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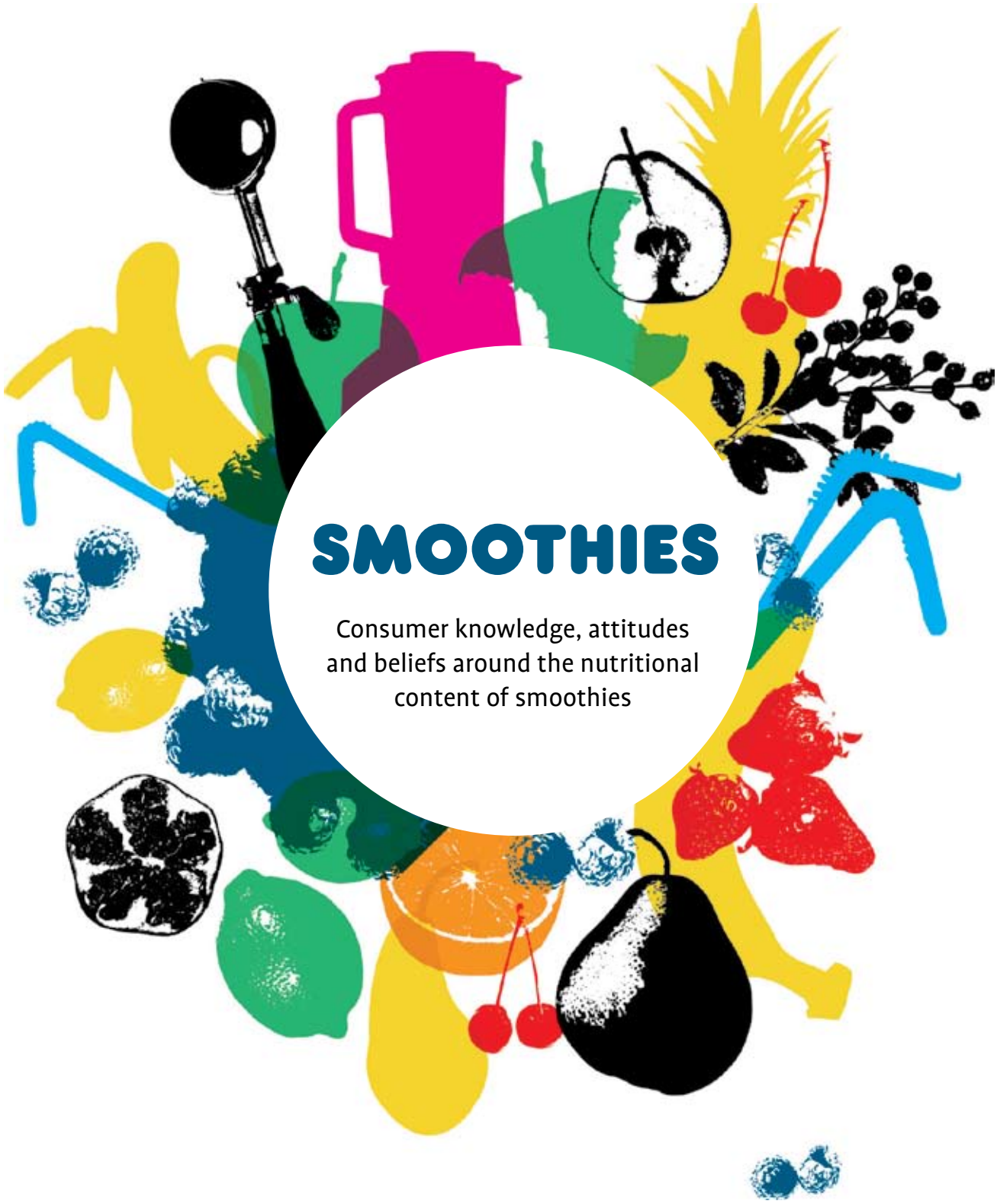

SMOOTHIES

Consumer knowledge, attitudes and beliefs around the nutritional content of smoothies

safefood research

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Background

One of the most visible public health nutrition messages is the promotion of 'fruit and vegetable' consumption. The World Health Organisation (2003) found conclusive evidence that a diet rich in fruits and vegetables is beneficial for health. Current dietary guidelines promote the consumption of five or more portions of fruit and vegetables per day. However surveys of dietary intake highlight that current population intakes fall short of this recommendation. ***safefood*** (2007) highlighted a number of perceived barriers to fruit and vegetable consumption including access, preparation and cost.

Smoothies are an increasingly popular way of consuming fruits. In 2006 the smoothie market in the Republic of Ireland (ROI) was worth an estimated €4 (£3) million and between 2002 and 2006, the market grew by 214% (AC Nielson in Amarach Consulting 2007). The smoothie market was estimated to be worth £282 (€354) million in the UK in 2008 (Mintel, 2008).

> *'Smoothies are an increasingly popular way of consuming fruit – but guidelines advise that they contain one portion of fruit.'*

Smoothies are blended drinks consisting of a number of ingredients including fruit (or less commonly vegetables), fruit juice, ice, yoghurt and milk. There are three main types of smoothies: fruit only, fruit and dairy, and functional. Functional smoothies, such as those that contain probiotics, have appeared only very recently on the market. Smoothies are commonly sold as a drink, snack or meal alternative and are available either ready-made or made-to-order.

Smoothies have a 'healthy image' which may or may not be justified. They provide a convenient way of consuming fruit and, where yoghurt and milk are included, contribute to dairy intake. The Health Promotion Agency in Northern Ireland (NI) and the Department of Health and Children in ROI currently advise that smoothies contain one portion of fruit. Concern exists that many commercially available smoothies are high in calories and added sugars. Some smoothies are made with syrup-based fruit concentrate rather than fruit which results in a product higher in sugar and lower in vitamins, particularly vitamin C. In addition, many have sugar added in the form of sucrose, syrup and honey. A warning about the potential harm to teeth associated with the frequent consumption of fruit smoothies due to their sugar and acid content was issued by the British Dental Health Foundation in 2008 (Smith 2008).

To make informed choices it is important that consumers of smoothie products are aware of the varied nutritional composition of smoothies.

Amarach Consulting (2007) conducted research into some aspects of smoothie consumption in ROI. However, there is little available information on consumers' knowledge, attitudes, beliefs and behaviours around smoothies on an all-island basis.

The aim of this research was to investigate consumer knowledge, attitudes and beliefs around the nutritional content of smoothies upon which to base ***safe*food** communication about smoothies.

> *'To make informed choices it is important that consumers of smoothie products are aware of the varied nutritional composition of smoothies.'*

Methodology

The study was conducted by Millward Brown IMS (MBIMS) on behalf of ***safe*food**.

An 11-item questionnaire was developed by both parties and included on the MBIMS and the Millward Brown Ulster (MBU) Omnibus Surveys. An Omnibus survey is a face-to-face, in-home survey asked of a representative sample of adults aged 15+ years living in ROI and 16+ living in NI. The sample was quota controlled in terms of gender, age, social class and region, to reflect the actual demographics of the adult population.

Fieldwork was conducted in ROI from 12 to 27 June and in NI from 20 to 27 June 2008. In total 1,002 participants in ROI and 1,011 participants in NI participated in the survey.

Findings

The following provides a brief overview of the research findings. Differences between NI and ROI are only highlighted where differences were found.

Smoothie Consumption

The key findings relating to smoothie consumption were:

- One third of participants drank smoothies
- *Smoothie drinkers* were generally more likely to be students, those aged under 35, single, female and from the ABC1 social class.

Reasons for drinking smoothies

Amongst those who drank smoothies the main reasons for doing so were 'like the taste' and 'health reasons'. See Table 1 for further information.

