Tracking restaurant menu items in the UK

Energy and nutrient trends

Coffee Break Seminar

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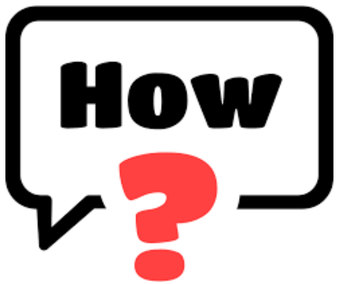
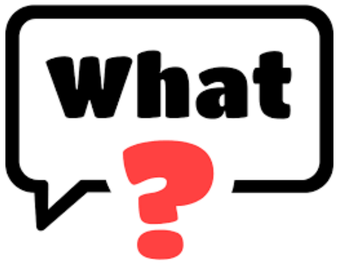
Content

do we need to track the nutrient composition of restaurant menu items?



can we track the nutrient composition of restaurant menu items?



have we found through tracking restaurant menu items in the UK?

Saltiest chips/fries competition

Which one contains the highest amount of salt?

McDonald's Fries (Medium)

0.62 g

Nando’s Chips (Regular)

0.60 g

The Regal: Bowl of Chips (Wetherspoons)

2.2 g

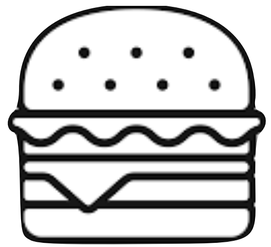
McCain Home Chips (one serving of 100g)

0.54 g

Nutrient composition of restaurant menu items

Why?

Restaurant foods tend to be high in **energy, fat, and salt**, yet low in **fibre and micronutrients.**



Compare to their supermarket equivalents, the food and drinks served out-of-home (or takeaway meals) contain **twice as many calories** on average

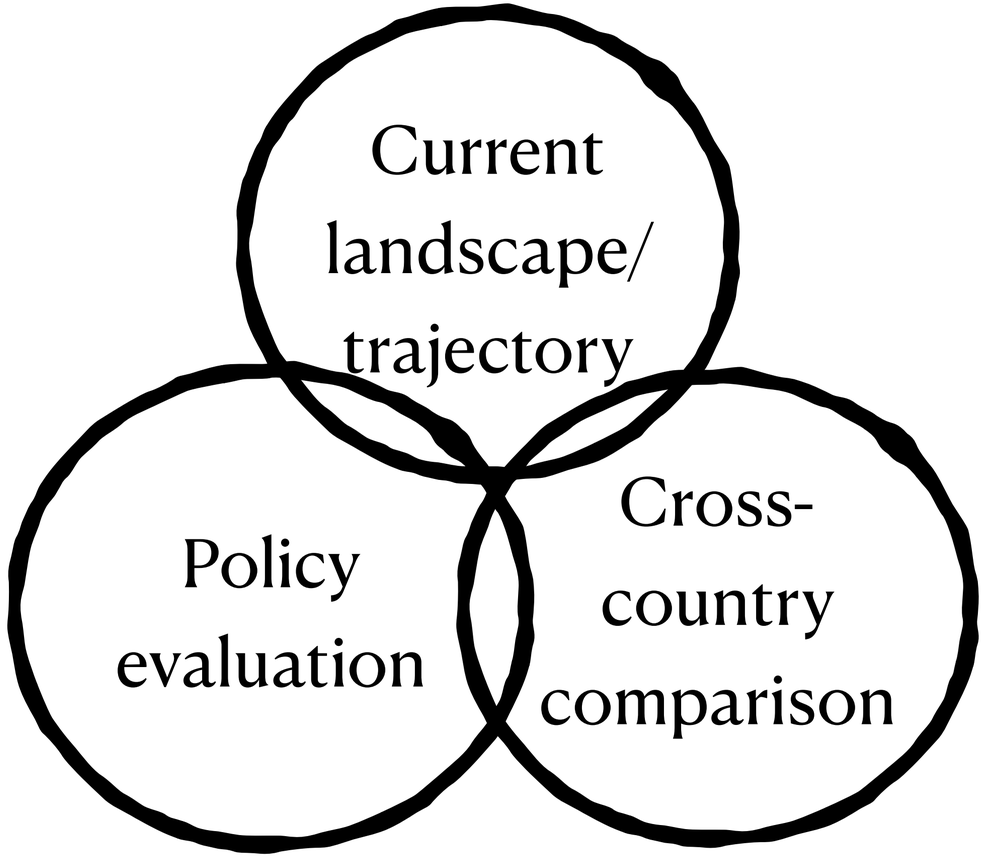
The food we eat outside the home makes up **20-25%** of adult daily calorie intake.

