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The extent of location-based promotions of less healthy food and drink in supermarkets in England

A pre- and post-implementation study of the impact of The Food (Promotion and Placement)(England) Regulations 2021

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Contents

Executive Summary

This report is independent research commissioned and funded by the National Institute for Health and Care Research Policy Research (NIHR) PRP-PRU-02-15-Healthy Weight. The views expressed in this publication are those of the authors and not necessarily those of the National Institute for Health and Care Policy Research, the Department of Health and Social Care or its arm's length bodies, or other Government Departments.

This report focuses on changes to the extent of food and drink high in fat, sugar, or salt (HFSS foods) displayed in specified locations (store entrances, end of aisles, checkout areas including self-checkouts, and standalone units) in supermarkets and convenience stores in England before and after the introduction of the Food (Promotion and Placement) (England) Regulations in October 2022. These regulations restrict the placement of HFSS foods from specific food categories in these locations, in retail outlets that are 2,000 square feet or over and have 50 or more employees. HFSS foods are identified using the Nutrient Profile Model (NPM) scoring system (detailed in the NPM Technical Guidance[1]). The purpose of this report is to provide a baseline from before the implementation of the regulations, followed by a comparison after implementation of the regulations. This research contributes to the evaluation of the impact of the legislation and its effects on the display of HFSS foods in specific restricted locations.

Findings presented here are based on observational data collected from 23 individual stores (19 supermarkets and four convenience stores[2]) from four chains in England in Spring/Summer 2022 (pre-legislation) and Spring/Summer 2023 (post-legislation). Observational data of products displayed at the locations identified by the regulations were captured using video glasses. The data was then coded.

- First products were assigned to one of three groups:
  i) HFSS food or drink (products from one of the 13 categories included in the regulations which did not pass the nutrient profiling model scoring threshold and are considered 'less healthy') ,
  ii) non-HFSS food or drink (products from one of the 13 categories but which did pass the nutrient profiling model scoring threshold),
  iii) out-of-scope food or drink (which includes products that do not fall within one of the identified food categories and products from one of the 13 categories identified in the regulations as exempt).

- Second, the relative location space used to display products within a store was estimated:
  i) for each product type in relation to other products in a location,
  ii) for each location type in relation to other locations within a store.

[1] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/216094/dh_123492.pdf
[2] The convenience stores in the sample are part of chains. Symbol convenience stores and independent convenience stores were not included in this research.

This report presents findings describing the proportion of location space used to display different product types. This assessment uses relative area of location space, which enables comparisons of percentage differences between the baseline data and follow-up data, accounting for changes in store layout.

This work was intended to be representative of supermarket and convenience stores in England, but unforeseen recruitment issues significantly reduced the number of stores and chains in the final sample. As such this report presents a case study of 23 stores from four chains (19 supermarkets and four convenience stores) and is not intended to be used as a representation of all food and drink retailers.

Pre-legislation data collection showed that substantial proportions of location space were being used for the display of food and drink high in fat, sugar, or salt, providing a clear rationale for implementation of the restrictions. Post-legislation data collection allows for comparisons in the use of space before and after the implementation, to test whether HFSS products have been removed, and to quantify the proportions of space used to display HFSS, non-HFSS and out-of-scope products. See section 2.4 for detailed definitions of these three groups products were assigned to.

Key findings from pre- and post-legislation comparisons show that:

- Across all 23 stores the proportion of space in all the restricted locations used to display HFSS products, reduced by 32 percentage points (from 38 to 6 percent) following the implementation of the regulations, with related increases in the display of out-of-scope products.

- With the exception of store entrances (where there was an increase of 2 percentage points), the proportion of space used to display HFSS products reduced across locations with the largest reduction in standalone units (30 percentage point decrease) followed by end-of-aisles (11 percentage point decrease), and checkouts (10 percentage point decrease).

- Post-legislation, the area used to display non-HFSS foods did not change across locations overall.

- Pre-legislation, the four convenience stores had higher average area used to display HFSS products (54 percent) than the 19 supermarkets (35 percent) (accounting for relative store size); post-legislation there was a decrease of 50 percentage points in convenience stores and 28 percentage points in supermarkets.

- Post-legislation, the average area used to display out-of-scope products in the four convenience stores increased from 33 percent to 82 percent. In the 19 supermarkets, the average area used to display out-of-scope products increased from 48 percent to 77 percent. The average area used to display non-HFSS foods did not largely differ (1 percentage point increase in convenience stores; 1 percentage point decrease in supermarkets).

- Pre-legislation, results varied by chain; the average area used to display HFSS products ranged from 27 percent in Chain B to 50 percent in Chain A; post-legislation the percentage point decrease ranged from 18 to 44 (across all chains it was 32).

- Confectionery is the product category where the biggest changes can be seen in the proportion of space across the restricted locations used for its display. Confectionery accounted for 18 percent of space

across all locations pre-legislation, decreasing to 2 percent after the legislation was introduced. Increases were seen for ready meals (14 percentage point increase of space in restricted locations) and for drinks (3 percentage point increase).

- Pre-legislation data showed that restricted locations were not always used for HFSS foods before the introduction of the regulations, at least at the time the research was undertaken. sPost-legislation data showed that, despite reductions overall, in some stores these locations were still being used for HFSS foods, with maximum values of proportions of space including 74 percent of store entrances and 40 percent of checkouts.

1. Background

1.1 Obesity prevention policies

More than half of adults in England are overweight or obese[3], and 18 percent of boys and 13 percent of girls aged 2 to 15 are obese[4]. Obesity is associated with poor health outcomes including Type 2 diabetes and cardiovascular disease[5], and represents a significant financial burden on the National Health Service[6]. In 2020, the Government published a Tackling Obesity strategy[7], including commitments to take forward obesity prevention policies.

