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Research Paper

Temporary and sustained changes in alcoholic and alcohol-free or low-alcohol drinks sales during January? A time series analysis of seasonal patterning in Great Britain

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ABSTRACT

Introduction: Sales of alcohol-free and low-alcohol (no/lo) drinks are increasing rapidly but the drivers of this trend remain unclear. Reductions in alcohol consumption during January, including through temporary abstinence campaigns like Dry January, are one potential driver. This study estimates the immediate and long-term impact of changes made in January on sales of standard alcoholic and no/lo drinks in Great Britain.
Methods: Population-level sales data for standard alcoholic and no/lo drinks were analysed using ARIMAX time series models for the on-trade (e.g. bars; June 2014 to January 2024), off-trade (i.e. shops; January 2020 to December 2023), and overall market (January 2020 to December 2023). Outcome measures were sales volumes of standard alcoholic and no/lo drinks in servings and the percentage of total servings that were no/lo drinks.
Results: In the overall market, alcoholic drink sales were lower in January than other months and highest in December (β=+263,074,000 servings; 95 %CI 230,629,000—295,520,000), while no/lo drink sales were higher in January compared to February, March, and the autumn months (lowest in November; β=-1081,000 servings; 95 %CI -1965,000 —-196,000). The percentage of servings that were no/lo drinks peaked in January. There was uncertain evidence of large reductions in alcoholic drink sales each January driving long-term reductions in the off-trade (β=-48,383,000 servings; 95 %CI -106,104—9338,000) but there did not appear to be substantial impacts on other long-term trends.
Conclusions: There are short-term decreases in standard alcoholic drink sales and increases in no/lo drink sales in January but there appeared to be no substantial sustained changes.

Introduction

Alcohol-free and low-alcohol drinks (no/lo drinks) are beers, ciders, wines, and spirits that contain little or no alcohol. Exact definitions vary across countries, but the UK Government defines no/lo products as those up to 1.2 % alcohol by volume (ABV). The popularity of no/lo drinks has risen significantly in recent years, with global sales volumes increasing by 6 % in 2021 across 10 leading economies, accounting for a 3.5 % share of the overall alcohol market (World Health Organization, 2023). Furthermore, data from European countries shows an increase in production of no/lo drinks between 2013 and 2019 (Kokole et al., 2022). In Great Britain, a similar trend has emerged, with a growing number of no/lo drinks sold in both the on-trade (e.g. bars, nightclubs, and restaurants) and the off-trade (e.g. supermarkets and convenience stores). Sales of no/lo drinks in Great Britain in 2023 amounted to 78 million litres, generating £362 m in revenue and accounting for 1.4 % of the total volume sold of alcoholic drinks (Holmes et al., 2023).

The rise of no/lo drinks may have public health benefits if people replace their consumption of standard alcoholic drinks with no/lo alternatives. Several studies of household purchasing data have demonstrated this substitution effect, particularly for beer (Anderson et al., 2020; Anderson & Kokole, 2022; Jané Llopis et al., 2022). For example, the introduction of new no/lo beer products resulted in a decrease in purchases of standard beer of the same brand by 48 ml per adult, per

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household, per day among British households that had previously bought beer products (Jané Llopis et al., 2022). Experimental studies and self-report surveys have also provided some evidence of substitution behaviour (De-loyde et al., 2023; Dobashi et al., 2024; Groefsema et al., 2024). However, there remains little research on this topic and many of the published studies have significant methodological limitations or connections to alcohol producers.

To improve understanding of the relationship between rising sales of no/lo drinks and changes in alcohol consumption, the underlying drivers of their increased popularity and any substitution behaviour need further exploration. Studies to date have focused largely on individual-level drivers, such as health concerns or avoiding the immediate negative effects of alcohol (e.g. hangovers or an inability to drive) (Corfe et al., 2020; Nicholls, 2023; Ramírez Pagès et al., 2024). However, drivers may also exist at the population-level. One such driver may be cultural shifts during traditional periods of abstinence or reduced alcohol consumption, such as January, when many individuals prioritise health-conscious behaviours (Norcross et al., 1989). In England, there are more attempts to reduce alcohol consumption in January than other months (de Vocht et al., 2016). Recent years have seen temporary abstinence challenges like Dry January add to this trend and prompt both social and commercial marketing of no/lo drinks. Organised by Alcohol Change UK, Dry January offers registered participants support throughout January to facilitate abstaining from alcohol (Alcohol Change UK, 2025a). In 2023, the challenge saw over 175,000 formal registrants, with >6.5 million individuals estimated to be participating informally by attempting to abstain from alcohol without registering for further support (Alcohol Change UK, 2025b).