Frequent restaurant food consumption is associated with higher **daily energy intake** and **BMI**

source: Mandating calorie labelling in the out-of-home sector: consultation response on policy enforcement, Department of Health and Social care, 2021; Eating out of home and its association with dietary intake: a systematic review of the evidence, Lachat et al., 2011

Nutritional composition of restaurant menu items

Why?



Restaurant food environment

Participant YH's food diary

Breakfast: regular oat latte + croissant from Caffe Nero

Lunch: Italian B.M.T wrap from subway

Dinner:
tantanmen beef brisket ramen from wagamama

Improve the estimation of nutrient consumption

Nutritional composition of restaurant menu items

How?

Nutritional composition of restaurant menu items

How?

Luckily, some restaurants post this information online and/or in-store!

News story

Calorie labelling on menus to be introduced in cafes, restaurants and takeaways

Government renews drive to tackle obesity and improve the nation’s health

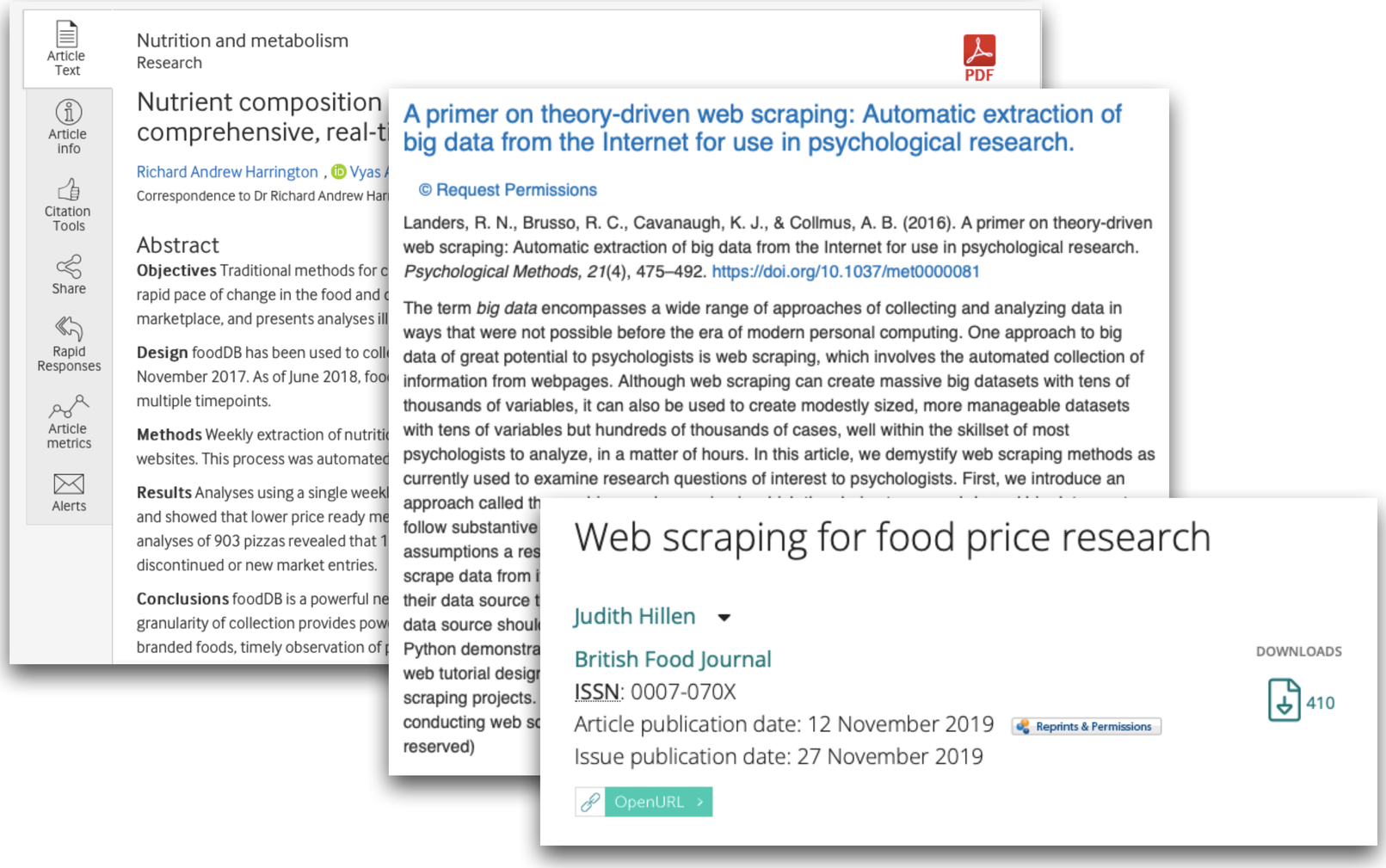
Nutritional composition of restaurant menu items