Legislation has recently been, or will soon be, implemented, including:

- In-store location restrictions in retail stores and their online equivalents of less healthy food and drink (implemented in October 2022);
- A 9pm – 5:30am watershed on TV, and online restrictions, for paid advertising of foods and drinks that are high in fat, sugar or salt (rescheduled for implementation in October 2025);
- Restrictions on volume-based promotions (for example 'buy one get one free' or '50 percent extra free') of less healthy food and drink (rescheduled for implementation in October 2025).

The focus of this report is on the in-store location restrictions. Restrictions on store-wide volume-based promotions were not included in the research brief at the inception of the project, however where products were on location-based promotion, volume-based promotions in those locations were recorded. Analysis on volume-based promotions has been included within the report but due to the delay to the implementation of the legislation it is not covered as part of the key findings.

[3] https://digital.nhs.uk/data-and-information/publications/statistical/health-survey-for-england/2021/overweight-and-obesity-in-adults
[4] https://files.digital.nhs.uk/9D/4195D5/HSE19-Overweight-obesity-rep.pdf
[5] https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight
[6] https://www.bi.team/wp-content/uploads/2022/11/Putting-health-in-the-spotlight_-quantifying-the-impact-of-obesity-prevention-policies-in-the-UK-1.pdf
[7] https://www.gov.uk/government/publications/tackling-obesity-government-strategy/tackling-obesity-empowering-adults-and-children-to-live-healthier-lives

1.2 Legislation

In October 2022, the UK Government passed legislation that introduced regulations to restrict location-based promotions of products high in fat, sugar, or salt (HFSS) within specified food categories[8], selected to include foods that were identified as being the biggest contributors to children's sugar and calorie intakes and were heavily promoted in retail settings in England. This was part of a range of policy interventions to support people to make healthier food and drink choices.

The regulations apply to medium and large retailers (with 50 or more employees) selling food and drink products where the 'relevant floor area' (i.e. the space where goods are displayed and customers are served) is 2,000 sq ft (185.8 m^2) or greater. It relates to specific locations within stores including store entrances, end-of-aisles (and any separate structures within 50cm of the end-of-aisle, referred to as 'standalone units'[9] in this report), checkouts (including tills, self-checkouts, and checkout queuing areas), and covered external areas. The findings discussed in this report are based on a sample of food and drink retailers (supermarkets and convenience stores[10]) as most food is purchased at these retailers.

The location restrictions also apply to online locations for businesses in scope of the restrictions. A qualifying business must not offer for sale specified HFSS food or drink products on an online marketplace in the following 'locations':

- the homepage of a website
- when a consumer is searching for or browsing for products other than 'schedule 1' food
- while a consumer is searching for or browsing schedule 1 food
- on a page not opened intentionally by the consumer, such as a pop-up page or a brand burst
- on a 'favourite products' page

The online location restrictions were not within the scope of this research project and have therefore not been assessed.

More detail about the regulations, including definitions of locations and the product categories that are included, can be found in the Department for Health and Social Care (DHSC) guidance[11].

1.3 Existing literature

There is a wealth of research in the field of obesity prevention and public health, and one aspect of this body of evidence is research into the placement of products in supermarkets and other retail outlets. The food environment, including the accessibility, affordability and marketing of different types of food, within the consumer environment or food stores, has been shown to influence dietary patterns and food choices (Glanz, 2009; Vogel et al., 2016).

A systematic review of the influences of product placement on sale of products on diet-related behaviours found that less prominent positioning of unhealthy foods resulted in better dietary-related outcomes, for example

[8] The 13 categories are: drinks, confectionery, cakes, ice cream, savoury snacks, morning goods, puddings and desserts, sweet biscuits, breakfast cereals, ready meals, yoghurts, pizza, and chips and potato products. Some products, e.g. plain, unfilled meringue nests, are in a restricted category but are exempt from the restrictions.
[9] These standalone units do not include islands placed in other areas of stores, which are not included in the regulations in England.
[9] The convenience stores in the sample are part of chains. Symbol convenience stores and independent convenience stores were not included in this research.
[11] https://www.gov.uk/government/publications/restricting-promotions-of-products-high-in-fat-sugar-or-salt-by-location-and-by-volume-price/restricting-promotions-of-products-high-in-fat-sugar-or-salt-by-location-and-by-volume-price-implementation-guidance

reduced sales of unhealthy foods (Shaw, Ntani, Baird & Vogel, 2020). It also found that increasing the prominence and availability of healthy foods increased sales of these products. The review looked at both observational studies, where in-store audits assessed food placement strategies, and intervention studies, where treatment (e.g. reducing availability of products) was applied with controls for comparison.

As observed in Shaw et al.'s (2020) review, the existing literature includes a mixture of observational and intervention studies, with some looking at the reduction of unhealthy dietary behaviours and others looking at promoting healthier behaviours. Stocking low-fat alternatives near regular items was found to reduce sales of regular items (Piernas, Harmer & Jebb, 2022), and placing fresh fruit and vegetables near store entrances was found to increase the sales of these items (Vogel et al., 2021).

1.3.1. Methods of data collection in the literature

Collecting data on food environments and subsequent consumer purchasing behaviour can be difficult, and many different methods have been used. These methods tend to be either interventional or observational.

Interventions, such as removing seasonal confectionery around Easter as in Piernas, Harmer and Jebb (2022), require cooperation from retailers in terms of implementation of an intervention and provision of data to assess its effectiveness. In this case, and in others (Vogel et al., 2021), store-level sales data were used to assess the number of units, weight (g) and value (£) of products sold during the study period (at both intervention and control stores). Whilst intervention studies provide high-quality data and enable comparisons to be made based on actual purchasing behaviour, there are methodological limitations: for example, potential differences between absolute sales in intervention and control stores (though these can be overcome using statistical approaches), and the commitment required from stores to implement interventions (Vogel et al., 2023).

