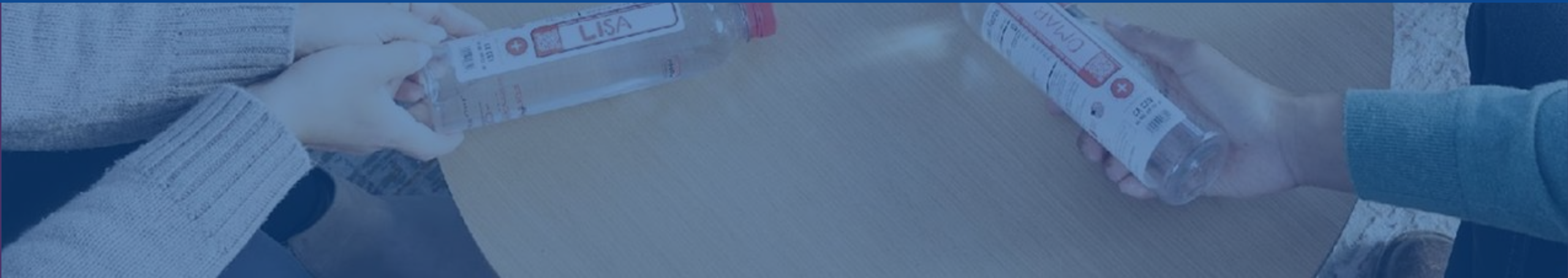


## Summary Report - Highlights

The Scale of Consumer Packaging Waste and Elevated Health Problems Due to Confusion

June 2024



# Introduction

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- This study was commissioned by Plus Brand as part of their campaign to understand and quantify the issue of confusion in relation to packaging waste. This project will also comprehensively analyze the market potential and strategic opportunities for Plus Brand's innovative All-Scratch!® technology in the United States.
- The aim of this research was to:
  - Understand if respondents ever experience confusion, and if so, how frequently and which products do they experience it with
  - What events do respondents attend and host and which of these do they experience confusion at
  - What do they do with their food/beverage item as a result of experiencing confusion
  - How concerned are they by the health risks related to confusion
  - How concerned are they by the environmental impact related to confusion
  - Their likelihood of purchasing a product with the All-Scratch!® technology
  - Identify and quantify the demand drivers, competitive landscape, and consumer adoption trends for All-Scratch!® technology.
  - Demonstrate how All-Scratch!® technology can effectively reduce food waste by eliminating ownership confusion at social gatherings such as sports events, live music concerts, and homes, ultimately enhancing product value and market penetration for Plus Brand

This project was carried out in collaboration with BCC research and its sister company, Futuresource Consulting. The market analysis was carried out by BCC research and the consumer survey was carried out by Futuresource Consulting.

# Methodology

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## Consumer Methodology

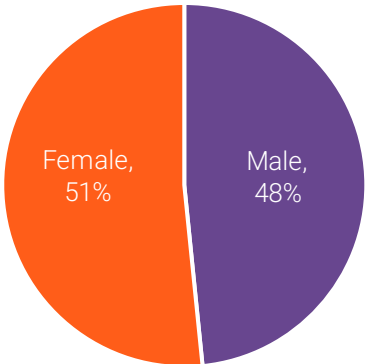
- Futuresource has interviewed 10,046 respondents. This was a nationally representative sample carried out in the US.
- Futuresource monitored key quota groups such as age, gender and income to ensure a representative spread.
- Fieldwork took place in April 2024, using an online survey approach.
- For more information regarding the methodology, interviewees or questionnaire used, please email [taran.sahota@futuresource-hq.com](mailto:taran.sahota@futuresource-hq.com)