- Energy and nutritional in
  of menu items served by l
  restaurants (potentially su
  the calorie labelling rule)
  nutritional information o

Building a database

Web scraping

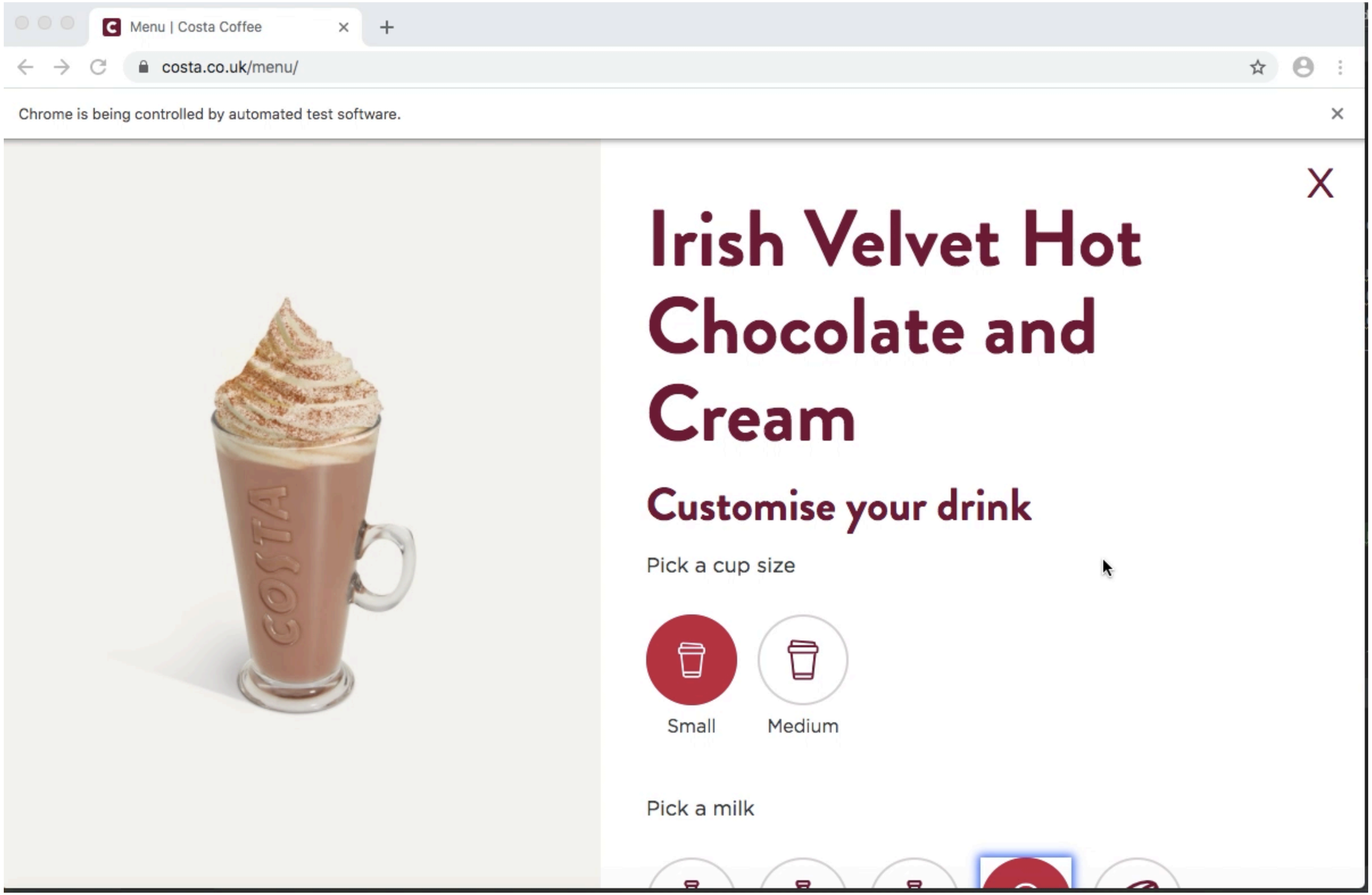
The power of web scraping



Office for National Statistics

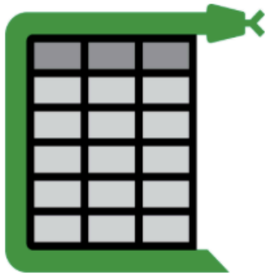
Web scraping

web crawler in action



MenuTracker

A longitudinal restaurant nutritional database



Star 1,260

Useful Links

Camelot @ GitHub
Camelot @ PyPI

Camelot: PDF Table Extraction for Humans

Release v0.10.1. (Installation)

build passing | docs passing | codecov 88% | pypi v0.10.1 | license MIT License | python 3.6 | 3.7 | 3.8
chat on gitter | code style black | continous quality deepsource

Camelot is a Python library that can help you extract tables from PDFs!