Observational studies may require less involvement from retailers (though often do look at sales data, for example Caspi et al., 2017), but can be time-consuming for researchers and data collectors. Data collection methods in observational studies involve researchers visiting stores and collecting data on the store environment. This could involve store inventories or audits (Cohen et al., 2015; Martin et al., 2012), and product and variety counts (Bodor et al., 2008; Caspi et al., 2017). These studies also often included physical measurements of space. Some used total square footage measured using lasers (Martin et al., 2012), whilst others focused on shelf length (Bodor et al., 2008; Rose et al., 2009).

Outcome measurements also vary across studies. In some cases, the availability of products is the outcome measure (Jalbert-Arsenault, Robitaille, & Paquette, 2017), whilst others look at store- or customer-level information. Outcome data measures have included store-level sales data (Piernas, Harmer & Jebb, 2022; Vogel et al., 2021), or techniques focused on sampled customers who complete surveys (Cohen et al., 2015) or have bag or receipt checks (Caspi et al., 2017).

The data collection methods used in this research involved elements of studies discussed above. As the original[12] number of sampled stores was 134 a method that enabled efficient data collection was required to reduce the amount of time data collectors needed to be in stores. Data also had to be easily comparable between stores. Time-consuming methods such as physical measurements of shelf space and in-store inventories with product and variety counts were ruled out as being unfeasible for this research. Instead, novel methods were used whereby data collectors visited stores and used video-recording glasses to capture footage

[12] See the accompanying Technical Report for more details on the sample and recruitment.

of the locations of interest in stores. Data coders then used an online tool to code unique products and the proportion of space they took up. The next section describes the methods in more detail.

2. Methods

2.1 Data collection

Baseline (pre-legislation) data collection was conducted between April and May 2022, before the legislation was introduced. Post-legislation data collection was conducted between April and June 2023, after the implementation of the regulations in October 2022.

Head Offices for major retail chains were contacted to seek permission for data collection in a small sample of their stores. Once permission was obtained from Head Offices, individual store managers were contacted to agree a convenient time for data collection.

Observational data of products displayed at the locations identified by the regulations were captured using video-recording glasses. Video footage was then input by a team of coders to an online coding tool, detailing the products in each location, and the relative size of locations to one another (for example, an end of aisle may have been half the size of the space displaying products in a store entrance). Coders selected whether a product in the footage was 'out-of-scope' of the regulations (for example, non-food items, alcohol, or fruit and vegetables,) or within one of the 13 categories included in the regulations. If the product was within one of the 13 categories included in the regulations, they used a lookup from the Kantar World Panel database to identify the exact food or drink item. Coded products were then assigned an HFSS status of 'healthy' or 'less healthy', based on the 2004/5 Nutrient Profiling Model (NPM) developed by the Food Standards Agency[13]. Products within one of the 13 categories but identified as 'exempt' were also coded as 'out of scope'. All coded data for each store was checked by another coder to ensure agreement and that no products or locations had been missed.

The data collected and coded enables an estimate of the percentage of display areas in locations used to promote HFSS foods to be calculated for each store (and for each type of location within each store).

For more information on the data collection, including design and methods, see the accompanying Technical Report.

2.2 Participating stores

Data were collected at two time points (April/May 2022 and April to June 2023) from a total of 23 stores (19 supermarkets and four convenience stores) from four chains that took part in the study. The stores were from different geographical regions across England and different levels of area deprivation, however the limited number of stores means comparisons along these lines were not possible.

Some stores did not have any products in some locations, and this finding differed between the two data collection periods. For example, 21 stores had products at entrances during pre-legislation data collection and all 23 stores had products at entrances post-legislation. More stores were displaying products in each location post-

[13] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/216094/dh_123492.pdf

legislation than pre-legislation, except till checkouts and standalone units, where the number of stores displaying products at these locations remained the same.

For more information: Tables A1 and A2

2.3 Analysis

To enable a meaningful interpretation of coded data, a series of weighting[14] variables were produced to enable analysis of the proportion of space taken up by each of the coded products, within each location and store. These variables built upon each other to account for:

- the relative amount of space a product took up at a location;
- the number of repeated locations within a store;
- the relative number of each of the location types within a store.

Using this analysis method enables comparisons to be made both within and between stores, accounting for differences in store size and display unit sizes. For example, an end-of-aisle space in one store may be much smaller than in another store, but 50 percent of both spaces may be used for HFSS products. This method also controlled for changes in store layout between the two data collection periods, because it takes into account the proportion of each available location used for the display of products.

Significance testing was not conducted on comparisons between percentages due to low numbers in the sample.

Further details on weighting and analysis can be found in the Technical Report.

2.4 Definitions

This report uses the following definitions throughout.

Locations

The locations covered by the regulations include store entrances, checkout areas (including till checkouts, self-checkouts, and queuing areas), end-of-aisles and any standalone units within 50cm of end-of-aisles, and covered external areas. A 'standalone unit' refers to a separate structure (for example, an island bin, free-standing unit such as fridge or freezer, side stack or clip strip) connected to, adjacent to or within 50cm of an aisle end. Detailed definitions of the restricted location types can be found in the regulation guidance[15].

Note that although the regulations include covered external areas near store entrances, data was not collected in this type of location. For the purpose of the report 'locations' refer to the restricted locations covered by the regulations, except for covered external areas which were excluded.