Table 1: Reasons for consuming smoothies

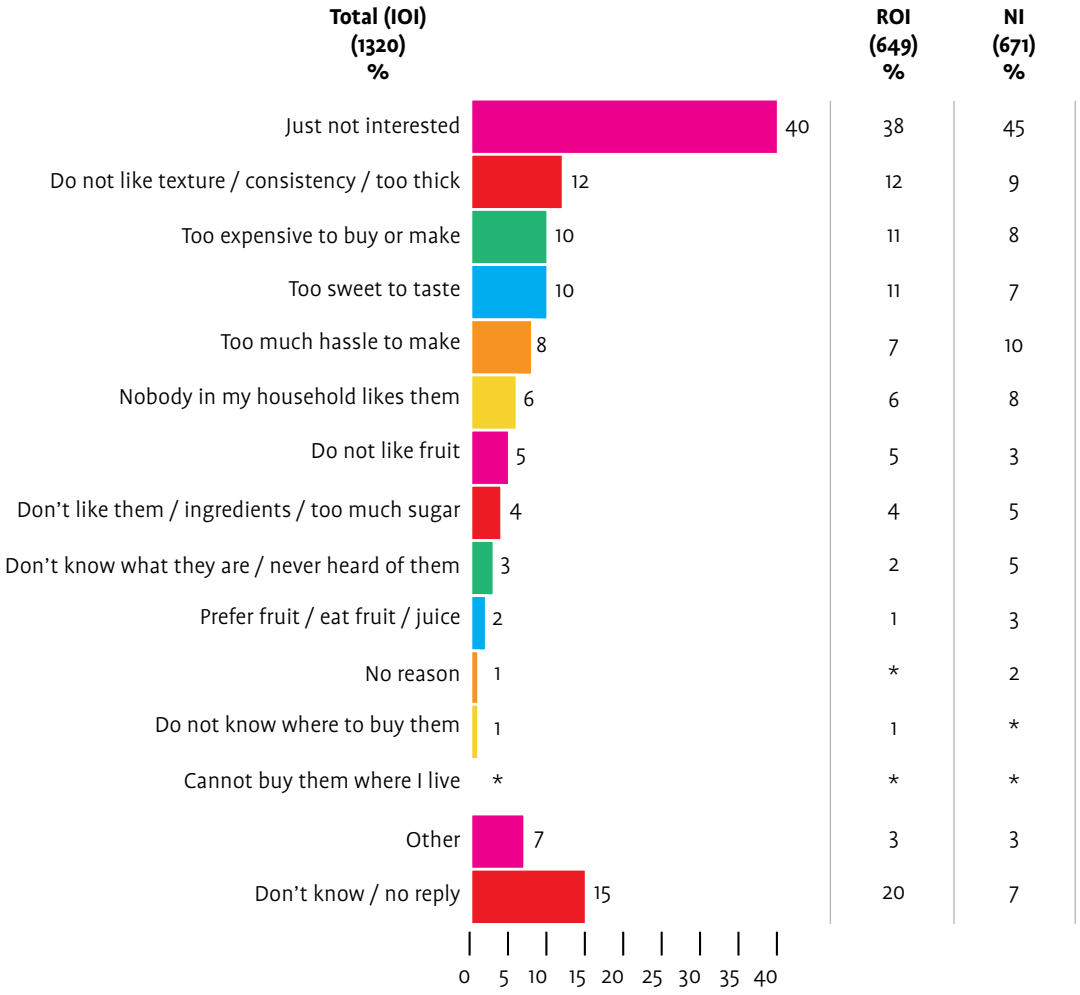
	IOI (n=688)		ROI (n=349)		NI (n=339)	
	Spontaneous	Total	Spontaneous	Total	Spontaneous	Total
Like the taste	43	67	41	65	48	73
Health reasons	36	56	36	52	38	66
To increase fruit intake	13	43	13	43	12	42
Natural ingredients	13	34	16	38	6	24
Instead of a soft drink	11	32	14	35	4	22
Convenient, can eat on the go	10	29	12	33	5	16
Snack	6	22	7	26	3	12
Meal replacement/very filling	7	20	9	24	3	9
Good value	9	14	13	17	2	7
To lose weight	2	11	2	12	1	5
To increase dairy intake	1	7	2	8	0	4
Other	5	5	3	3	9	10

Note: Total=spontaneous and prompted responses combined

Reasons for not drinking smoothies

Participants who reported that they did not drink smoothies (n=1320) cited a number of reasons, predominantly 'just not interested'. These are outlined in Figure 1.

Fig 1: Reasons for not drinking smoothies



* *Negligible*

In ROI, those who cited disinterest in smoothies were more likely to be males (41%), aged over 65 (47%) and widowed/divorced/separated (45%). This was similar in NI as those who cited disinterest were more likely to be males (50%), aged between 55 and 64 years (55%) and aged over 65 (57%).

Frequency of smoothie consumption

The majority of participants (n=688) drank smoothies two to five times a week (31%) or once a week (23%). Others consumed smoothies once a day or more (12%), a couple of times a month (17%), once a month (9%) and less often (7%). The frequency of smoothie consumption appeared greater in ROI than NI. 13% of participants in ROI drank smoothies once a day or more compared with 9% in NI.

Types of smoothies purchased

Participants purchased smoothies made-to-order from smoothie/juice bars or café/restaurants (58%), ready-to-drink pre-packaged smoothies (47%), and made their own (43%).

When asked which location they most often purchased smoothies from, there was no difference in terms of the location amongst all smoothie drinkers, with all three options being given equal preference.

ROI consumers bought their smoothies most often made-to-order (37% ROI, 19% NI), while NI consumers bought their smoothies most often ready to drink (43% NI, 26% ROI). NI *smoothie consumers* were more likely to make their own smoothies (34% NI, 26% ROI).

Quantities of smoothies normally consumed

Participants cited the following as being the most frequent quantity of smoothie consumed per drinking occasion:

- regular glass – 200ml (34%)
- small bottle/container – 250ml (30%)
- dome container – 400ml+ (28%)
- other (2%)
- none of these (5%).

NI *smoothie drinkers* were more likely to consume regular glass (39% v 32%) and small bottle/container (33% v 28%), while ROI *smoothie drinkers* were more likely to consume dome container sized portions (31% v 21%) perhaps reflective of the fact that consumers in ROI were more likely to buy from smoothie bars.

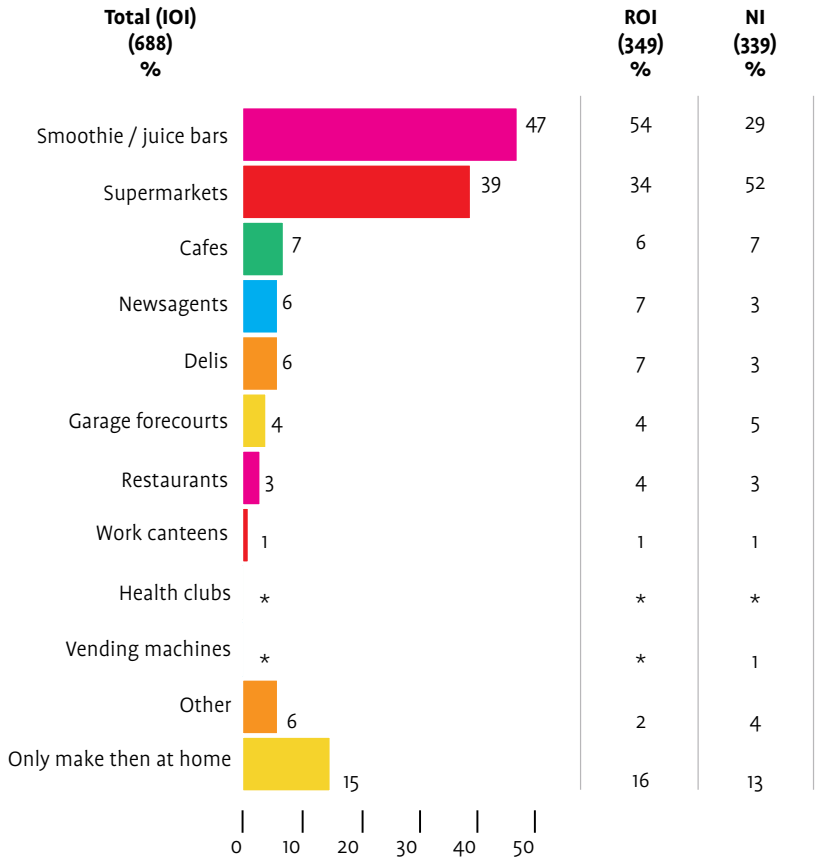
Smoothie purchasing locations

Smoothies were purchased more often than not from smoothie/juice bars (47%) and supermarkets (39%). 15% stated that they only made smoothies at home. NI participants were much more likely to cite supermarkets (52% v 34%) than their ROI counterparts. On the other hand, ROI participants were more likely to cite smoothie/ juice bars (54% v 29%).