Dry January is part of a wider international movement of similar temporary alcohol abstinence campaigns (De Ternay et al., 2022). While the timing of the abstinence period and the inclusion of fundraising or social media support may vary from country to country, these campaigns share the goals of encouraging participants to reconsider their drinking habits and promoting healthier lifestyles.

Evidence on the impact of Dry January and similar campaigns on alcohol consumption is mixed. Some studies suggest these campaigns help participants reduce their alcohol consumption (Butters et al., 2023; Saengow et al., 2024), with research reporting long-term reductions, coupled with improvements in self-reported wellbeing (De Visser et al., 2017; de Visser & Nicholls, 2020). However, a study indicated that increased participation in Dry January at the population-level does not necessarily lead to lower alcohol consumption (Case et al., 2021). As a result, it remains unclear whether individual-level changes in behaviour during January translate into population-level decreases in sales of standard alcoholic drinks or increases in sales of no/lo drinks. It also remains unclear whether any population-level changes are temporary or whether they have longer-term impacts.

While this study is not designed to assess the impact of any specific campaign, the timing offers an opportunity to explore whether broader changes in sales patterns during January suggest a shift in population-level alcohol-related behaviours, and whether these patterns persist beyond the month itself. Therefore, the aim of this study was to conduct a time-series analysis using population-level sales data for Great Britain to test whether sales of standard alcoholic and no/lo drinks change in January and the long-term impact of any changes. The analysis aimed to estimate changes across the overall market as well as separately for the on-trade (e.g. bars, restaurants) and off-trade (i.e. shops) sectors.

Methods

Data

The analysis used two market research datasets, which provide on-trade and off-trade sales data.

On-trade sales data

The market research company Nielsen provided on-trade sales data in Great Britain for 499 weeks, from 15th June 2014 to 6th January 2024 via their CGA by NielsenIQ service (hereafter CGA) (CGA by NIQ 2025). Weekly no/lo and standard alcoholic drink sales by value and natural volume of product for separate beverage types (i.e. beer, cider, wine, spirits, RTDs) were included in the data. CGA compile the data from sources including: (i) daily or weekly electronic point of sale (EPOS), wholesaler and delivery information; (ii) a stratified random sample of outlets that provide information on the products they stock and (iii) the type and location of all on-trade premises in Great Britain (Holmes et al., 2023). The data are compiled monthly and then modelled into weekly data by CGA. Fitting time series models to data that already incorporates modelled time components is liable to produce spurious results, so we analysed the data as 116 monthly data points. CGA data treated Sunday as the first day of the week. Weeks were assigned to the month in which they ended or if ending in the first three days of the month were assigned to the previous month. Therefore, the final week in each month included up to three days from the following month.

Off-trade sales data

Circana provided weekly off-trade alcohol sales data in Great Britain for 208 weeks between 5th January 2020 and 30th December 2023 (Circana, 2025). Circana data were more detailed than CGA data and included no/lo and standard alcoholic drink sales by value and natural volume for named stock-keeping units (SKUs, or specific barcodes), together with product details including ABV and pack size. Circana uses a combination of wholesale and EPOS data to estimate alcohol sales. All large multiple retailers (i.e. supermarkets) excluding discount stores (e.g. Aldi, Lidl) provide EPOS data, as well as a sample of smaller retailers (Holmes et al., 2023). Circana collect their data weekly, so 208 weekly data points were included in the analysis. Circana data treated Monday as the first day of the week.

Combined on-trade and off-trade sales data

The on-trade and off-trade datasets were combined for the period that both were available (5th January 2020 to 30th December 2023) to produce 48 monthly data points for the overall alcohol market. To combine on-trade and off-trade data, corresponding weekly data (dates within a one-day difference) were combined. Once aligned, the data were aggregated to monthly data points and assigned to months using the same approach as for the CGA data.

Outcome measures

The three outcome measures were the volume of sales of: (i) standard alcoholic and (ii) no/lo drinks, both measured in servings (defined below), and (iii) the percentage of total alcoholic and no/lo drinks servings that came from no/lo drinks. Each outcome was analysed separately for the overall market, off-trade and on-trade. Off-trade analyses used the total weekly serves. Overall market and on-trade analyses used mean weekly serves in each month to account for variations in the number of weeks per month and prevent months with more weeks showing disproportionately higher total sales volumes. For all measures and trade sectors, January or Week 1 of the year may contain up to three days in December due to the way days are distributed across weeks in the raw data. This may inflate sales estimates in this period due to New Year celebrations.