## Market Analysis Methodology

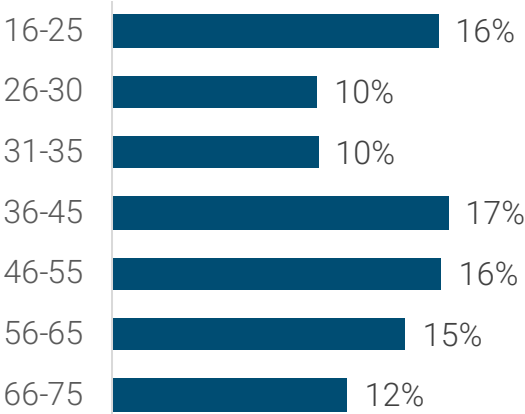
- BCC has collected and reviewed existing research papers, reports, and publications on global food waste.
- BCC has gathered data on food production, consumption, and waste from primary sources like government reports, industry publications, and databases such as FAO, UNEP, ReFED Inc., and others.
- Convert volume data to value using average market prices of various food categories.
- In the case of mass gathering event waste, we have identified food and beverage items consumed, leftover, and spilled. We also estimated the food and beverage packaging waste generated by each attendee.
- For more information regarding the market research methodology, please email [kunal.nagpure@bccresearch.com](mailto:kunal.nagpure@bccresearch.com)

# Consumer Survey - Nationally representative sample of US respondents

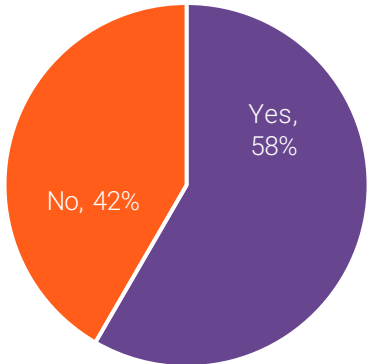
Gender  
(All respondents: N = 10046)



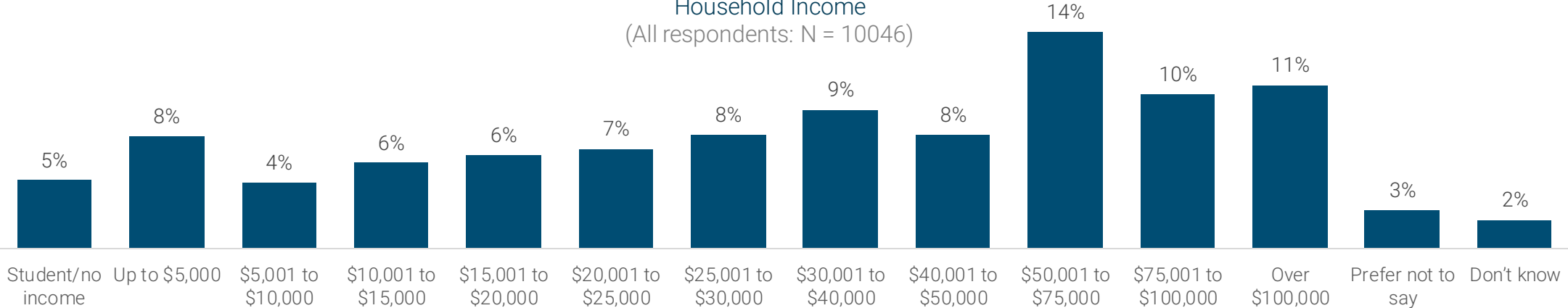
Age  
(All respondents: N = 10046)



Do you have children?  
(All respondents: N = 10046)



Household Income  
(All respondents: N = 10046)

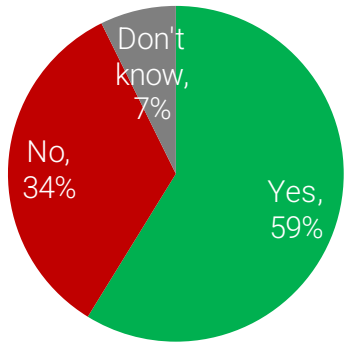


Q1: Please confirm your gender. Q2: How old are you?  
Q5c: Do you have children? Q5: What is your annual household income?

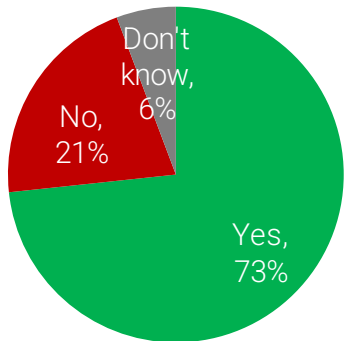
# The consumer data shows that confusion is a widespread issue, with nearly 3 in 5 across the US experiencing it. Of these, nearly three-quarters have experienced it in the last year

Those who have experienced it primarily report experiencing it with beverage containers, most commonly with drink cans, plastic cups and plastic bottles. Confusion is prevalent across a range of different events, with it being highest at informal social events and formal friends/family events.