> **Note:**
>
> You can also check out Excalibur, the web interface to Camelot!

Tabula

Tabula is a tool for liberating data tables locked inside PDF files.

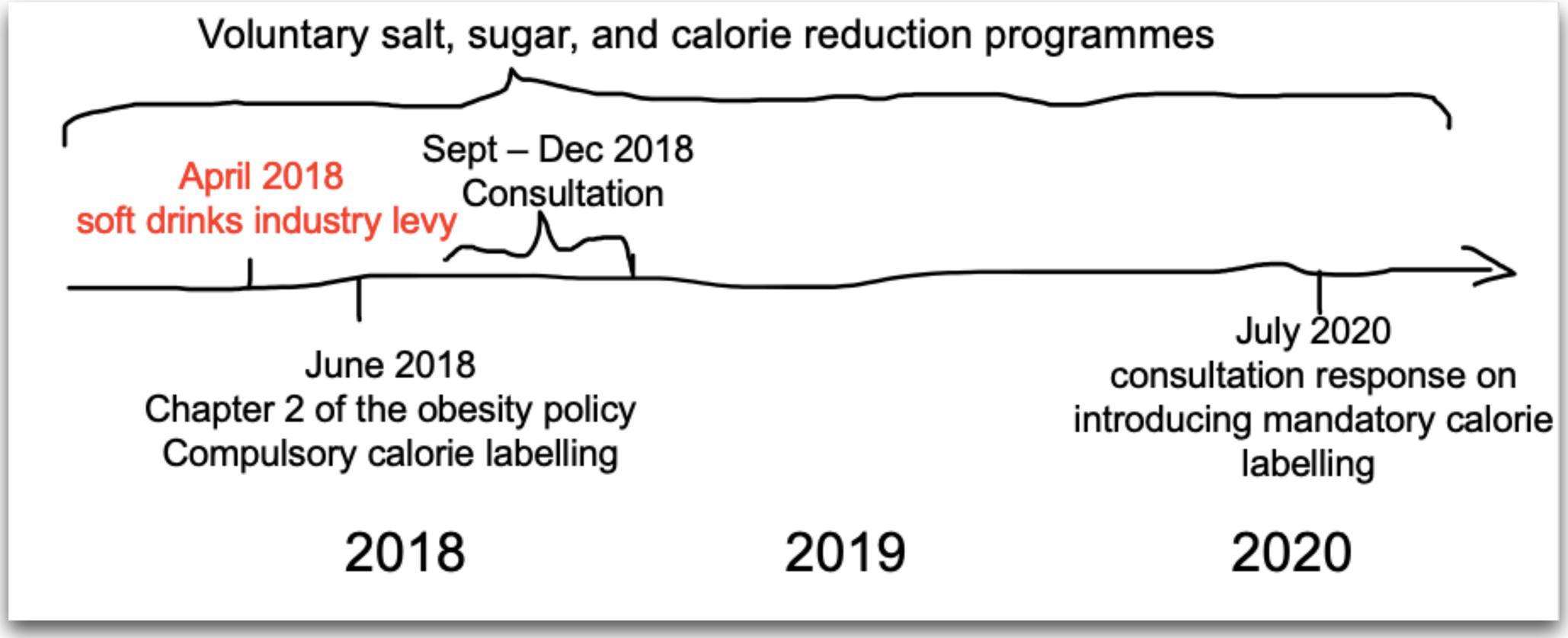
MenuTracker database

Data collected (quarterly)

Collection	Month Year	Number of food outlets (restaurants)	Number of Menu Items	Primary sampling frame
Pilot Data Collection	April-June 2018	42	10,782	top 100 based on volume sales
Pilot Data Collection	April 2019	48	13,678	over 20 outlets
Pilot Data Collection	October 2020	40	9,330	top 100 based on volume sales
Pilot Data Collection	December 2020	40	11,584	top 100 based on volume sales
Quarterly Data Collection	March 2021	85	18,005	Over 250 employees
Quarterly Data Collection	June 2021	83	19,310	Over 250 employees
Quarterly Data Collection	September 2021	79	19,323	Over 250 employees
Quarterly Data Collection	December 2021	81	19,698	Over 250 employees