A break down of smoothie purchasing locations is shown in Figure 2.

Fig 2: Smoothie purchasing locations

Base: Those who drink smoothies (688)



** Negligible*

Those in NI who stated that they only made them at home were more likely to be aged 35 to 44 years (18%) and from the C1 social class (19%). ROI participants who stated that they only made smoothies at home were more likely to be aged over 35 years (27%) and married/living as married (25%).

In ROI those who purchased from smoothie/juice bars were more likely to be under 35 years (66%), single (63%) and students (65%). In NI, they were more likely to be male (35%), less than 35 years (38%), single (38%) and have dependent children (35%). Those in NI who purchased from supermarkets were more likely to be female (57%) and from C2DE social classes (61%).

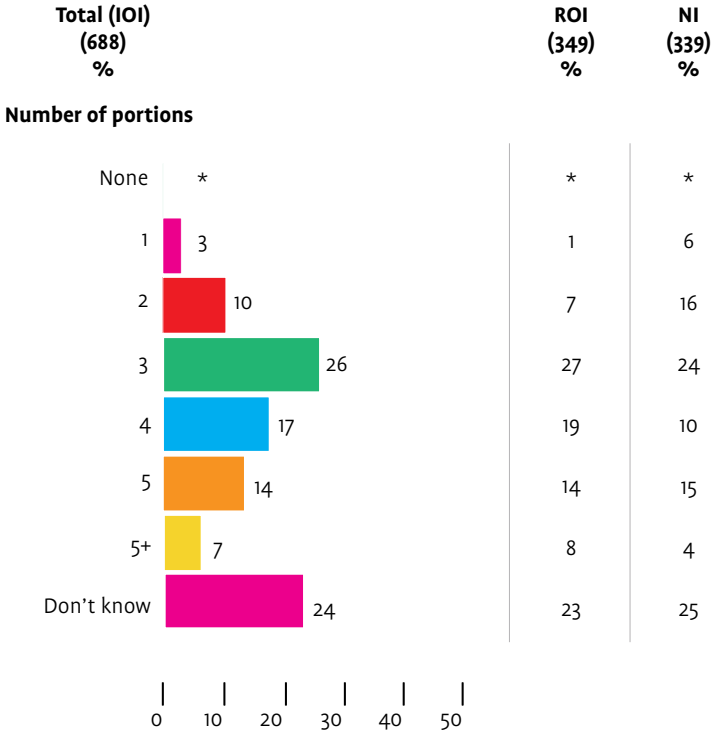
Understanding of nutritional value and ingredients

Contribution of smoothies towards 5-a-day fruit and vegetable requirements

Participants (*smoothie drinkers*, n=688) were generally of the opinion that smoothies (dome container, 400ml+) contributed more towards 5-a-day recommendations than they actually do. Only 3% correctly identified that smoothies contribute towards only **one** daily portion of fruit and vegetables. ROI smoothie drinkers were more likely to overestimate smoothie contribution towards 5-a-day recommendations compared to their NI counterparts. See Figure 3 for further information.

Fig 3: Responses to the question 'Can you tell me how many portions, if any, of your recommended intake of fruit are typically contained in smoothie "C" on this card?'

Base: Those who drink smoothies (688)



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Contribution of smoothies towards 3-a-day milk and dairy requirements

It is important to remember that some smoothies contain dairy in the form of yoghurt, while others do not.

8% of *smoothie drinkers* stated that smoothies contributed to zero portions of dairy, 24% stated one, 13% stated two, 10% stated three, 7% stated four, 3% stated five, 2% stated over five portions, while 34% stated that they did not know.

ROI *smoothie drinkers* were more likely than their NI counterparts to overestimate the contribution of smoothies to milk and dairy intake recommendations.

Ingredients used to make smoothies

Fresh fruit, yoghurt, fruit juice, frozen fruit, milk and ice were the most frequently cited typical ingredients used to make smoothies (Table 2).

Table 2: Responses to 'ingredients used to make smoothies'

	IOI (n=688)	
	Spontaneous	Total
Fresh fruit	84	90
Yoghurt	34	67
Fruit juice	28	53
Frozen fruit	20	44
Ice	17	44
Milk	16	41
Fruit juice-unsweetened	5	23
Honey	5	21
Fruit juice – sweetened	4	17
Added vitamins	3	15
Fruit puree	3	12
Added sugars	2	10
Fruit syrup	2	10
Artificial flavourings	1	7
Preservatives	1	7
Added colours	0	6
Starch	0	2
Don't know	2	2
Other	2	3