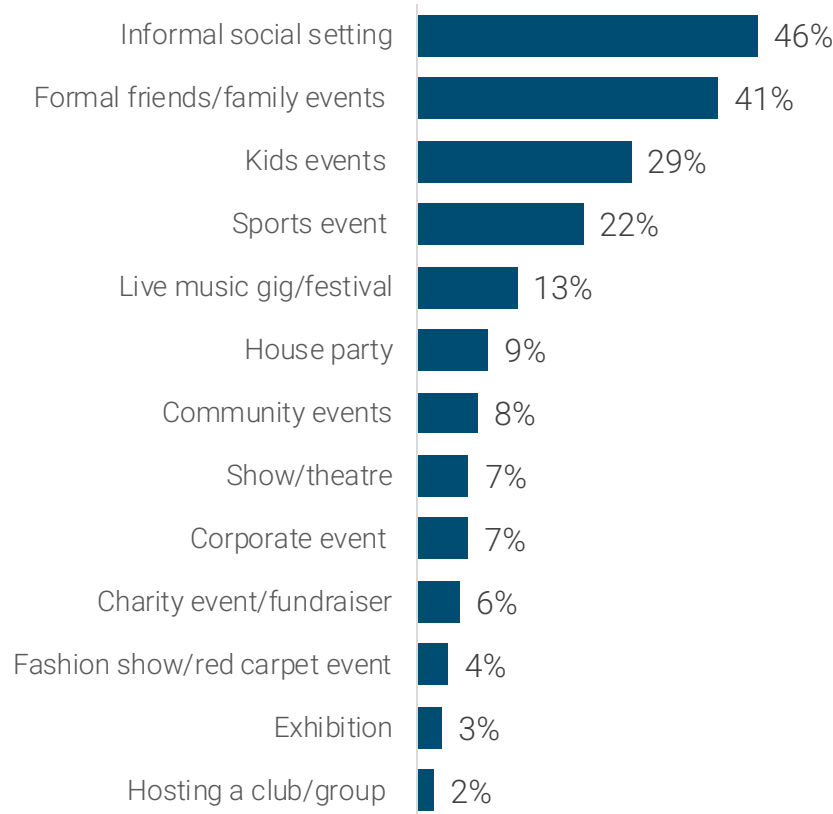
Have you ever experienced 'confusion' with pre-packaged food or beverage items?  
(All respondents: N = 10046)



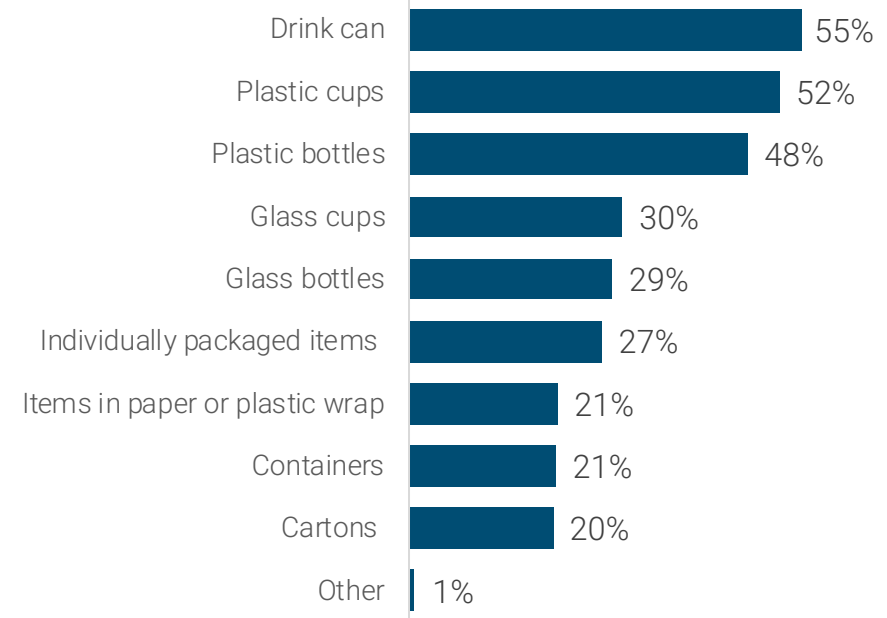
Have you experienced 'confusion' with food or beverages in the last 12 months?  
(Those who have experienced confusion: N = 5906)