Standardised servings approach

Public health-oriented analyses of alcohol sales usually convert natural volume (i.e. volume of liquid) of sales into volume of pure alcohol. However, we required an alternative metric as no/lo products contain little or no alcohol. Using natural volumes was an unsatisfactory alternative as different beverage types have different standard serving sizes (e.g., a 330 ml bottle of beer vs. a 25 ml shot of spirits), meaning

changes in sales of beverages with larger serving sizes would have a disproportionate impact on our results. We therefore developed a new 'servings' measure.

Servings were calculated by dividing the natural volume sold of each beverage type by its standard serving size. Table 1 reports the standard serving sizes used. For the on-trade, we used the serving sizes specified in the Weights and Measures Act 1985 (Gov.UK, 2024). For off-trade beer, ciders and RTDs (i.e. pre-mixed spirits), we used the sales-weighted median product volume in the Circana data. Volumes larger than one litre were excluded when calculating the median to avoid products sold in multi-packs from skewing the results. For off-trade wine and spirits, we used typical self-poured serving sizes reported in previous experimental research (Meier et al., 2013).

Analysis

Descriptive trends analysis

We first plotted descriptive graphs of the number of servings sold over time of standard alcoholic and no/lo drinks, and the percentage of total servings sold that were no/lo drinks, for the on-trade, off-trade, and overall markets.

Time series analysis

We then conducted nine autoregressive integrated moving average with an exogenous variable (ARIMAX) time series analyses. These covered the three outcomes for each of the three trade sectors. For each outcome, we tested for three effects: (i) a background time trend in sales; (ii) an immediate January effect on sales, which reverts to its previous level in February (referred to hereafter as temporary seasonality) and (iii) a long-term effect on sales, where step-changes in January change the level of the long-term trend, (referred to hereafter as an annual step-change effect). Fig. 1 illustrates these effects using simulated data.

Stepwise modelling approach

We used a three-step approach for each ARIMAX analysis because models that simultaneously estimate the temporary seasonality and annual step-change effects have excess degrees of freedom and produce spurious results due to over-fitting. As this three-step procedure is an iterative process, the results below present only the final estimates rather than the estimates at each step.

In Step 1, we fitted an ARIMAX model to test for a temporary seasonality effect that compared January to other months of the year. We did this by including dummy variables for each month from February to December (on-trade and overall market) or the second week of January and each subsequent week of the year (off-trade).

In Step 2, we fitted an ARIMAX model to test for an annual step-change while controlling for the background trend and any temporary January effect, again using a dummy variable. We operationalised the annual step-change as a linear series increasing by one each year. Although we are interested in whether sales are higher or lower in January than other months in the Step 1 models, extreme peaks or dips in sales at the beginning and end of years can bias estimates in the Step 2 models. We mitigated this by controlling for January and December in all Step 2 models and visually inspected the data to assess whether controls were also necessary for other months with extreme peaks or dips.

Table 1
Servings size assumptions used in analyses for the on-trade and off-trade.

	On-trade	Off-trade
Beer	568 ml (one pint)	330 ml (standard bottle)
Cider	568 ml (one pint)	330 ml (standard bottle)
Wine	175 ml (medium glass)	175 ml (medium glass)
Spirits	25 ml (single measure)	50 ml (double measure)
RTDs	250 ml (standard bottle)	250 ml (standard bottle)

We only undertook Step 3 if we detected a significant annual step-change coefficient in the expected direction at Step 2 (e.g. a decrease in standard alcoholic drink sales or increase in no/lo drink sales). We used a p-value of <0.1 for this significance test to provide a sensitive threshold. If we detected a significant annual step-change effect, we then fitted a revised ARIMAX model to test again for temporary seasonality. The revised model adjusted the series to remove the step-change effect before repeating the process used in Step 1. To remove the step-change, the coefficient from the Step 2 model was fixed using constrained regression and the residuals were then included in the Step 3 model.

