual climate action? Impact awareness and perceived difficulties in changing transport and food behaviour	Shane Timmons et al.	2024	https://www.esri.ie/system/files/publications/RS186.pdf	**(N=1,200)**
Climate Change in the Irish Mind Wave 2 Demographic Table	Environmental Protection Agency (EPA)	2023	https://www.epa.ie/publications/monitoring--assessment/climate-change/CCIM-Wave-2-Summary-Demographic-tables.pdf	**(N=4,000)**
Understanding domestic consumer attitude and behaviour towards energy: A study on the Island of Ireland	Alastair Brown et al.	2023	https://www.sciencedirect.com/science/article/pii/S0301421523002781	**(N=1,373)**
Climate Change's Four Irelands: An Audience Segmentation Analysis	Leiserowitz et al.	2023	https://climatecommunication.yale.edu/publications/climate-changes-four-irelands-an-audience-segmentation-analysis/	**(N=4,030)**
Sew what for sustainability? Exploring intergenerational attitudes and practices to clothing repair in Ireland.	Helen Maguire et al.	2022	https://irishgeography.ie/index.php/irishgeography/article/view/1469	**(N=15)**
Repair: National attitudes and behaviours survey 2022	Environmental Protection Agency (EPA)	2022	https://www.epa.ie/our-services/monitoring--assessment/circular-economy/behavioural-insights/repair-national-attitudes--behaviours-survey-2022/	**(N=1,049)**
Reuse: National attitudes and behaviours survey 2023 (Part 4)	Environmental Protection Agency (EPA)	2023	https://www.epa.ie/our-services/monitoring--assessment/circular-economy/behavioural-insights/reuse-national-survey-2023/	**(N=1,264)**
Textiles: National attitudes and behaviours survey 2021	Environmental Protection Agency (EPA)	2021	https://www.epa.ie/our-services/monitoring--assessment/circular-economy/behavioural-insights/textiles-national-attitudes--behaviours-surveys/	**(N=3,710)**

Textiles: Circular retail propositions national survey 2022	Environmental Protection Agency (EPA)	2022	https://www.epa.ie/our-services/monitoring--assessment/circular-economy/textiles-national-attitudes--behaviours-surveys/textiles-circular-retail-propositions-national-survey-2022/	**(N=1,069)**
Food Waste: National attitudes and Behaviours survey 2022	Environmental Protection Agency (EPA)	2022	https://www.epa.ie/our-services/monitoring--assessment/circular-economy/behavioural-insights/food-waste-behavioural-insights-research-/food-waste-national-attitudes--behaviours-study-2022/	**(N=1,013)**
Plastics: National attitudes and behaviours survey 2019 - 2021	Environmental Protection Agency (EPA)	2021	https://www.epa.ie/our-services/monitoring--assessment/circular-economy/behavioural-insights/plastics-national-attitudes--behaviours-survey-2019-2021/	**(N=3,079)**
Usage and Attitudes towards Single Use Packaging for Fruits & Vegetables 2024	Environmental Protection Agency (EPA)	2024	https://www.epa.ie/publications/circular-economy/resources/Single-Use-Packaging-Fruit-Veg-National-Survey-Report-2024.pdf	**(N = 1,016)**
Creating context for corridors of consumption: the case of Ireland	Mary Jo Lavelle et al.	2021	https://www.tandfonline.com/doi/full/10.1080/15487733.2020.1864966?scroll=top&needAccess=true#abstract	**(N=1,500)**
What's Consuming Ireland? Exploring expressed attitudes and reported behaviours towards the environment, quality of life and sustainable consumption on the island of Ireland.	Mary-Jo Lavelle et al.	2017	https://irishgeography.ie/index.php/irishgeography/article/view/1233	**(N=1,500) - Households**
Sustainable Production and Consumption: The Influence of Social Norms	Gideon Fadiran and Stephen Onakuse	2022	https://www.epa.ie/publications/research/waste/research-408-sustainable-production-and-consumption-the-influence-of-social-norms.php	**(N=318)**
The Circular Economy Tracker	John O'Mahony	2023	G:\7 Research & Education\6 RESEARCH\EU funded projects\DIRECT LIFE Project\WP - 1 -	**(N=1,006)**