At which types of event have you experienced 'confusion' in the last 12 months?  
(Those who have experienced confusion in last 12 months: N = 4109)



Which items have you experienced 'confusion' with in the last 12 months?  
(Those who have experienced confusion in last 12 months: N = 4330)



Q15: Have you ever experienced 'confusion' with pre-packaged food or beverage items? Q17a: Have you experienced 'confusion' with food or beverages in the last 12 months?  
Q17: Which of the following types of items have you experienced 'confusion' within the last 12 months?  
Q18: In the last 12 months, at which of the following types of event(s) have you experienced food or beverage confusion?

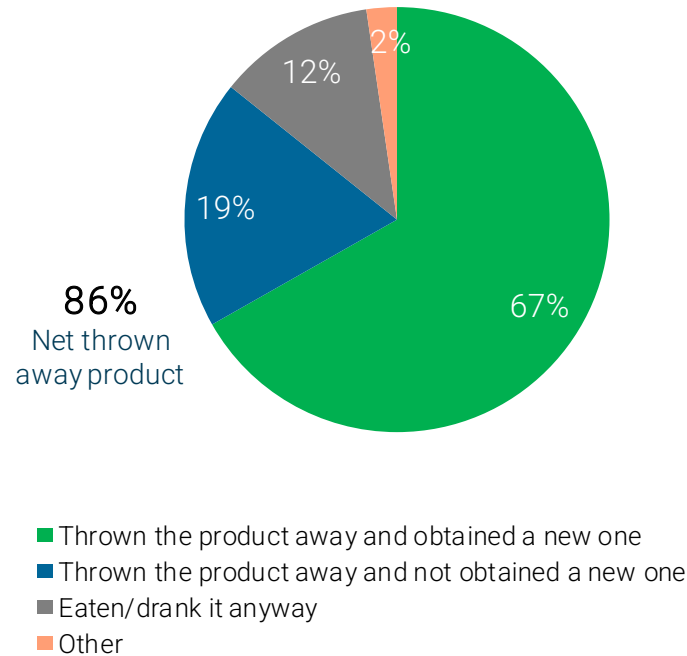


# Confusion has a clear impact on waste, as a majority of individuals (86%) reported throwing away their item as a direct result of confusion. When asked why, health concerns are generally cited as the main motivator

While concern around the environmental impact caused by additional waste from confusion is high, it is not as high as the health concerns. This suggests that when faced with the option of throwing away the product to avoid health risks or keeping the item to reduce waste, individuals are more likely to choose the former.

Thinking about a situation where you have experienced confusion with an opened beverage/food product, what have you usually done?

(Those who have experienced confusion in last 12 months: N = 4330)



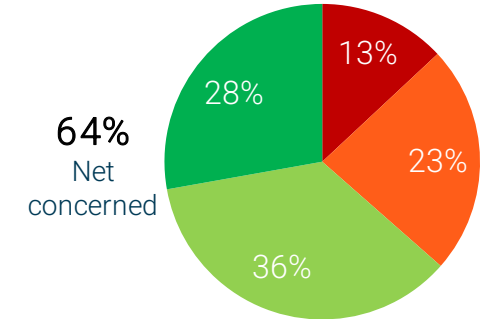
Why would you throw away the product rather than just eating/drinking it anyway?

(Those who would throw away product if they experienced confusion: N = 7989)



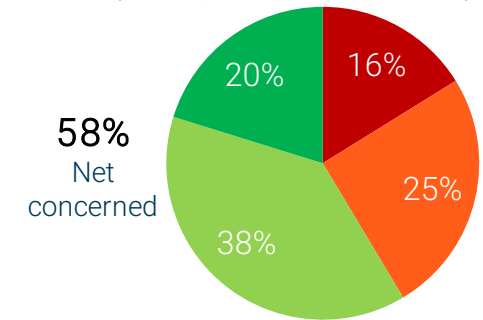
Concerned about the health risks (for example germs, viruses or bacteria) caused by 'confusion' of food/drink related products?