Model selection and diagnostics

Auto-Correlation Function (ACF) plots and Partial Auto-Correlation Function (PACF) plots were examined in order to select an initial ARIMA model specification. Outcome variables were modelled using AR and MA terms. Dickey-Fuller testing was performed to determine whether the model was stationary. Model selection was based on the Akaike information criterion (AIC) in order to select the most parsimonious model. Portmanteau tests were performed to ensure that model residuals resembled white noise. In cases where models could not be fitted, quadratic transformations, differencing and/or the aggregation of the series to monthly time points were used. Model adjustment and selection were then repeated. Model specifications are described in Table A.1.

COVID-19 adjustment

On-trade outlets were subject to closure or reduced capacity due to restrictions introduced to control the spread of the COVID-19 pandemic during our study period. These restrictions also affected off-trade alcohol sales. We controlled for this by including the Oxford Covid-19 Government Response Tracker (OxCGRT) as a covariate in all analyses. The OxCGRT contains indexed values that correspond with the severity of societal restrictions imposed by governments (Hale et al., 2021). A COVID-19 dummy variable was also incorporated into the analyses of the on-trade and overall markets during the period when most on-trade outlets were closed (March 2020 – May 2021). This variable was included in the analyses if it enhanced the parsimony of the models.

All analyses were performed in STATA version 18.0 software (StataCorp, College Station, TX, USA). A p-value of <0.05 was considered significant except for in Step 2 analyses (see above). This study was approved by the University of Sheffield Ethics Committee (Ref:052,138). Informed consent was not required due to the use of secondary sales data.

Results

Descriptive trends in sales

Table 2 and Figure A.1 show the annual servings sold of standard alcoholic and no/lo drinks and the percentage of servings sold that are no/lo drinks.

Standard alcoholic drink sales increased by 6 % in the overall market between 2020 and 2022, the period affected by the COVID-19 pandemic, before falling back to 2020 levels in 2023. There was a 14 % decrease in on-trade standard alcoholic drink sales between 2015 and 2023; although, the period for which there is data for the overall market and which was affected by the COVID-19 pandemic saw a 118 % increase in sales. In the off-trade, standard alcoholic drink sales dropped by 19 % between 2020 and 2023.

Conversely, no/lo drinks sales increased rapidly across all trade sectors and time periods. Sales rose 69 % overall between 2020 and 2023, including a 335 % rise in the on-trade and a 55 % rise in the off-trade. The percentage of total sales that were no/lo drinks similarly increased by 0.45 percentage points (pp) in the overall market, 0.40pp in the on-trade and 0.65pp in the off-trade.