Regulation categories

Thirteen product categories are covered by the regulations, having been identified as the biggest contributors to children's sugar and calorie intakes, and which are heavily promoted. These are: drinks, confectionery, cakes,

[14] Note that weighting in this study has a different aim compared to most other surveys. The purpose of weighting for this study was to calculate the amount of space each individual product took up relative to other products within a store. Other weighting methods attempt to align the achieved sample with population characteristics, which would not be appropriate here.
[15] https://www.gov.uk/government/publications/restricting-promotions-of-products-high-in-fat-sugar-or-salt-by-location-and-by-volume-price/restricting-promotions-of-products-high-in-fat-sugar-or-salt-by-location-and-by-volume-price-implementation-guidance

ice cream, savoury snacks, morning goods, puddings and desserts, sweet biscuits, breakfast cereals, ready meals, yoghurts, pizza, and chips and potato products. Some products, e.g. plain, unfilled meringue nests, are in a restricted category but are exempt from the restrictions.

Products from the regulation categories, and which were not exempt from the regulations, were coded as either HFSS or non-HFSS food products, as defined below[16].

HFSS food products

Pre-packed food and drink from one of the 13 product categories included in the regulations which are defined as 'less healthy' based on the 2004/05 NPM in accordance with the nutrient profiling technical guidance 2011 are called 'HFSS food products' throughout this report. This means the products did not pass the NPM and are restricted as per the regulations.

An example HFSS food product would be a regular chocolate bar.

Non-HFSS food products

Pre-packed food and drink from one of the 13 product categories included in the regulations which are defined as 'healthy' based on the 2004/05 NPM in accordance with the nutrient profiling technical guidance 2011 are called 'non-HFSS food products' throughout this report. This means the products passed the NPM and are not restricted.

An example non-HFSS food product might be a high-fibre, low-fat chocolate bar.

Out-of-scope products

For this analysis, some products displayed in restricted locations are categorised as out-of-scope, either because they are not included in one of the 13 product categories covered by the regulations, or because they were exempt.

Any non-food items such as toiletries as well as food and drink items from categories not covered by the regulations such as alcohol[17] and fruit and vegetables are classified as out-of-scope. Some of these products may be HFSS based on the global definition (of not passing the NPM), for example butter (which is not in a category covered by the regulations).

Some food and drink items may fall into one of the 13 product categories included in the regulations, and may also be HFSS, but are exempt from the restrictions, e.g. plain, unfilled meringue nests, are classified as out-of-scope. Details and examples of out-of-scope exempt products can be found in the regulations**Error! Bookmark not defined.** and implementation guidance.

For post-legislation data collection, the types of out-of-scope products listed for data coders to assign a product to was expanded, to enable more detailed analysis of the types of products now being displayed in areas where HFSS products were located previously.

[16] The nutritional information available for each product was accurate at the time of coding but may be subject to change. As such some products may have been defined as HFSS when reformulation may mean they no longer are.

[17] Whilst alcohol is calorie-dense and less healthy, it is out of scope of the regulations relating to HFSS products. Other policies are attempting to support healthier purchasing and consumption behaviour of alcohol, as with tobacco and vaping products.

Mean proportion of area
The mean proportion of area, across all stores, used to display a particular type of product. As the size of location areas, and stores, varies from store to store, it is not possible to calculate the true percentage of space used to display products across stores.[18] Instead the percentage is calculated for each store individually, and then a mean proportion of area is presented for analysis.

Range: minimum and maximum area
The range: minimum and maximum mean proportion of areas used to display a particular type of product are provided alongside the mean, for context (e.g. whilst the average area might be 50 percent, this could range from 0 percent in some locations/stores to 100 percent in others).

Volume-based promotions
Volume-based price promotions are those where there is an offer of financial incentive to buy multiple items compared with each item separately (e.g. 3 for 2) and/or those where an item or part of it is free (e.g. 50 percent extra free). Note that volume-based promotions are not currently restricted (with plans to introduce these regulations in October 2025), and they were not included in the research brief. However, when baseline data was collected information on volume-based promotions at restricted locations was collected, and this is therefore analysed in this report. Store-wide volume-based promotions were out of scope for this research.

3. Results

3.1 Use of location areas to display HFSS foods, non-HFSS foods from the regulation categories, and out-of-scope products, pre- and post-legislation

Pre-legislation the average area used to display HFSS foods differed by location: standalone units (39 percent, range: 10-73 percent) and checkout areas (33 percent, range: 0-79 percent) had the highest average areas used to display HFSS foods compared to end-of-aisles (16 percent, range: 0-43 percent) and store entrances (13 percent, range: 0-83 percent). Across all location types, the average area used to display HFSS foods pre-legislation was 38 percent (range: 13-72 percent).

Post-legislation, there was an overall reduction in the average area used to display HFSS foods from the regulation categories in the key locations of 32 percentage points (from 38 to 6).

