ANNEX

CHANGES IN THE NUTRITIONAL PROFILE OF PACKAGED FOOD AND BEVERAGE PRODUCTS FROM 14 LARGE COMPANIES IN INDIA OVER A THREE YEAR PERIOD

Prepared by The George Institute for the Access to Nutrition Initiative

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FOODSWITCH

DISCLAIMER

The George Institute for Global Health (The George Institute) prepared this report. Sections of this report involving analysis of sales-weighted data were prepared by ATNI under the terms of their licence to use Euromonitor International data.[1] In addition, ATNI commissioned additional product composition data from Innova Market Insights for the 2023 India *Product Profile*.[2] ATNI is to assume responsibility for this aspect of the analysis.

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[1] Euromonitor International is an independent, privately owned global market research firm conducting in-country research in 100 countries worldwide analysing 26 consumer industries including; Hot Drinks, Packaged Food and Soft Drinks. Euromonitor International produces historic and forecast cross-comparable market data and strategic reports to narrate the current and future drivers shaping each one.

[2] Innova Market Insights is a commercial knowledge supplier for the Food and Beverage industry.

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Background

In 2023, The George Institute was commissioned by the Access to Nutrition Initiative (ATNI) to examine whether the mean healthiness of packaged food and beverage products from leading manufacturers operating in India have changed since the release of the *2020 India Product Profile*. The *2020 India Product Profile* and the *2023 India Product Profile* input into ATNI's India Index report. The Index scores and ranks the contribution of India's largest food and beverage manufacturers to tackling the global burden of nutrition-related disease. It consists of an analysis of those companies' policies, practices and disclosures (the Corporate Profile), which includes an analysis of the nutritional quality of each company's food and beverage products in their major markets (the Product Profile).

This report is an Annex to the main *2023 India Product Profile* report and examines changes in the healthiness of packaged food and beverage products using data from the *2020 India Product Profile* and *2023 India Product Profile*. In this report, changes will be examined using 2020 and 2023 data for only those companies and categories that were included in both the *2020 India Product Profile* and the *2023 India Product Profile*.

OVERALL GOAL AND SPECIFIC OBJECTIVES

The overall goal of this work was to provide stakeholders, including companies, government, nutrition experts and others with a fuller understanding of changes that have occurred in the nutritional quality of packaged food and non-alcoholic beverage products (hereafter "foods and beverages") sold by the largest manufacturers in India between 2020 and 2023.[3] Specific objectives were to answer the following questions:

1. *How has the average nutritional quality of each company's product portfolio changed between 2020 and 2023 and how do companies compare?* The metric used was the mean Health Star Rating of the product portfolio.

2. *How has the average sales-weighted nutritional quality of each company's product portfolio changed between 2020 and 2023 and how do companies compare?* The metric used was the sales-weighted mean Health Star Rating of the product portfolio.

3. *How has the proportion of products considered 'healthy' in each company's product portfolio changed between 2020 and 2023 and how do companies compare?* The metric used was the proportion of products with a Health Star Rating of ≥3.5.

4. *How has the proportion of sales-weighted products considered 'healthy' in each company's product portfolio changed between 2020 and 2023 and how do companies compare?* The metric used was the sales-weighted proportion of products with a Health Star Rating of ≥3.5.

5. *How have the average levels of energy (kJ/100g), saturated fat (g/100g), total sugar (g/100g) and sodium (mg/100g) changed between 2020 and 2023 and how do companies compare?*

6. *How have the average levels of energy (kJ/100g), saturated fat (g/100g), total sugar (g/100g) and sodium (mg/100g) changed between 2020 and 2023 in each food and beverage category for each company?*

[3] Note that nutritional quality for the purposes of this report does not include assessment of whether products have been fortified with micronutrients.

METHODOLOGY

Selection of companies

ATNI requested The George Institute include the products of 14 manufacturers for which data were available in both the *2020 India Product Profile* and the *2023 India Product Profile*. The included companies, in alphabetical order, with the name used throughout this report in brackets are:

1. Adani Wilmar (Adani Wilmar)
2. Britannia Industries Limited (Britannia)
3. Coca-Cola India (Coca-Cola India)
4. Gujarat Cooperative Milk Marketing Federation (Amul)
5. Hatsun Agro Product Limited (Hatsun Agro/HAP)
6. Hindustan Unilever Limited (Hindustan Unilever/HUL)
7. ITC Limited (ITC)
8. Karnataka Cooperative Milk Producers Federation (KMF Nandini)
9. Marico Limited (Marico)
10. Mondelēz India Foods Private Limited (Mondelēz India)
11. Mother Dairy Fruit & Vegetable Private Limited (Mother Dairy)
12. Nestlé India Limited (Nestlé India)
13. Parle Products Private Limited (Parle Products)
14. PepsiCo India Inc (PepsiCo India)

Product identification

Data for this analysis derived from the main Product Profiles in India for 2020 and 2023. Further details can be seen in the main Product Profile report.

Sales data

Sales data were obtained at the Euromonitor subset level for each company. This was used to generate sales-weighted outcomes for analyses. As ATNI held the licence for the Euromonitor International data, ATNI did the analyses and provided The George Institute with results. ATNI accepts full responsibility for these components of the report.

The data were analysed using STATA statistical software version 17.

RESULTS

Products included

There were 1,317 products in 2020 and 1,449 in 2023.

Table 1 *Number of food products by company in EMI subsets*

	Adani Wilmar		Amul		Britannia		Hatsun Agro		HUL		ITC		KMF Nandini		Marico		Mondelēz India		Mother Dairy		Nestlé India		Parle Products		PepsiCo India		Total	
	20	23	20	23	20	23	20	23	20	23	20	23	20	23	20	23	20	23	20	23	20	23	20	23	20	23	20	23
Baked Goods	-	-	-	-	29	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29	70
Breakfast Cereals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32	8	-	-	-	-	-	-	-	-	5	4	37	12
Confectionery	-	-	-	-	-	-	-	-	-	-	19	100	-	-	-	-	74	43	-	-	28	67	26	17	-	-	147	227
Dairy	-	-	92	55	34	37	23	29	-	-	-	-	31	74	-	-	-	-	55	61	15	31	-	-	-	-	246	287
Edible Oils	12	9	-	-	-	-	-	-	-	-	-	-	-	-	9	3	-	-	6	8	-	-	-	-	-	-	27	20
Ice Cream	-	-	56	20	-	-	83	84	66	140	-	-	-	-	-	-	-	-	28	104	-	-	-	-	-	-	233	348
Processed Fruit and Vegetables	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	23	-	-	-	-	-	-	8	23
Rice, Pasta and Noodles	-	-	-	-	-	-	-	-	-	-	21	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	12
Sauces, Dressings and Condiments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	24	-	-	-	-	9	24
Savoury Snacks	-	-	-	-	8	10	-	-	-	-	44	46	-	-	-	-	-	-	-	-	-	-	59	28	37	39	148	123
Soup	-	-	-	-	-	-	-	-	23	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	19
Sweet Biscuits, Snack Bars and Fruit Snacks	-	-	-	-	65	76	-	-	-	-	73	60	-	-	-	-	10	11	-	-	-	-	116	40	-	-	264	187
Sweet Spreads	-	-	-	-	-	-	-	-	7	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7
Total	12	9	148	75	136	193	106	113	96	166	157	218	31	74	41	11	84	54	97	196	52	122	201	85	42	43	1203	1,359

Table 2 *Number of beverage products by company in Euromonitor subsets*

	Coca-Cola India		Mondelēz India		PepsiCo India		Total	
	2020	**2023**	**2020**	**2023**	**2020**	**2023**	**2020**	**2023**
Bottled Water	8	6	-	-	-	-	8	6
Carbonates	22	23	-	-	15	13	37	36
Concentrates	-	-	4	3	-	-	4	3
Juice	33	26	-	-	19	13	52	39
Other Hot Drinks	-	-	13	6	-	-	13	6
Total	**63**	**55**	**17**	**9**	**34**	**26**	**114**	**90**

In 2020, *Sweet Biscuits, Snack Bars and Fruit Snacks* had the largest number of products included in analysis (n=264), and in 2023 *Ice Cream* the largest (n=348). *Concentrates* was the category with the smallest number of products in both years (n=4 in 2020 and n=3 in 2023).

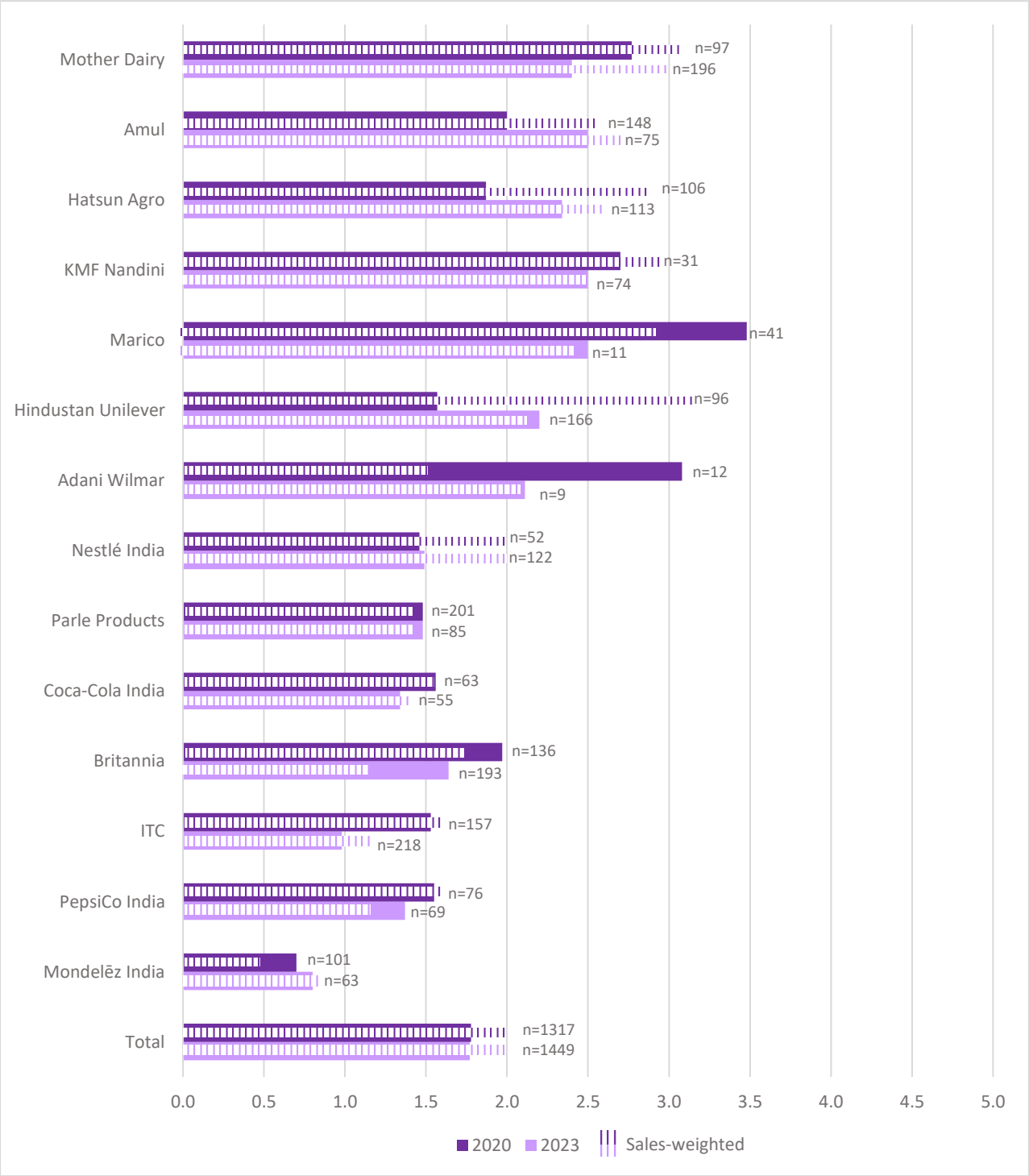
Table 3 *Proportion of revenue included in analysis for each company*

	No. categories	% revenue (within overall analysis)		% product range included	
	Both years	**2020**	**2023**	**2020**	**2023**
Adani Wilmar	1	7%	18%	93%	98%
Amul	2	17%	19%	100%	100%
Britannia	4	8%	9%	100%	100%
Coca-Cola India	3	8%	7%	100%	99%
Hatsun Agro	2	3%	2%	100%	100%
Hindustan Unilever	3	2%	1%	23%	21%
ITC	4	6%	6%	97%	64%
KMF Nandini	1	9%	8%	100%	100%
Marico	2	3%	1%	100%	97%
Mondelēz India	4	6%	5%	100%	100%
Mother Dairy	4	10%	5%	100%	100%
Nestlé India	3	3%	3%	38%	53%
Parle Products	**3**	7%	8%	100%	100%
PepsiCo India	4	12%	8%	93%	98%

Table 3 shows the proportion of revenue that each company represented in the overall analyses for 2020 and 2023, as well as the proportion of each company's portfolio that was included in each year. Most companies had 100% of their product range included, with two notable exceptions; Hindustan Unilever and Nestlé India. Amul represented the largest proportion of all company sales in both years.

ANALYSIS 1 and 2 *Changes in mean nutrient profile of products and sales-weighted nutrient profile of products between 2020 and 2023*

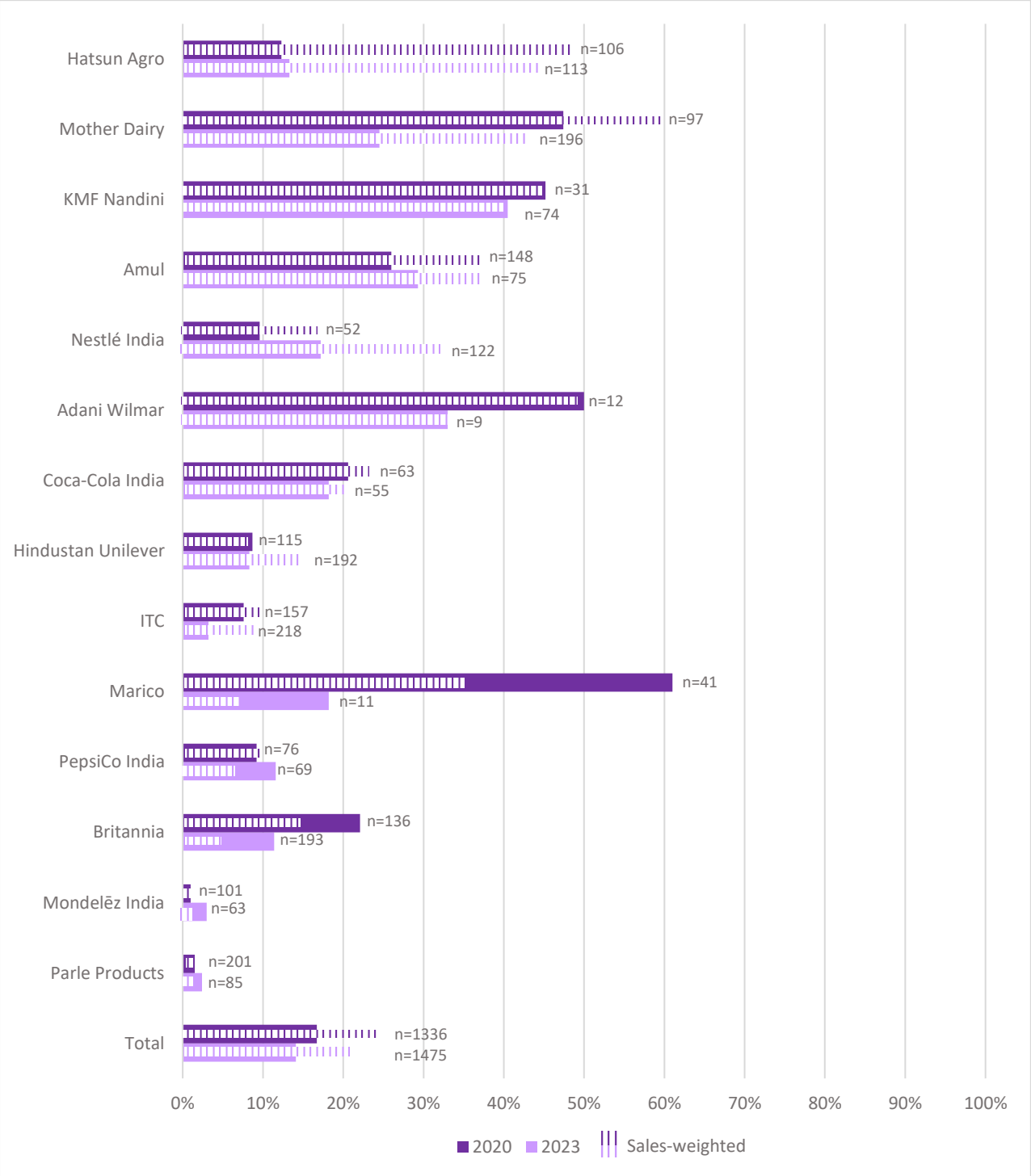
Figure 1 *Mean Health Star Rating and sales-weighted mean Health Star Rating by company in 2020 versus 2023 – overall product portfolio*



The overall sales-weighted mean HSR decreased slightly from 2.0 in 2020 to 1.9 in 2023. Before sales-weighting, Marico had the highest raw mean HSR in both years. When sales-weighting was applied, Mother Dairy had the highest mean HSR in both years. Hindustan Unilever showed the greatest improvement in overall sales-weighted mean HSR, increasing 0.6 HSR between 2020 and 2023. Britannia had the largest decrease in sales-weighted mean HSR between 2020 and 2023 decreasing 0.5 stars.

ANALYSIS 3 and 4 *Changes in the proportion of 'healthy' products and sales-weighted proportion of 'healthy' products between 2020 and 2023*

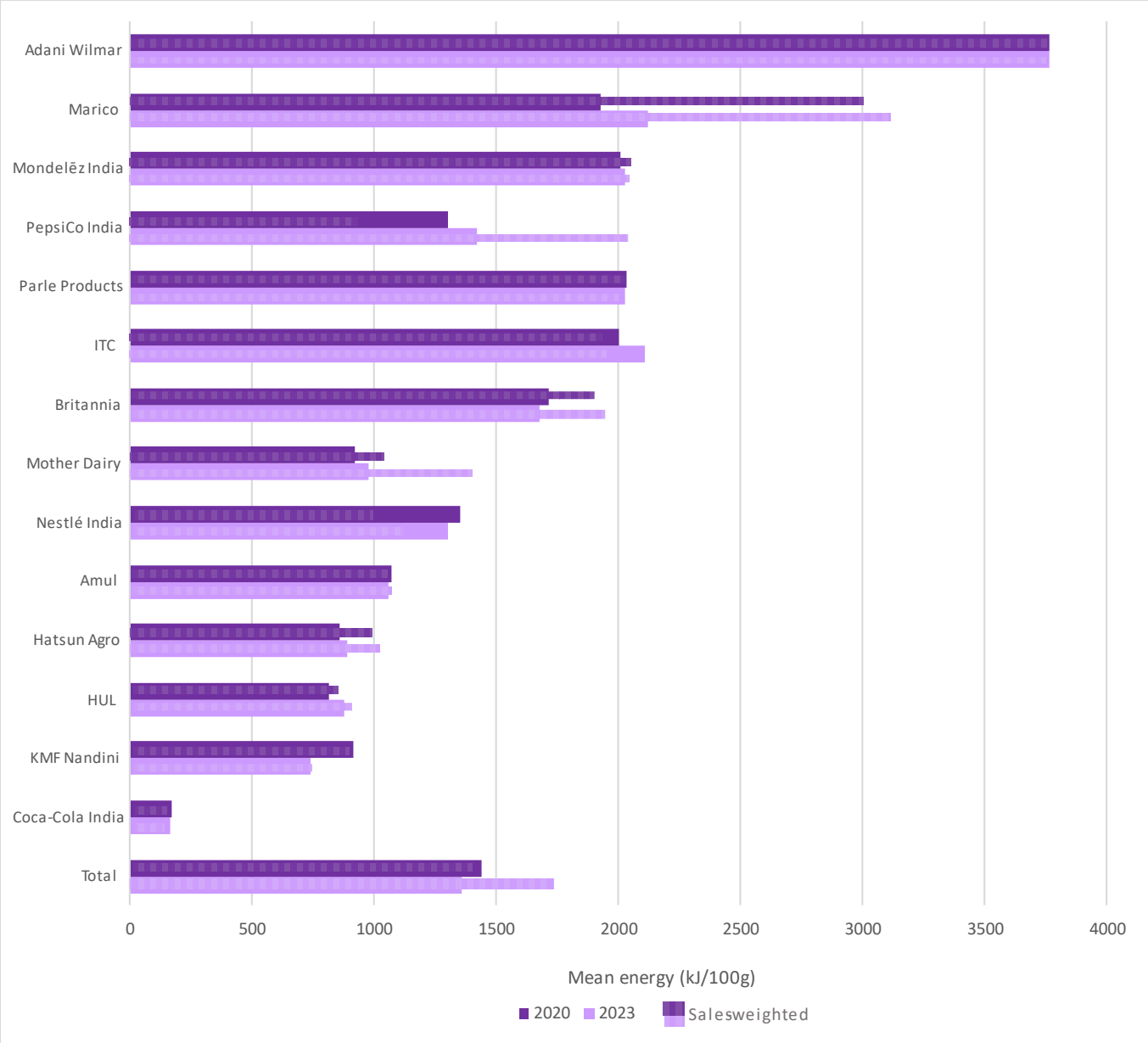
Figure 2 *Proportion of 'healthy' products and sales-weighted proportion of 'healthy' products by company in 2020 versus 2023 – overall product portfolio*



The proportion of sales-weighted products considered 'healthy' decreased slightly overall between 2020 and 2023 (24% to 21%; **Figure 2**). Before sales-weighting was applied, Marico had the highest proportion of healthy products in 2020 (61%) and KMF Nandini in 2023 (41%). When sales-weighting was applied, in 2020 Mother Dairy had the largest proportion of healthy products (60%) and Hatsun Agro in 2023 (45%). Nestlé India and Hindustan Unilever showed the greatest improvement in sales-weighted proportion of healthy products between 2020 and 2023, with Marico having the largest decrease.

ANALYSIS 5 *Changes in mean levels of nutrients and sales-weighted mean levels of nutrients for all products between 2020 and 2023*

Figure 3 *Changes in mean levels of energy (kJ/100g) between 2020 and 2023 by company overall*



Although the raw mean energy content decreased slightly between 2020 and 2023 (1448kJ/100g to 1364kJ/100g; **Figure 3**), once company sales-weighting was applied the opposite trend was found, with sales-weighted energy content increasing from 1417kJ/100g in 2020 to 1726kJ/100g in 2023. In both 2020 and 2023, Adani Wilmar and Marico had the highest mean energy content (kJ/100g) out of the 14 companies included in analysis. This is due to both company's portfolios containing *Edible Oils.* Coca-Cola India had the lowest mean energy content in both years due to its portfolio being dominated by beverages (which generally are lower in energy content due to the volume of water present).

Table 4 *Proportion of products from each company that were missing saturated fat values in 2020 and 2023*

	2020		2023	
	No. products	**n (%) missing**	**No. products**	**n (%) missing**
Adani Wilmar	12	0 (0%)	9	0 (0%)
Amul	148	1 (1%)	75	1 (1%)
Britannia	136	0 (0%)	193	0 (0%)
Coca-Cola India	63	6 (10%)	55	0 (0%)
Hatsun Agro	106	0 (0%)	113	0 (0%)
Hindustan Unilever	96	1 (1%)	166	0 (0%)
ITC	157	39 (25%)	218	6 (3%)
KMF Nandini	31	0 (0%)	74	0 (0%)
Marico	41	0 (0%)	11	0 (0%)
Mondelēz India	101	0 (0%)	63	0 (0%)
Mother Dairy	97	81 (84%)	196	0 (0%)
Nestlé India	52	0 (0%)	122	0 (0%)
Parle Products	201	56 (28%)	85	6 (7%)
PepsiCo India	76	0 (0%)	69	0 (0%)
Total	**1,317**	**184 (14%)**	**1,449**	**13 (1%)**

In 2023, Adani Wilmar had the highest mean level of saturated fat (**Figure 4**) before and after sales-weighting was applied. However, in 2020 Marico had the highest sales-weighted level of saturated fat. Coca-Cola India had the lowest mean saturated fat in both years (0.0g/100g) due to its portfolio solely comprising of beverages. Companies with noticeably higher saturated fat contents when sales weighting was applied include Marico, Hatsun Agro and PepsiCo India, meaning that products with higher saturated fat levels contributed more to sales than those with lower levels.