(All respondents: N = 10046)



Concerned about the environmental impact caused by the additional waste resulting from throwing away due to experiencing 'confusion'?

(All respondents: N = 10046)

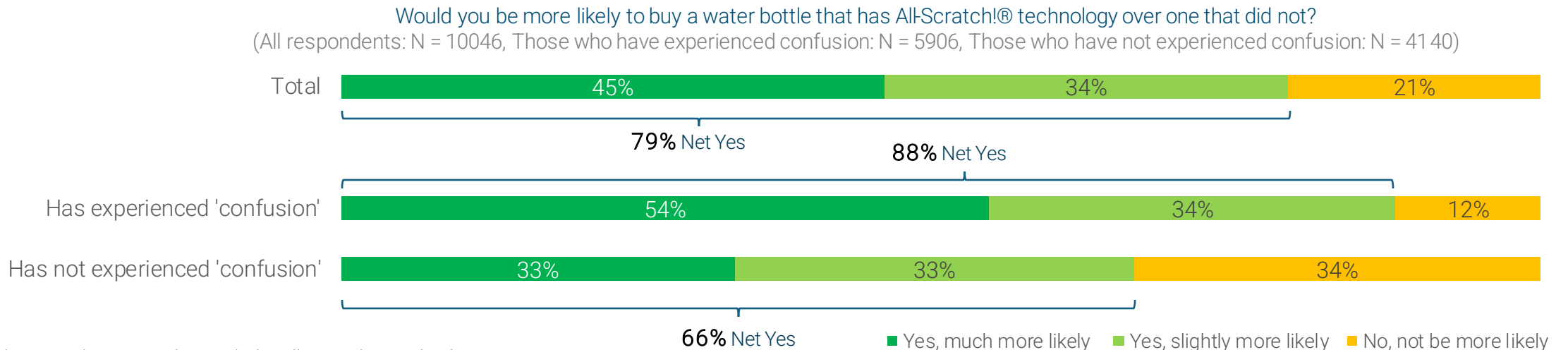
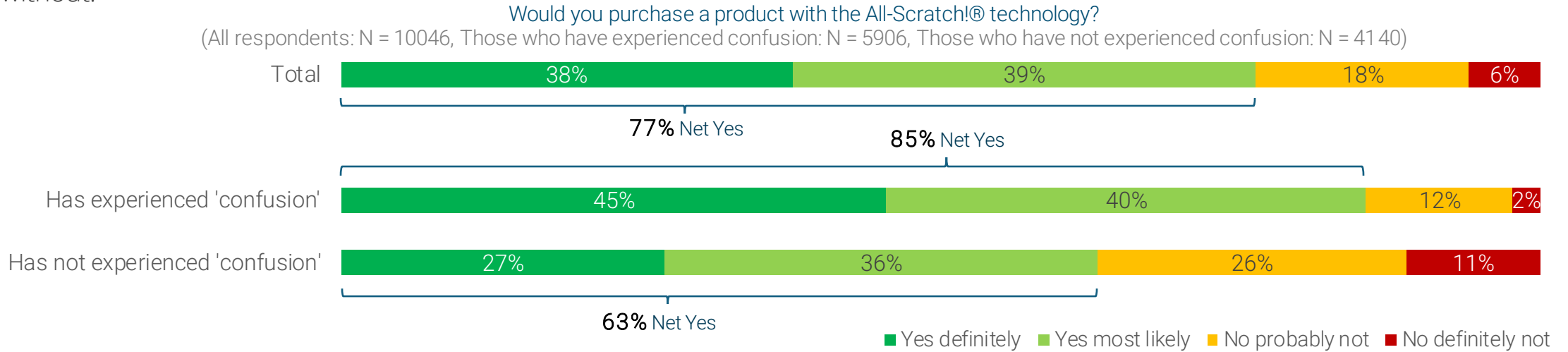


Q21: Thinking about a situation where you have experienced confusion with an opened beverage/food product, what have you usually done?  
 Q21b: Please explain why you would decide to throw away the product rather than just eating/drinking it anyway.  
 Q22: How concerned are you by the health risks (for example germs, viruses or bacteria) caused by 'confusion' of food/drink related products?  
 Q25: How concerned are you by the environmental impact caused by the additional waste resulting from throwing away due to experiencing 'confusion'?