Note: Total=spontaneous and prompted responses combined

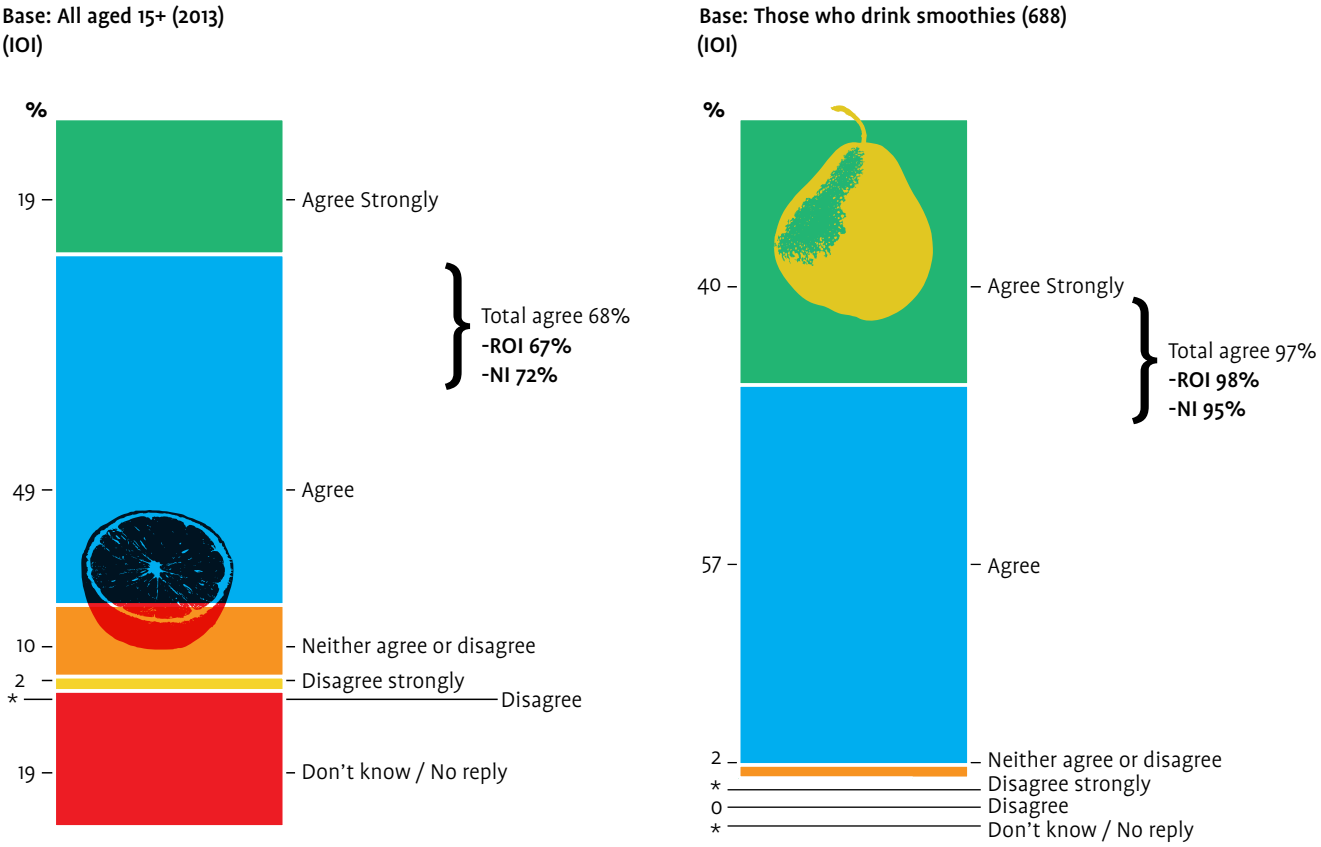
Perceptions about smoothies

In general *smoothie drinkers* were more decisive in their opinions than the overall population sampled with fewer of them citing don't know/giving no reply.

Smoothies are a healthy drink

The majority (68%) of *all participants* (n=2013) either agreed or agreed strongly that smoothies are a healthy drink, compared to 97% of *smoothie drinkers* (n=688). See Figure 4 for further information.

Fig 4: Perceptions about smoothies – Smoothies are a healthy drink

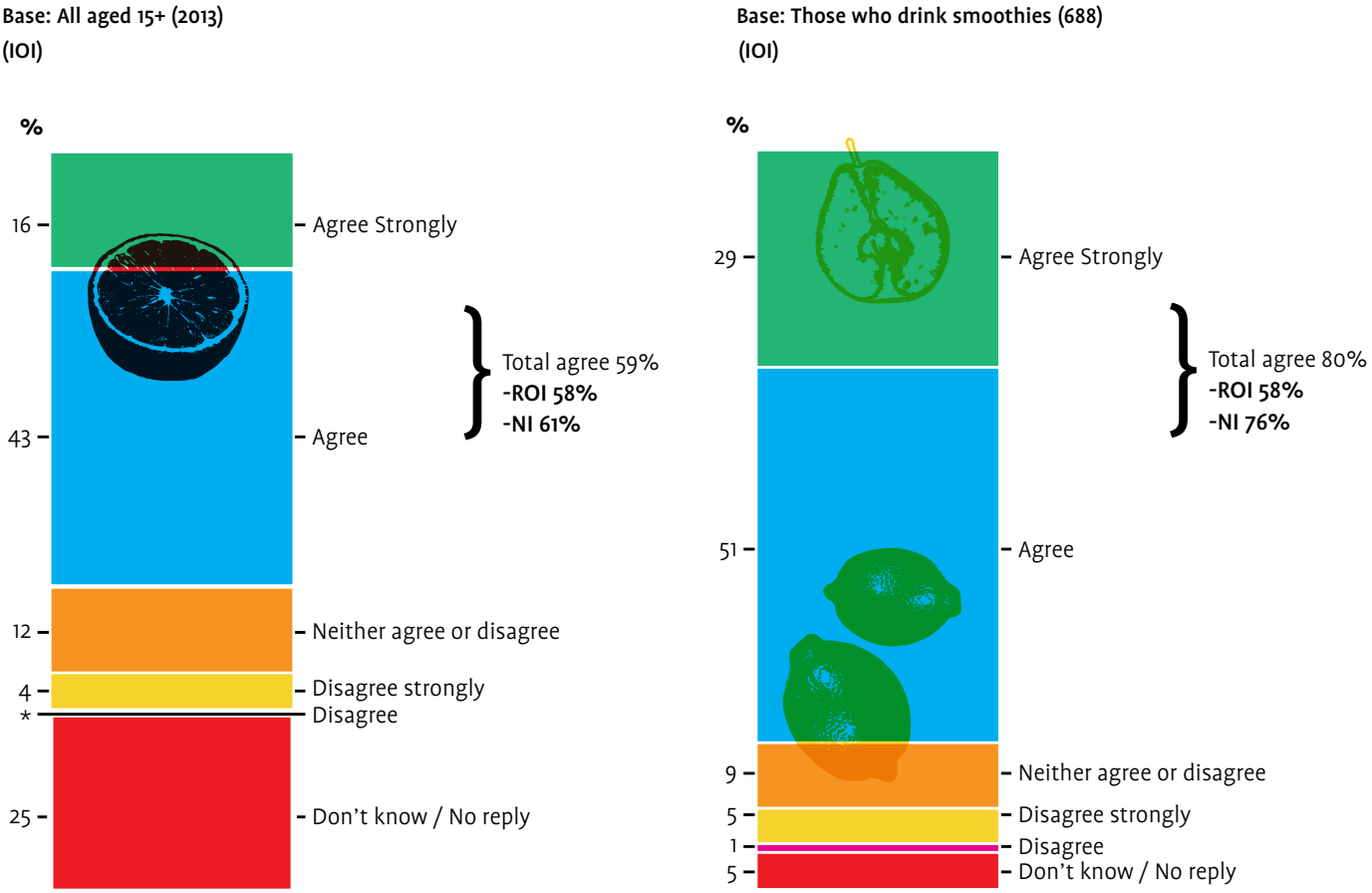


* *Negligible*

Smoothies are high in natural sugar

The majority (59%) of *all participants* (n=2013) either agreed or agreed strongly that smoothies are high in natural sugars, compared with 80% of *smoothie drinkers* (n=688). See Figure 5 for details.

Fig 5: Perceptions about smoothies – Smoothies are high in natural sugar



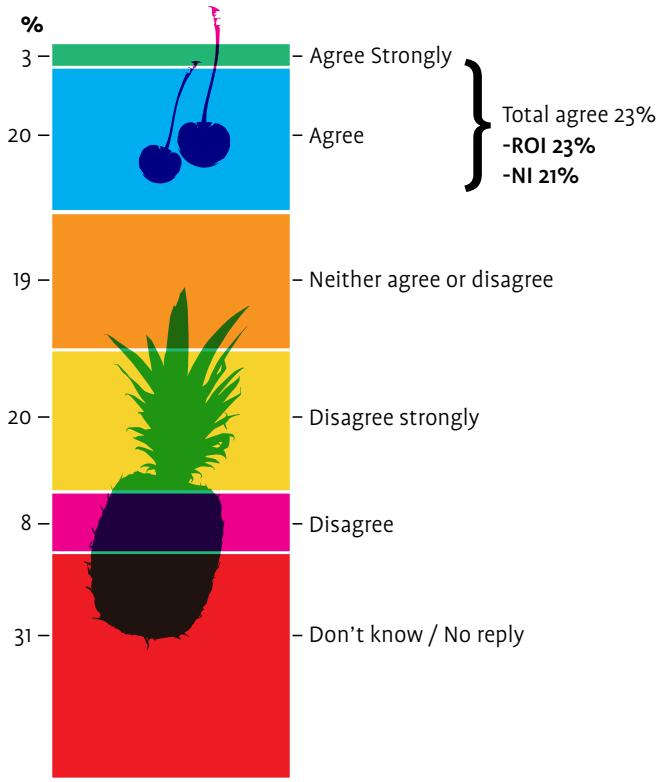
Smoothies are high in added sugar

There was a divide among participants in terms of the high added sugar content of smoothies.