It is important to note that there was a large change in the proportion of companies that provided saturated fat values between 2020 and 2023, which likely affected results. For ITC, the only company with a significant increase in saturated fat, this was likely in part because in 2020 25% of products did not have saturated fat values, dropping to only 3% in 2023. **Table 4** shows that 14% of all products in 2020 did not have saturated fat values available, yet this had dropped to only 1% in 2023. In 2020, eight companies had zero products missing saturated fat values. However, in 2023 a large improvement was seen in terms of labelling of saturated fat values, with 11 companies having 100% of products with saturated fat values available and the majority of remaining companies still showing an increase in the proportion of their product range reporting saturated fat values (**Table 4**).

Figure 4 *Changes in mean levels of saturated fat (g/100g) between 2020 and 2023 by company overall*

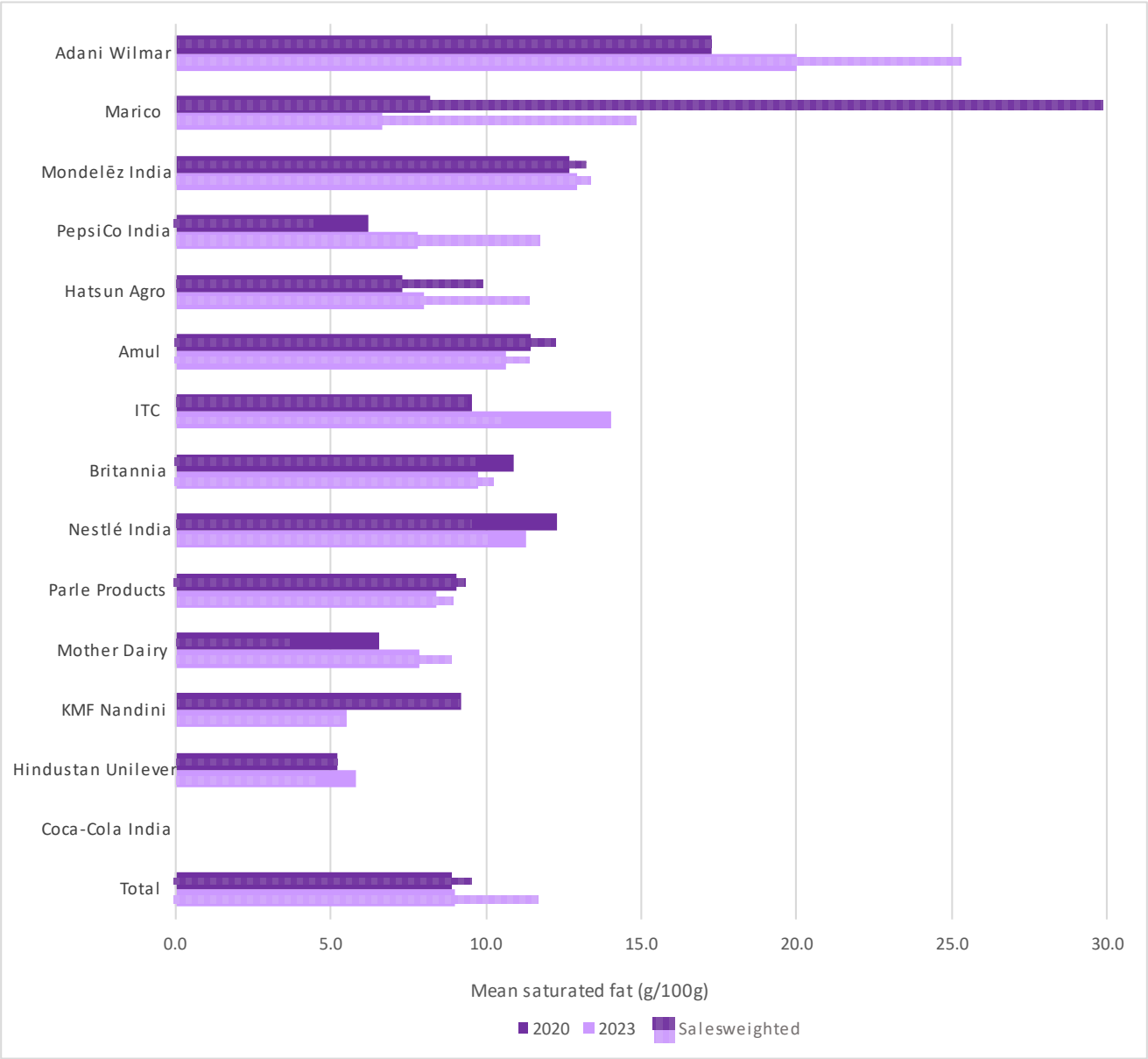


Table 5 *Proportion of products from each company missing sodium values in 2020 and 2023*

	2020		2023	
	No. products	**n (%) missing**	**No. products**	**n (%) missing**
Adani Wilmar	12	12 (100%)	9	2 (22%)
Amul	148	103 (70%)	75	40 (53%)
Britannia	136	109 (80%)	193	0 (0%)
Coca-Cola India	63	52 (83%)	55	2 (4%)
Hatsun Agro	106	1 (1%)	113	3 (3%)
Hindustan Unilever	96	0 (0%)	166	0 (0%)
ITC	157	157 (100%)	218	0 (0%)
KMF Nandini	31	28 (90%)	74	0 (0%)
Marico	41	32 (78%)	11	0 (0%)
Mondelēz India	101	1 (1%)	63	0 (0%)
Mother Dairy	97	94 (97%)	196	1 (1%)
Nestlé India	52	0 (0%)	122	0 (0%)
Parle Products	201	201 (100%)	85	69 (81%)
PepsiCo India	76	0 (0%)	69	0 (0%)
Total	**1,317**	**790 (60%)**	**1,449**	**117 (8%)**

In 2020 before sales-weighting was applied, Marico had the highest mean level of sodium and in 2023 it was Nestlé India (**Figure 5**). After sales-weighting was applied, KMF Nandini had the highest mean sodium content in both years. Notable sales-weighted increases in sodium between 2020 and 2023 include Nestlé India and PepsiCo India. For Nestlé India, the reason for this increase was the presence of a very small number of very high sodium products driving up the category mean for *Sauces, Dips and Condiments* rather than a true change in overall sodium content. For PepsiCo India, the change was driven by a large increase in the proportion of PepsiCo India's revenue that derived from *Savoury Snacks* (from 33% in 2020 to 87% in 2023).

There was a large decrease overall in the proportion of products that had missing sodium values between 2020 (60% missing) and 2023 (8% missing) however sodium was still the nutrient with the most missing values from the 14 manufacturers. In 2020, only three companies had 100% of products providing sodium values. However, in 2023 there was an improvement, with eight companies having 100% of their products having reported sodium values and the majority of remaining companies still showing an increase in the proportion of their product range reporting sodium values (**Table 5**).

Figure 5 *Changes in mean levels of sodium (mg/100g) between 2020 and 2023 by company overall*

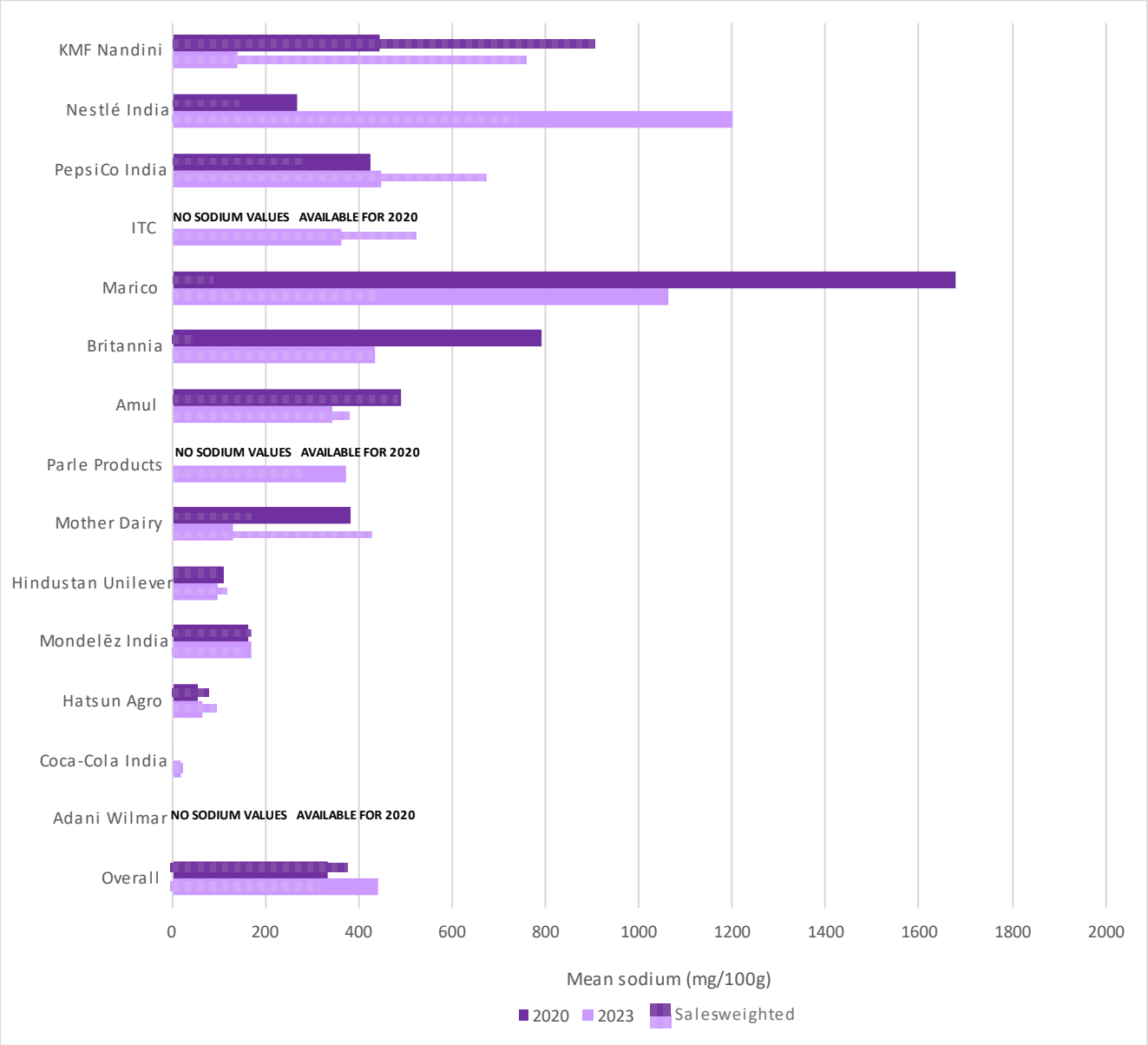


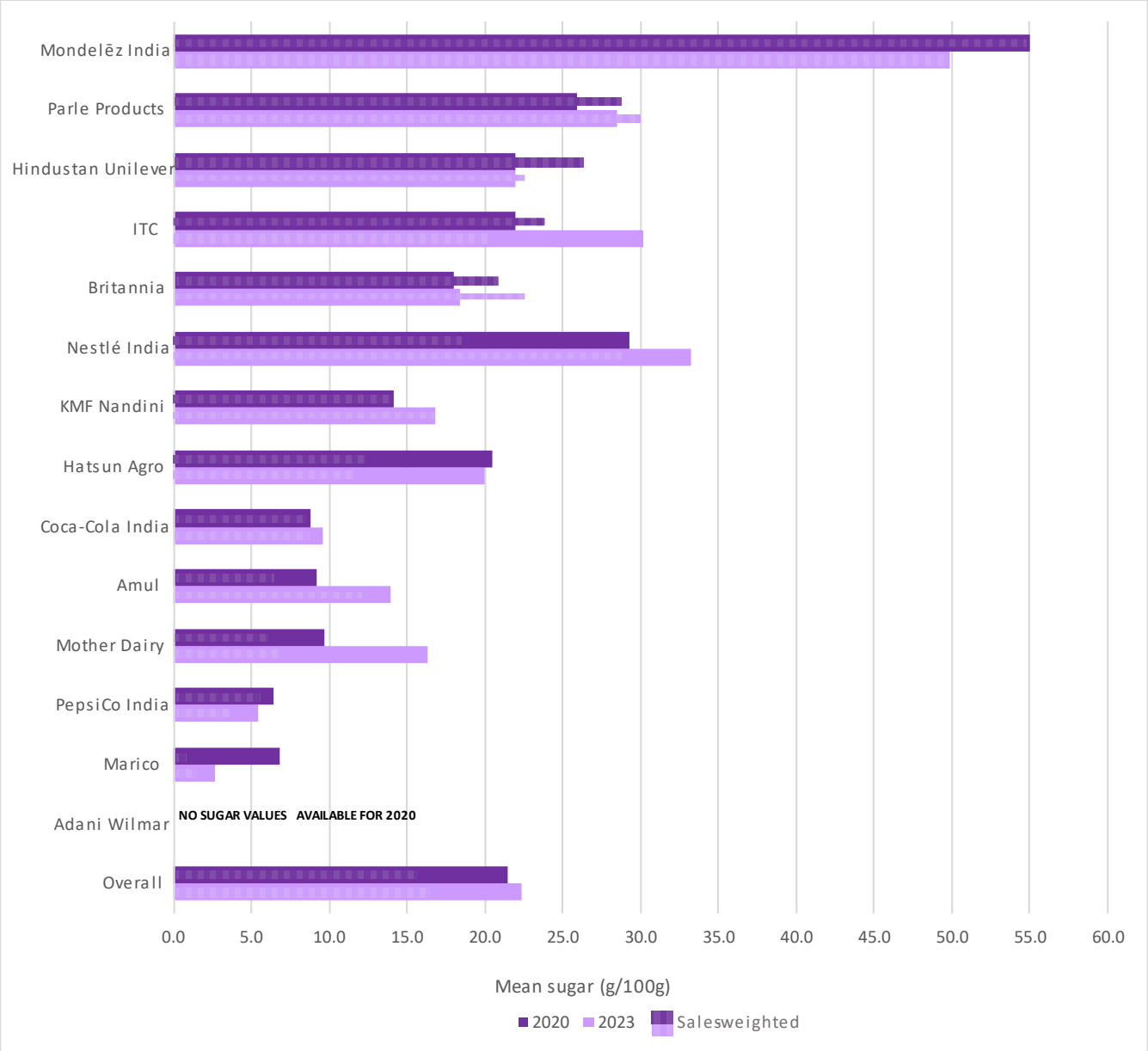
Table 6 *Proportion of products from each company missing total sugar values in 2020 and 2023*

	2020		2023	
	No. products	**n (%) missing**	**No. products**	**n (%) missing**
Adani Wilmar	12	12 (100%)	9	0 (0%)
Amul	148	104 (70%)	75	37 (49%)
Britannia	136	0 (0%)	193	0 (0%)
Coca-Cola India	63	0 (0%)	55	0 (0%)
Hatsun Agro	106	24 (23%)	113	25 (22%)
Hindustan Unilever	96	0 (0%)	166	0 (0%)
ITC	157	37 (24%)	218	0 (0%)
KMF Nandini	31	2 (6%)	74	0 (0%)
Marico	41	7 (17%)	11	0 (0%)
Mondelēz India	101	0 (0%)	63	0 (0%)
Mother Dairy	97	11 (11%)	196	0 (0%)
Nestlé	52	0 (0%)	122	0 (0%)
Parle Products	201	1 (0%)	85	0 (0%)
PepsiCo India	76	0 (0%)	69	0 (0%)
Total	**1,317**	**198 (15%)**	**1,449**	**62 (4%)**

There was a decrease in the proportion of products that had missing total sugar values between 2020 (15% missing) and 2023 (4% missing; **Table 6**). In 2020 six companies had 100% of products reporting the total sugar content and in 2023 there were 12. Amul was the company with the lowest proportion of products with total sugar values provided (30% in 2020 and 51% in 2023).

In both 2020 and 2023, Mondelēz India had the highest mean level of total sugars (55.0g/100g in 2020 and 49.9g/100g in 2023; **Figure 6**). Notable differences before and after sales-weighting was applied were seen for Nestlé India, Mother Dairy, ITC, Hatsun Agro and Marico. For Nestlé India, before sales weighting was applied there was a decrease in mean total sugar content between 2020 and 2023, however after sales weighting the opposite trend was seen. This same flipping of the trend was seen for ITC. For Hatsun Agro and Marico, sales-weighting decreased the mean total sugar content for their portfolios, indicating lower sugar products were responsible for more sales.

Figure 6 *Changes in mean levels of total sugars (g/100g) between 2020 and 2023 by company overall*



ANALYSIS 6 *Changes over time in each category by company between 2020 and 2023*

ADANI WILMAR

Figure 7 *Changes in mean HSR by category for Adani Wilmar; 2020-2023*

Figure 8 *Changes in proportion of 'healthy' products by category for Adani Wilmar; 2020-2023*

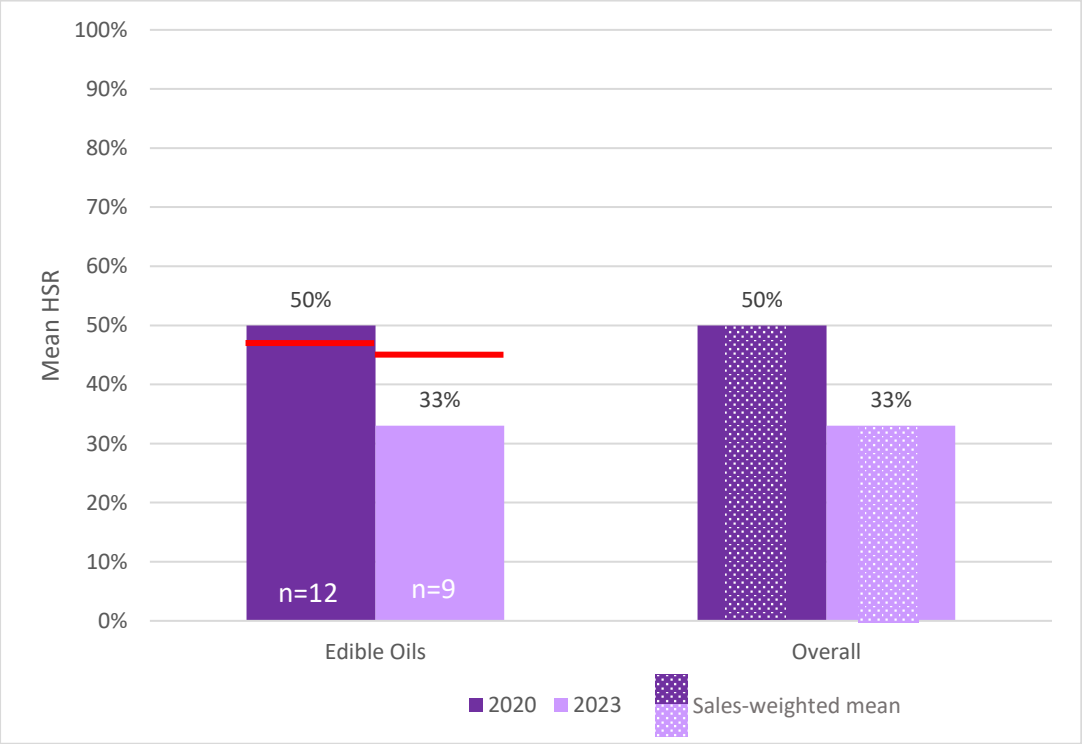


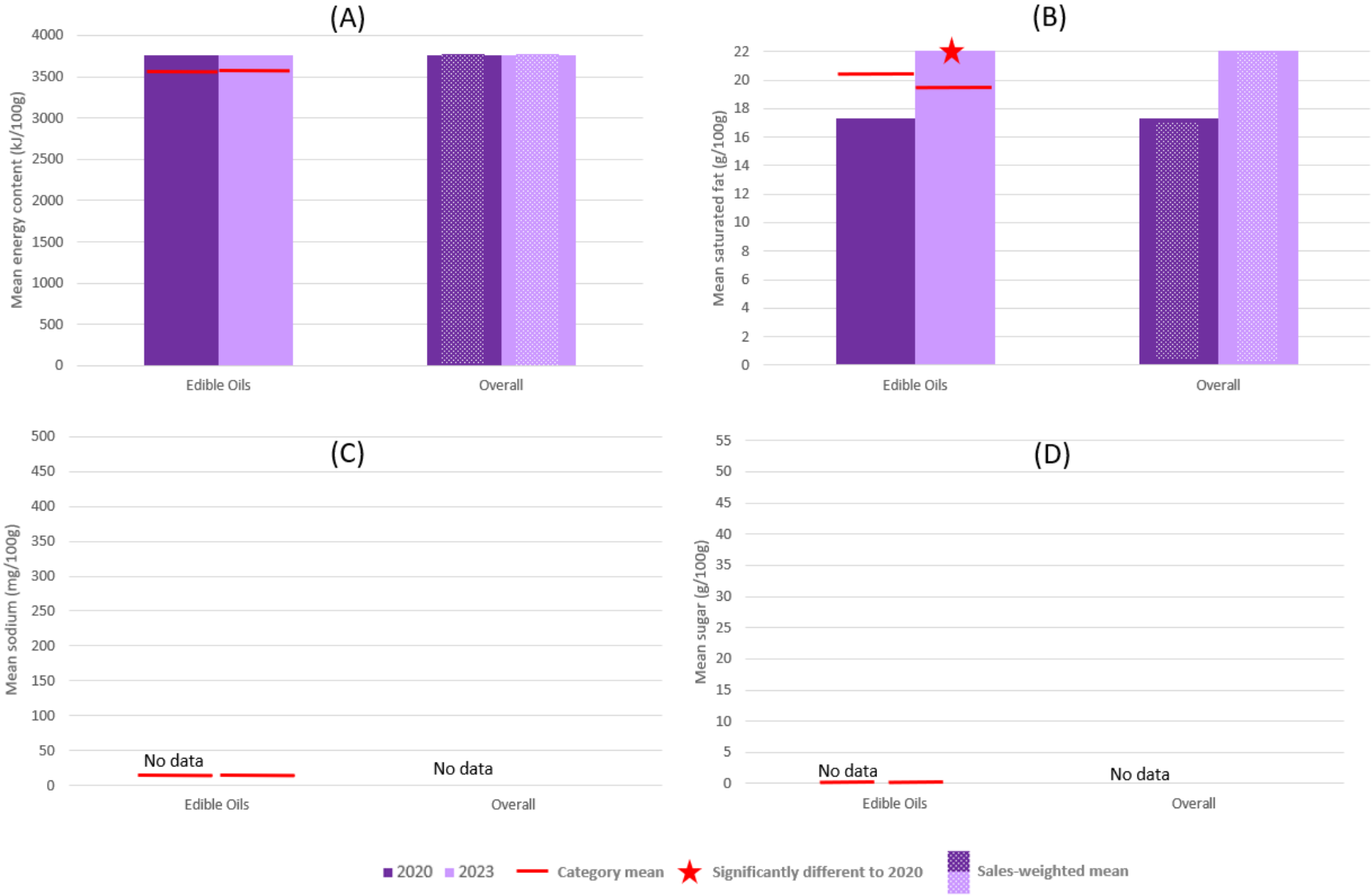
Table 7 *Adani Wilmar products missing nutrient values in 2020 and 2023, by EMI subset*

N (%) missing nutrient values		Edible Oils *2020 n=12* *2023 n=9*	Overall *2020 n=12* *2023 n=9*
Saturated fat	**2020**	0 (0%)	0 (0%)
	2023	0 (0%)	0 (0%)
Sodium	**2020**	12 (100%)	12 (100%)
	2023	2 (22%)	2 (22%)
Sugar	**2020**	12 (100%)	12 (100%)
	2023	0 (0%)	0 (0%)

The overall sales-weighted mean HSR for Adani Wilmar decreased between 2020 and 2023 from 3.1 to 2.1 (**Figure 7**). Similarly, the proportion of products considered 'healthy' decreased from 50% to 33% (**Figure 8**). Although in 2023 there were a number of categories that Adani Wilmar sold products in, only one category (*Edible Oils*) had sufficient data in both 2020 and 2023 to undertake analysis. In 2023 all values for saturated fat, sugar and sodium were provided, which was an improvement from 2020 where no sugar or sodium values were available.

