Leveraging choice architecture to promote healthier online food choices

A stepped-wedge cluster randomised trial with Deliveroo and Maki & Ramen

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The objective

To evaluate the impact of three digital choice architecture interventions - menu reordering, healthy defaults and gain-framed swap prompts - on the calorie content of items purchased via an online food delivery platform, while assessing commercial viability and consumer satisfaction.

The intervention

The trial implemented three distinct behavioral nudges on the Maki & Ramen menu within the Deliveroo app:

Menu Reordering: Reorganising items within each category to place lower-calorie and high revenue options at the top.

- Principle: **Primacy Effect and Cognitive Ease** - leveraging the tendency of users to select from the first few items viewed during fast-paced decision-making.

Healthy Defaults: Defaulting all ramen dishes to a lower-calorie noodle (with a clear option to swap back).

- Principle: **Default Effect and Status Quo Bias** - reducing the friction of choosing a healthier alternative by making it the pre-set selection.

Swap Prompts: Offering a lower-calorie broth swap for select dishes with the prompt: "Swap the broth in this ramen for our delicious Miso Broth, a Sapporo classic since 1953, and save 650 calories."

- Principle: **Authenticity and Gain Framing** - positioning the healthier choice as a premium, traditional option while explicitly highlighting the caloric benefit.

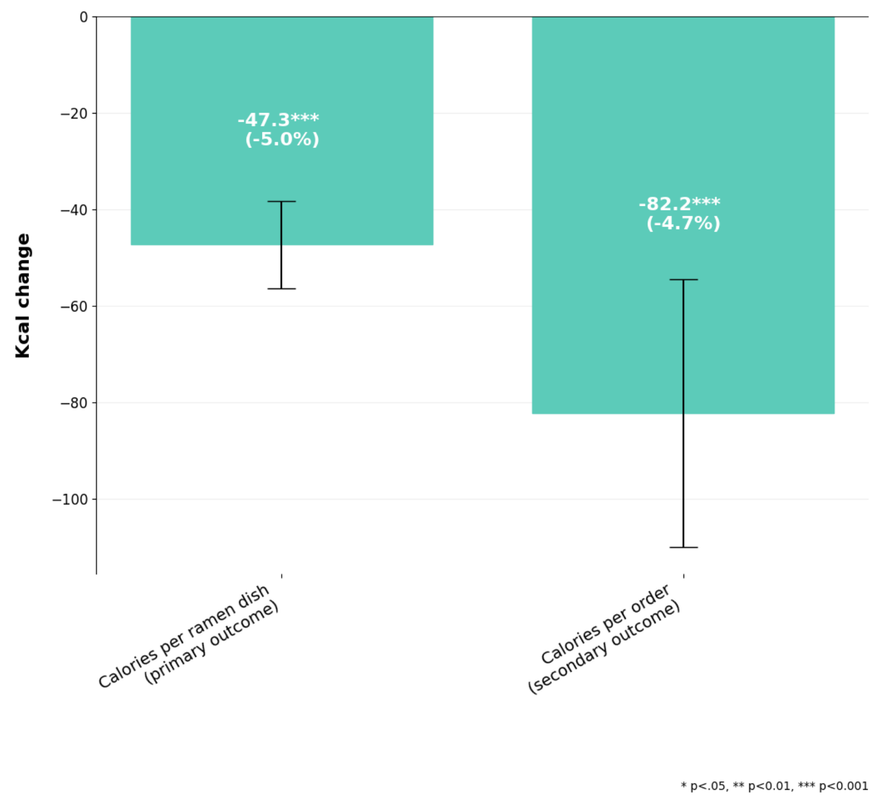
Study setting & methodology

- **Platform:** Deliveroo, acting as the digital intermediary.
- **Partner:** Maki & Ramen (Sushi and Noodle restaurant).
- **Population:** Deliveroo users ordering from Maki & Ramen clusters.
- **Design:** A stepped-wedge cluster randomised trial (CRT). This design was selected to maximise statistical efficiency and account for the inability to perform individual-level A/B testing on the live platform.
- **Timeframe:** June 2025 – December 2025 (24 weeks).

Key findings

Outcome measure	Estimated effect (vs control)
Primary: Ramen dish calories	-5% (-47.3 kcal)
Secondary: Calories per transaction	-4.7% (-82 kcal)
Commercial: Revenue per restaurant	No significant change in restaurant revenue

Impact of the intervention on calories per ramen dish and calories per order



Scientific & policy implications

Regular use of online takeaway services has been linked to a higher risk of overweight and obesity, highlighting the urgent need for interventions in this digital food environment. With around 25 million UK users in 2023, food delivery apps represent a highly scalable and impactful avenue for public health interventions.

Preserving autonomy through nudges: The efficacy of using choice architecture to shift eating behaviour without restricting consumer choice or removing products, while making it easier for people to adopt healthier habits.

Making changes in a digital setting: How platform interfaces can be optimised to counter the promotion of high-calorie, energy-dense options.

Benefitting businesses and consumers: Providing a framework for restaurants and delivery platforms to align public health goals with business success.

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