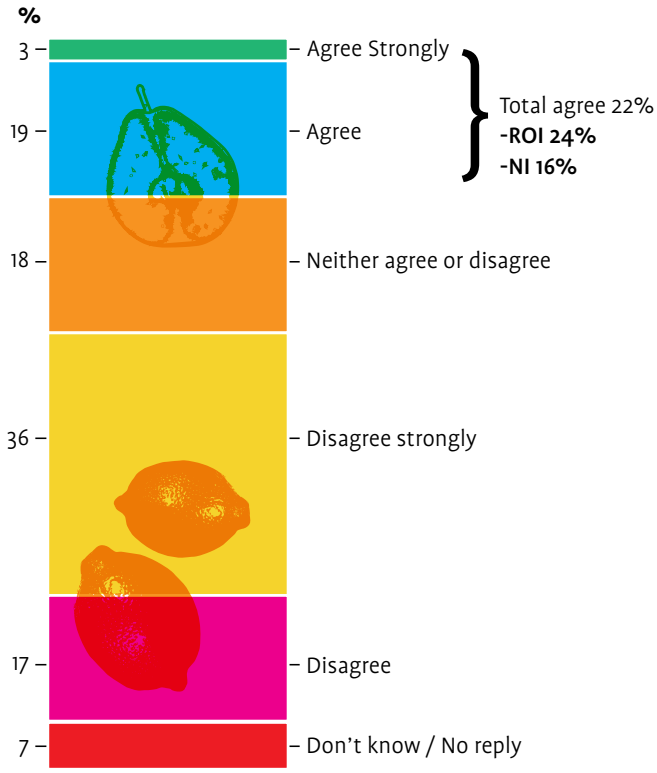
23% of *all participants* (n=2013) either agreed or agreed strongly that smoothies are a high in added sugar, on par with 22% of *smoothie drinkers* (n=688). See Figure 6 for further details.

Fig 6: Perceptions about smoothies – Smoothies are high in added sugar

Base: All aged 15+ (2013)
(IOI)



Base: Those who drink smoothies (688)
(IOI)

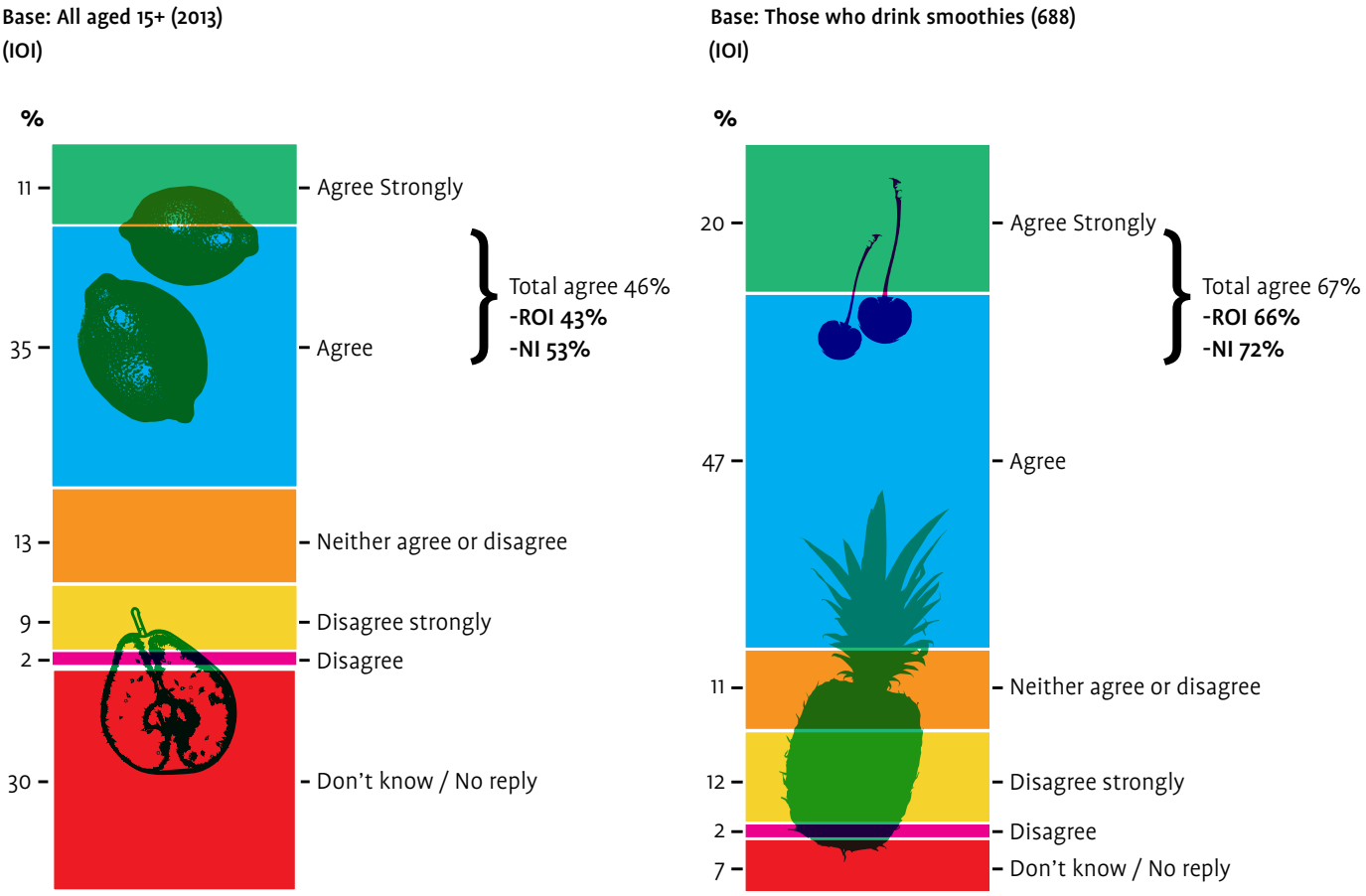


Smoothies bought in smoothie/juice bars are always made with fresh fruit

Almost half of *all participants* (n=2013) either agreed or agreed strongly that smoothies bought in smoothie/juice bars are always made with fresh fruit. NI participants were more in agreement with this statement (53 v 43%).

Over two thirds (67%) of *smoothie drinkers* (n=688) either agreed or agreed strongly with this statement. See Figure 7 for further information.

Fig 7: Perceptions about smoothies – Smoothies bought in smoothie/juice bars are always made with fresh fruit