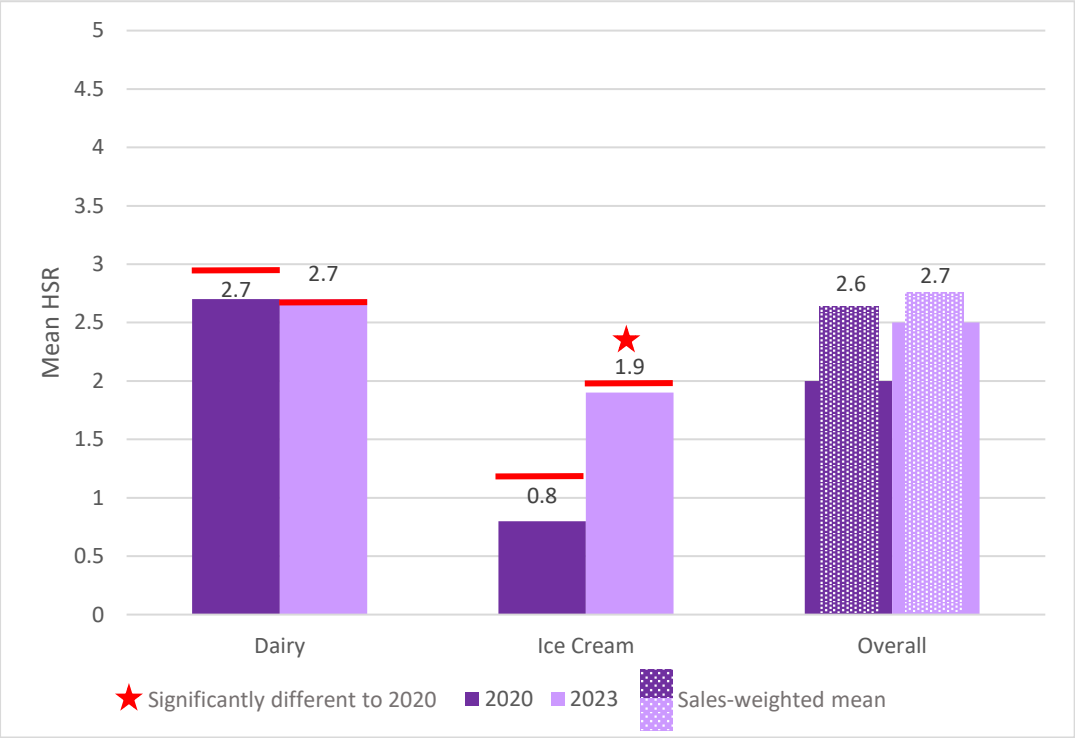
The overall mean energy content of Adani Wilmar *Edible Oils* remained the same between 2020 and 2023 (**Figure 9**). The mean energy content for Adani Wilmar *Edible Oils* was above the category average in both years. There was a significant increase in mean saturated fat content, due to some products with higher saturated fat contents included in 2023. It is important to note that more than 100% of Adani Wilmar's products in 2020 did not have total sugar or sodium content available on product labels (**Table 7**). As zero products in 2020 had sugar or sodium levels available, changes between 2020 and 2023 could not be evaluated for Adani Wilmar.

Figure 9 *Changes in mean nutrient levels for Adani Wilmar; 2020-2023 – (A) Energy (B) Saturated fat (C) Sodium (D) Total sugar*



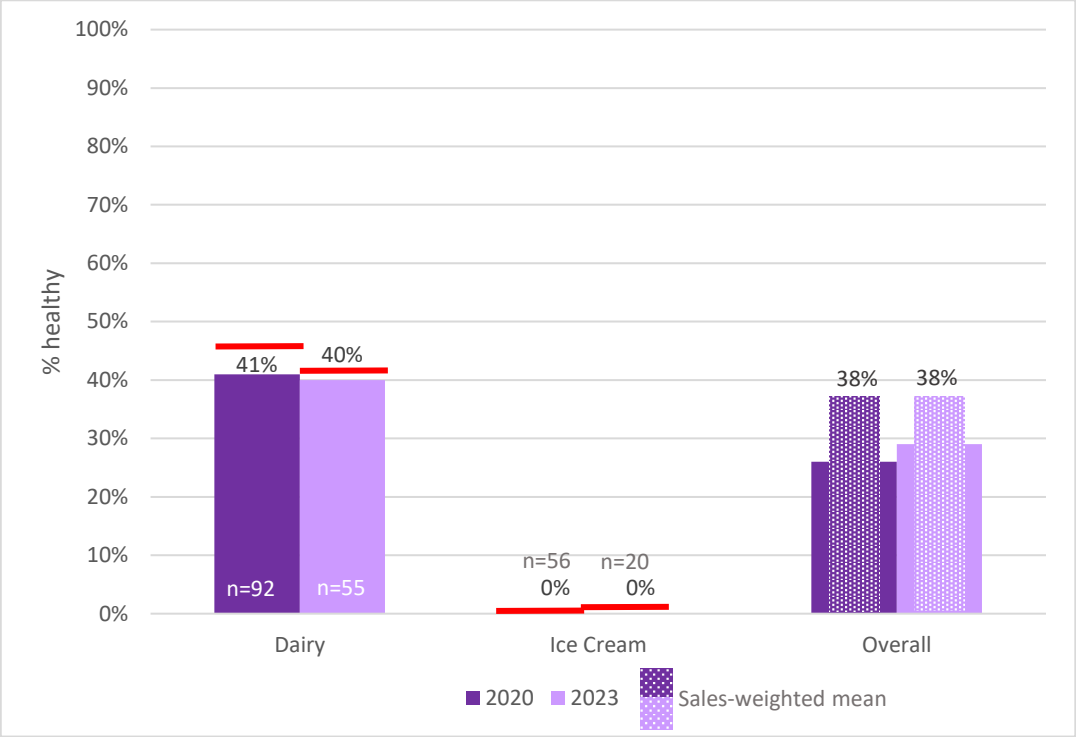
AMUL

Figure 10 *Changes in mean HSR by category for Amul; 2020-2023*



The overall sales-weighted mean HSR for Amul increased slightly between 2020 and 2023 from 2.6 to 2.7 (**Figure 10**).

Figure 11 *Changes in the proportion of 'healthy' products by category for Amul; 2020-2023*



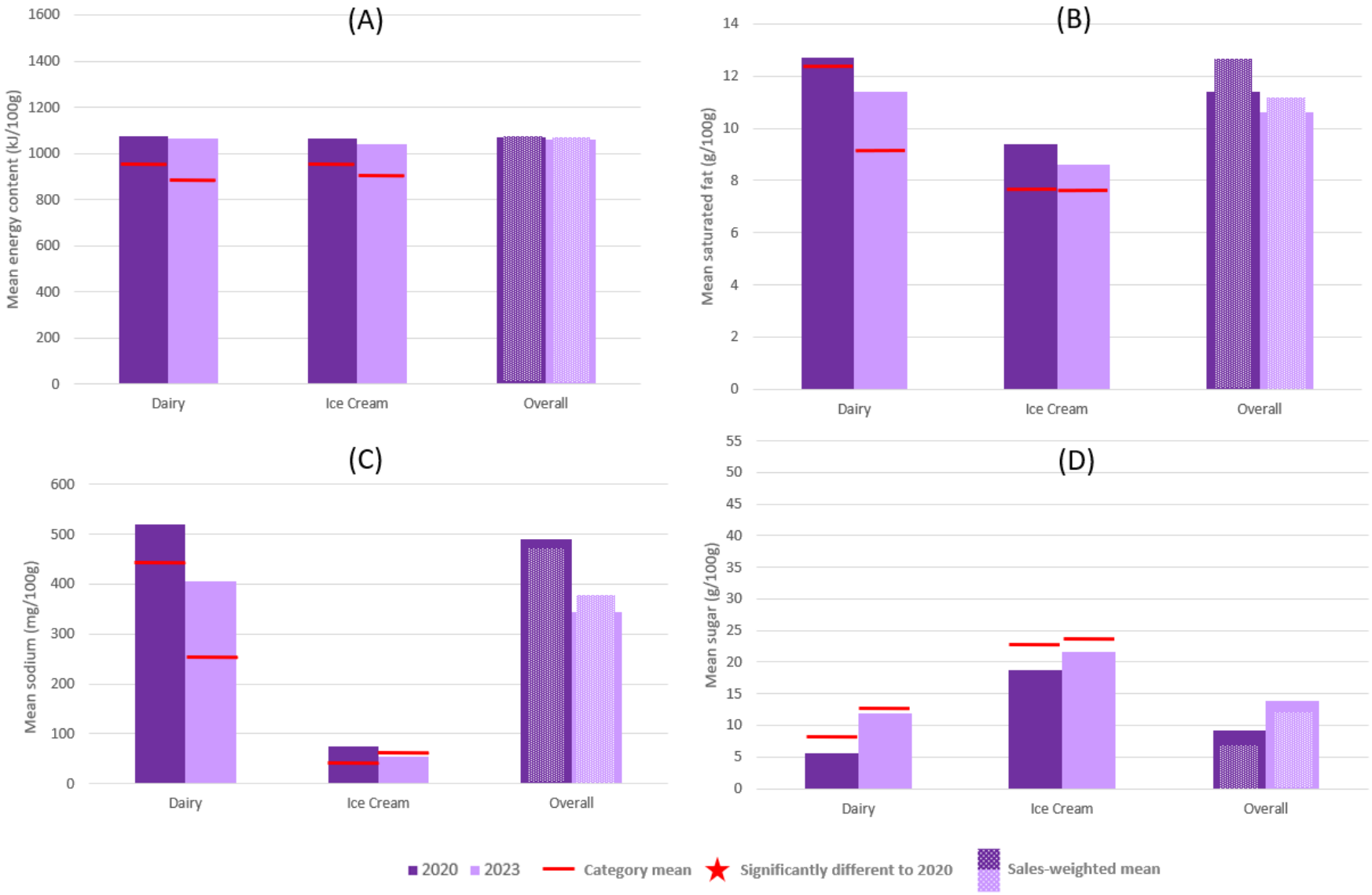
The proportion of products considered 'healthy' did not change between 2020 and 2023 (38% sales-weighted in both years; **Figure 11**).

Table 8 *Amul products missing nutrient values in 2020 and 2023, by EMI subset*

N (%) missing nutrient values		Dairy *2020 n=92* *2023 n=55*	Ice Cream *2020 n=56* *2023 n=20*	Overall *2020 n=148* *2023 n=75*
Saturated fat	**2020**	1 (1%)	0 (0%)	1 (0%)
	2023	0 (0%)	0 (0%)	0 (0%)
Sodium	**2020**	50 (54%)	53 (95%)	103 (70%)
	2023	26 (47%)	14 (70%)	40 (53%)
Sugar	**2020**	60 (65%)	44 (79%)	104 (70%)
	2023	24 (45%)	12 (60%)	36 (48%)

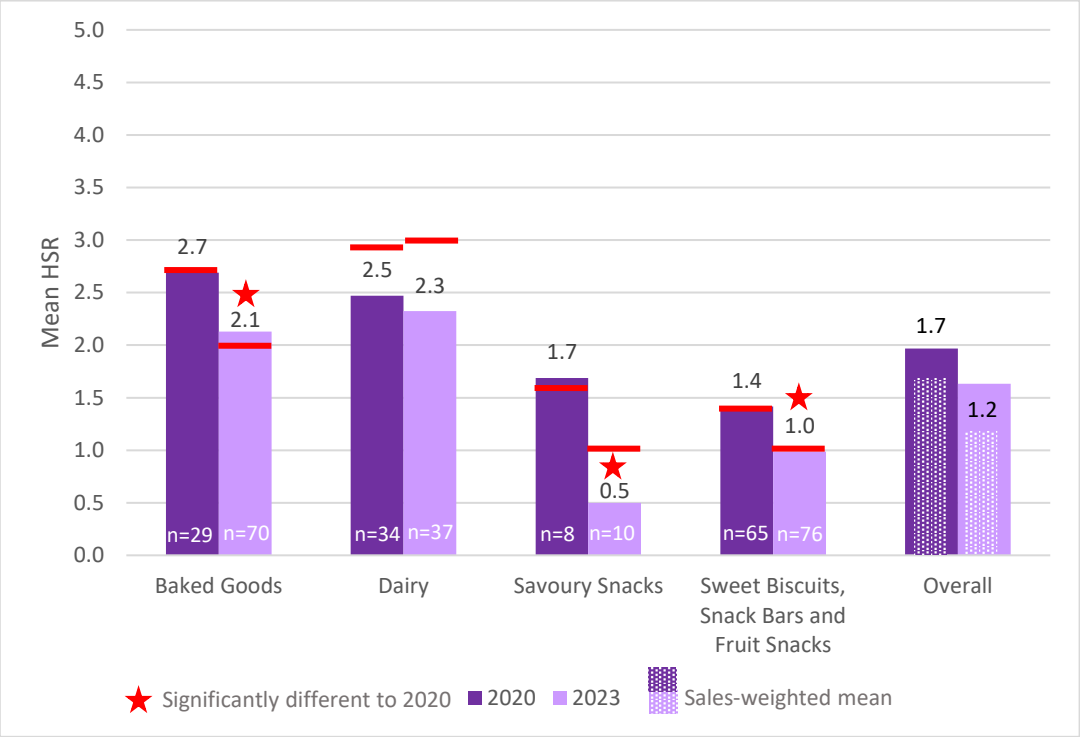
The overall mean energy, saturated fat and sodium of Amul products decreased slightly between 2020 and 2023 (**Figure 12**), however none of the changes were significant. Mean sugar content increased slightly but also was not significant. However, it is important to note that more than 50% of Amul's products in both years did not have sodium values available (**Table 7**). Importantly, although almost all of Amul products in both 2020 and 2023 had saturated fat values available, total sugar and sodium contents were missing for many products (**Table 10**), and so proxy values for these nutrients were required to calculate the HSR for many of Amul's products.

Figure 12 *Changes in mean nutrient levels for Amul; 2020-2023 – (A) Energy (B) Saturated fat (C) Sodium (D) Total sugar*



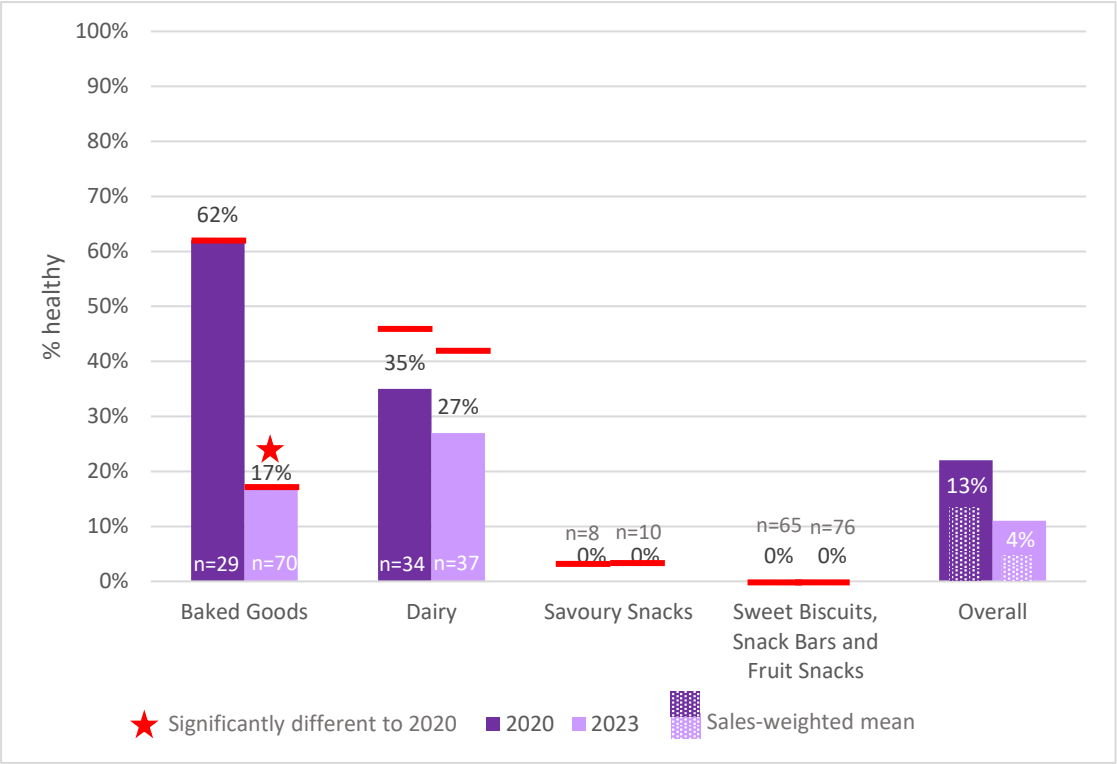
BRITANNIA

Figure 13 *Changes in mean HSR by category for Britannia; 2020-2023*



The raw and sales-weighted mean healthiness of Britannia's product portfolio decreased between 2020 and 2023 (**Figure 13**). There was a significant decrease observed in all categories except *Dairy*. Although almost all of Britannia's products in both 2020 and 2023 had saturated fat and total sugar values available, sodium content was missing for most products in 2020 (**Table 9**), and proxy values were used to calculate the HSR meaning the overall change in mean HSR should be interpreted with caution.

Figure 14 *Proportion of 'healthy' products by category for Britannia; 2020-2023*



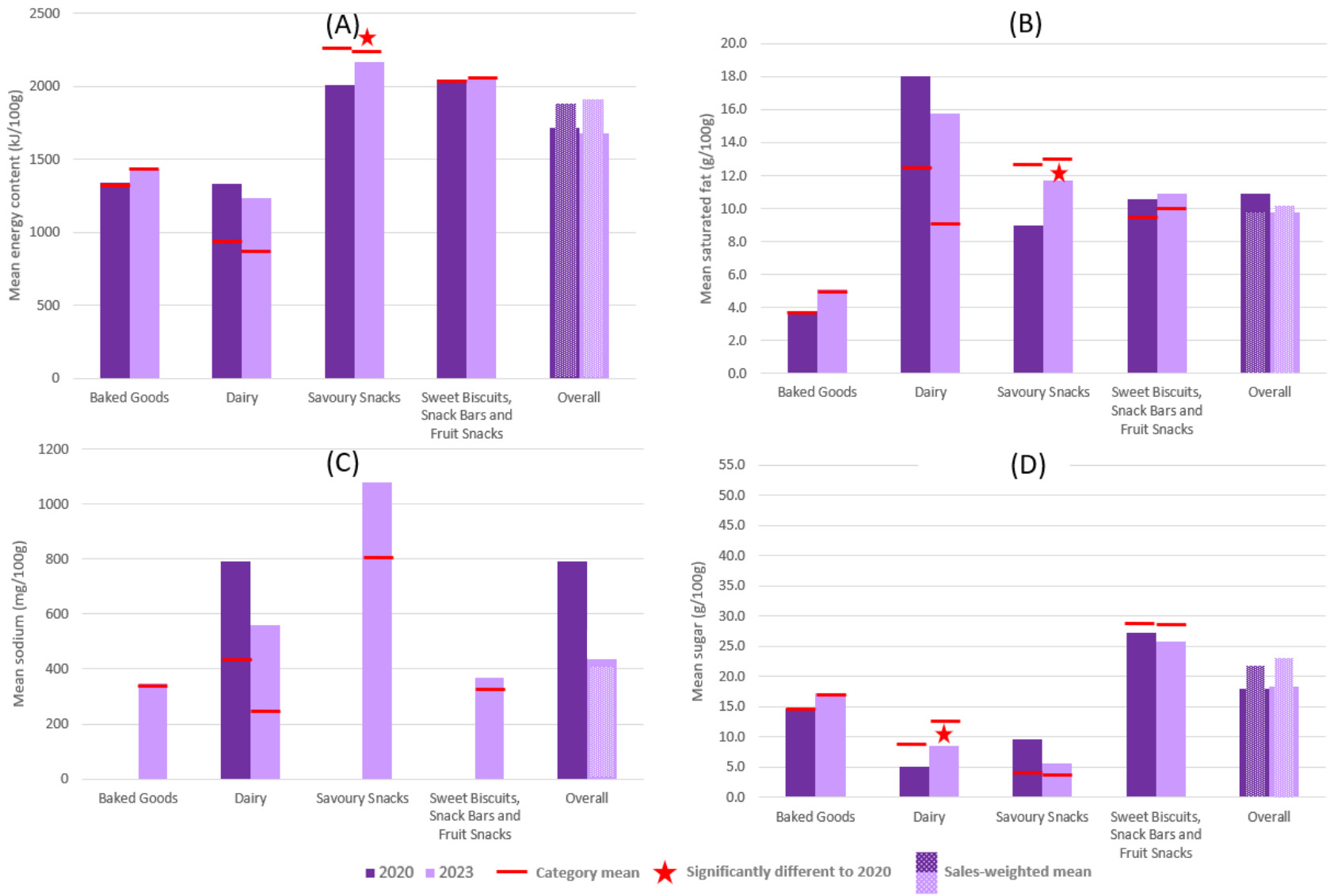
There was a large decrease in the proportion of products considered 'healthy' for Britannia between 2020 and 2023, driven by decreases in the *Baked Goods* category (**Figure 14**).

Table 9 *Britannia products missing nutrient values in 2020 and 2023, by EMI subset*

N (%) missing nutrient values		Baked Goods *2020 n=29 2023 n=70*	Dairy *2020 n=34 2023 n=37*	Savoury Snacks *2020 n=8 2023 n=10*	Sweet Biscuits, Snack Bars and Fruit Snacks *2020 n=65 2023 n=76*	Overall *2020 n=136 2023 n=193*
Saturated fat	**2020**	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	2023	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Sodium	**2020**	29 (100%)	7 (21%)	8 (100%)	65 (100%)	109 (80%)
	2023	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Sugar	**2020**	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	2023	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

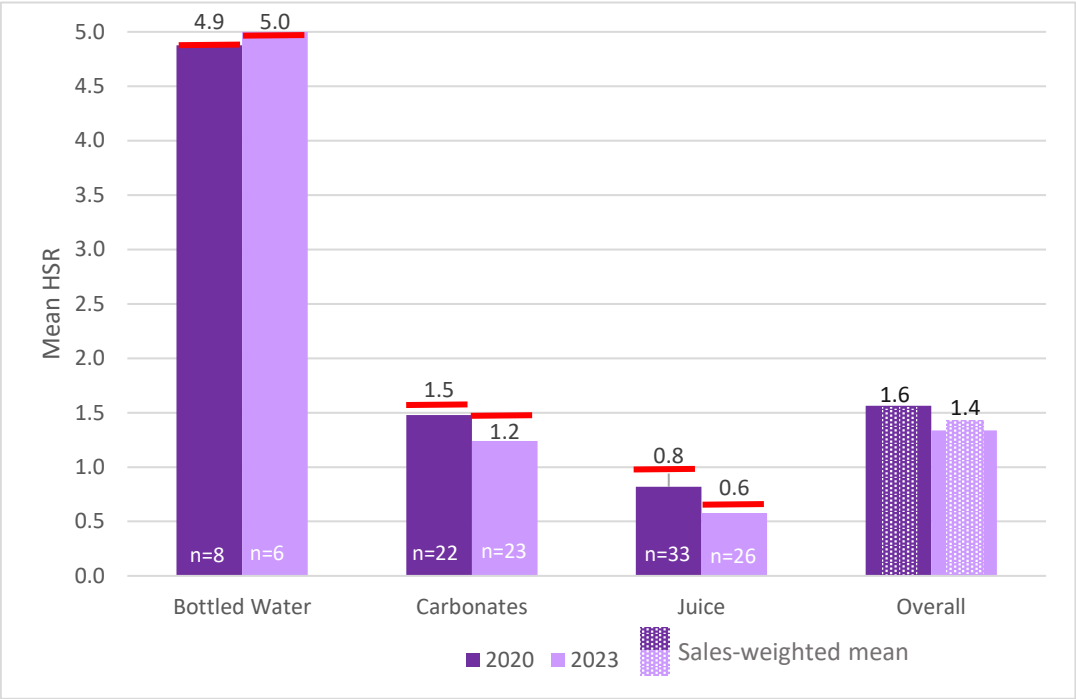
There was a significant decrease in mean sodium content overall for Britannia products between 2020 and 2023, although this change should be interpreted with caution given the huge amount of missing data for sodium in 2020. As seen in **Figure 15C**, three categories did not have data for sodium and so changes could not be evaluated. A positive finding was that although sodium values were missing for 80% of products in 2020, none were missing in 2023. There was a small but significant increase in energy and saturated fat in the *Savoury Snacks* category ($p<0.001$ for both) and a significant increase in the mean sugar content of the *Dairy* category.