■ 1 - Not at all concerned      ■ 2 - Fairly unconcerned  
 ■ 3 - Fairly concerned        ■ 4 - Very concerned

# The All-Scratch!® technology is extremely appealing, with nearly 4 in 5 saying they would be likely to purchase it. This shows that respondents can see the All-Scratch!® technology as a solution to the real-life problem they face

It's even higher among those who have reported experiencing the issue of confusion with their food and/or beverages (85%). Furthermore, nearly 9 in 10 respondents who have experienced confusion are more likely to purchase a water bottle with the All-Scratch!® technology vs. one without.



Q30: Would you purchase a product with the All-Scratch!® technology?

Q30c: If there was a water bottle that had the All-Scratch!® technology, would you be more likely to buy that bottle over one that did not?

Those who said the All-Scratch!® technology would alleviate their health concerns often felt it would help to prevent the spread of germs and diseases that may occur due to confusion

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Why would the All-Scratch!® technology alleviate health concerns?  
(Those who said it would alleviate health concerns: N = 4754)

*“My health is very poor so picking up germs is dangerous for me. All-Scratch!® is a very smart move - actually a life saver. Something as simple as this can save illness and lives.”*

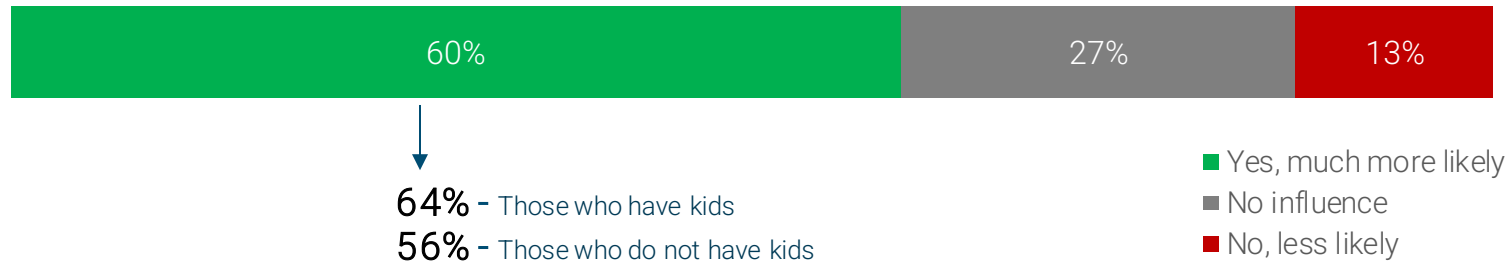
*“I love this idea and wish companies had thought of it before. If I were having a get-together, I would definitely purchase this product to ensure we are all kept safe from any disease that might be going around.”*



# In addition to the health benefits of the All-Scratch!® technology, it's also seen as a fun product with the personalisation element being very appealing

3 in 5 said the creative element of the All-Scratch!® technology makes them more likely to buy it, with this being stronger among those with children vs. those without. Two-thirds of parents said they believe their children would utilise the All-Scratch!® technology, with personalisation, fun and identification being key uses and motivators for children.

Does the ability to personalise your items using the All-Scratch!® technology make you more likely to buy it?  
(All respondents: N = 10046)



Would your children use the All-Scratch!® technology for its creative/fun purposes?  
(Respondents with children: N = 5863)



How do you think your kids would make use of the creative aspect of the All-Scratch!® technology?  
(Respondents with children who would use All-Scratch!® technology: N = 3877)