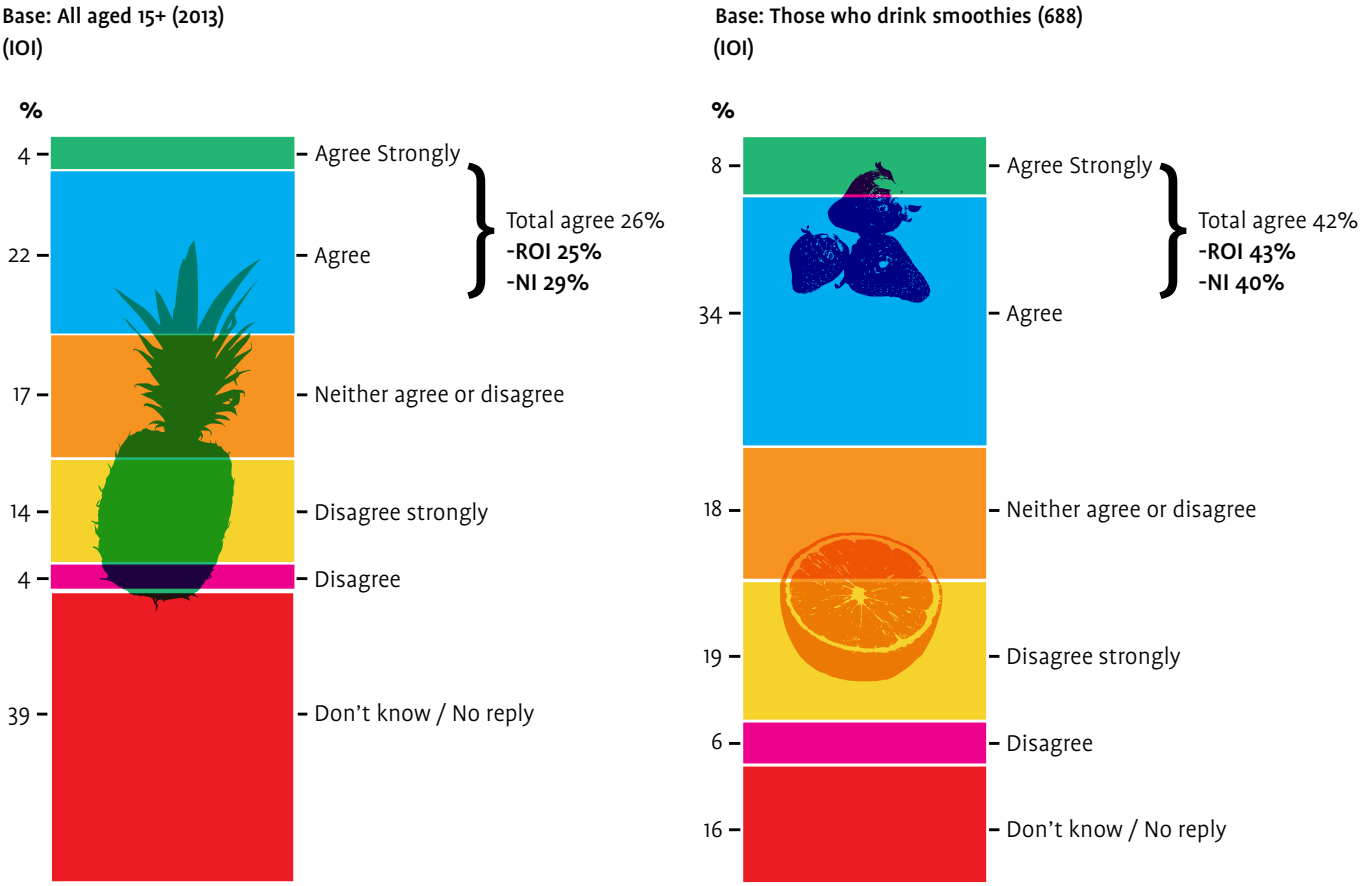


'Almost half of all participants (n=2013) either agreed or agreed strongly that smoothies bought in smoothie/juice bars are always made with fresh fruit.'

Pre-packed smoothies are always made with fresh fruit

One quarter of *all participants* (n=2013) either agreed or agreed strongly that pre-packed smoothies are always made with fresh fruit compared with 42% of *smoothie drinkers* (n=688). See Figure 8 for details.

Fig 8: Perceptions about smoothies – Pre-packed smoothies (i.e. bottles or cartons) are always made with fresh fruit



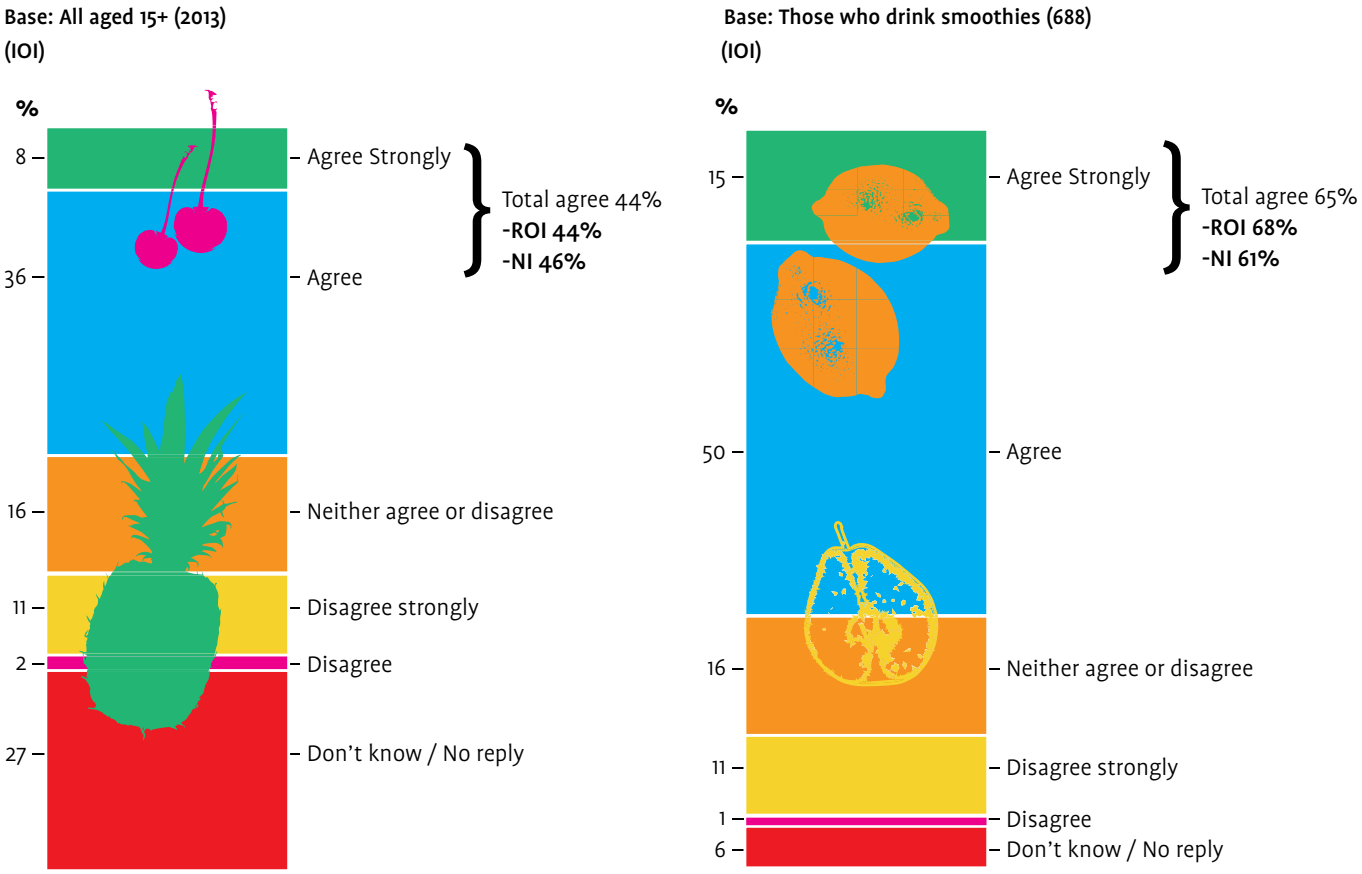
'One quarter of all participants (n=2013) either agreed or agreed strongly that pre-packed smoothies are always made with fresh fruit.'

Smoothies are low in calories

44% of *all participants* (n=2013) either agreed or agreed strongly that smoothies are low in calories.

The majority (65%) of *smoothie drinkers* (n=688) either agreed or agreed strongly with this statement. See Figure 9 for further information.