Figure 15 *Changes in mean nutrient levels for Britannia; 2020-2023 – (A) Energy (B) Saturated fat (C) Sodium (D) Total sugar*



COCA-COLA INDIA

Figure 16 *Changes in mean HSR by category for Coca-Cola India; 2020-2023*



The mean healthiness of Coca-Cola India's product portfolio decreased slightly between 2020 and 2023 (**Figure 16**), as did the proportion of products considered 'healthy' (**Figure 17**).

Figure 17 *Changes in proportion of 'healthy' products by category for Coca-Cola India; 2020-2023*

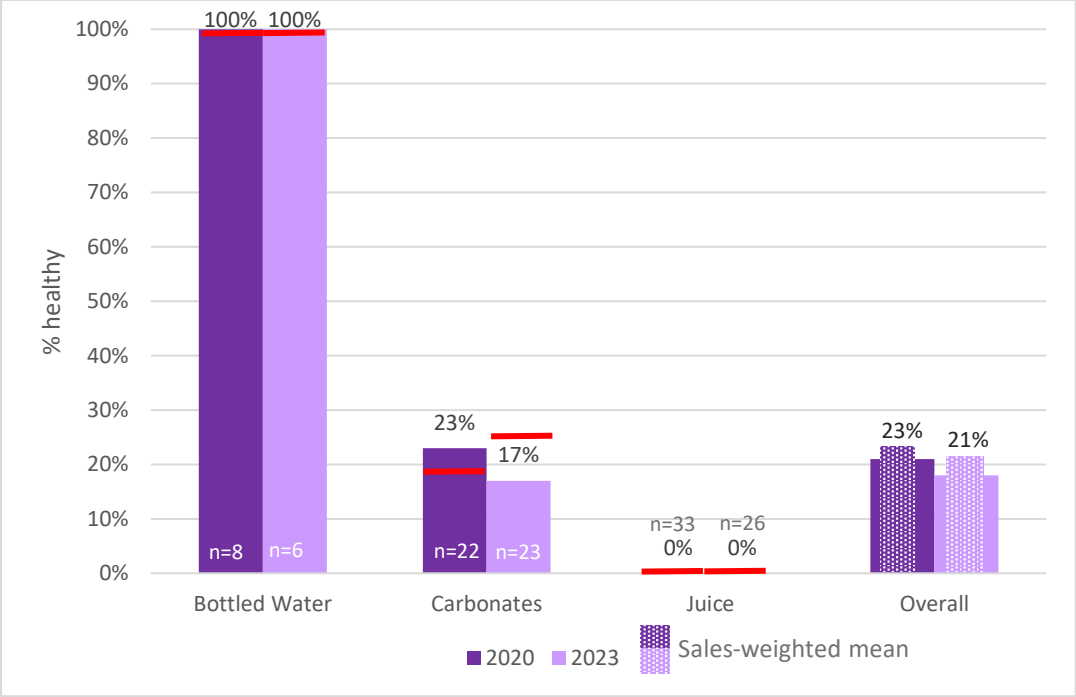
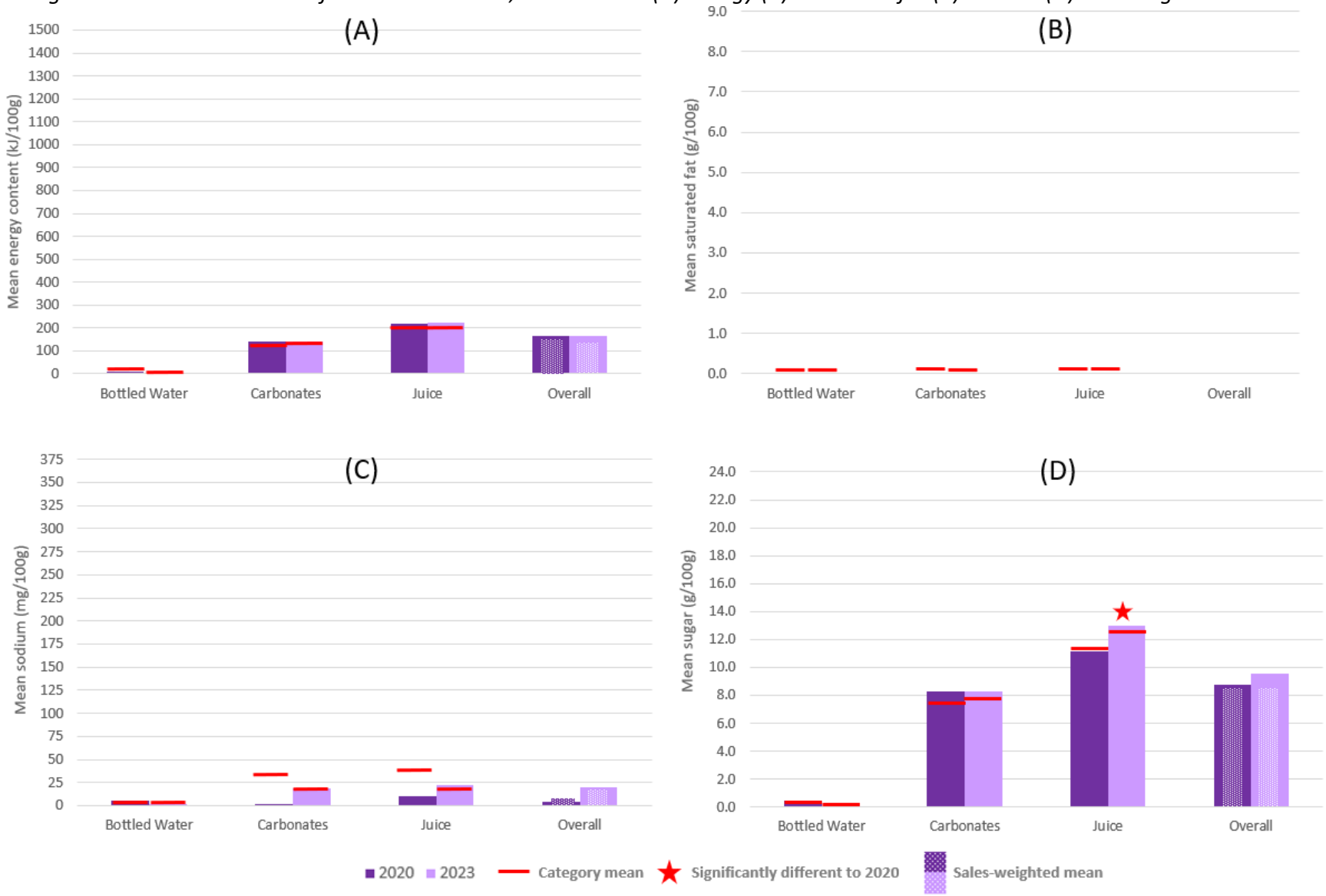


Table 10 *Coca-Cola India products missing nutrient values in 2020 and 2023, by EMI subset*

N (%) missing nutrient values		Bottled Water *2020 n=8 2023 n=6*	Carbonates *2020 n=22 2023 n=23*	Juice *2020 n=33 2023 n=26*	Overall *2020 n=63 2023 n=55*
Saturated fat	2020	0 (0%)	0 (0%)	6 (18%)	6 (10%)
	2023	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Sodium	2020	3 (37%)	17 (77%)	32 (97%)	52 (83%)
	2023	2 (33%)	0 (0%)	0 (0%)	2 (4%)
Sugar	2020	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	2023	0 (0%)	0 (0%)	0 (0%)	0 (0%)

Interestingly, 100% of Coca-Cola India's products in both 2020 and 2023 reported total sugar values on the package, yet sodium content was missing for the majority of products in 2020 (**Table 10**). The overall levels of energy, saturated fat, sodium and total sugar did not change significantly between 2020 and 2023 for Coca-Cola India (**Figure 18**). As seen in **Table 10**, sodium data were scarce in 2020 (83% missing) however the product types sold by Coca-Cola India are unlikely to be high contributors to dietary sodium given they are all beverage products and given that sodium values were provided in 2023 and were close to zero for all products.

Figure 18 *Changes in mean nutrient levels for Coca-Cola India; 2020-2023 – (A) Energy (B) Saturated fat (C) Sodium (D) Total sugar*

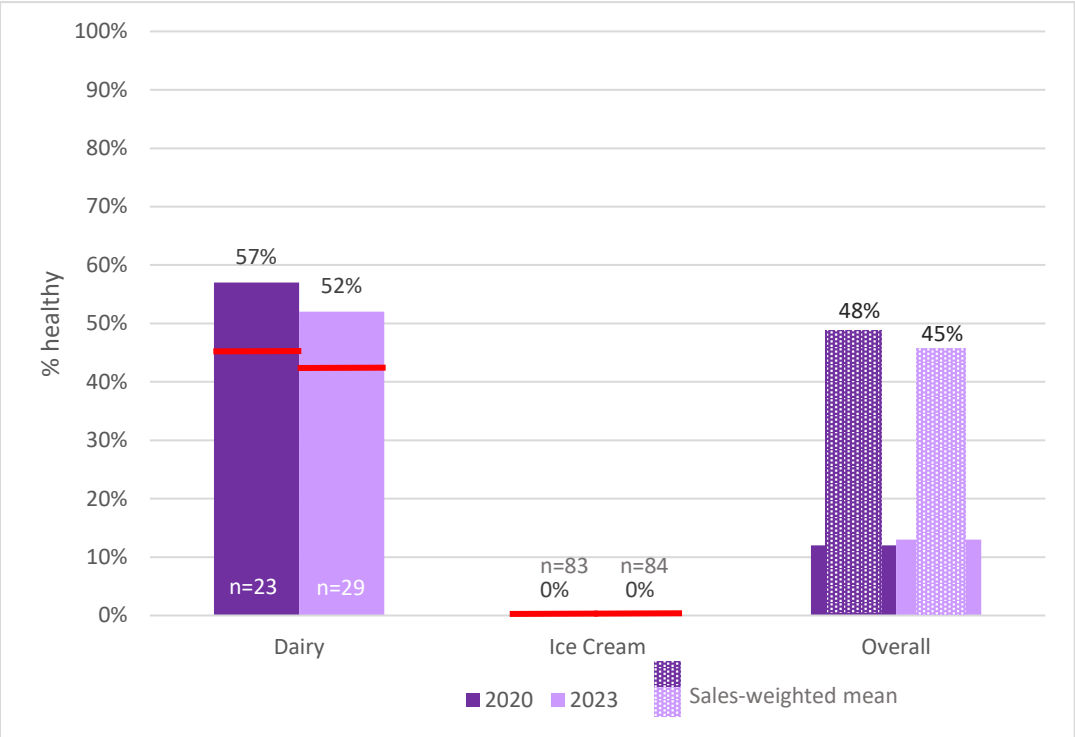


HATSUN AGRO

Figure 19 *Changes in mean HSR by category for Hatsun Agro; 2020-2023*

The overall raw mean HSR for Hatsun Agro increased between 2020 and 2023 from 1.9 to 2.3, however the sales-weighted mean decreased from 2.8 to 2.7 (**Figure 19**). The change was due in large part to an increase in the proportion of sales deriving from *Ice Cream* compared to *Dairy* between 2020 and 2023.

Figure 20 *Changes in the proportion of 'healthy' products by category for Hatsun Agro; 2020-2023*



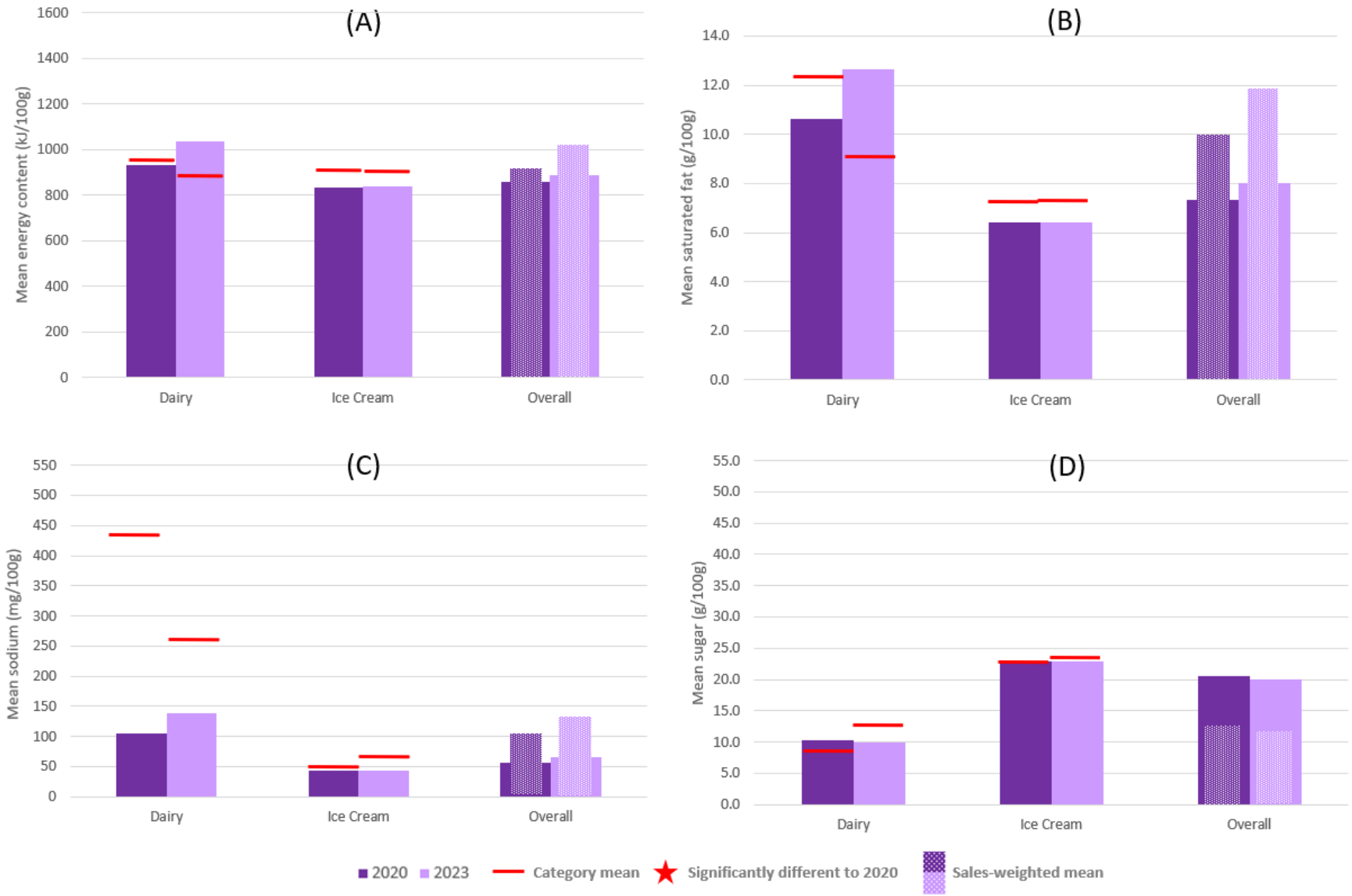
There were no large changes in the proportion of Hatsun Agro products considered healthy between 2020 and 2023 (**Figure 20**), although the sales-weighted proportion of healthy products was much higher than the raw results, indicating that healthier products (e.g. *Dairy*) represent higher sales than less healthy products (e.g. *Ice Cream*).

Table 11 *Hatsun Agro products missing nutrient values in 2020 and 2023, by EMI subset*

N (%) missing nutrient values		Dairy *2020 n=23* *2023 n=29*	Ice Cream *2020 n=83* *2023 n=84*	Overall *2020 n=106* *2023 n=113*
Saturated fat	**2020**	0 (0%)	0 (0%)	0 (0%)
	2023	0 (0%)	0 (0%)	0 (0%)
Sodium	**2020**	1 (4%)	0 (0%)	1 (1%)
	2023	3 (10%)	0 (0%)	3 (3%)
Sugar	**2020**	8 (35%)	16 (19%)	24 (23%)
	2023	9 (31%)	16 (19%)	25 (22%)

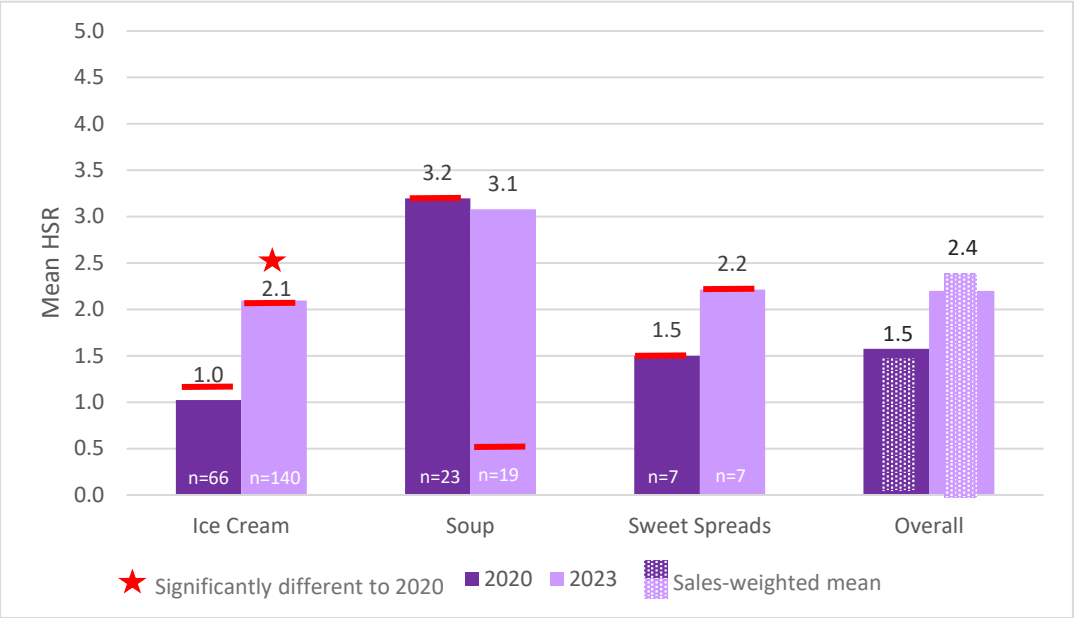
Importantly, although almost all Hatsun Agro products in both 2020 and 2023 had saturated fat and sodium values available, total sugar contents were missing for many products (**Table 11**), and so proxy values for sugar were required to calculate the HSR for many of Hatsun Agro's products. The overall mean energy, saturated fat, sodium and total sugar content of Hatsun Agro products did not change significantly between 2020 and 2023 (**Figure 21**). Mean sugar and sodium contents for all Hatsun Agro products were lower than the category average, however it is important to note that around a quarter of Hatsun Agro's products in both 2020 and 2023 did not have total sugar content available (**Table 11**).

Figure 21 *Changes in mean nutrient levels for Hatsun Agro; 2020-2023 – (A) Energy (B) Saturated fat (C) Sodium (D) Total sugar*



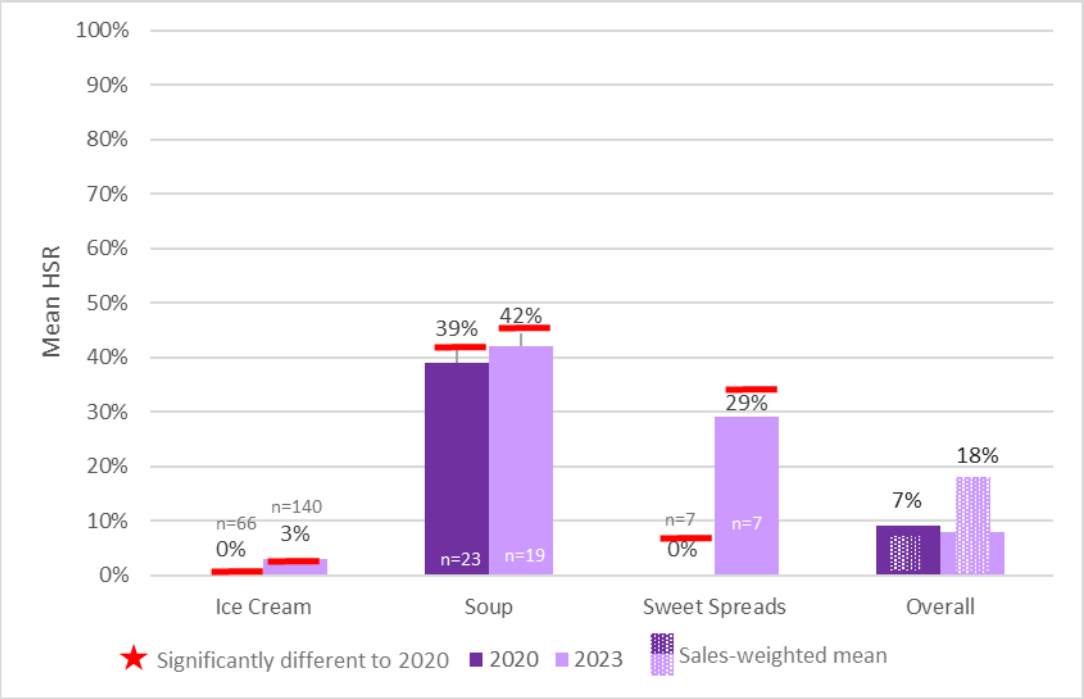
HINDUSTAN UNILEVER

Figure 22 *Changes in mean HSR by category for Hindustan Unilever; 2020-2023*



Hindustan Unilever showed a large increase in sales-weighted mean HSR between 2020 and 2023 (1.5 to 2.4; **Figure 22**), based on the assessment of 96 products in 2020 and 166 in 2023. This was due to an increase in mean HSR in *Ice Cream* which is Hindustan Unilever's highest selling category.