Energy and nutrient trends

Menu items served by large chain restaurants in the UK, 2018 -2020



Energy and nutrient trends

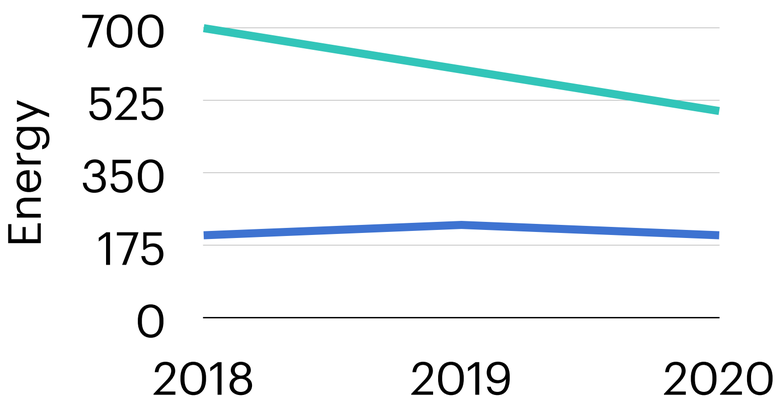
Menu items served by large chain restaurants in the UK, 2018 -2020

Core Items

Items available in all three years

Big Mac

Quarter Pounder™ with Cheese



Newly introduced items
reintroduced items
removed items

McPlant

Nacho cheese wedges

2018	2019	2020
?	?	500
?	500	?
500	?	?

Energy and nutrient trends

Menu items served by large chain restaurants in the UK, 2018 -2020

- Sugar per serving reduced from 15.28 g in 2018 to 14.41 g in 2020 ($p<0.05$).
- We also observed a downward trend for energy, and upward trends for salt and saturated fat, but these were not statistically significant