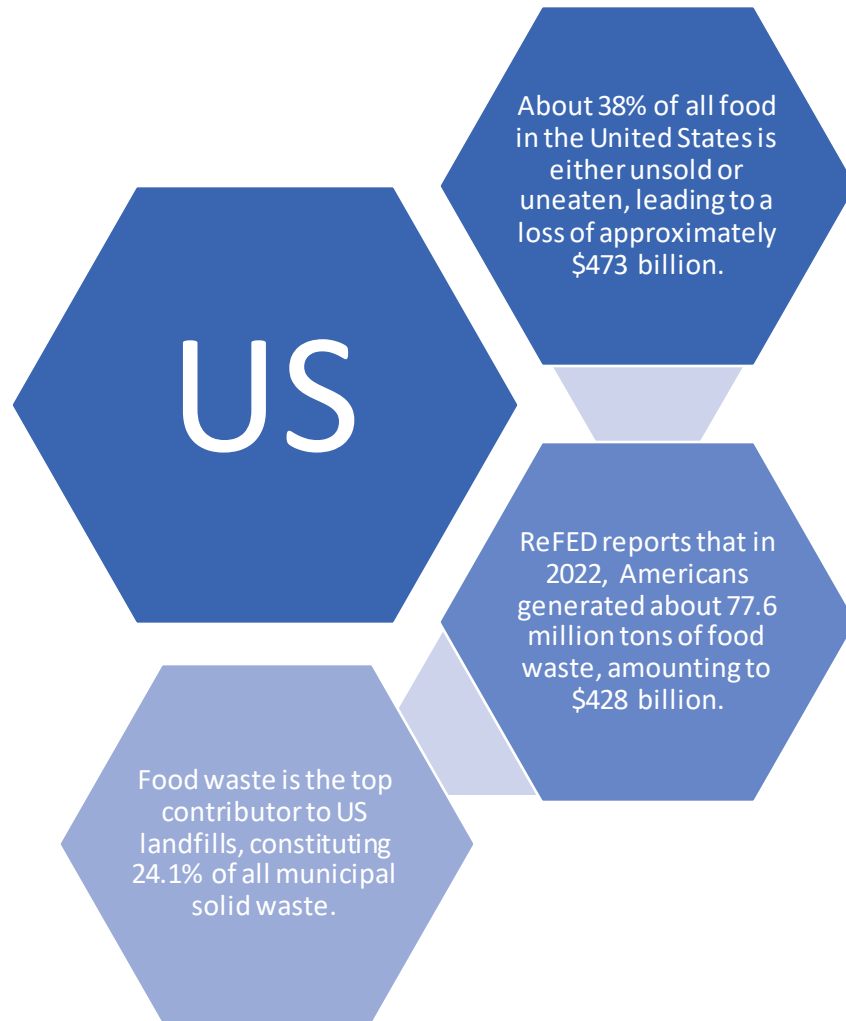


Q33: Does the ability to personalise your items using the All-Scratch!® technology make you more likely to buy it?

Q34: Would your children use the All-Scratch!® technology for its creative/fun purposes?

Q35: How do you think your kids would make use of the creative aspect of the All-Scratch!® technology?

# US Food Waste Analysis



Source:- BCC Research and ReFED, Inc.

## Food Wastage in US



Each year, American businesses, consumers, and farms spend \$218 billion on activities related to food that ultimately goes uneaten.

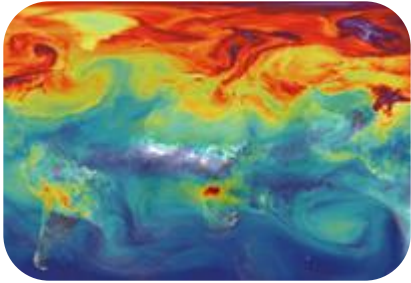


This \$218 billion expenditure amounts to 1.3% of the United States' total Gross Domestic Product (GDP) on growing, processing, and disposing of food that is never consumed.



Food waste results in an annual loss of \$74 billion for American businesses

# Environmental Impact of US Food Waste



6.1% of U.S. GHG Emission



16% of U.S. Cropland Use



22% of all Fresh Water Use



24% of Landfill Inputs

- ❖ According to the EPA, U.S. food loss and waste generate 170 million metric tons of CO<sub>2</sub> equivalent GHG emissions, which is similar to the yearly CO<sub>2</sub> emissions of 42 coal-fired power plants.
- ❖ Food waste contributes to methane emissions. When food decomposes in landfills, it releases methane gas, which is 28 to 36 times more potent than CO<sub>2</sub> in terms of its greenhouse gas effect.
- ❖ Despite having sufficient resources, the U.S. has around 38 million people, including 12 million children, who are food insecure due to the wastage of 108 billion pounds of food.

Source:- BCC Research and ReFED, Inc.