Figure 23 *Changes in the proportion of 'healthy' products by category for Hindustan Unilever; 2020-2023*



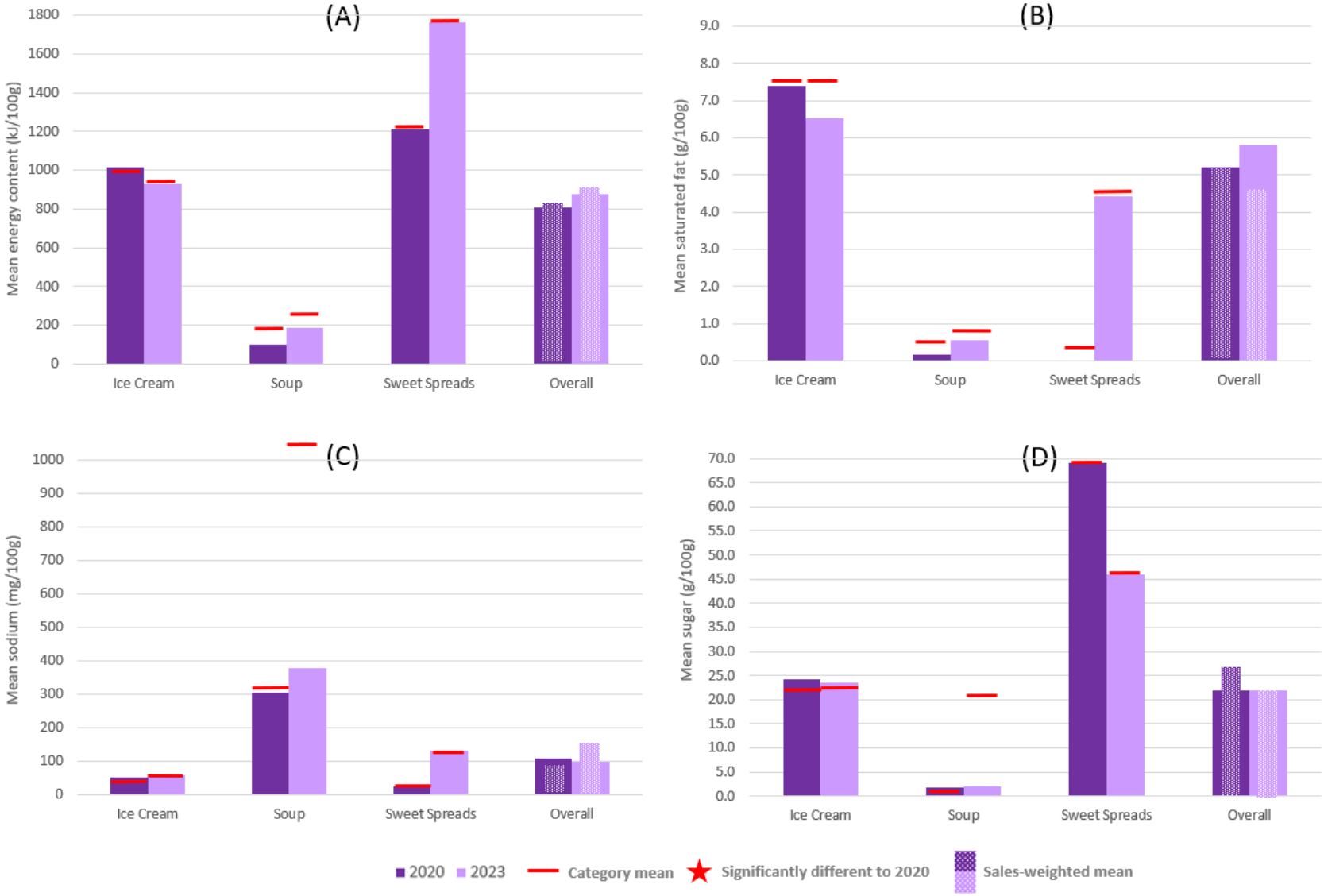
Hindustan Unilever also had an increase in the sales-weighted proportion of products considered 'healthy' from 7% in 2020 to 18% in 2023 (**Figure 23**). However, an important thing to note for Hindustan Unilever is that categories representing only 21% of overall sales were included in analysis due to the varying data formats provided and used in the *2020 Product Profile* compared to the *2023 Product Profile*.

Table 12 *Hindustan Unilever products missing nutrient values in 2020 and 2023, by EMI subset*

N (%) missing nutrient values		Ice Cream *2020 n=66* *2023 n=140*	Soup *2020 n=23* *2023 n=24*	Sweet Spreads *2020 n=7* *2023 n=7*	Overall *2020 n=96* *2023 n=166*
Saturated fat	2020	0 (0%)	0 (0%)	1 (14%)	1 (1%)
	2023	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Sodium	2020	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	2023	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Sugar	2020	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	2023	0 (0%)	0 (0%)	0 (0%)	0 (0%)

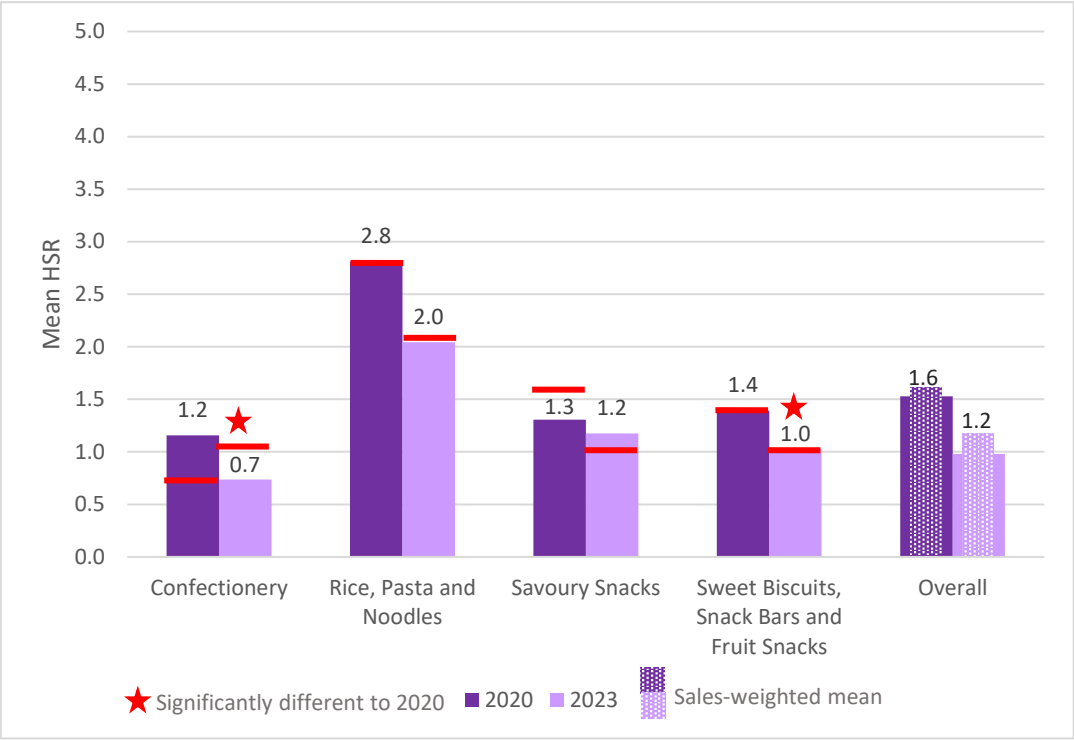
The sales-weighted mean saturated fat and mean total sugar content for Hindustan Unilever decreased between 2020 and 2023 (**Figure 24**).

Figure 24 *Changes in mean nutrient levels for Hindustan Unilever; 2020-2023 – (A) Energy (B) Saturated fat (C) Sodium (D) Total sugar*



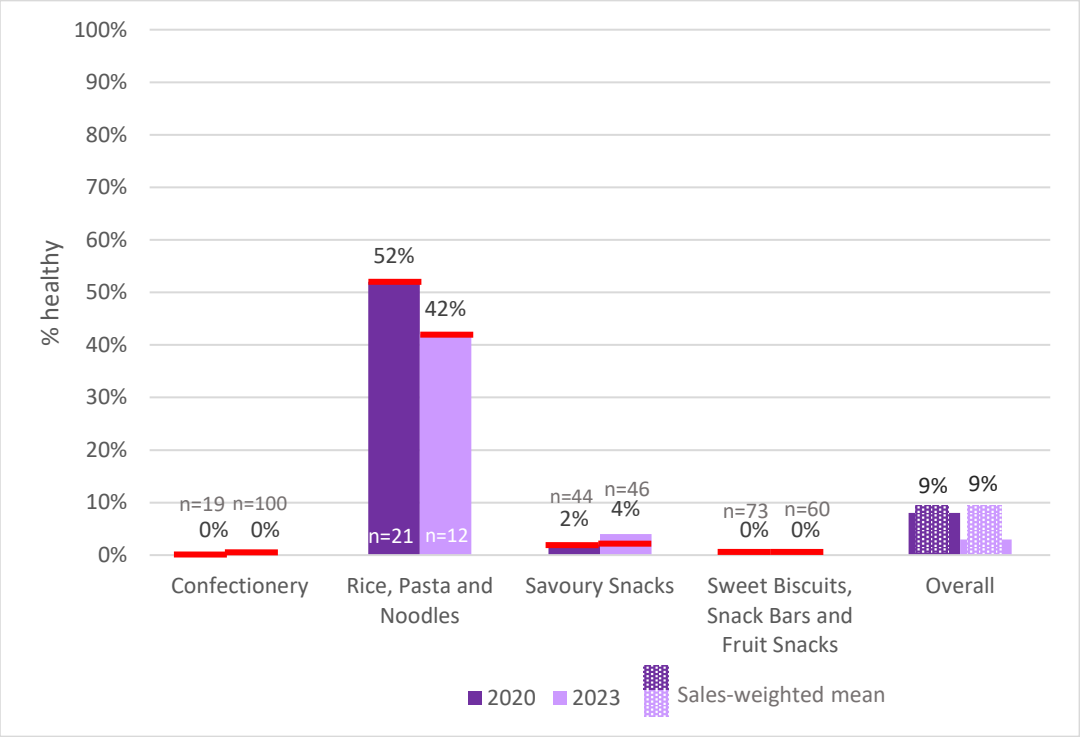
ITC

Figure 25 *Changes in mean HSR by category for ITC; 2020-2023*



The mean sales-weighted HSR for ITC products decreased between 2020 and 2023, from 1.6 in 2020 to 1.2 in 2023 (**Figure 25**). This was mainly driven by significant decreases in mean HSR for *Confectionery* and *Sweet Biscuits, Snack Bars and Fruit Snacks*, although all four categories decreased in mean HSR. However, as seen in **Table 13**, sodium values were not provided in 2020 resulting in proxy values needing to be used in the calculation of the HSR and is likely the reason for the large change seen over time.

Figure 26 *Changes in the proportion of 'healthy' products by category for ITC; 2020-2023*



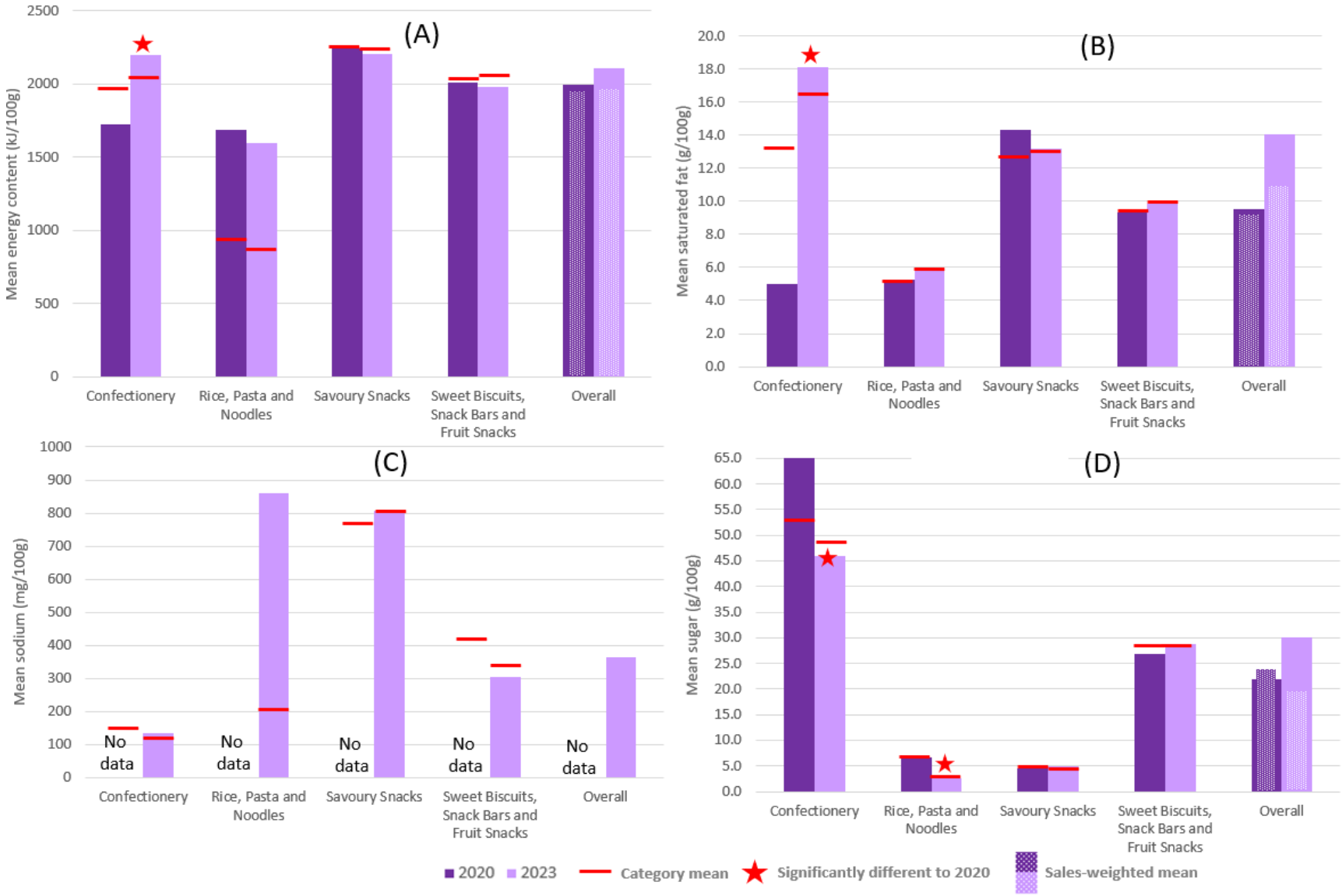
The sales-weighted proportion of products considered healthy did not change between 2020 and 2023 (**Figure 26**).

Table 13 *ITC products missing nutrient values in 2020 and 2023, by EMI subset*

N (%) missing nutrient values		Confectionery *2020 n=19 2023 n=100*	Rice, Pasta and Noodles *2020 n=21 2023 n=12*	Savoury Snacks *2020 n=44 2023 n=46*	Sweet Biscuits, Snack Bars and Fruit Snacks *2020 n=73 2023 n=60*	Overall *2020 n=157 2023 n=218*
Saturated fat	2020	4 (21%)	3 (14%)	11 (25%)	21 (29%)	39 (25%)
	2023	6 (6%)	0 (0%)	0 (0%)	0 (0%)	6 (3%)
Sodium	2020	19 (100%)	21 (100%)	44 (100%)	73 (100%)	157 (100%)
	2023	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Sugar	2020	6 (32%)	6 (29%)	9 (20%)	16 (22%)	37 (24%)
	2023	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

In 2020, ITC did not provide sodium data for any of their products. One quarter of products in 2020 also did not have saturated fat or total sugar values. However, in 2023 all data were provided except for six *Confectionery* products lacking saturated fat data (**Table 13**). ITC did not have any significant changes in the overall energy, total sugar and saturated fat content of their product range between 2020 and 2023, however changes at the category level were observed, with the *Confectionery* category showing some changes. However, as *Confectionery* represented the lowest proportion of revenue for ITC, these changes did not result in any overall differences between 2020 and 2023 (**Figure 27**).

Figure 27 *Changes in mean nutrient levels for ITC; 2020-2023 – (A) Energy (B) Saturated fat (C) Sodium (D) Total sugar*



KMF NANDINI

Figure 28 *Changes in mean HSR by category for KMF Nandini; 2020-2023*

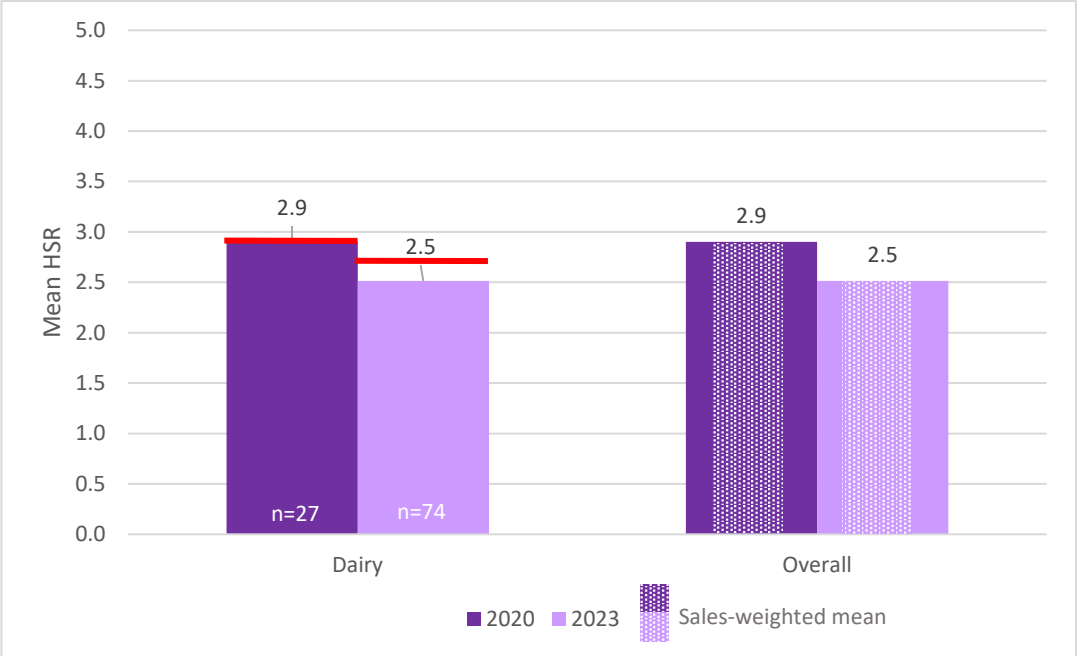


Figure 29 *Changes in the proportion of 'healthy' products by category for KMF Nandini; 2020-2023*

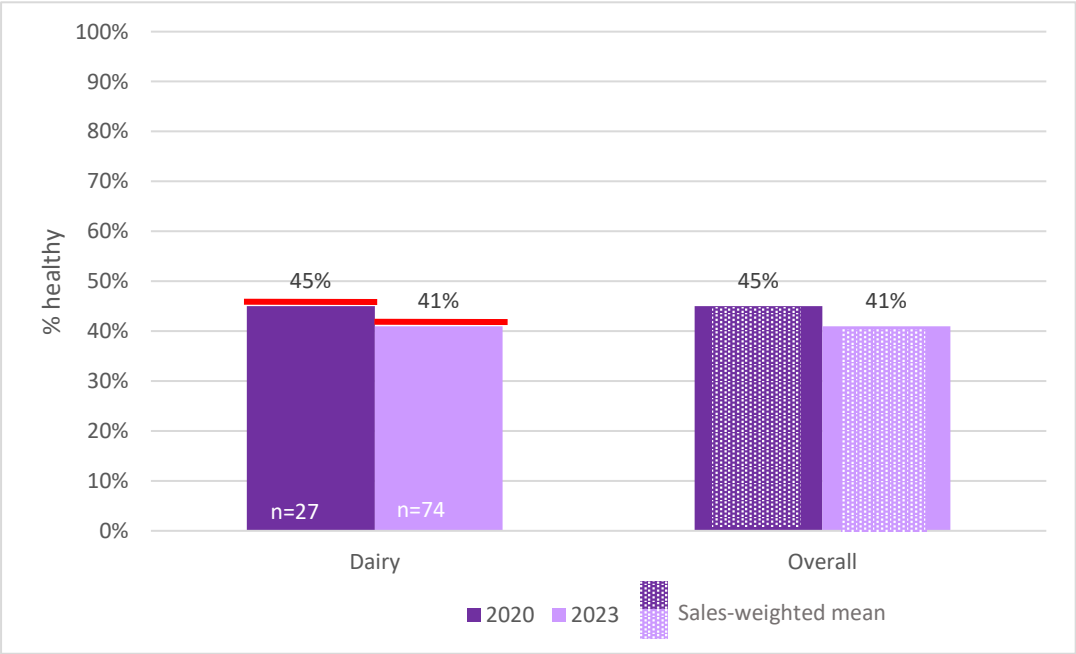


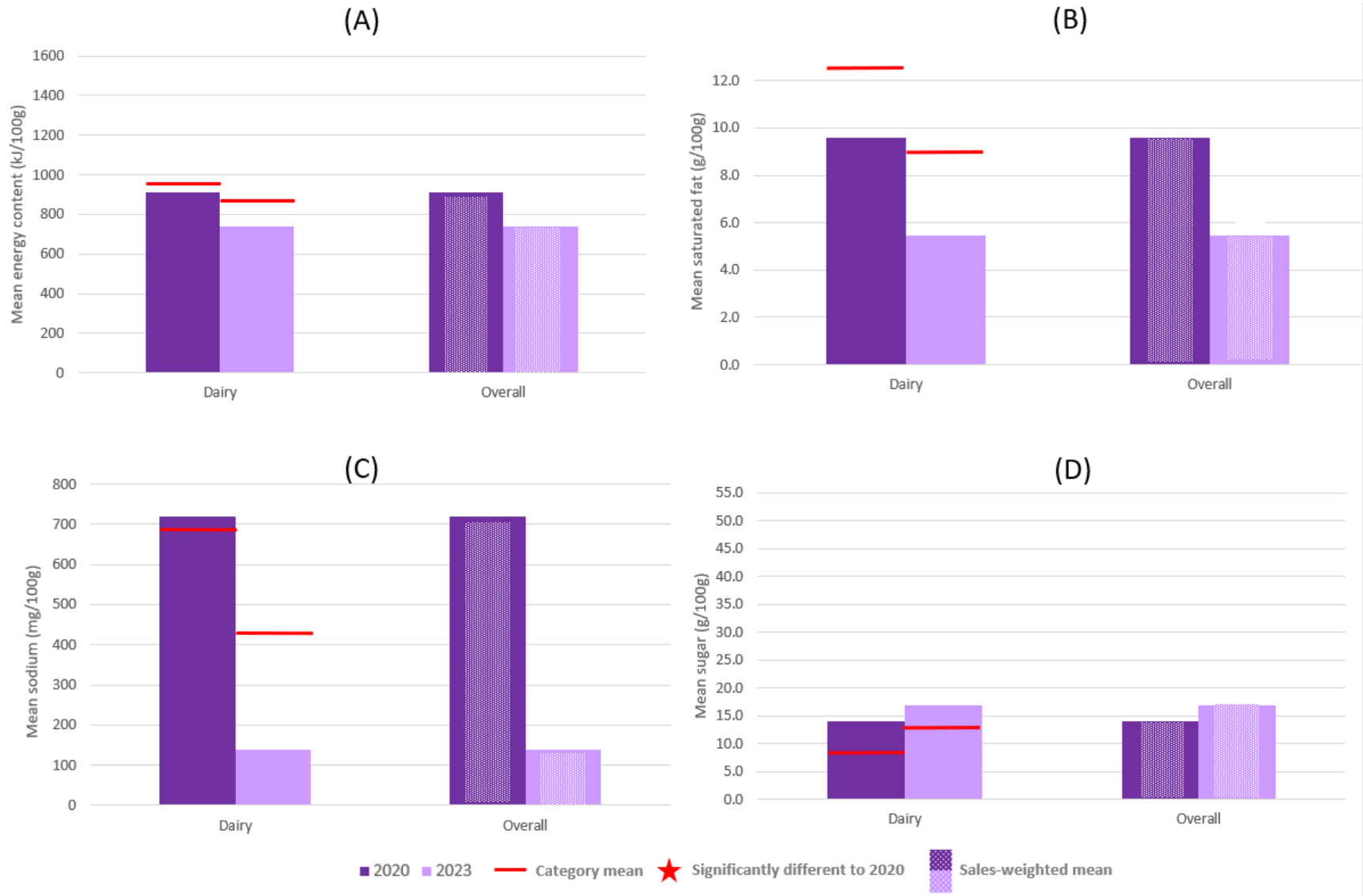
Table 14 *KMF Nandini products missing nutrient values in 2020 and 2023, by EMI subset*

N (%) missing nutrient values		Dairy *2020 n=27 2023 n=74*	Overall *2020 n=27 2023 n=74*
Saturated fat	2020	0 (0%)	0 (0%)
	2023	0 (0%)	0 (0%)
Sodium	2020	25 (93%)	25 (93%)
	2023	0 (0%)	0 (0%)
Sugar	2020	2 (7%)	2 (7%)
	2023	0 (0%)	0 (0%)

The mean sales-weighted HSR for KMF Nandini products decreased between 2020 and 2023 (2.9 to 2.5; **Figure 28**). The sales-weighted proportion considered healthy also decreased slightly (**Figure 29**). Little sodium data were provided in 2020, and so the use of proxy values may have influenced the change in mean HSR observed.