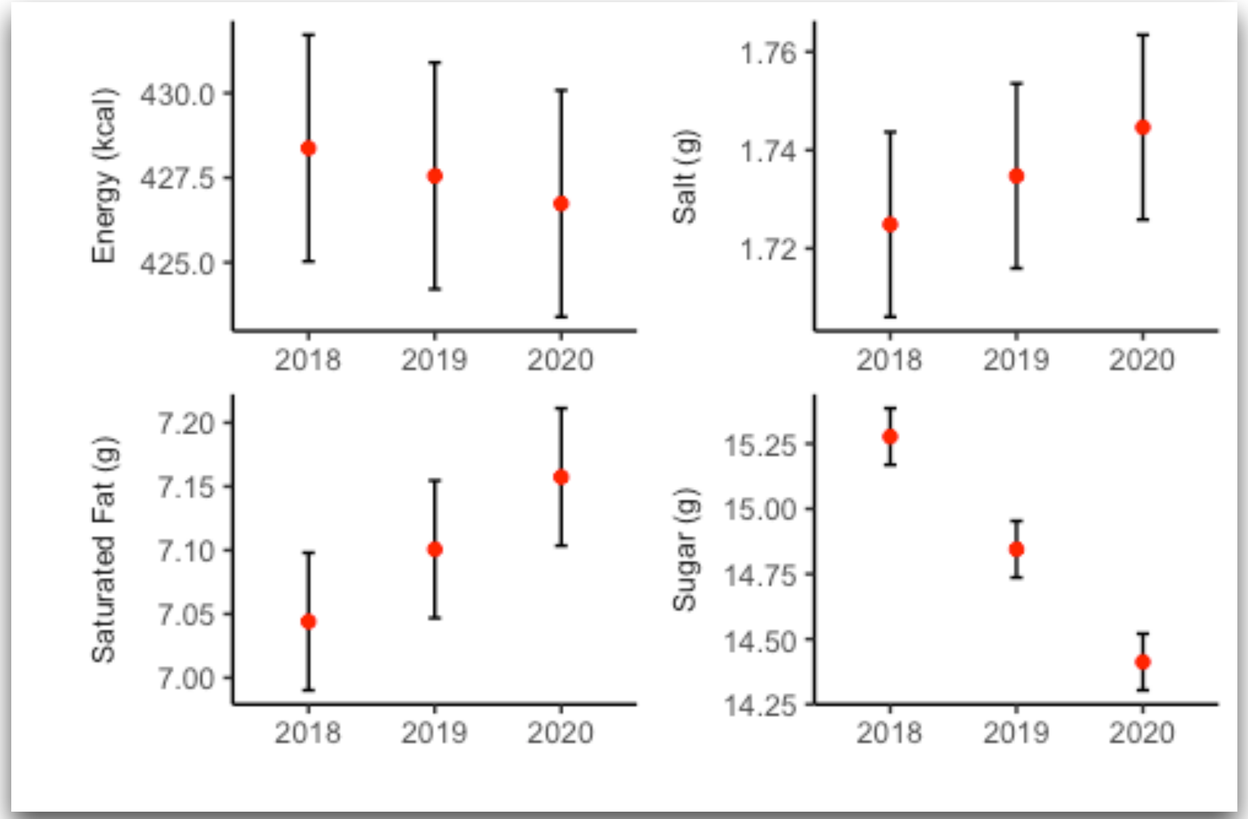


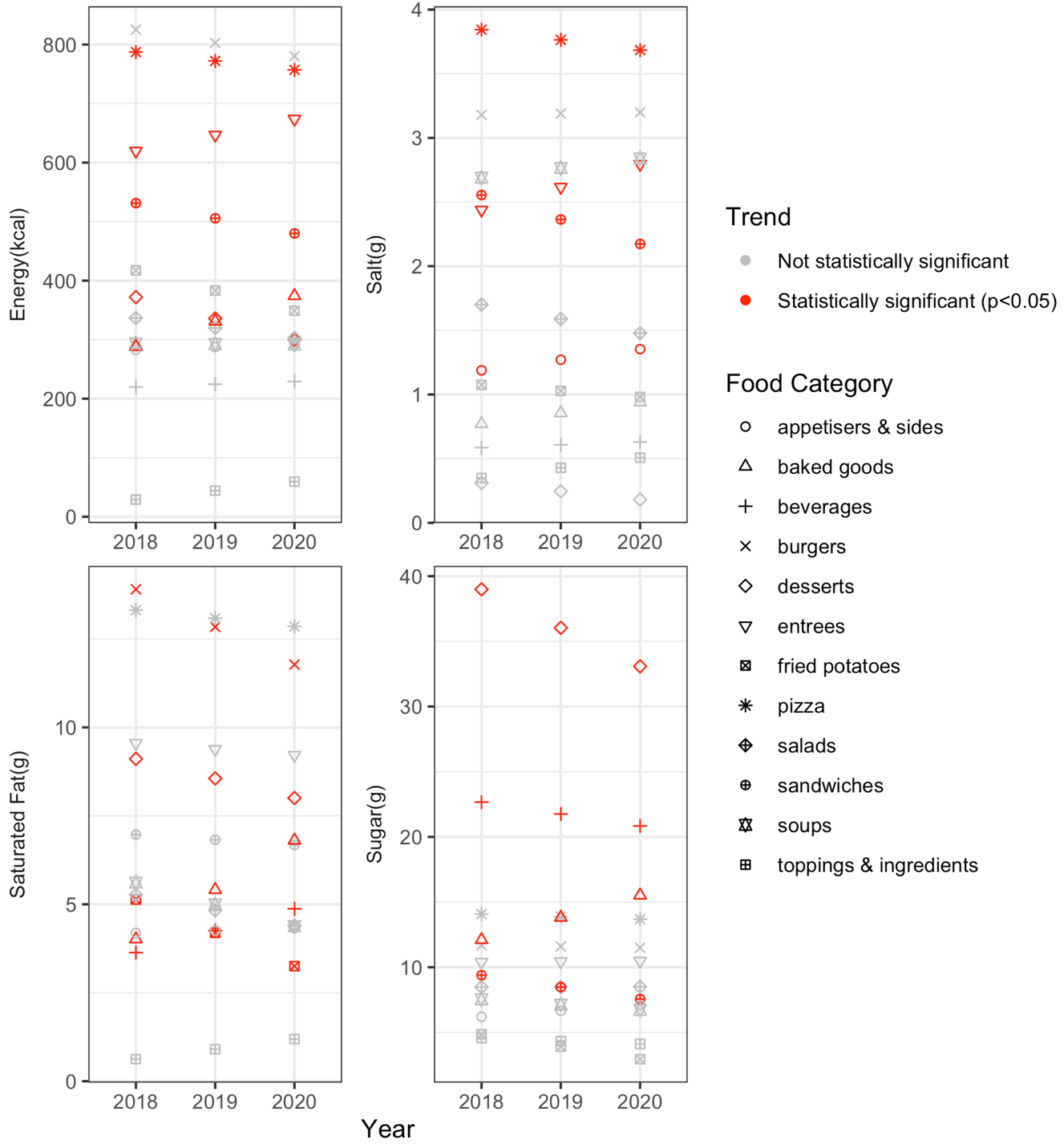
Figure 2 Predicted mean energy (kcal), salt (g), saturated fat (g), and sugar (g) per serving by year, among all menu items. Models were adjusted for children's menu item status, shareable status, food category, and restaurant type. The 95% confidence intervals (CI) are represented by vertical bars, and the predicted mean values are represented by red dots.

Energy and nutrient trends

Menu items served by large chain restaurants in the UK, 2018 -2020

All menu items, by food category →

- Changes were sporadic and consistent across different food categories.
- No significant changes were observed in the nutrient content of salads, soups, and toppings & ingredients.



Energy and nutrient trends

Menu items served by large chain restaurants in the UK, 2018 -2020

- Sugar per serving decreased by 0.31g per year (95% CI= -0.45, -0.17).
- There were no significant changes in salt, sugar, and saturated fat content among core items.