Fig 9: Perceptions about smoothies – Smoothies are low in calories



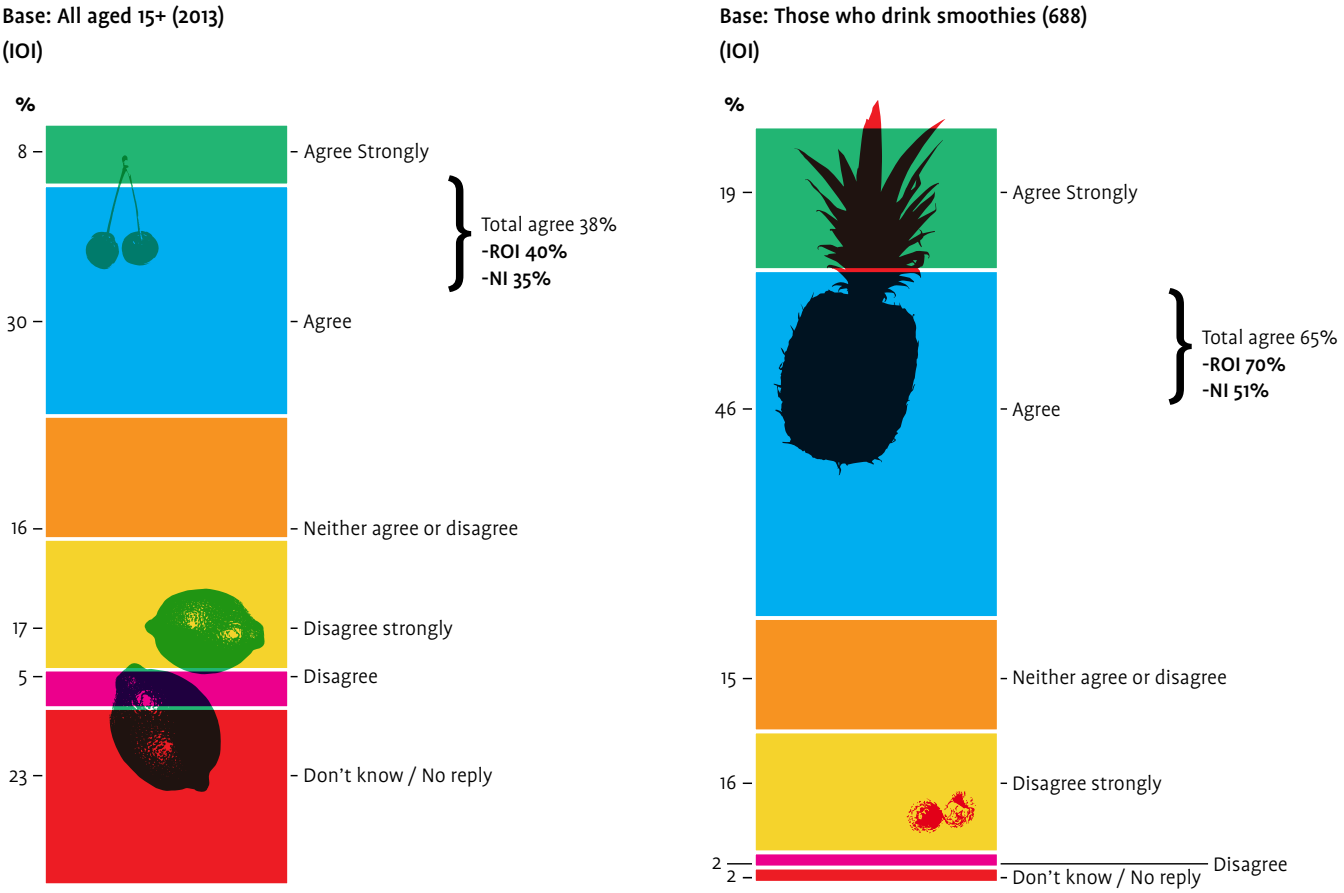
Smoothies are a great alternative for breakfast/lunch

38% of *all participants* (n=2013) either agreed or agreed strongly that smoothies are a great alternative for breakfast/lunch.

The majority of *smoothie drinkers* (n=688) (65%) either agreed or agreed strongly with this statement.

ROI *smoothie consumers* were more in agreement with this statement (70 v 51%). See Figure 10 for further information.

Fig 10: Perceptions about smoothies – Smoothies are a great alternative for breakfast/lunch



'Many people felt that smoothies were a great alternative for breakfast or lunch.'

Drinking smoothies can be bad for my teeth

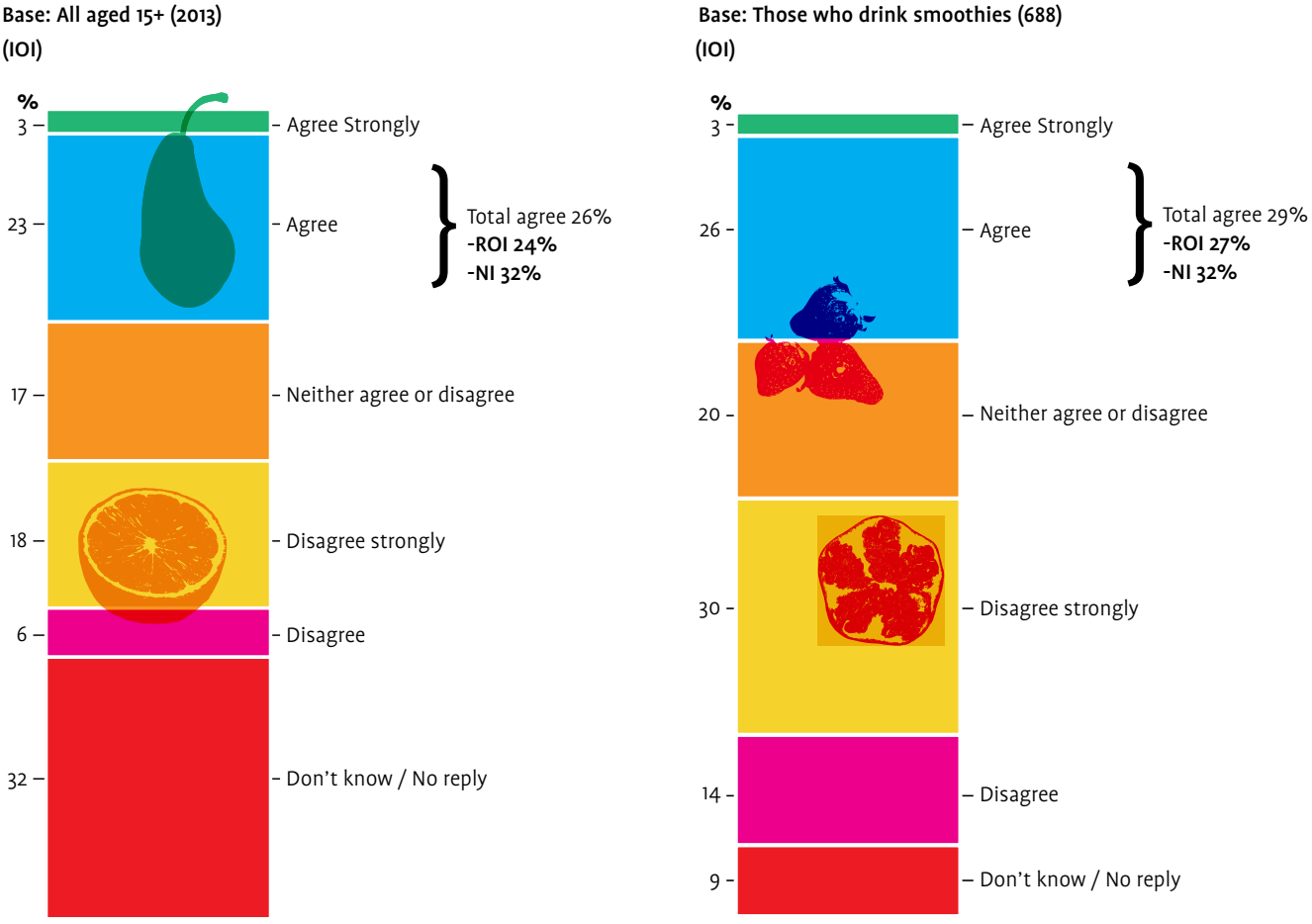
There was a divide among participants in terms of the effects of smoothie consumption on dental health.