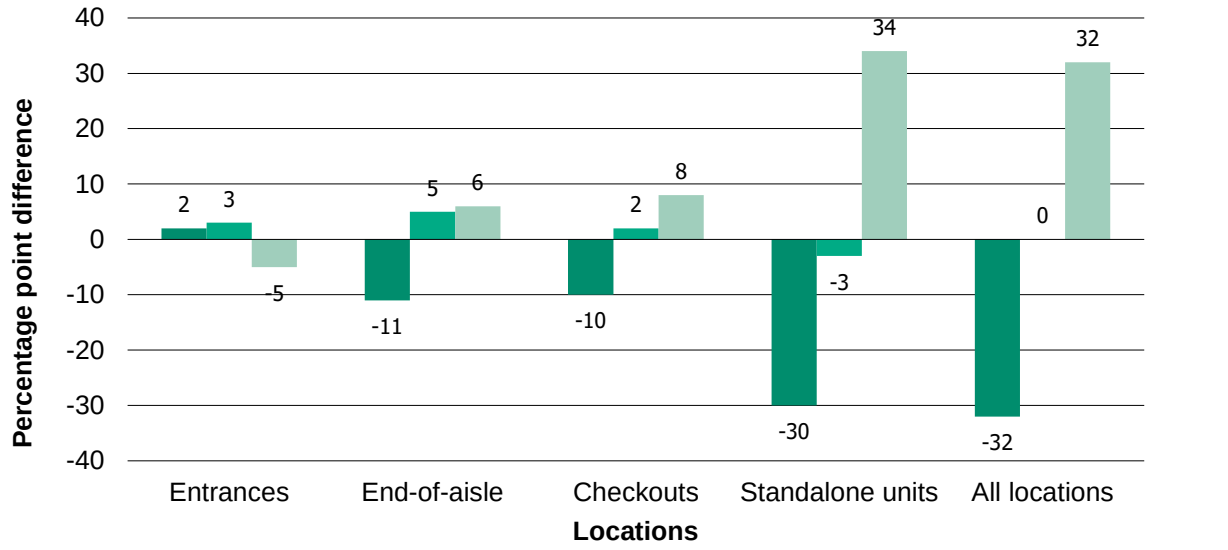
Looking at individual location types, the average space used to display HFSS foods decreased post-legislation in all but store entrances. Decreases were 10 percentage points at checkouts, 11 percentage points at end-of-aisles, and 30 percentage points for standalone units. In store entrances the average area used to display HFSS foods from the regulation categories increased by 2 percentage points.

[18] To do this, physical measurements of every display area, including those not captured by the regulations, would have been required. This was ruled out as infeasible very early on in the project development, and instead presentation of mean, minimum and maximum percentages was agreed as appropriate.

Post legislation and looking across all locations together, there was no change in the proportion of space used for non-HFSS foods, that is food and drink from one of the 13 product categories included in the regulations but pass the nutrient profiling model. However, in all individual locations but standalone units, where the average area used to display non-HFSS foods decreased by 3 percentage points, the average area used to display non-HFSS foods increased.

The average area used to display out-of-scope products (for example fruit and vegetables, household items, or alcohol) increased post-legislation for all location types combined, from 45 percent (range: 22-73 percent) pre-legislation to 78 percent (range: 53-100 percent) post-legislation. The largest percentage point increase was in standalone units: pre-legislation the average area used to display out-of-scope products was 45 percent (range: 17-74 percent), increasing to 78 percent (range: 51-100 percent) post-legislation.
Overall, stores have removed some but not all HFSS foods from the restricted locations, and these tend to have been replaced by out-of-scope products.
For more information: Table 1

Figure 1: Percentage point difference (pre- and post-legislation) of location areas used to display product types, by location
Base: All stores



Note: Numbers below zero denote a reduction in the proportion of space being used to display products at these locations post-legislation.

3.2 Variations in the use of location areas for the display of HFSS and non-HFSS foods from the regulation categories, and out-of-scope products, pre- and post-legislation, by chain
The number of participating stores per supermarket chain varied from four to nine stores. These results are a case study of those stores and cannot be generalised to the entire chain.

Out of the four participating supermarket chains, all displayed HFSS foods across locations pre-legislation, and all chains displayed a reduced proportion of these products post-legislation. The percentage point decrease across chains ranged from 18 to 44 (across all chains it was 32).

Chains differed in the types of products that were on display post-legislation. In Chain B, the average area used to display non-HFSS foods increased by 14 percentage points, and the average area used to display out-of-scope products increased by 4 percentage points. Conversely in Chain C, the average area used to display out-of-scope products increased by 53 percentage points whilst the average area used to display non-HFSS foods decreased by 23 percentage points.

For more information: Table 2

3.3 Variations in the use of location areas to display HFSS foods and non-HFSS foods from the regulation categories, and out-of-scope products, pre- and post-legislation, by store type

The participating stores were categorised as supermarkets (those over 3,000 sq ft where Sunday trading hours apply) or convenience stores (those under 3,000 sq ft where Sunday trading hours do not apply). Four participating stores were convenience stores, and 19 were supermarkets. Across both store types, there was a reduction in the proportion of HFSS foods that were displayed post-legislation, with decreases in average area of 50 percentage points in convenience stores and 28 percentage points in supermarkets.

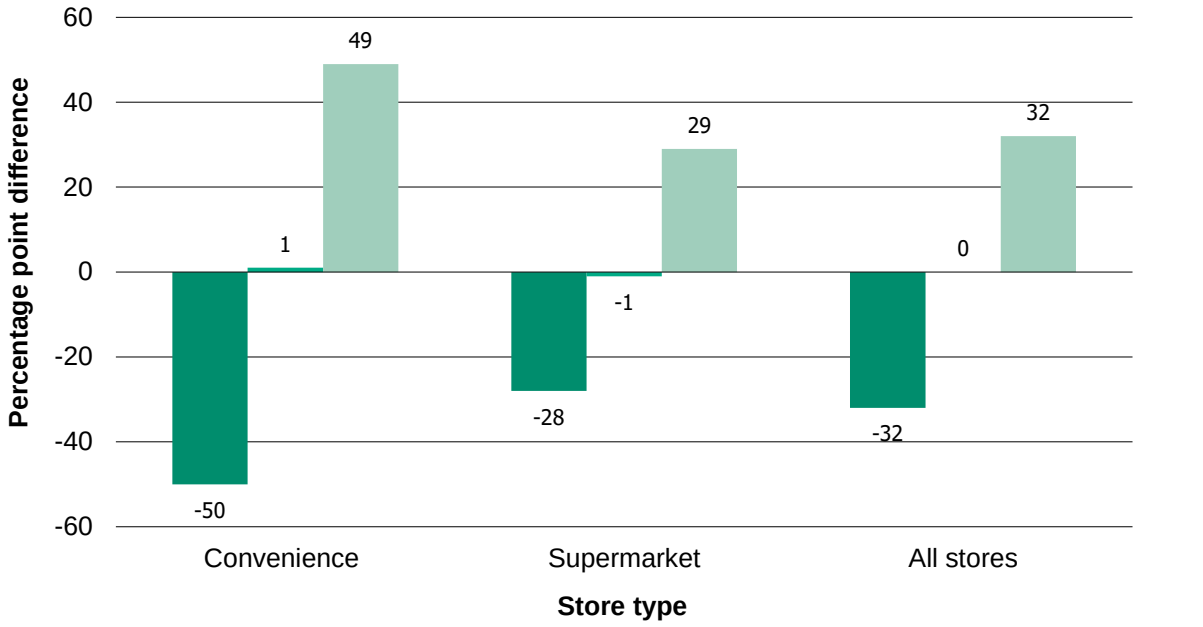
Both convenience stores and supermarkets subsequently saw an increase in the display of out-of-scope products post-legislation. The average area used to display out-of-scope products in convenience stores was 82 percent (range: 67-91), an increase of 49 percentage points. In supermarkets the increase was 29 percentage points, to 77 percent (range: 53-100).