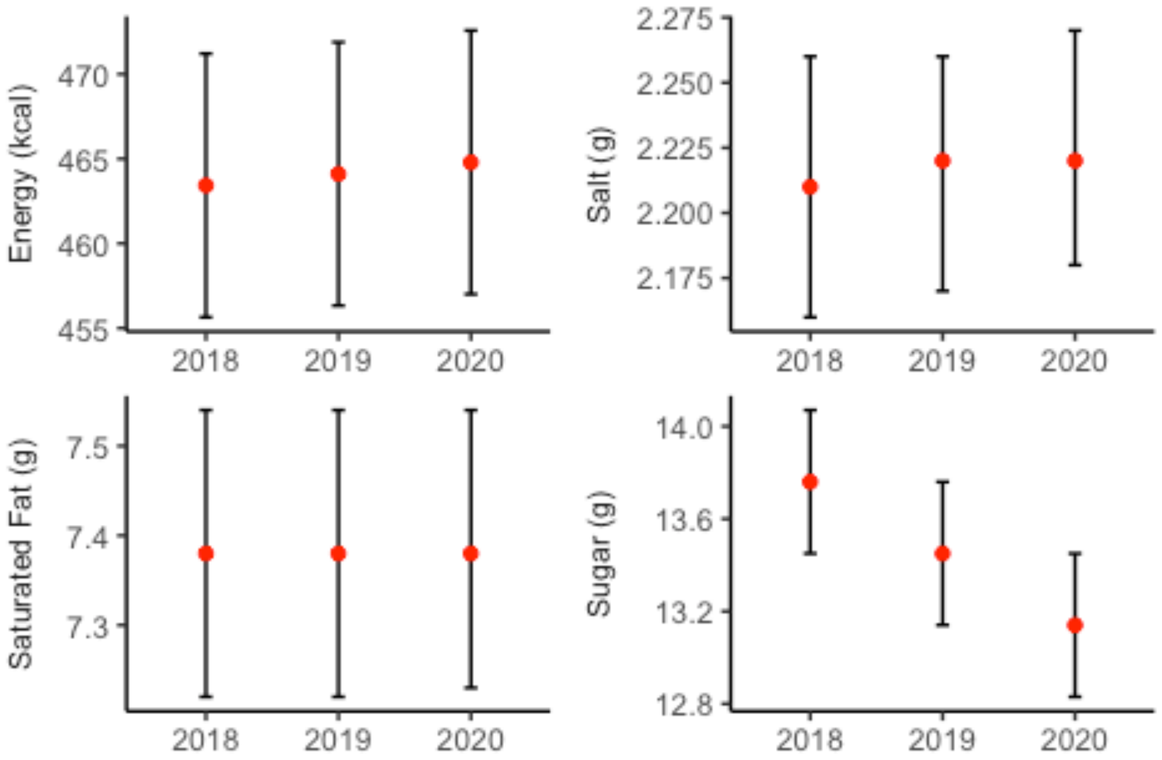


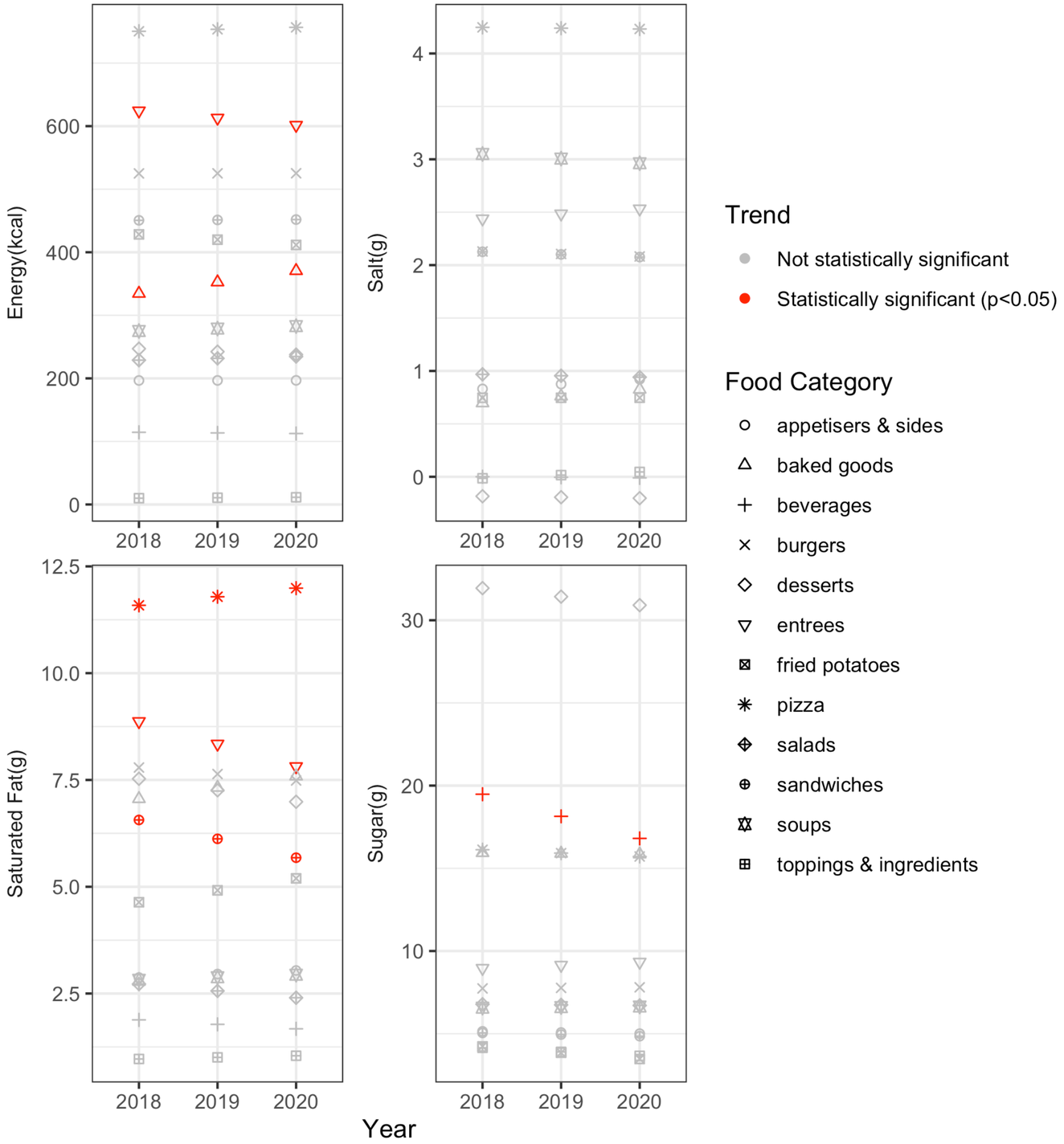
Figure 4 Predicted mean energy (kcal), salt (g), saturated fat (g), and sugar (g) per serving by year, among core items. Models were adjusted for children's menu item status, shareable status and food category. The 95% confidence intervals (CI) are represented by vertical bars, and the predicted mean values are represented by red dots.

Energy and nutrient trends

Menu items served by large chain restaurants in the UK, 2018 -2020

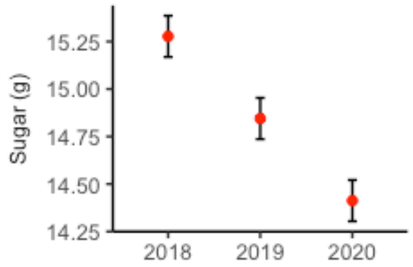
Core items, by food category →

- Saturated fat content of menu items decreased in sandwiches, but increased in pizzas. There was a downward trend for sugar in beverages, but no significant trend in salt in any food category.
- There were no significant changes in appetisers & sides, burgers, desserts, fried potatoes, salads, soups, and toppings & ingredients, among core items.

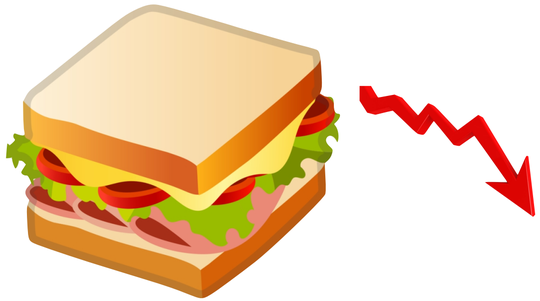


Energy and nutrient trends

Menu items served by large chain restaurants in the UK, 2018 -2020



Among core items, sugar per serving reduced significantly from 2018 to 2020, especially in **beverages**.



Our results showed that **sugar** content of all menu items and core items declined from 2018 to 2020.

Energy, salt, and saturated fat content in menu items **remained constant overall**

Energy and nutrient trends

Menu items served by large chain restaurants in the UK, 2018 -2020

- Policies focusing on **single nutrient** do not necessarily improve the **nutrient quality** of restaurant food items.

- Our results signal that **little progress** has been made towards a healthier restaurant environment by industry self-regulation between 2018 and 2020, when no mandatory policy for the out-of-home sector has been implemented. More robust policy approaches may be needed to improve the overall nutritional quality of restaurant foods.

Acknowledgement

Dr Jean Adams

Dr Thomas Burgoine

Dolly Theis

Michael Essman