26% of *all participants* (n=2013) either agreed or agreed strongly that 'smoothies can be bad for my teeth' while 24% disagreed or disagreed strongly with this statement.

The majority of *smoothie drinkers* (n=688) (44%) either disagreed or disagreed strongly with this statement. 29% either agreed or agreed strongly.

NI participants were more aware of the impact of smoothie consumption on dental health than their ROI counterparts. See Figure 11 for further information.

Fig 11: Perceptions about smoothies – Smoothies can be bad for your teeth



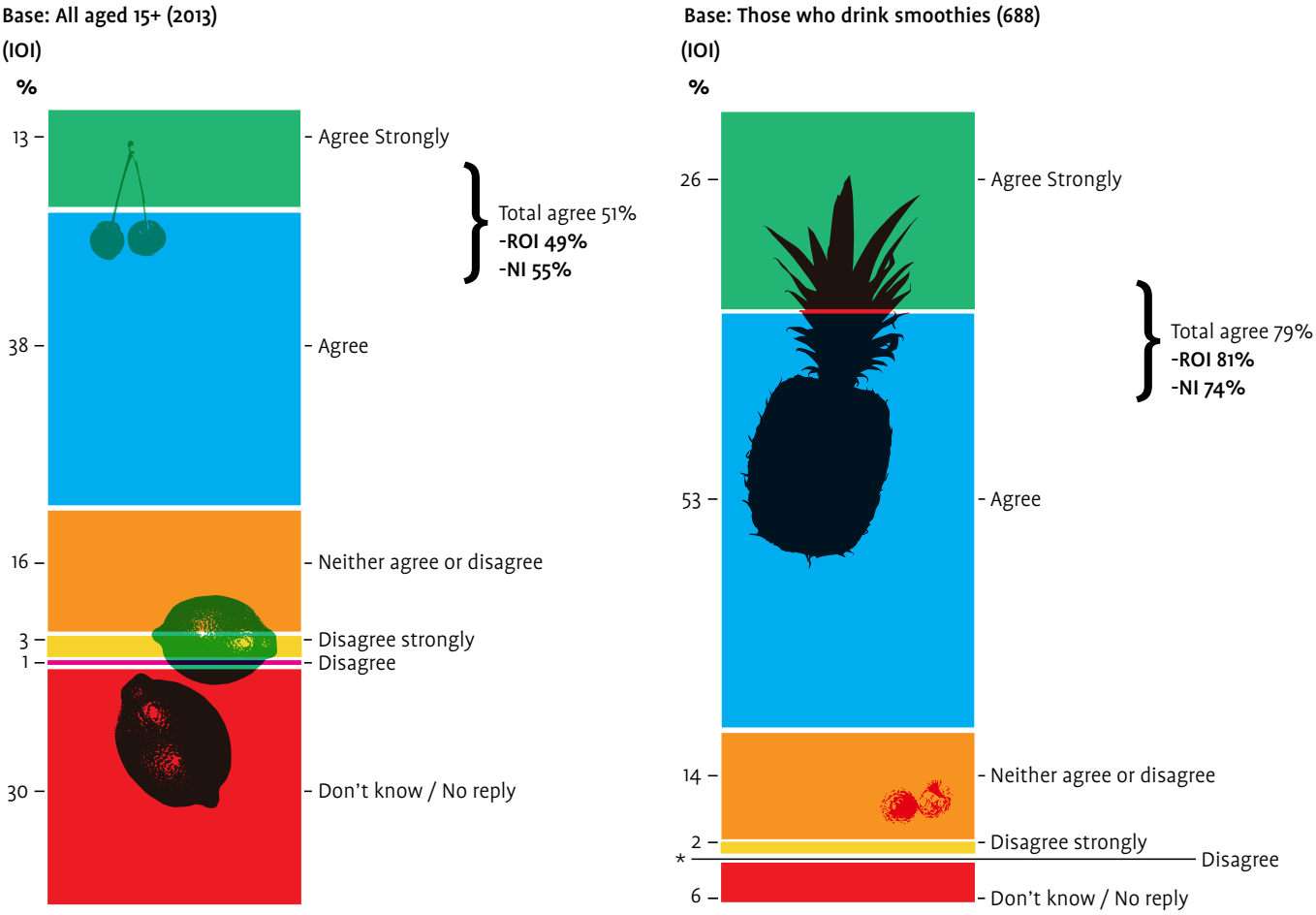
Some smoothies are healthier than others

Half of *all participants* (n=2013) either agreed or agreed strongly that some smoothies are healthier than others.

NI participants were more in agreement with this statement (55 v 49%).

Almost four out of five *smoothie drinkers* (n=688) (79%) either agreed or agreed strongly with this statement. ROI consumers were more in agreement than their NI counterparts (81 v 74%). See Figure 12 for further information.

Fig 12: Perceptions about smoothies – Some smoothies are healthier than others



* *Negligible*

> *'Most respondents realised that some smoothies are healthier than others.'*

Summary and conclusions

A summary of the key outcomes of this research are provided below:

- One in three adults on the island of Ireland reported to drink smoothies
- Smoothies, were more popular among women, the younger age group and higher social classes
- Those who drank smoothies did so predominantly because they liked the taste, followed by a desire to be healthy in some way, be it to increase their fruit intake or increase their consumption of 'natural' foodstuffs
- Non-smoothie drinkers cited disinterest, a dislike of the consistency of the drink, expense and excessive sweetness as some of the reasons for not drinking smoothies
- Approximately four in ten smoothie drinkers on the island were frequent consumers of smoothies, drinking them at least two to five times a week
- There was a clear preference for pre-packed and home-made smoothies in NI, while in ROI there was a stronger preference for made-to-order smoothies
- A number of misconceptions concerning smoothies were evidenced:
  - Over-expectations as to '5-a-day' contributions. It appeared that the overriding common belief was that they are high in fruit (average four portions) and dairy (average two portions)
  - Awareness of smoothie ingredients appeared to be low
  - Many perceived smoothies to be low in calories which may or may not be the case depending on the smoothie product purchased.

- Smoothie consumers and non-consumers generally perceived smoothies as a healthy food, however, there was also some confusion observed:
  - Consumers seemed aware that smoothies were high in natural sugars, and confused as to whether they were high in added sugars
  - There was confusion about the effects of smoothie consumption on dental health, with a divide in opinion among the general population and also among smoothie consumers themselves
- Smoothie drinkers were much more firm in their views regarding smoothies including their health value, and their sugar and calorie contents. Non-smoothie drinkers cited much higher levels of don't knows
- Smoothie consumers were generally of the opinion that smoothies were a good alternative option for lunch or breakfast.

'While most agree that some smoothies are healthier than others, the research does suggest that consumers would benefit from more information on smoothies to enable them to make a fully informed, healthier choice.'

Key messages for consumers

- Smoothies are one of the many ways that we can include fruits and vegetables in our diets
- Smoothies only count as one portion of fruit and vegetables a day, regardless of how much is consumed. Smoothies that contain milk or yoghurt also contribute to calcium and dairy food intakes
- Smoothies should be consumed with a meal for dental health reasons. They are high in naturally-occurring sugar which can damage teeth so drinking smoothies between meals should be avoided
- It is best to drink smoothies through a straw. This reduces the amount of sugar coming in contact with teeth
- The ingredients used in ready-made or made-to-order smoothies can vary thus can impact on the calorie, fat and sugar content of these products. Read the labels on these products (in the case of ready-made, prepackaged smoothies) and/look out/ask for smoothies made with:

  – Fresh/frozen fruit
  – Unsweetened fruit juices
  – Low fat dairy products
  – No other additional ingredients that would add to the fat and sugar content of the product, e.g. added sugar, honey or syrup.

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