The change in display of non-HFSS products was minimal in both store types: in convenience stores it increased by 1 percentage point, whilst in supermarkets it decreased by 1 percentage point.

For more information: Table 3

Figure 2: Percentage point difference (pre- and post-legislation) of location areas used to display product type, by store type (supermarket / convenience)

Base: All stores



Note: Numbers below zero denote a reduction in the proportion of space being used to display products post-legislation.

3.4 Variations in the use of location areas to display products, pre- and post-legislation, by regulation category

All coded products which were included in the regulations were grouped into one of 13 regulation categories: drinks, confectionery, cakes, ice cream, savoury snacks, morning goods, puddings and desserts, sweet biscuits, breakfast cereals, ready meals, yoghurts, pizza, and chips and potato products. Any coded products which did not fit into one of these categories, including those which were exempt from the regulations, were coded as out-of-scope.

This analysis looks at all products, regardless of HFSS status. Some products within these categories may pass the NPM due to having low fat, sugar and salt content whilst still being classified as e.g. confectionery.

Pre-legislation, the regulation categories that accounted for the majority of space used for products (regardless of HFSS status) across locations were: confectionery (18 percent, range: 0-45 percent); drinks (10 percent, range: 2-34 percent); and savoury snacks (10 percent, range: 0-21 percent). Products from other regulation categories accounted for much smaller proportions of space (4 percent or less).

Across all locations, the average area used to display products in each of the regulation categories differed pre- and post-legislation. The average area used to display confectionery reduced from 18 percent (range: 0-45 percent) pre-legislation to 2 percent (range: 0-9 percent) post-legislation, whilst the average area used to display ready meals increased from 0 percent (range: 0-2 percent) pre-legislation to 14 percent (range: 0-28 percent) post-legislation.

In store entrances, the average area used to display drinks, confectionery, cakes, ice cream, and morning goods increased, whilst the average area used to display savoury snacks and sweet biscuits decreased. At end-of-aisles the average area used to display drinks, savoury snacks, and ready meals increased, whilst the average area used to display confectionery and breakfast cereals decreased. At checkouts, the average area used to display cakes and savoury snacks increased, whilst the average area used to display confectionery, ice cream, puddings and desserts, sweet biscuits, and pizza decreased. In standalone units, the average area used to display drinks and ready meals increased, whilst the average area used to display confectionery, cakes, ice cream, savoury snacks, puddings and desserts, sweet biscuits, breakfast cereals, and pizza decreased.

For more information: Table 4a

3.5 Variations in the use of location areas to display HFSS foods, pre- and post-legislation, by regulation category

This analysis uses the same regulation categories as above, but focuses on foods that do not pass the nutrient profiling model (i.e. HFSS foods).

Pre-legislation, the regulation categories that accounted for the majority of space used for HFSS products across locations were: confectionery (18 percent, range: 0-45 percent); savoury snacks (9 percent, range: 0-21 percent); and sweet biscuits (4 percent, range: 0-11 percent). Products from other regulation categories accounted for smaller proportions of space (2 percent or less).