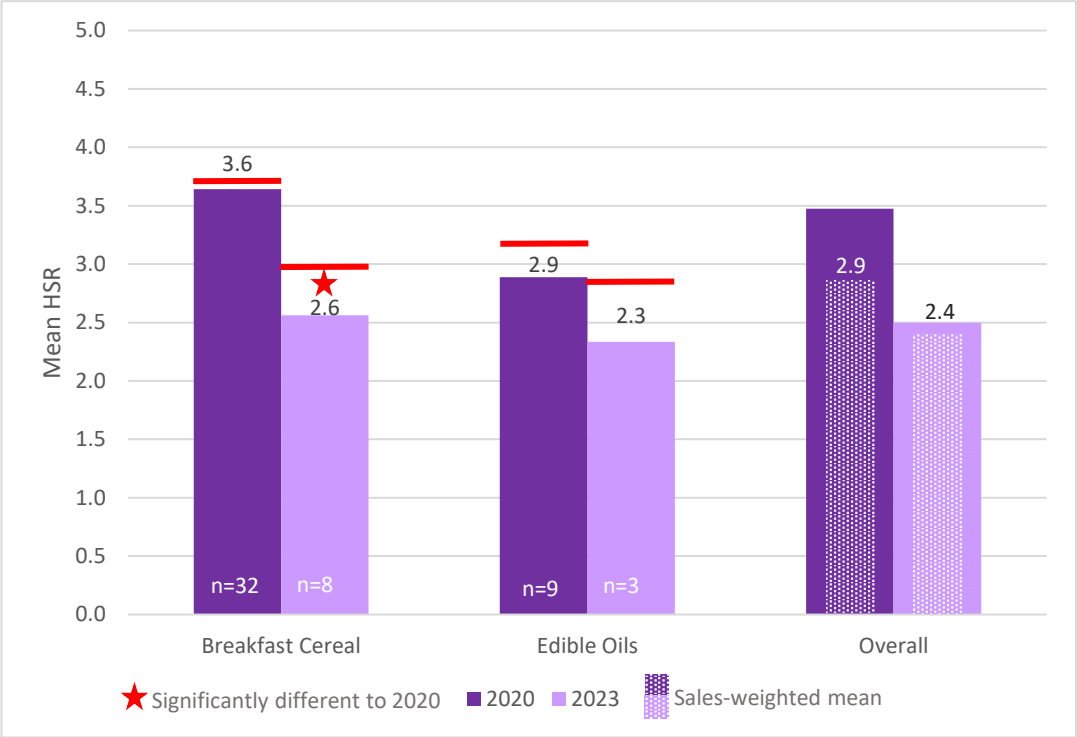
Almost 100% of products in both years did not report sodium values (**Table 14**), and a small proportion (7%) did not report total sugar content. This resulted in a substantial decrease in mean sodium content between 2020 and 2023 (**Figure 30**). There was also a substantial decrease in mean saturated fat content between 2020 and 2023, however no changes in mean total sugar or energy content were observed.

Figure 30 *Changes in mean nutrient levels for KMF Nandini; 2020-2023 – (A) Energy (B) Saturated fat (C) Sodium (D) Total sugar*



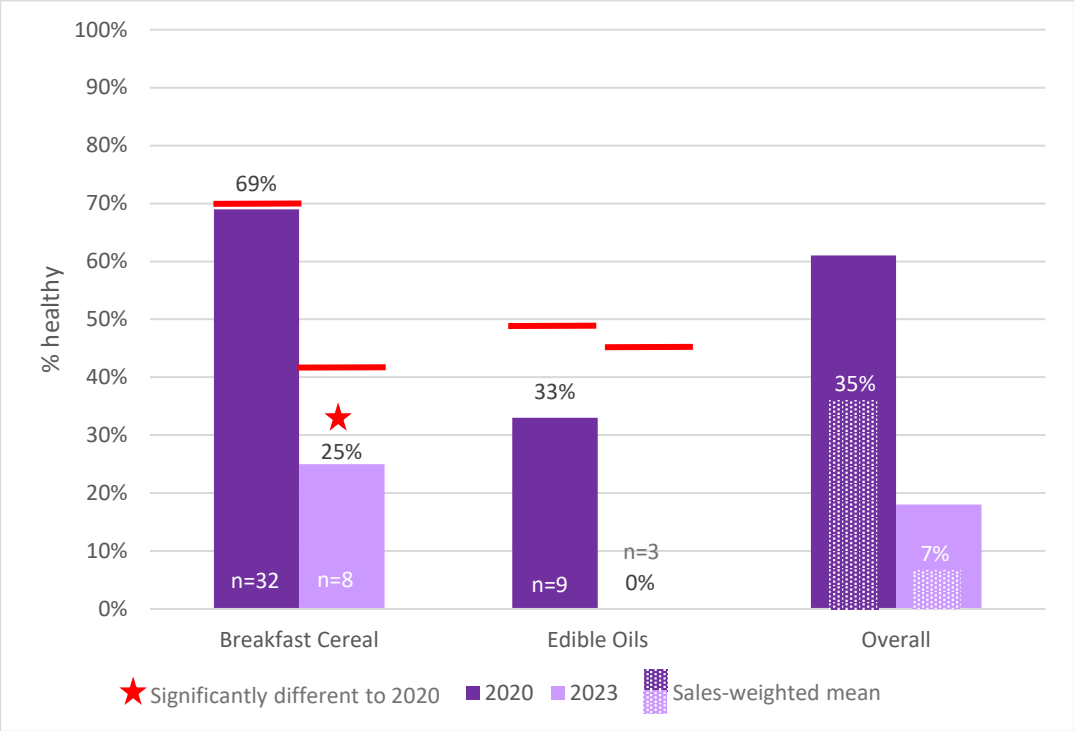
MARICO

Figure 31 *Changes in mean HSR by category for Marico; 2020-2023*



The sales-weighted mean HSR for Marico products overall decreased between 2020 and 2023 (2.9 to 2.4), driven mainly by changes in the *Breakfast Cereal* category, (3.6 to 2.6; p=0.02; **Figure 31**).

Figure 32 *Changes in the proportion of 'healthy' products by category for Marico; 2020-2023*



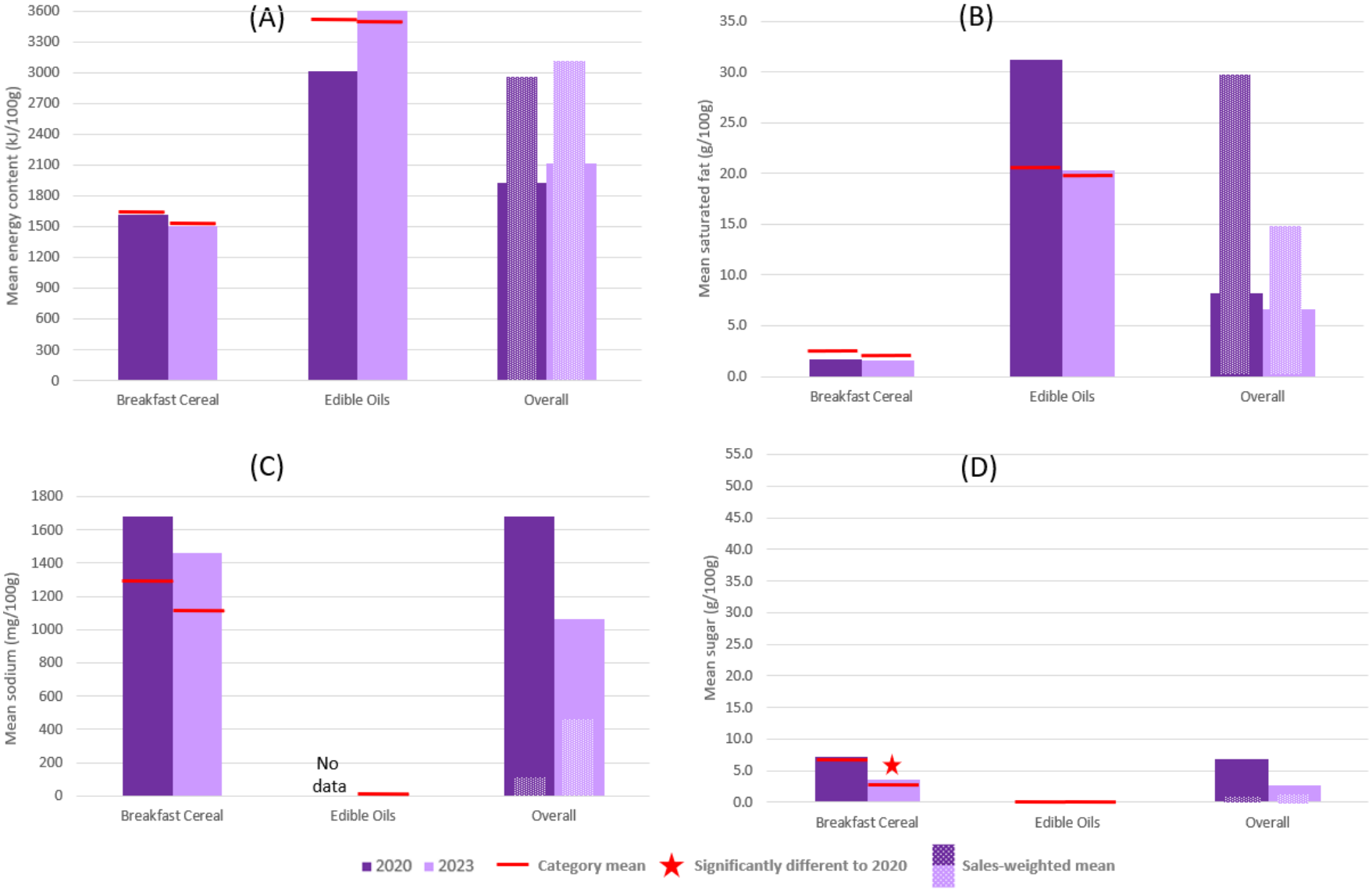
There was a large decrease in the proportion of products considered 'healthy' for Marico between 2020 and 2023 (**Figure 32**). Although, it must be noted that there was a substantial decrease in total product numbers between 2020 and 2023 for Marico; from n=41 in 2020 to n=11 in 2023, which was the main reason driving the large change, with a small number of *Edible Oils* receiving an HSR of >=3.5 in 2020 but none in 2023. Adding to the reasons for these changes, the proportion of revenue deriving from each category changed substantially between 2020 and 2023, and sugar content was missing for many products in 2020 (**Table 15**).

Table 15 *Marico products missing nutrient values in 2020 and 2023, by EMI subset*

N (%) missing nutrient values		Breakfast Cereal *2020 n=32 2023 n=8*	Edible Oils *2020 n=9 2023 n=3*	Overall *2020 n=41 2023 n=11*
Saturated fat	2020	0 (0%)	0 (0%)	0 (0%)
	2023	0 (0%)	0 (0%)	0 (0%)
Sodium	2020	23 (72%)	9 (100%)	32 (78%)
	2023	0 (0%)	0 (0%)	0 (0%)
Sugar	2020	0 (0%)	7 (78%)	7 (17%)
	2023	0 (0%)	0 (0%)	0 (0%)

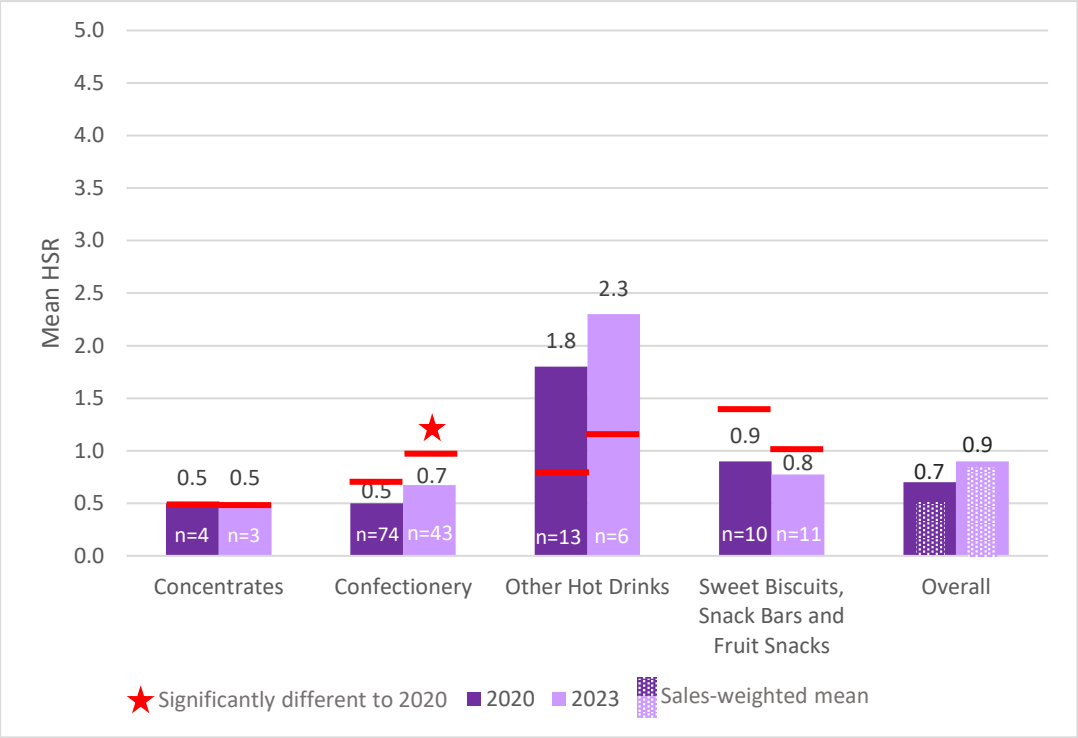
Around ¾ of products in 2020 did not report sodium values (**Table 15**), and 17% did not report total sugar content. However in 2023 all nutrient values were provided. A significant decrease in mean total sugar content was observed (6.8g/100g to 2.7g/100g; p=0.008; **Figure 33**), however with 17% of missing sugar values this result should be interpreted with caution. No significant changes in energy, saturated fat or sodium were observed for Marico.

Figure 33 *Changes in mean nutrient levels for Marico; 2020-2023 – (A) Energy (B) Saturated fat (C) Sodium (D) Total sugar*



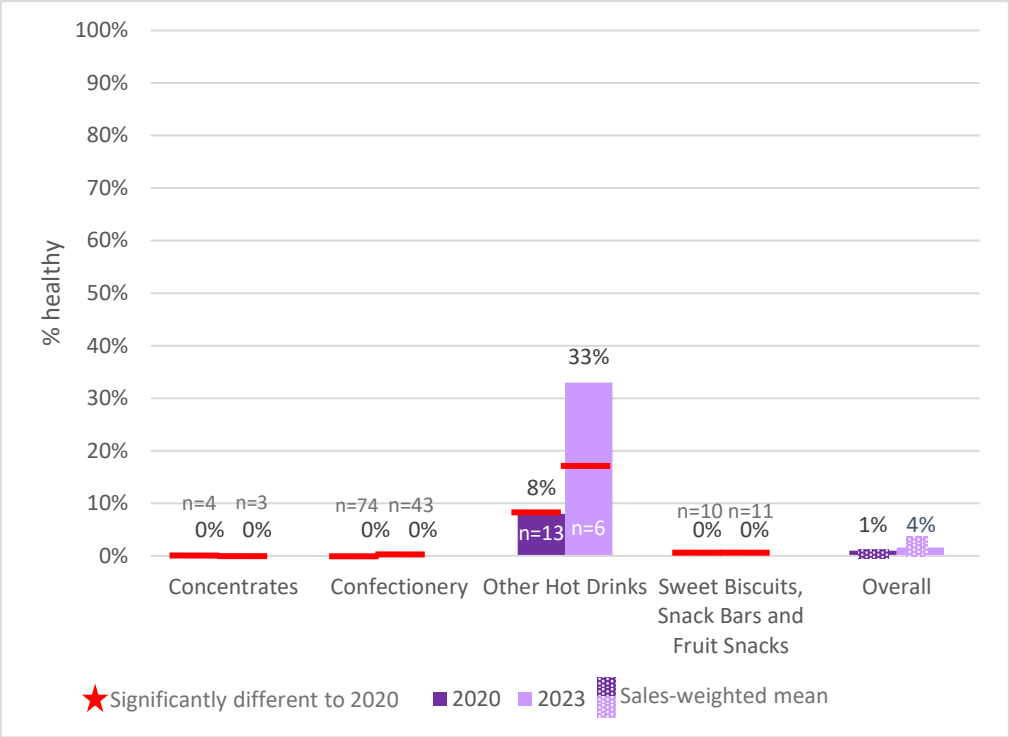
MONDELĒZ INDIA

Figure 34 *Changes in mean HSR by category for Mondelēz India; 2020-2023*



The mean sales-weighted HSR for Mondelēz India's product range increased between 2020 and 2023 (0.7 to 0.9; **Figure 34**), although remained the lowest of all companies included in the analysis. Mean healthiness was below the category average for all product categories in the Mondelēz India range.

Figure 35 *Changes in proportion of 'healthy' products by category for Mondelēz India; 2020-2023*



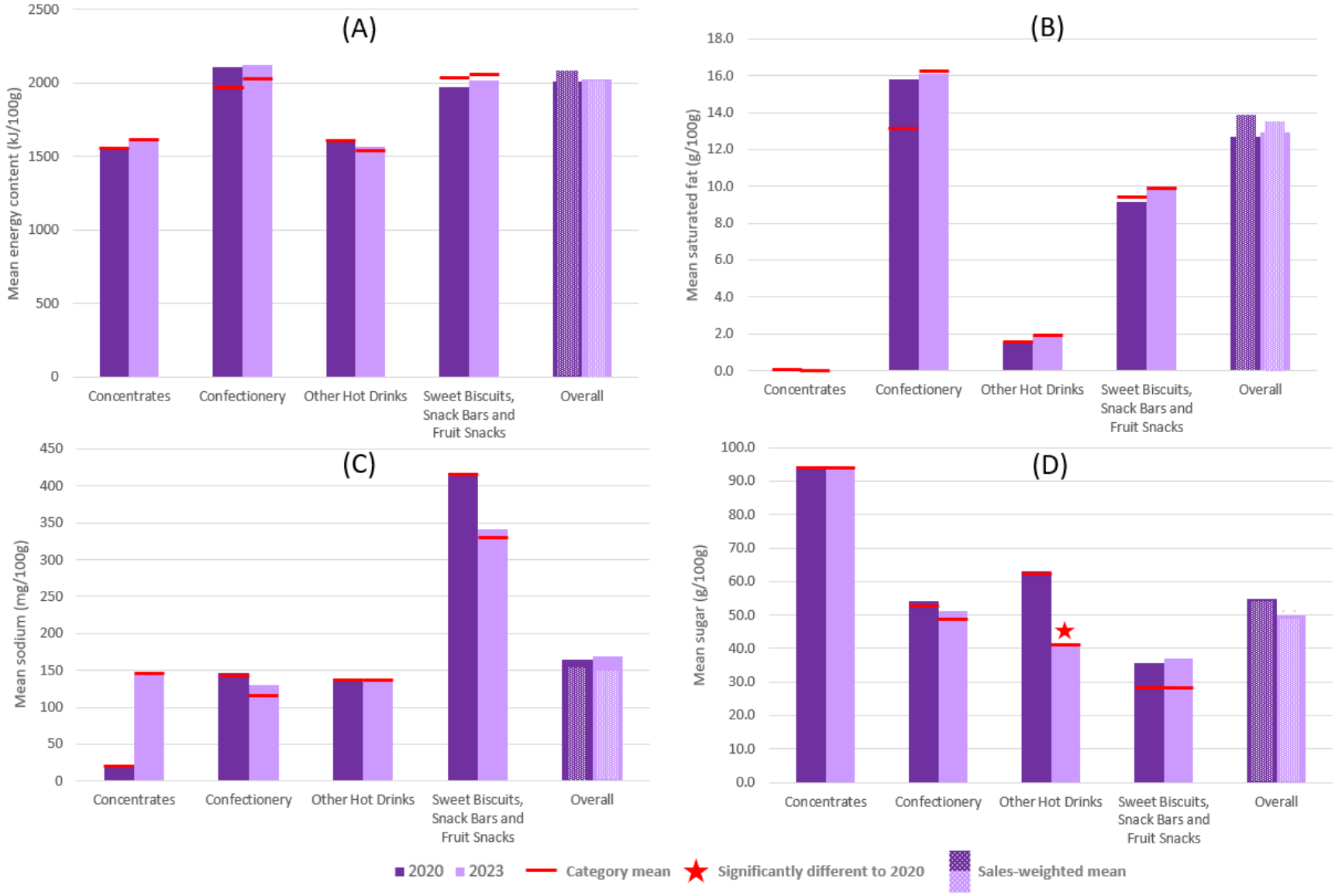
Only one category in Mondelēz India's product range had products with an HSR>=3.5 (*Other Hot Drinks).* There was no change overall in the proportion of products considered 'healthy' (**Figure 35**).

Table 16 *Mondelēz India products missing nutrient values in 2020 and 2023, by EMI subset*

N (%) missing nutrient values		Concentrates *2020 n=4* *2023 n=3*	Confectionery *2020 n=74* *2023 n=43*	Other Hot Drinks *2020 n=13* *2023 n=6*	Sweet Biscuits, Snack Bars and Fruit Snacks *2020 n=10* *2023 n=11*	Overall *2020 n=101* *2023 n=63*
Saturated fat	2020	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	2023	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Sodium	2020	0 (0%)	0 (0%)	0 (0%)	1 (10%)	1 (1%)
	2023	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Sugar	2020	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	2023	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

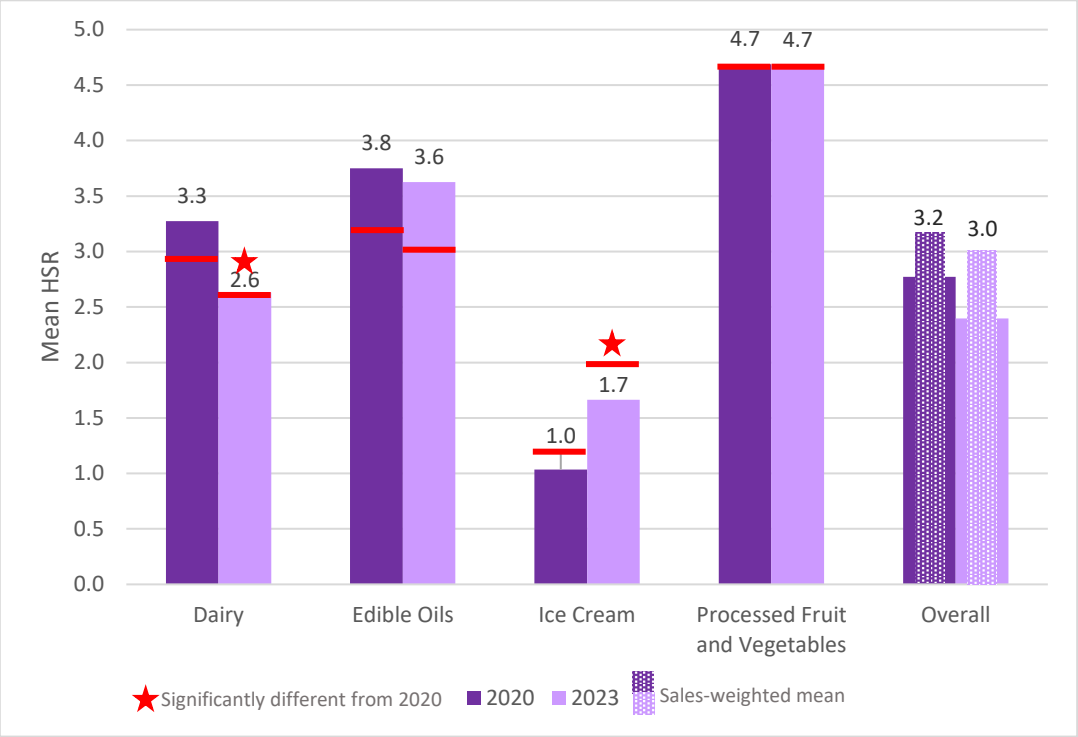
Mondelēz India was one of the only companies in this analysis to provide nearly all required nutrient data in 2020 and 2023 (**Table 16**), with only one product in 2020 not having sodium content available. No significant changes were observed between 2020 and 2023 overall for levels of energy, saturated fat or sodium in Mondelēz India's product range, however there was a significant decrease in total sugar content overall (55.0 to 49.9g/100g; p=0.005; **Figure 36**) driven by *Other Hot Drinks* which had a significant decrease in sugar (62.9g/100g to 42.1g/100g; p=0.01).