			Deliverables\Deliverable - WP1 - The Circular Economy Tracker\Results\Raw Data B&A Market Research	
Household Environmental Behaviours - Waste and Recycling	Central Statistics Office (CSO)	2021	https://www.cso.ie/en/releasesandpublications/er/hebwr/householdenvironmentalbehaviours-wasteandrecyclingquarter32021/	**(N=4,641) - Households**
Irish population knowledge, attitudes, and perception of air pollution	Keith Ian Quintyne et al.	2023	https://www.researchgate.net/publication/372014425_Knowledge_attitudes_and_perception_of_air_pollution_in_Ireland	**(N=1005)**
Assessing Sustainable Skills Amongst Irish Citizens,	Bilendi, IKC3, Rediscovery Centre	2024	https://docs.google.com/presentation/d/13vKFPwbB9UgoDZt1GZPXGB8Czcv6jDUt/edit#slide=id.p2	**(N=1000)**
Sign of the Times	IPSOS B&A	2024	https://banda.ie/wp-content/uploads/2024/04/Ipsos-BA-Sign-of-times-2024.pdf	**(N=1000)**
Assessment of the Environmental Impact of Food Consumption in Ireland—Informing a Transition to Sustainable Diets	Laura B. Kirwan et al.	2023	https://www.mdpi.com/2072-6643/15/4/981	**(N = 7,748) - Reported Daily Diets**
Current Perceptions of Sustainable Diets in Ireland and the Outlook of Circular Eating Practices	Shelley Fox et al.	2023	https://www.mdpi.com/2304-8158/12/21/4003	

Appendix 3 - Chi Square Test Results

1. A chi-square test of independence was conducted to examine the association between gender and agreement with the statement "I always keep things I own for a long time." The test revealed a statistically significant association, $\chi^2(4, N = 1050) \approx 23.5$, $p < 0.001$. Females were more likely than males to "Strongly agree" with the statement, while males were more likely to select "Somewhat agree" or lower agreement categories. This suggests a gender difference in self-reported tendencies to keep possessions for a long time, with females expressing stronger agreement.
2. A chi-square test of independence was conducted to examine the relationship between gender and agreement with the statement "I buy items that I never end up wearing"

within the EPA-Textiles1 data. The test revealed a statistically significant association, $\chi^2(4, N = 1009) \approx 90.5$, $p < 0.001$. Females were much more likely than males to "Somewhat agree" or "Strongly agree" with the statement, while males were more likely to "Strongly disagree." This indicates a notable gender difference in self-reported purchasing behaviour, with women more likely to acknowledge buying unworn items.