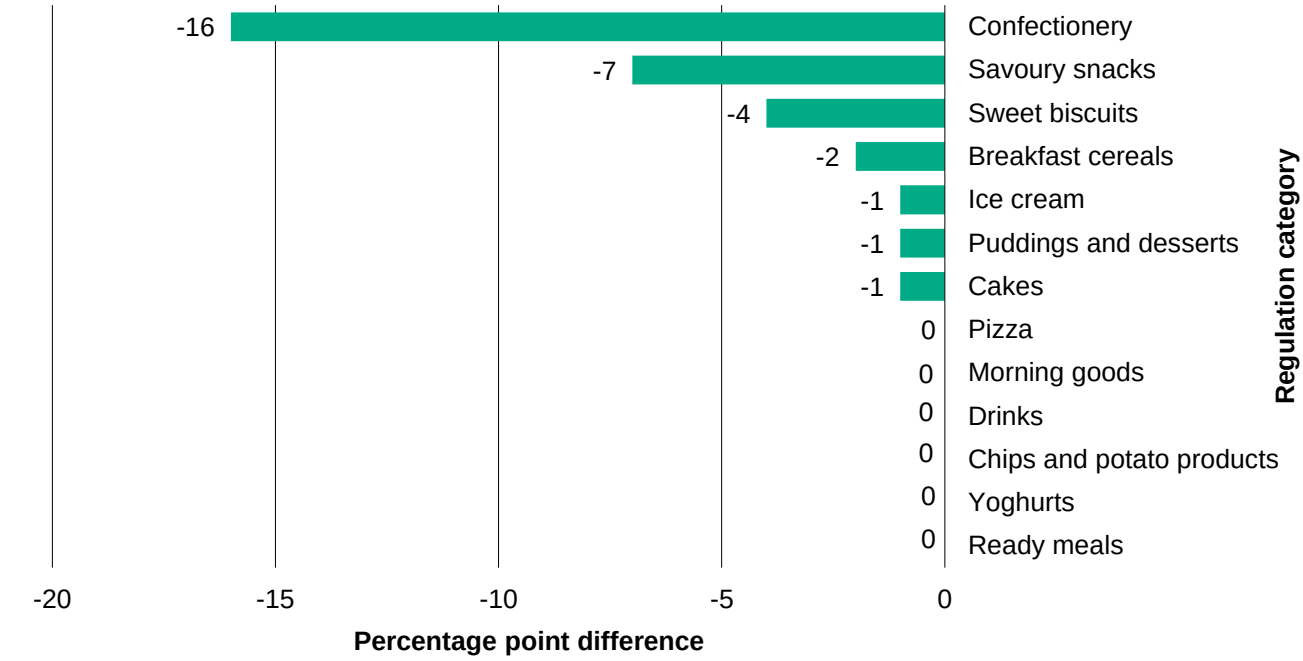
Across all locations, the space used to display HFSS foods from any of the 13 product categories covered by the regulations decreased post-legislation. The average area used to display HFSS foods decreased by 16 percentage points for confectionery, and 7 percentage points for savoury snacks, with average decreases between 0-4 percentage points for other items.

In store entrances and at end-of-aisles, the largest reduction was in the average area used to display savoury snacks (4 percentage point decreases for both). At checkouts and in standalone units, the largest reductions were in the average areas used to display confectionery (10 and 13 percentage point decreases, respectively).

For more information: Table 4b

Figure 3: Percentage point difference (pre- and post-legislation) in mean area of location areas used to display HFSS foods, by regulation category

Base: All stores



3.6 Variations in the use of location areas to display out-of-scope products, post-legislation, by product types

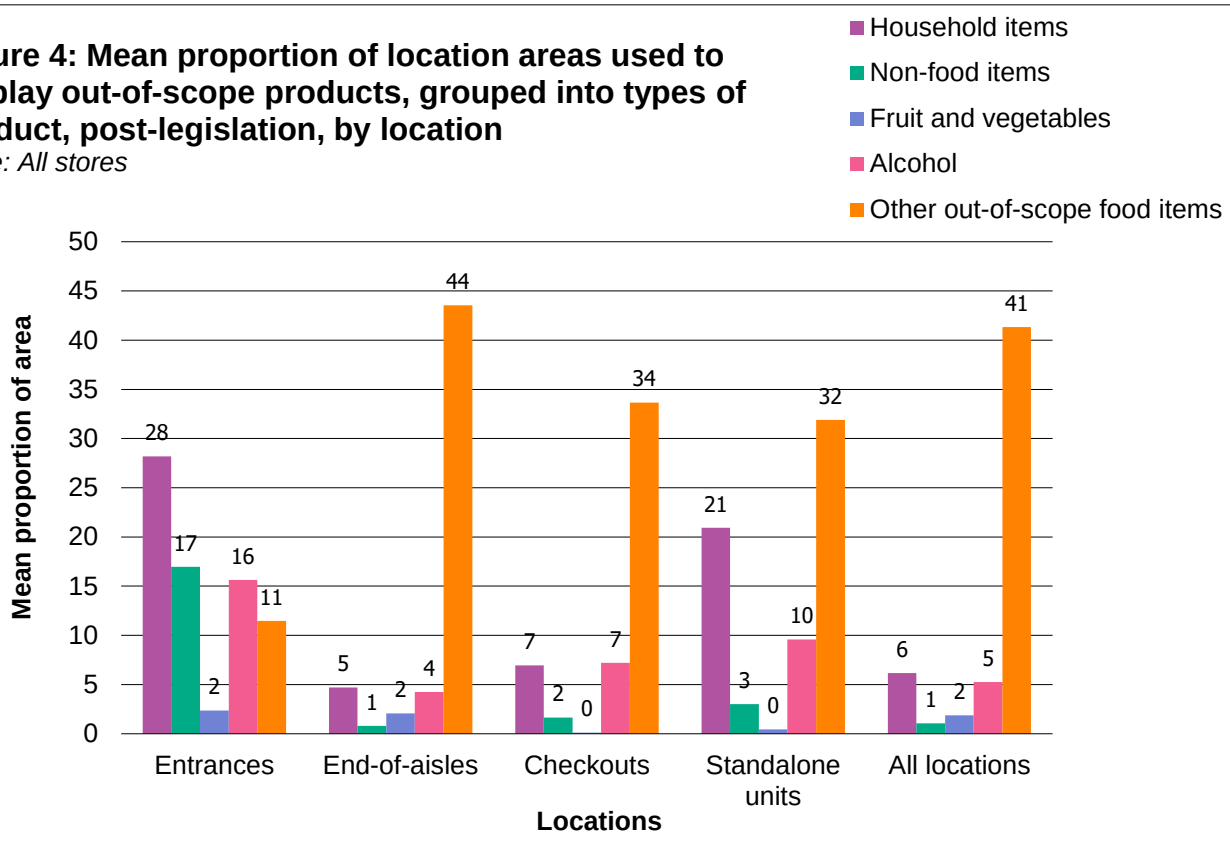
For post-legislation data collection, out-of-scope products were coded into one of five groups: household items e.g. toilet rolls, non-food items e.g. gifts, fruit and vegetables, alcohol, and other out-of-scope food items (primarily products from non-regulated food categories but also including those in one of the 13 products categories, but that are exempt from the legislation). For this analysis, any products that are covered by the regulations were grouped together, regardless of HFSS status. Pre-legislation data collection did not differentiate between types of out-of-scope products, and as such this analysis focuses on post-legislation findings only.