Figure 36 *Changes in mean nutrient levels for Mondelēz India; 2020-2023 – (A) Energy (B) Saturated fat (C) Sodium (D) Total sugar*



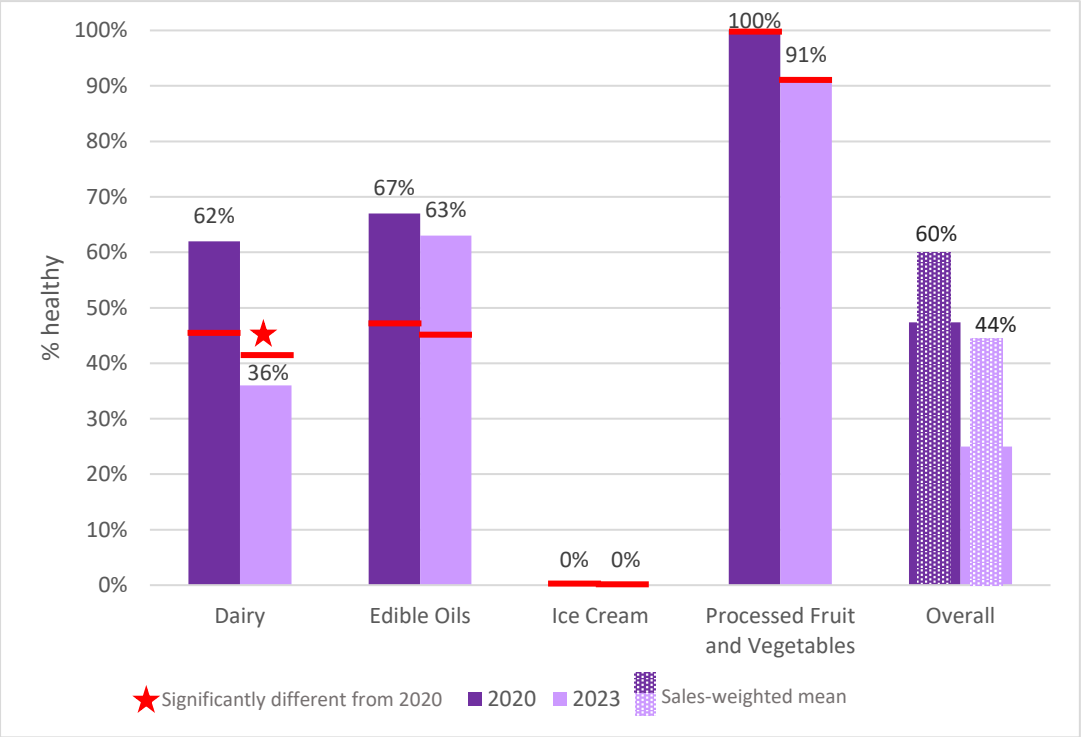
MOTHER DAIRY

Figure 37 *Changes in mean HSR by category for Mother Dairy; 2020-2023*



There was a decrease in the healthiness of Mother Dairy's overall product portfolio between 2020 and 2023. There was a significant decrease in mean HSR for *Dairy* products (3.3 to 2.6; p=0.004; **Figure 37**) and a significant increase in *Ice Cream* products (1.0 to 1.7; p<0.001). Mother Dairy generally had mean healthiness in each category at or above the category average for all 14 companies.

Figure 38 *Changes in the proportion of 'healthy' products by category for Mother Dairy; 2020-2023*



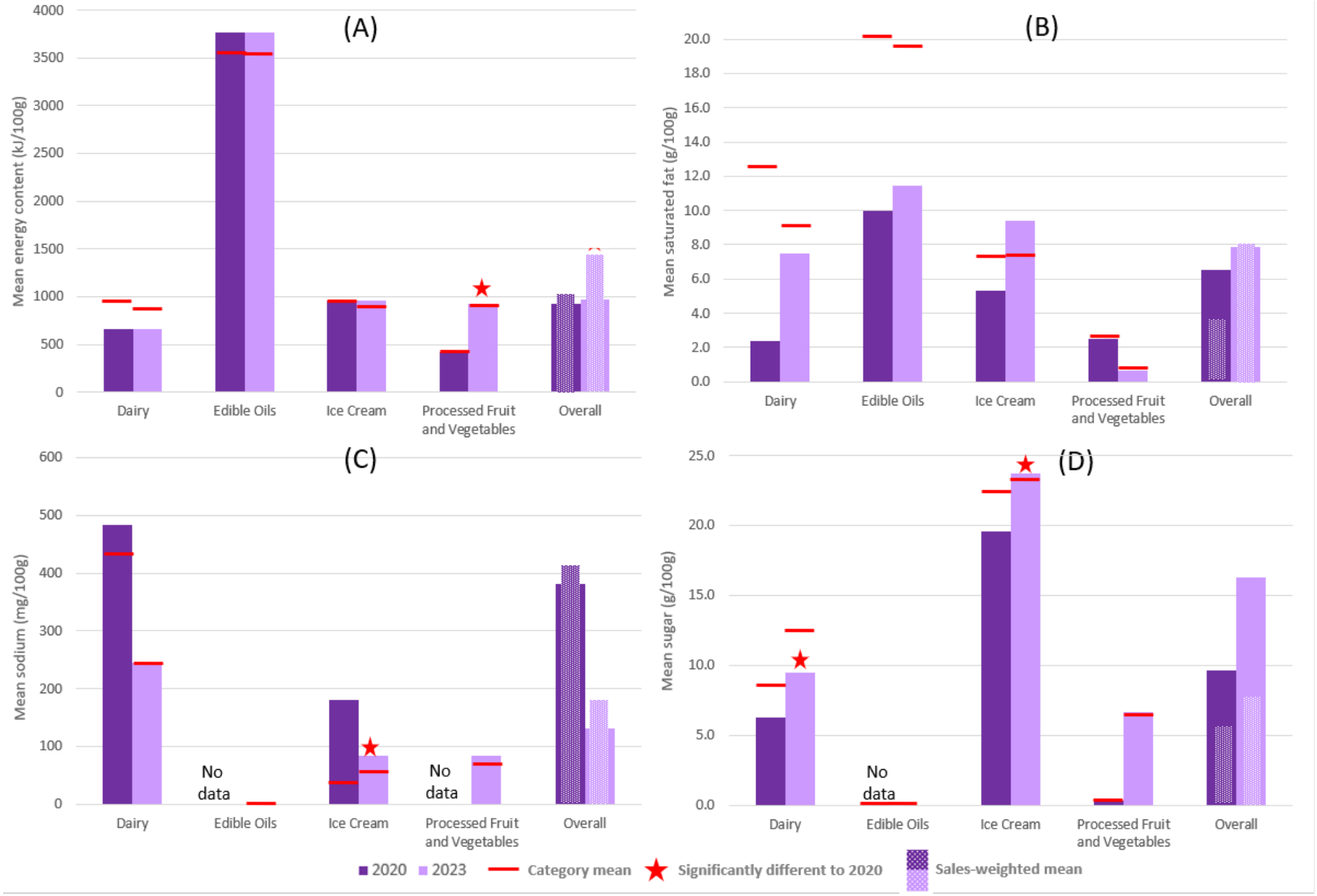
There was a large decrease for the proportion of products considered 'healthy' (sales-weighted 60% in 2020 to 44% in 2023; **Figure 38**). This was driven by a significant decrease in the *Dairy* category which is the highest selling category for Mother Dairy.

Table 17 *Mother Dairy products missing nutrient values in 2020 and 2023, by EMI subset*

N (%) missing nutrient values		Dairy *2020 n=55* *2023 n=61*	Edible Oils *2020 n=6* *2023 n=8*	Ice Cream *2020 n=28* *2023 n=104*	Processed Fruit and Vegetables *2020 n=8* *2023 n=23*	Overall *2020 n=97* *2023 n=196*
Saturated fat	2020	54 (98%)	0 (0%)	21 (75%)	6 (75%)	81 (84%)
	2023	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Sodium	2020	53 (96%)	6 (100%)	27 (96%)	8 (100%)	94 (97%)
	2023	0 (0%)	0 (0%)	0 (0%)	1 (4%)	1 (1%)
Sugar	2020	1 (2%)	6 (100%)	3 (11%)	1 (12%)	11 (11%)
	2023	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

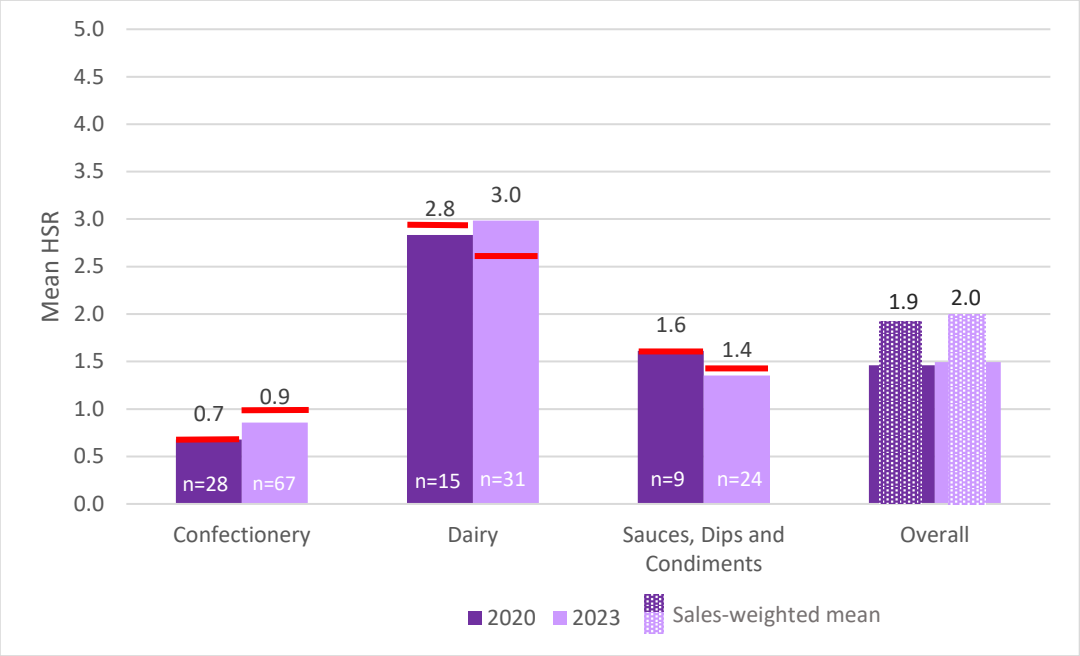
Mother Dairy had a very low proportion of products in 2020 and 2023 that reported saturated fat and sodium levels (<20% for all) meaning that we must interpret the overall changes in mean saturated fat and sodium for Mother Dairy very cautiously. However, in 2023 all but one product had all required nutrients provided. There was a significant increase in energy content between 2020 and 2023 (919kJ/100g to 975kJ/100g; p=0.004; **Figure 39A**), however due to missing data for sodium and total sugar, changes over time could not be evaluated for these nutrients. Similarly, there was a substantial amount of missing data for saturated fat, meaning that changes in this nutrient overall and by category should be interpreted with caution.

Figure 39 *Changes in mean nutrient levels for Mother Dairy; 2020-2023 – (A) Energy (B) Saturated fat (C) Sodium (D) Total sugar*



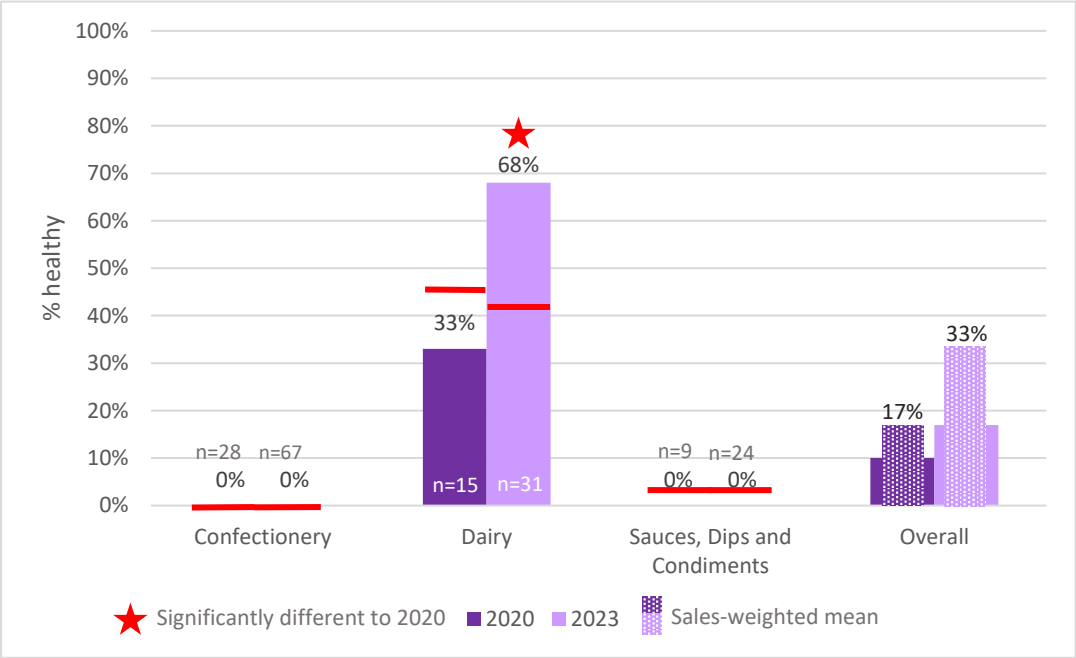
NESTLÉ INDIA

Figure 40 *Changes in mean HSR by category for Nestlé India; 2020-2023*



The mean healthiness of Nestlé India's overall product portfolio did not change substantially between 2020 and 2023 (sales-weighted HSR 1.9 to 2.0; **Figure 40**).

Figure 41 *Changes in proportion of 'healthy' products by category for Nestlé India; 2020-2023*



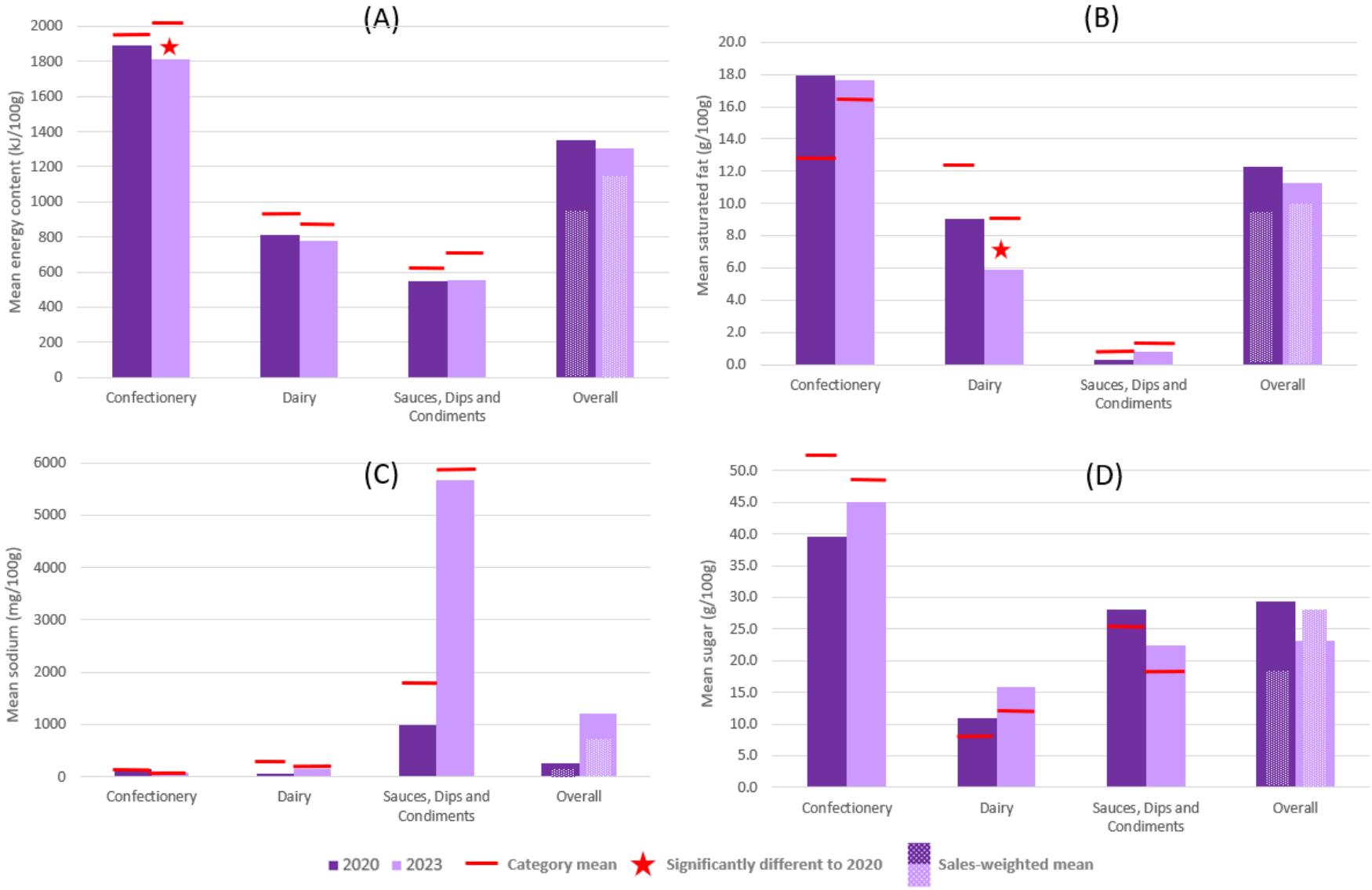
The proportion of healthy products increased, due to large changes in the *Dairy* category between 2020 and 2023 (**Figure 41**). However, it's important to note that due to differences in the format of nutrient values provided by Nestlé India in 2020 versus 2023 in the *Rice, Pasta and Noodles* category, this category was not able to be included in analysis, resulting in 38% in 2020 and 53% in 2023 of Nestlé India's revenue being included in this analysis.

Table 18 *Nestlé India's products missing nutrient values in 2020 and 2023, by EMI subset*

N (%) missing nutrient values		Confectionery *2020 n=28 2023 n=67*	Dairy *2020 n=15 2023 n=31*	Sauces, Dips and Condiments *2020 n=9 2023 n=24*	Overall *2020 n=52 2023 n=122*
Saturated fat	2020	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	2023	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Sodium	2020	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	2023	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Sugar	2020	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	2023	0 (0%)	0 (0%)	0 (0%)	0 (0%)

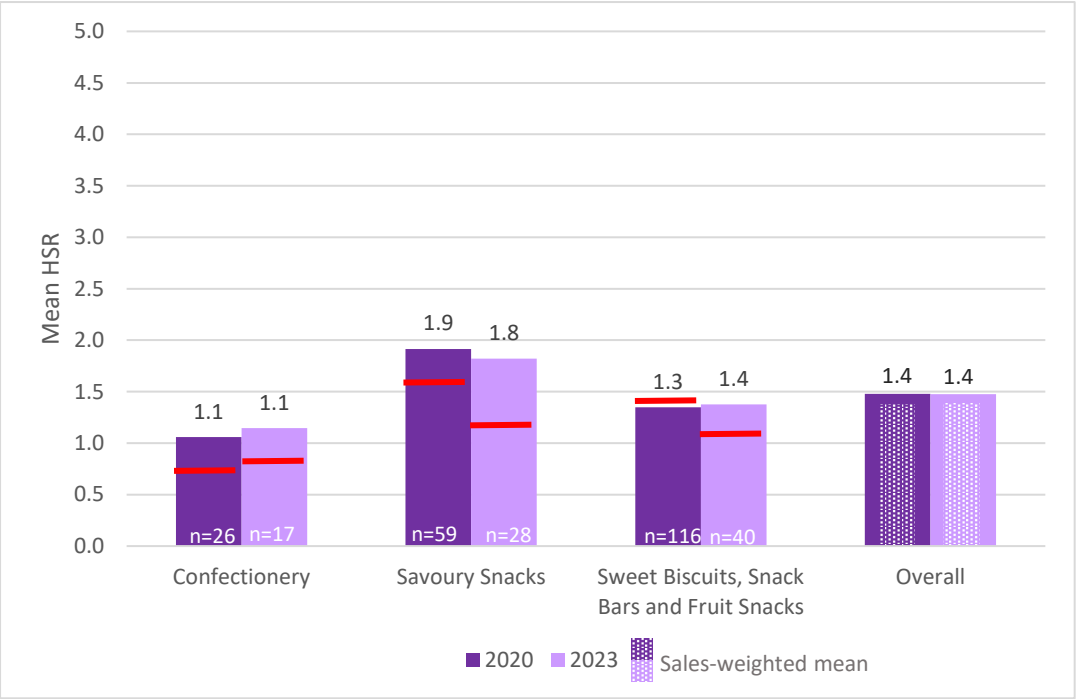
In both 2020 and 2023, 100% of Nestlé India products had information on levels of saturated fat, sodium and total sugar provided (**Table 18**). No significant changes were seen in nutrient levels overall in Nestlé India's product range (**Figure 42**). Although large, the difference in sodium content in the *Sauces, Dips and Condiments* category between 2020 and 2023 was driven solely by a small number of products with high sodium values and as such the differences over time were not significant. Using raw data, all nutrients appeared to decrease between 2020 and 2023, however once sales-weighting was applied, the result flipped and all nutrients saw an increase.

Figure 42 *Changes in mean nutrient levels for Nestlé India; 2020-2023 – (A) Energy (B) saturated fat (C) Sodium (D) Total sugar*



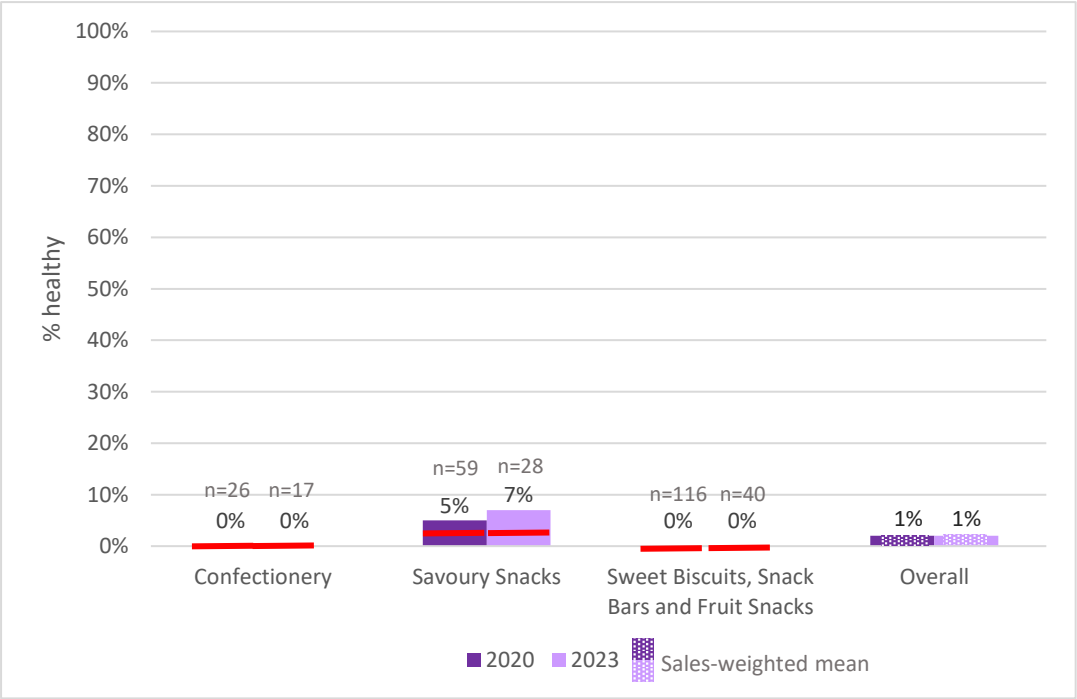
PARLE PRODUCTS

Figure 43 *Changes in mean HSR by category for Parle Products; 2020-2023*



The mean healthiness of Parle Products' portfolio remained the same between 2020 and 2023 (sales-weighted HSR=1.4; **Figure 43**), despite a large decrease in the number of products assessed since 2020 (201 vs 85). No significant changes were observed at the category level. Not surprisingly, *Confectionery* products had the lowest overall healthiness of all product categories examined.