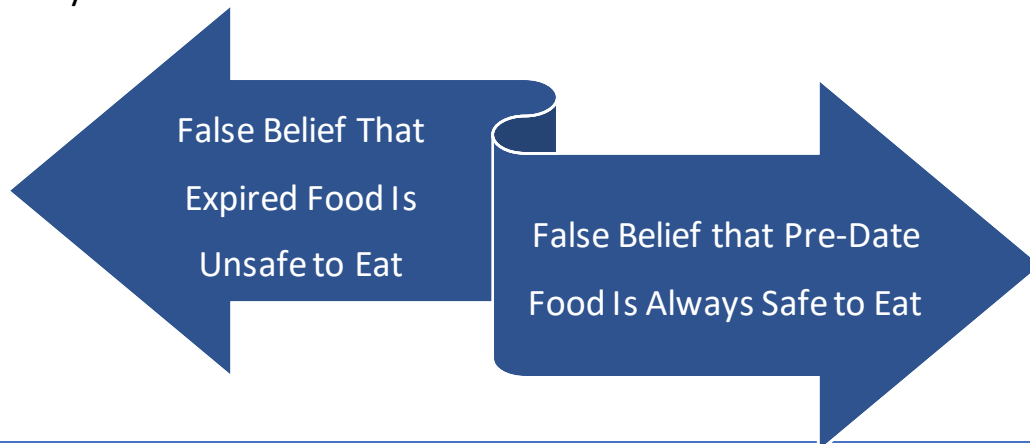
# US Food & Beverage Waste Due To Confusion

## Food & Beverage Wastage Due to Confusion

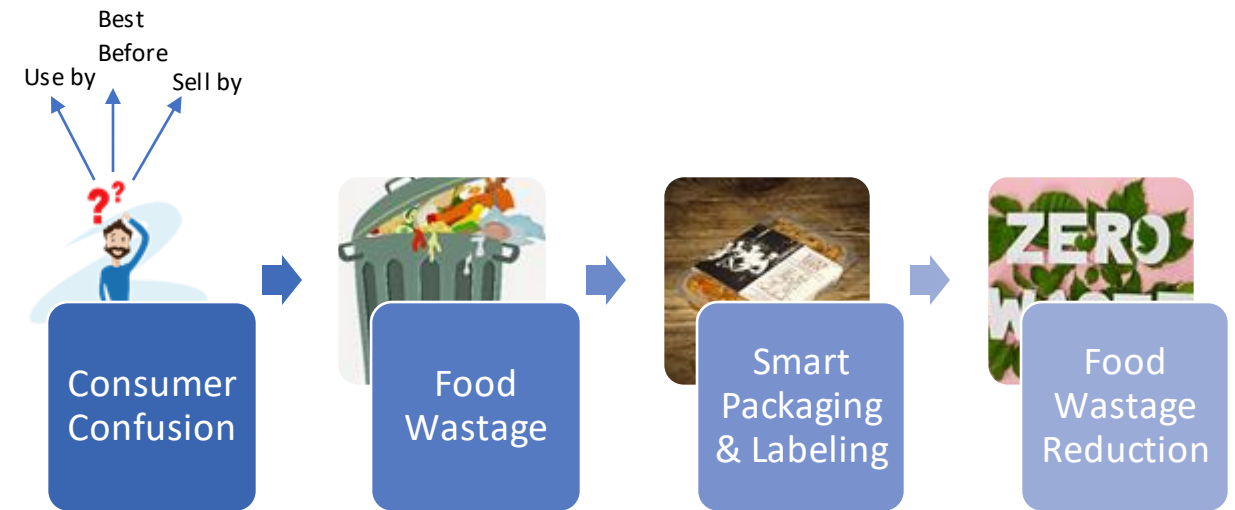
Confusion, inconsistent, and unclear date labels significantly contribute to food & beverage waste in the US. Consumers discard food & beverage items prematurely as they are unfamiliar with labels indicating "use-by," "best before," and "sell-by" dates

Approximately 90% of consumers discard perfectly good items like dairy, eggs, and grains due to safety concerns, even though these can remain fresh beyond their expiration dates.

Misinterpreted labels contribute to 20% of consumer waste, amounting to a significant \$29 billion in the US. Due to confusion over date labels, the average household throws away \$275 to 455 worth of good food each year.



## How to Avoid Food & Beverage Wastage Caused by Confusion





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