Across all locations, the largest average area used to display products was used for other out-of-scope food items (41 percent, range: 5-72 percent). This category was also the largest for end-of-aisles, checkouts, and standalone units. In store entrances, the largest average area used to display products was used for household items (28 percent, range: 0-100 percent). Non-food items e.g. gifts (17 percent, range: 0-100 percent) and alcohol (16 percent, range: 0-100 percent) were also regularly displayed in store entrances. Standalone units often displayed household items (21 percent, range: 0-100 percent) or alcohol (10 percent, range: 0-33 percent).

For more information: Table 5

Figure 4: Mean proportion of location areas used to display out-of-scope products, grouped into types of product, post-legislation, by location

Base: All stores



3.7 Variations in the use of location areas to display HFSS and non-HFSS foods from the regulation categories, also used for volume price promotions, pre- and post-legislation[19]

Products displayed at the location areas that were included in the regulations were also coded as either on volume price promotion or not. Volume price promotions are those where there is an offer of financial incentive to buy multiple items compared with each item separately (e.g. 3 for 2) and/or those where an item or part of it is free (e.g. 50 percent extra free). Implementation of restrictions on use of volume price promotion on HFSS products has been delayed until October 2025.

Prior to the implementation of the legislation around the display of HFSS foods, the average area across locations displaying HFSS foods that was also used for volume price promotions was 1 percent (range: 0-3 percent). The average area displaying non-HFSS foods that was also used for volume price promotions was 1 percent (range: 0-4 percent). Post-legislation, there was no change in the average area, displaying either HFSS or non-HFSS foods, that was also used for volume price promotions.

Across location types, a similar proportion of space was used for volume price promotions. The largest average area used to display products that were also on volume price promotion was store entrances: pre-legislation, 4 percent (range: 0-80 percent) was used to display HFSS foods that were also on volume price promotion, and post-legislation, 2 percent (range: 0-50 percent).

For more information: Table 6

[19] The regulations restricting volume price promotions had not been implemented during the data collection period for this research project. 'Post-legislation' here refers to the regulations restricting the display of HFSS products from certain categories.

4. Conclusions

This report presents findings on the extent of food and drink high in fat, sugar, or salt (HFSS foods) displayed in specified locations (store entrances, end-of-aisles, checkout areas including self-checkouts, and standalone units) in England before and after the introduction in October 2022 of legislation restricting their placement in these locations. Data on products displayed at these locations and the proportion of space they took up were collected from 23 stores at two time points, pre- and post-legislation: to provide baseline figures for the proportion of space across restricted locations devoted to the display of HFSS foods before the implementation of the legislation; and to enable evaluation of the effectiveness of the legislation.

Pre-legislation findings show that there was a clear rationale for legislation restricting the location-based promotions of products high in fat, sugar, or salt (HFSS). Pre-legislation, around two fifths of available space in the specified location areas were being used to display HFSS products. This varied by location type, store type (convenience or supermarket) and chain.

The post-legislation findings then provide evidence that, after the introduction of the legislation, the participating supermarkets and convenience stores had partially implemented the regulation guidance and had reduced the proportion of HFSS products from the 13 restricted categories in those locations. Additional detail is provided about the types of products, non HFSS and out-of-scope, displayed in these locations post-legislation, however further research would need to be conducted to determine where HFSS products had been moved to (as data collection focused on specified locations only).

As described in the report, this research used novel data collection methods and as such there are some limitations to be aware of:

- The four chains involved were aware of the research being carried out in their stores and therefore they may have been more compliant with the regulations, although they were still displaying some HFSS products in restricted locations.

- Stores may also have been preparing for the implementation of the regulations ahead of baseline data collection, meaning that ‘pre-legislation’ figures may be underestimates.

- Data collection was conducted at two specific time points and as such provides a ‘snapshot’ of the products displayed across stores at these times. Product placement will vary over time.

- This research was originally intended to be representative of stores in England, but the unforeseen recruitment issues significantly reduced the number of stores and chains in the final sample. Therefore, this report presents findings of a case study of 23 stores and is not intended to be used as a representation of all food and drink retailers. This small sample size also did not allow for analysis of statistical significance, which would provide more information on the true differences between phases of data collection.

- The methods used provide a comparison of the types of products that were on display pre- and post-legislation; this research does not measure consumer behaviour and whether the change in product display has an impact on the types of products that are bought.

Further evaluative detail on the methodology of this study can be found in the Technical Report.

Despite these limitations, the research has shown that the legislation has been largely successful, at least in this subsample of stores with the proportion of space used for HFSS products falling overall, In this sample of stores, there is variation in the types of products now being displayed in those locations although, as yet, no increase in the proportion of space devoted to non-HFSS products. Further research is required to assess this in more detail, including any potential unintended consequences for example increased display of alcohol. Additionally, data from individual stores does suggest some patterns which may represent breaches of the regulations, for example locations with high proportions of HFSS products still on display.

Overall, this research provides evidence in two main ways. First, that large proportions of specified, high-footfall location areas were used to display HFSS products before the introduction of the legislation, providing a strong rationale for its implementation. Second, at least in the participating stores, retailers were abiding by the regulations at the time of post-legislation data collection and had removed most HFSS products from the restricted food categories from the specified locations. As described above, more detailed research would need to be conducted to determine where these HFSS products are now located, and what has replaced them.

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