3. A chi-square test of independence was performed to examine the association between gender and the frequency of choosing not to eat meat for environmental reasons based on CCIM2 demographic table data (EPA, 2024e). The results showed a statistically significant association, $\chi^2(4, N = 1253) \approx 92.7$, $p < 0.001$. Females were significantly more likely than males to report "Often" or "Occasionally" refraining from eating meat for environmental reasons, while males were much more likely to report "Never." This highlights a strong gender difference in environmentally motivated dietary behaviour.
4. The chi-square test indicates a statistically significant association between gender and self-reported ability to organise food in the cupboards, $\chi^2(9, N=1013) = 18.11$, $p = 0.034$. Females tend to rate themselves higher on this skill, particularly in the highest category ("10 - Very good at doing this"), compared to males. This suggests gender differences in perceived competence in food organisation.
5. A chi-square test of independence was conducted to examine the relationship between gender (male/female) and self-reported frequency of informal furniture reuse reported in the CSO data (Often, Sometimes, Never, No Response). The results of the chi-square test are as follows: $\chi^2 (3, N = 4641) = 148.1$, $p < 0.001$. There was a statistically significant association between gender and frequency of informal furniture reuse. Females were more likely than males to report "Sometimes" and "Often" reusing furniture informally, while males were more likely to report "Never" engaging in this behaviour.
6. A chi-square test of independence was conducted to examine the association between gender and the frequency of purchasing second-hand clothing in charity or second-hand shops using the CSO data. The results revealed a statistically significant association, $\chi^2(3, N = 4641) = 242.2$, $p < 0.001$. Women were more likely than men to report purchasing second-hand clothing "Often" or "Sometimes," while men were more likely to report "Never" purchasing second-hand clothing. This suggests a strong gender difference in engagement with second-hand clothing markets.
7. A chi-square test of independence was performed to assess the relationship between age group and the frequency of purchasing second-hand furniture in charity or second-hand shops using CSO data (CSO, 2021). The test indicated a statistically significant association, $\chi^2(12, N = 4649) = 90.7$, $p < 0.001$. Younger age groups (18-34 and 35-44) were more likely to report purchasing used furniture "Sometimes" or "Often," while older age groups (55-64 and 65+) were more likely to report "Never." This highlights a clear age-related trend in second-hand furniture purchasing behaviour.
8. A chi-square test of independence was conducted to evaluate the association between age group and the frequency of purchasing second-hand clothing or textiles through online platforms. The analysis showed a statistically significant association, $\chi^2(12, N =$

4621) = 211.4, $p < 0.001$. The youngest age group (18-34) was most likely to report purchasing second-hand clothing online "Often," with a clear decline in frequency as age increased. Older age groups (55-64 and 65+) were much more likely to report "Never" purchasing second-hand clothing online. This demonstrates a pronounced generational divide in the use of online platforms for second-hand clothing purchases.

9. A chi-square test of independence revealed a statistically significant association between age group and the frequency of households receiving or buying used furniture via private gifts, donations, or swaps, $\chi^2(12, N=4641) > 100$, $p < 0.001$. Younger age groups (especially 18-34 and 35-44) were more likely to report "Often" or "Sometimes" engaging in this behaviour, while older groups (55-64 and 65+) were much more likely to report "Never." This demonstrates a strong age-related difference in informal furniture acquisition practices.
10. A chi-square test of independence found a statistically significant association between gender and frequency of discussing climate change with family and friends, $\chi^2(3, N=1329) = 28.1$, $p < 0.001$. Females were more likely to report discussing climate change "Often" and less likely to report "Never" compared to males, indicating a gender difference in climate change communication within families and social circles.
11. A chi-square test of independence was conducted to examine the relationship between age group and the frequency of considering environmental impact when purchasing clothes using the EPA-Textiles1 data. The test revealed a statistically significant association between age and this purchasing behaviour ($\chi^2(16, N \approx 500) > 30$, $p < 0.01$). Younger respondents (16-24) were more likely to report "All the time" or "Often" considering environmental impact, while older groups showed a more even spread across the categories, with slightly higher frequencies in "Seldom" and "Never." This suggests that environmental considerations in clothing purchases are more prevalent among younger consumers.
12. The chi-square test indicates a statistically significant association between gender and feelings towards climate change in the IKC3 data (IKC3 et al., 2023), $\chi^2(4, N \approx 1001) = 13.47$, $p = 0.0092$. Females are more likely than males to report feeling "very concerned" or "concerned" about climate change, while males are more likely to be "not that concerned" or "not at all concerned." The "Other, what?" response was negligible.
13. A chi-square test of independence was conducted to examine the relationship between age group and feelings towards climate change in IKC3 Data (IKC3 et al., 2023). The test revealed a statistically significant association, $\chi^2(20, N = 1000) = 38.6$, $p = 0.008$. Younger age groups (18–29 and 30–39) were more likely to report feeling "very concerned" or "concerned" about climate change, while older groups (particularly 60–69 and 70–74) showed higher proportions reporting "not that concerned" or "not at all concerned." This suggests that concern about climate change is more prevalent among younger adults.

REDISCOVERY CENTRE

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