Figure 44 *Changes in the proportion of 'healthy' products by category for Parle Products; 2020-2023*



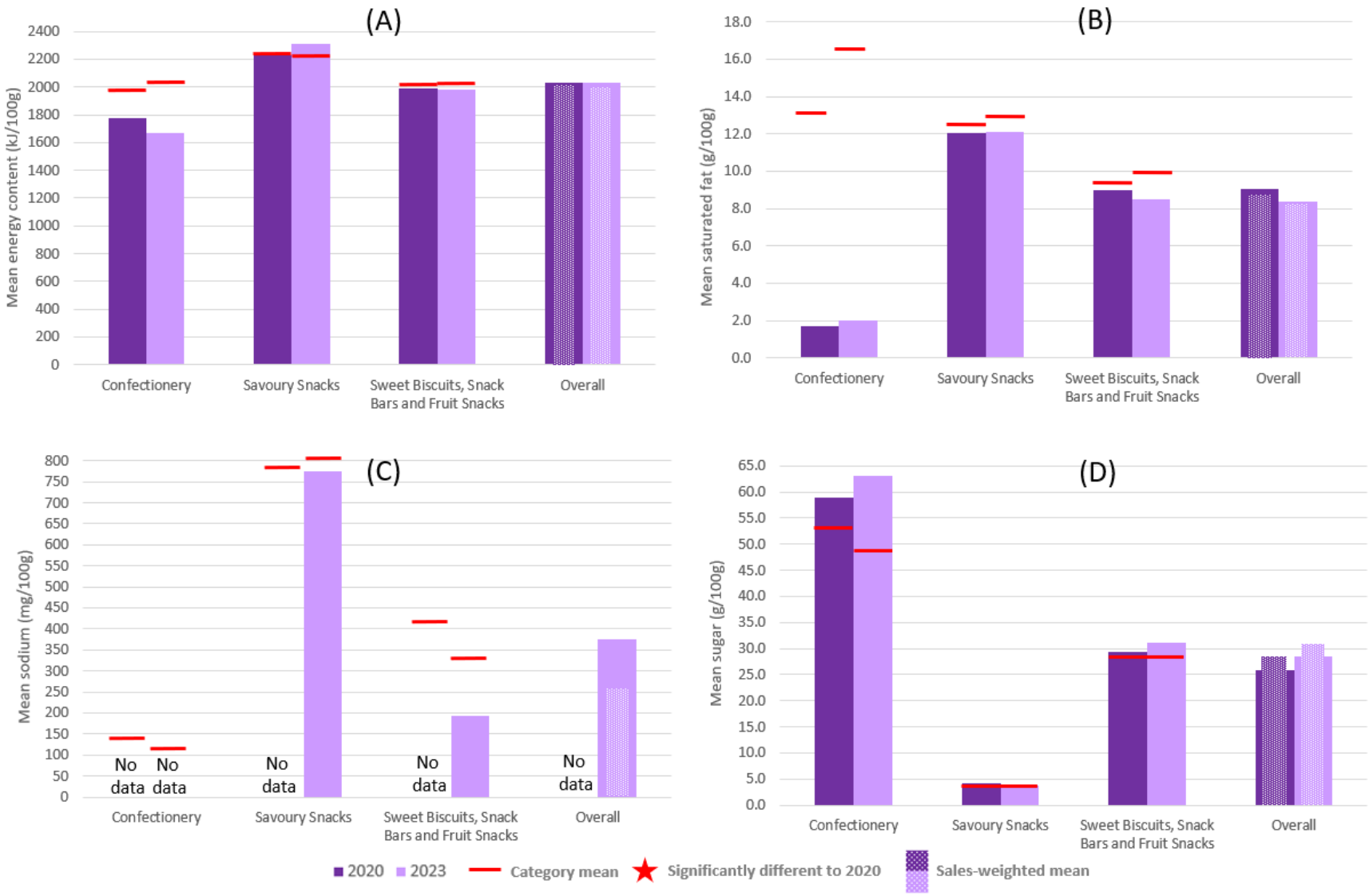
There were also no significant changes in the proportion of products considered healthy overall or in each category for Parle Products between 2020 and 2023 (**Figure 44**).

Table 19 *Parle Products missing nutrient values in 2020 and 2023, by EMI subset*

N (%) missing nutrient values		Confectionery *2020 n=26* *2023 n=17*	Savoury Snacks *2020 n=59* *2023 n=28*	Sweet Biscuits, Snack Bars and Fruit Snacks *2020 n=116* *2023 n=40*	Overall *2020 n=201* *2023 n=85*
Saturated fat	2020	9 (75%)	14 (24%)	33 (28%)	56 (28%)
	2023	2 (12%)	3 (11%)	1 (2%)	6 (7%)
Sodium	2020	26 (100%)	59 (100%)	116 (100%)	201 (100%)
	2023	17 (100%)	23 (82%)	29 (72%)	69 (81%)
Sugar	2020	0 (0%)	1 (2%)	0 (0%)	1 (0%)
	2023	0 (0%)	0 (0%)	0 (0%)	0 (0%)

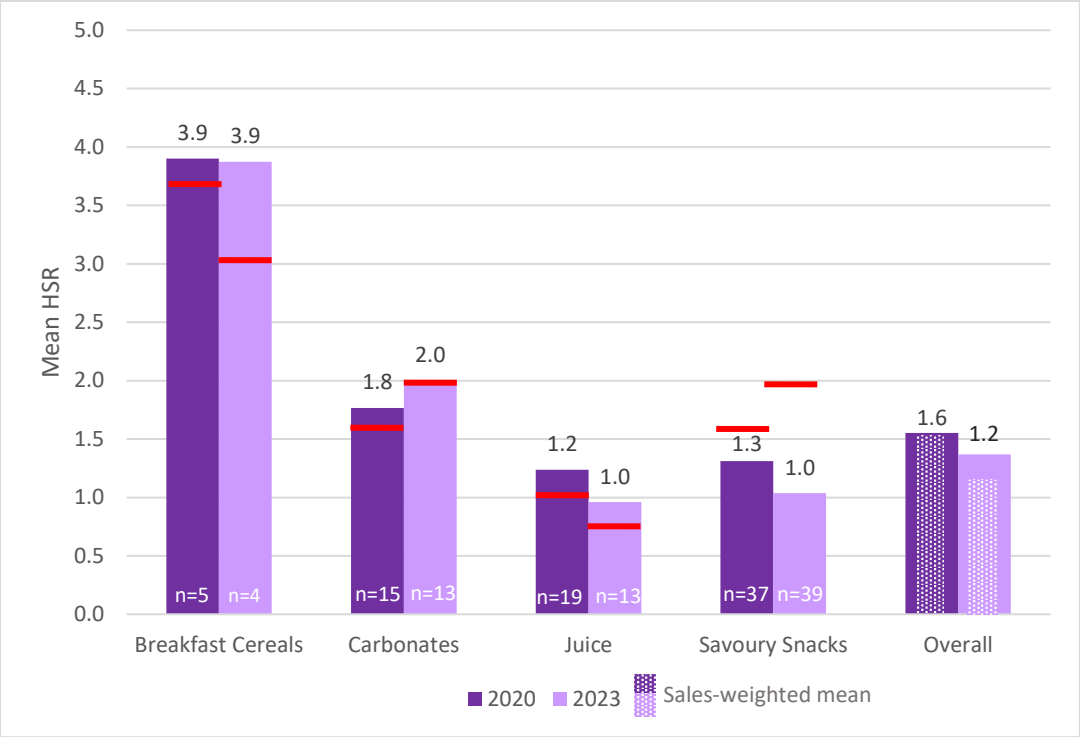
Sodium values were missing from 100% of products in 2020 and 81% in 2023 (**Table 19**), yet 100% of total sugar values were available. In 2020, 72% of products had saturated fat values and this increased to 93% in 2023. No significant changes were observed overall for levels of saturated fat, total sugar or energy between 2020 and 2023 (**Figure 45**).

Figure 45 *Changes in mean nutrient levels for Parle Products; 2020-2023 – (A) Energy (B) Saturated fat (C) Sodium (D) Total sugar*



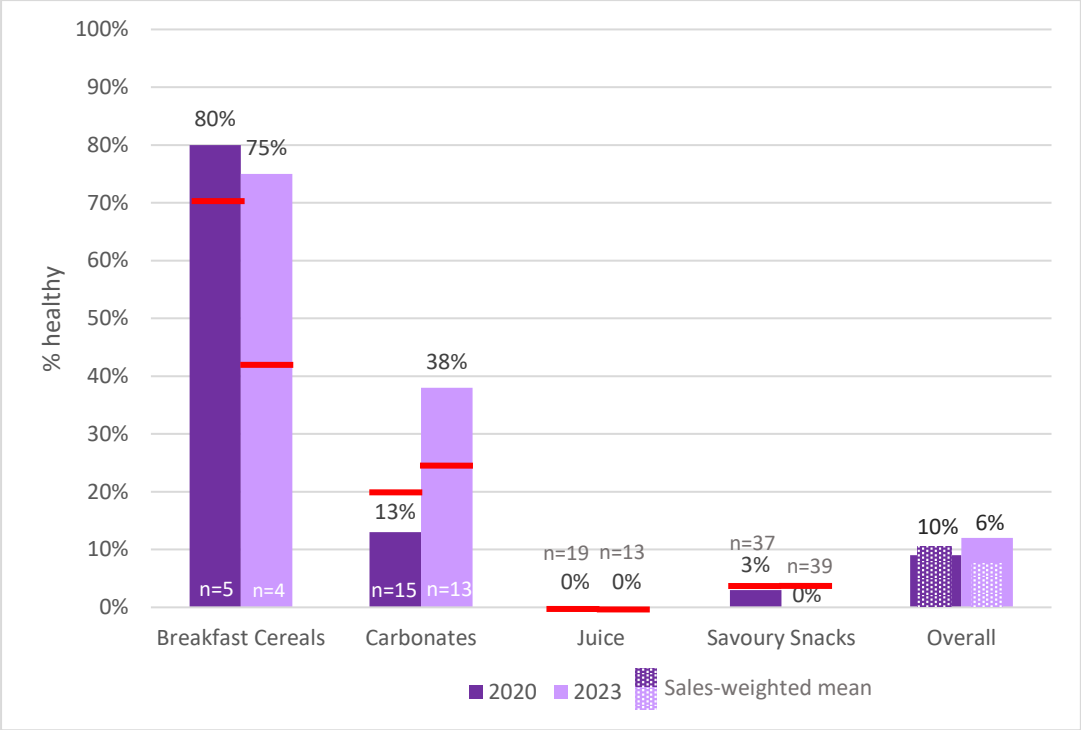
PEPSICO INDIA

Figure 46 *Changes in mean HSR by category for PepsiCo India; 2020-2023*



The sales-weighted mean healthiness of PepsiCo India's overall product portfolio decreased from 1.6 in 2020 to 1.2 in 2023, driven by decreases in mean HSR for *Savoury Snacks*. *Breakfast Cereals* had the highest mean HSR out of PepsiCo India's portfolio in both years, and *Juice* the lowest (**Figure 46**).

Figure 47 *Changes in proportion of 'healthy' products by category for PepsiCo India; 2020-2023*



There was a small decrease in the sales-weighted proportion of products considered healthy between 2020 and 2023 for PepsiCo India (**Figure 47**).

Table 20 *PepsiCo India products missing nutrient values in 2020 and 2023, by EMI subset*

N (%) missing nutrient values		Breakfast Cereals *2020 n=5 2023 n=4*	Carbonates *2020 n=15 2023 n=13*	Juice *2020 n=19 2023 n=13*	Savoury Snacks *2020 n=37 2023 n=39*	Overall *2020 n=76 2023 n=69*
Saturated fat	2020	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	2023	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Sodium	2020	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	2023	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Sugar	2020	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	2023	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

There were no missing nutrient values for PepsiCo India products in either 2020 or 2023. There were no significant changes in levels of energy, saturated fat, total sugar or sodium for PepsiCo India products between 2020 and 2023 (**Figure 48**) using the raw data, however when weighted by category sales, the overall mean values for energy, saturated fat and sugar all increased dramatically, due mainly to a large increase in the proportion of PepsiCo India's revenue that derived from *Savoury Snacks*.

Figure 48 *Changes in mean nutrient levels for PepsiCo India India; 2020-2023 – (A) Energy (B) Saturated fat (C) Sodium (D) Total sugar*

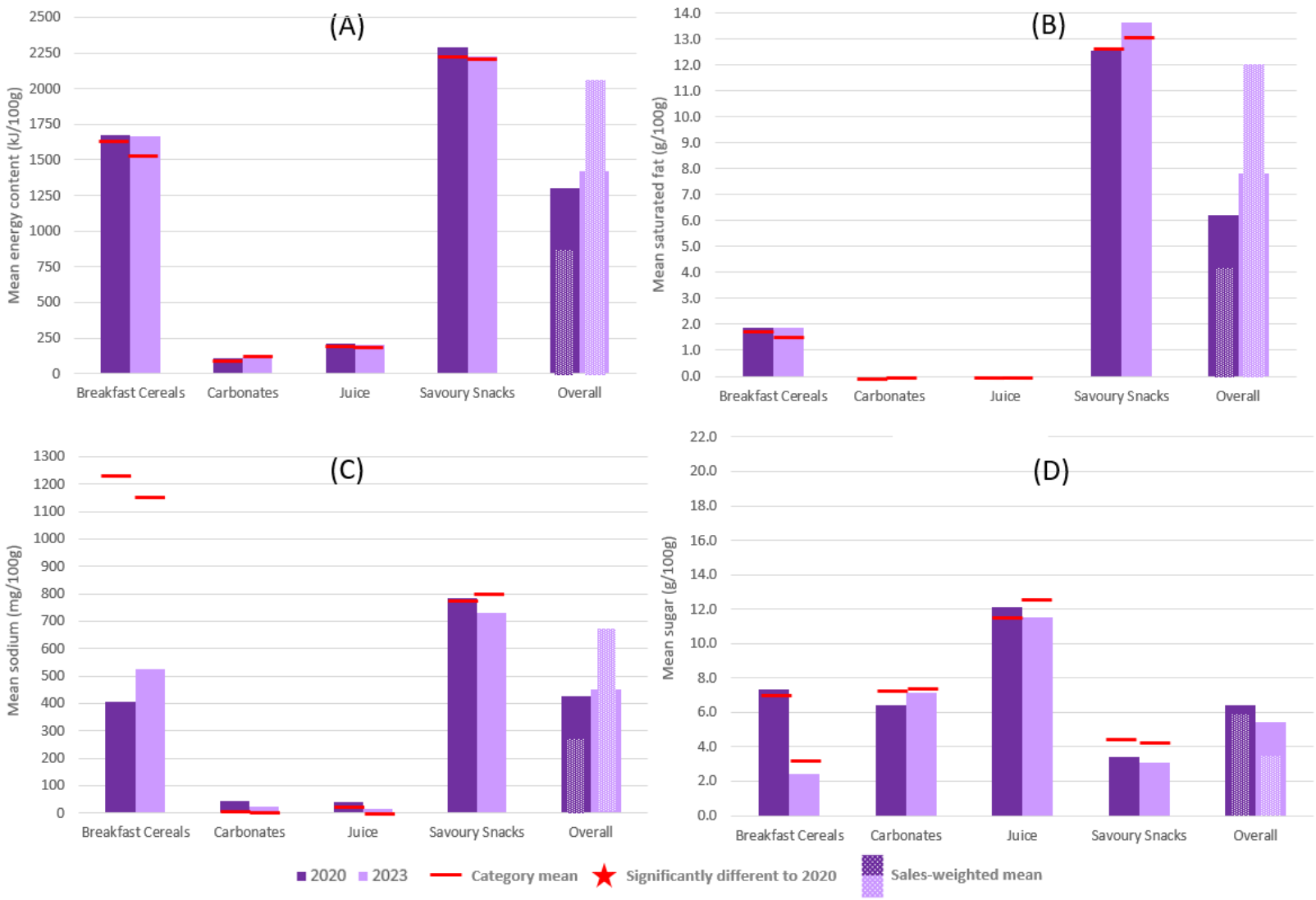


Table 21 *Mean and SD HSR of food products by EMI subsets*

Euromonitor Subset		Mean ± SD 2020	Mean ± SD 2023
FOODS	Baked Goods	2.7 ± 1.3	2.1 ± 1.1
	Breakfast Cereals	3.7 ± 1.2	3.0 ± 1.7
	Confectionery	0.7 ± 0.4	0.8 ± 0.4
	Dairy	2.9 ± 1.4	2.6 ± 1.5
	Edible Oils	3.2 ± 1.2	2.8 ± 1.2
	Ice Cream	1.2 ± 0.9	2.0 ± 0.6
	Processed Fruit and Vegetables	4.7 ± 0.6	4.7 ± 0.9
	Rice, Pasta and Noodles	2.8 ± 1.0	2.0 ± 1.7
	Sauces, Dips and Condiments	1.6 ± 0.6	1.4 ± 0.7
	Savoury Snacks	1.6 ± 0.8	1.2 ± 0.8
	Soup	3.2 ± 0.3	3.1 ± 0.7
	Sweet Biscuits, Snack Bars and Fruit Snacks	1.4 ± 0.6	1.1 ± 0.6
	Sweet Spreads	1.5 ± 0.0	2.2 ± 1.2

Table 22 *Mean and SD HSR of beverage products by EMI subsets*

Euromonitor Subset		Mean ± SD 2020	Mean ± SD 2023
BEVERAGES	Bottled Water	4.9 ± 0.4	5.0 ± 0.0
	Carbonates	1.6 ± 1.4	1.5 ± 1.5
	Concentrates	0.5 ± 0.0	0.5 ± 0.0
	Juice	1.0 ± 0.9	0.7 ± 0.6
	Other Hot Drinks	1.8 ± 1.0	2.3 ± 1.2

Tables 21 and 22 show the mean and standard deviation of HSR for all products in each EMI subset from the 14 included companies.

CONCLUSIONS AND INTERPRETATION

Key findings

- The overall mean healthiness of companies' products was 1.8 out of 5.0 stars in both 2020 and 2023. Sales-weighting increased the overall mean slightly to 2.0 in 2020 and 1.9 in 2023.
- In both years Mother Dairy had the highest sales-weighted mean HSR with 3.2 out of 5.0 in 2020 and 2.9 out of 5.0 in 2023.
- Hindustan Unilever showed the greatest improvement in overall sales-weighted mean HSR, increasing 0.6 HSR between 2020 and 2023.
- Nine of the 14 companies had a decrease in sales-weighted mean HSR between 2020 and 2023. KMF Nandini went from a mean HSR of 2.9 in 2020 to a mean HSR of 2.5 in 2023. Four companies had an increase in sales-weighted mean HSR between 2020 and 2023 (Nestlé India, Hindustan Unilever, Amul and Mondelēz India). One company had no change (Parle Products).
- The proportion of products considered 'healthy' decreased slightly overall between 2020 and 2023 (24% to 21%). Before sales-weighting was applied, Marico had the highest proportion of healthy products in 2020 (61%) and KMF Nandini in 2023 (41%). When sales-weighting was applied, in 2020 Mother Dairy had the largest proportion of healthy products (60%) and Hatsun Agro in 2023 (45%).
- Nestlé India showed the greatest improvement in sales-weighted proportion of healthy products between 2020 and 2023, with Marico having the largest decrease.
- There was a decrease in the proportion of products that had missing sodium, saturated fat and/or total sugar values between 2020 and 2023.
- There was an increase in the proportion of products with saturated fat values between 2020 and 2023. In 2020 14% of products did not report saturated fat content, yet this dropped to only 1% in 2023.
- There was a decrease overall in the proportion of products that had missing sodium values between 2020 (60% missing) and 2023 (8% missing) however sodium was still the nutrient with the most missing values on products from these 14 manufacturers.

Methodological limitations

The results of this research should be considered in relation to the following limitations:

The limited nutrition data available. The data available were in part insufficient to evaluate the change in nutritional value of the products using the HSR because they are based on a larger number of nutrients than current Indian regulations require to be listed on packs. The problem was addressed by using proxy data unless several data points were missing. Where this was the case, products were excluded from analysis. The most likely impact of using proxy nutrient values is underestimation of the real differences between products (because proxy values were imputed at the sub-category level), and correspondingly, therefore, underestimation of the real differences between companies.

The absence of a complete list of all marketed products. Listings of all products sold in India and their nutritional content were sought from the 14 companies in both 2020 and 2023. In 2020 seven companies provided full nutrition data for their product range, and although this increased to 10 companies in 2023 (Britannia, Coca-Cola India, Hindustan Unilever, ITC, KMF Nandini, Mondelēz India, Nestlé India and PepsiCo India), there was still a substantial amount of data for which companies did not provide feedback on. The solution was to compile listings based upon data extracted from the FoodSwitch database and data used in the most recent Global Product Profile. Each data source is likely to be incomplete but combining data from these two sources should have achieved reasonable coverage for all companies. It seems unlikely that incomplete data collection has resulted in significant biases in the results.

Restriction of the analysis to 14 large companies. The assessment of 14 of the largest food and beverage manufacturers was a pragmatic compromise designed to ensure feasibility and meaningful comparisons based upon the average nutritional composition of the majority of products made by each company. This strategy will not have affected the primary conclusions of the project about the relative nutritional quality

of the products provided by the included companies but how the included companies compare to other smaller companies, artisanal/street food providers, quick service restaurants or home-cooked meals is unknown. We also restricted analysis to those companies that were included in both the *2020 India Product Profile* and the *2023 India Product Profile.*

Limitations of the Health Star Rating. The HSR is subject to ongoing evaluation and refinement. While the algorithm is based upon extensive research and validation, there is continuing discussion of how it operates for some food categories. Another limitation in the current analysis is that in 2020, nutrition data for certain types of products (those that have different nutrient values depending on whether it is being evaluated on an "as sold" versus an "as consumed" basis) was in a different format than 2023. This issue was particularly seen in the *Rice, Pasta and Noodles* category and the *Other Hot Drinks* category, resulting in some companies not being able to have these data included in the change analysis from 2020 to 2023. This highlights the importance of companies providing *all* possible data for both research purposes and to ensure consumers have access to all information about the healthiness of the food and beverage products they are purchasing.

No consideration of serving size. Overweight and obesity can be influenced by the quantity of food people choose to consume at one sitting (portion size) and the serving size recommended on packs. This may be the case particularly for products provided in packages eaten at a single sitting (although not all such products have a serving size that corresponds to the package size). The association between serving size and portion size for products provided in packages that contain multiple servings is also not always strong. It has been argued that nutrient profiling models should include consideration of serving size but the absence of agreed national and international standards has meant that this has not proved possible to date.

Limited granularity of sales data. The sales data accessible from Euromonitor International are provided by category not by individual product. This limits the capacity to obtain robust sales-weighted estimates of metrics because it is not possible to precisely match a sales figure to an HSR value. Accordingly, for the overall sales-weighted results, the sales of the company within each category were matched to the mean HSR for all company products within that category. Erroneous results may have been generated because it is unlikely that sales volumes of every item sold by a company within a given category were the same. So, while the process should give a reasonable sales-weighted estimate of the mean healthiness of products, it is imperfect. Similarly, the sales-weighted results relating to sales of healthy products are estimates, as it is unlikely that the proportion of sales of healthy products in any category is directly proportional to the total sales of that category.

Recommendations for companies

- Companies need to direct investment towards improving the healthiness of their products both by changing the mix of products sold and reformulating unhealthy products to improve their nutritional quality.
- Companies need to increase the proportion of sales deriving from healthy foods and decrease their reliance on sales of unhealthy foods. One way this can be done is by redirecting their marketing to healthier products.
- Companies need to ensure that they are providing sufficient nutrition information on their product packaging. At a minimum, companies should be providing levels of energy, saturated fat, total sugar and sodium per 100g/mL.
- Reformulation should be a priority, particularly for established brands and market-leading products unlikely to be discontinued. Companies have a particular opportunity to improve the nutritional quality of products that play a large part in children's diets to ensure that they are suitable for them.

Recommendations for the Government of India

- Nutrition labelling requirements need to be strengthened to include, at a minimum, an additional requirement for labelling of sodium/salt as recommended by the Codex Guidelines on Nutrition Labelling. Growing consumer interest in added sugar content has recently led countries such as the United States to require added sugar content in the on-pack nutrient declaration; India could consider a similar step in future legislative reform.
- Compile and maintain a comprehensive list of the nutrient content of all packaged food products such that necessary action to reformulate products can be identified, targets set and progress monitored.
- A government-led national program should be implemented with haste to address the poor nutritional quality of many of the products made by the leading food and beverage manufacturers in the Indian market.