

The impact of increasing vegetarian ready meal facings in a real-world retail setting

A stepped-wedge randomised controlled trial evaluating sales, nutrition, and environmental metrics

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The objective

The primary aim was to evaluate whether increasing the proportion of frozen vegetarian ready meals visible to customers (known as facings), whilst maintaining the availability of non-vegetarian meals, increases vegetarian meal sales in a retail environment. Secondary aims included assessing the impact on business outcomes (revenue), nutritional quality, and environmental metrics such as greenhouse gas emissions.



The intervention

The trial tested an availability intervention within five retail stores across England. By increasing the prominence of vegetarian options, the intervention sought to nudge behaviour through environmental restructuring.

Intervention location: The change was applied to freezers containing the company's core product range (accounting for 44% of sales).

Facing modification: The proportion of vegetarian meal facings in study freezers was increased from approximately 28-31% (pre-intervention) to 44-45% (during intervention).

Study setting & methodology

- **Location:** Five COOK retail stores took part in the study (Beaconsfield, Chiswick, Guildford, Oxford, and Solihull).
- **Target population:** Anyone who shops at COOK stores (generally 30–64 years old).
- **Design:** A stepped-wedge randomised controlled trial (SWRCT) whereby each store was randomly assigned to start the intervention in a different week over a six-week period.
- **Timeframe:** 29th July - 8th September 2024.
- **Data sources:** Outcomes were measured using weekly store-level sales data. Nutritional information and ingredient lists were provided by the retailer; the latter were linked to agri-environmental databases to calculate environmental impacts. Interviews were also conducted with staff and customers.

Key findings

The intervention successfully shifted purchasing behaviour towards vegetarian meals without negatively affecting business metrics. While nutritional and environmental gains were slight, the overall direction of change was positive.

Outcome measure	Result (Intervention effect)
Primary: Likelihood of vegetarian meal purchase	+14% increase (OR 1.14, 95% CI 1.04 to 1.25)
Secondary: Total store sales	+£37.16 ± 134.05
Secondary: Nutritional (salt content)	+0.016g/100g (Significant increase, p = 0.0186)
Secondary: Assessing the healthiness of products using the UK nutrient profile model	+12% increase likelihood of selecting a meal that does not pass the UK NPM (p = 0.008)
Environmental metrics <ul style="list-style-type: none">• GHG emissions• water use• land use• eutrophication	Small and statistically non-significant improvements
Process evaluation interview findings (n = 11 staff and 8 customers)	Staff found the intervention simple to implement. Staff and customers felt that the Intervention improved visibility of vegetarian options, but for some shoppers this was insufficient to shift entrenched preferences for meat-based meals. Staff felt that the intervention could be improved by staff actively promoting vegetarian options.

Scientific & policy implications

- Increasing vegetarian facings is a viable strategy for shifting purchasing behaviour in real-world retail settings. When comparing the findings of this study to existing literature, this intervention appears to be more effective than messaging interventions, but less effective than removing meat options.
- Change in consumer purchasing did not translate into health or environmental gains. Significant increases in salt content and likelihood of failing the UK NPM demonstrate that vegetarian options are not always a proxy for health. Future interventions should consider options for maximising intervention benefits.
- The intervention was simple to implement and aligned with business procedures. Implementers noted that entrenched meat preferences are difficult to shift through visibility alone and suggested incorporating active staff promotion.
- Co-design ensured high intervention fidelity. Further work should explore more ambitious interventions and test these in diverse settings like supermarkets to investigate socio-economic impacts.

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