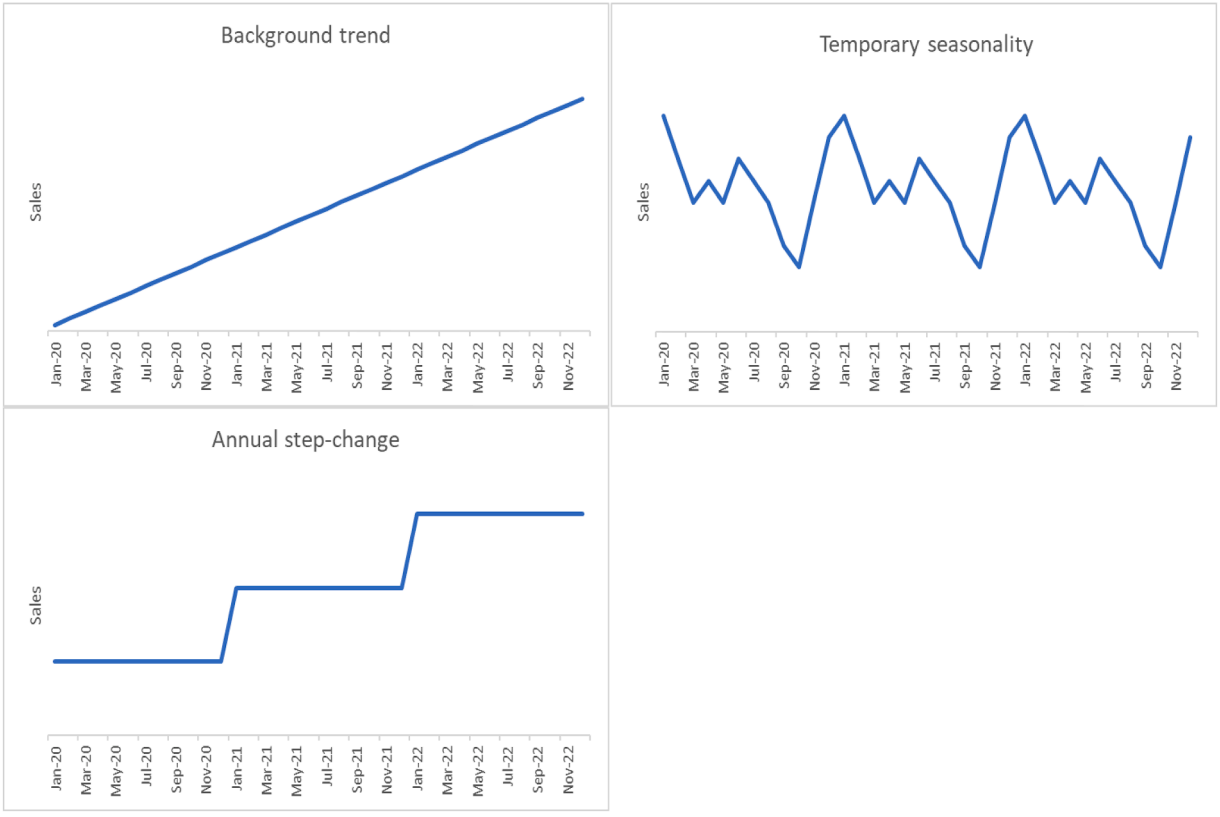

Fig. 1. Illustration of potential effects: (i) background trend; (ii) temporary seasonality and (iii) annual step-change.

Table 2
Descriptive data and long-term trend analysis of total sales of standard alcoholic and no/lo drinks in thousands of serves and percentage of sales that are no/lo drinks, 2014–2023.

	Servings sold of standard alcoholic drinks (thousands)			Servings sold of no/lo drinks (thousands)			% of servings sold that are no/lo drinks		
Year	Overall market	On-trade	Off-trade	Overall market	On-trade	Off-trade	Overall market	On-trade	Off-trade
2014[1]	–	*4140,592*	–	–	*2456*	–	–	*0.06 %*	–
2015	–	7380,134	–	–	4926	–	–	0.07 %	–
2016	–	7360,890	–	–	5671	–	–	0.08 %	–
2017	–	7245,106	–	–	6777	–	–	0.09 %	–
2018	–	7200,736	–	–	9235	–	–	0.13 %	–
2019	–	7187,490	–	–	14,088	–	–	0.20 %	–
2020[2]	*22,053,884*	*2920,557*	*19,388,056*	*146,155*	*6771*	*140,715*	*0.66 %*	*0.23 %*	*0.72 %*
2021[2]	*22,957,130*	*4262,433*	*18,482,488*	*200,245*	*11,758*	*187,882*	*0.86 %*	*0.28 %*	*1.00 %*
2022	23,292,638	6856,868	16,465,720	217,263	23,222	193,491	0.92 %	0.34 %	1.16 %
2023	22,067,552	6378,168	15,672,117	247,633	29,449	218,008	1.11 %	0.46 %	1.37 %

[1] Data only covers June-December 2014.
[2] Data affected by the COVID-19 pandemic.

Fig. 2 and Table A.2 show the average monthly values across all years for the three outcomes. Standard alcoholic sales peak in all trade sectors in December, and in May in the off-trade. They are lowest in January in the overall market and in the on-trade, whereas in the off-trade they are low in January, February and September. No/lo drinks sales are highest in December and the summer months in all trade sectors, but also peak in January to a smaller degree in the overall market and off-trade. Given these patterns, the proportion of sales attributable to no/lo drinks is highest during January and, to a lesser degree, in the summer months.

Time series analysis

Temporary seasonality

Fig. 3 shows the results of the times series analyses for temporary seasonality (see Table 3 for numerical results).

There was evidence of temporary seasonality for standard alcoholic drinks sales in all trade sectors. The number of servings of standard alcoholic drinks sold was significantly greater in all other months compared to January in the overall and on-trade markets. In the off-trade, the coefficients comparing against Week 1 were lowest during the weeks in January, suggesting a decline in sales (although significant only in Week 2), and were significantly higher than Week 1 in some but not all weeks during April to September and particularly during late November and December.

There was also evidence of temporary seasonality for no/lo drinks sales. The number of servings of no/lo drinks sold in the overall market in February to March and September to November was significantly lower than in January. Although the coefficients in the on-trade and off-trade analyses showed a similar pattern to the overall market, there were no significant effects except for higher no/lo sales in the off-trade in

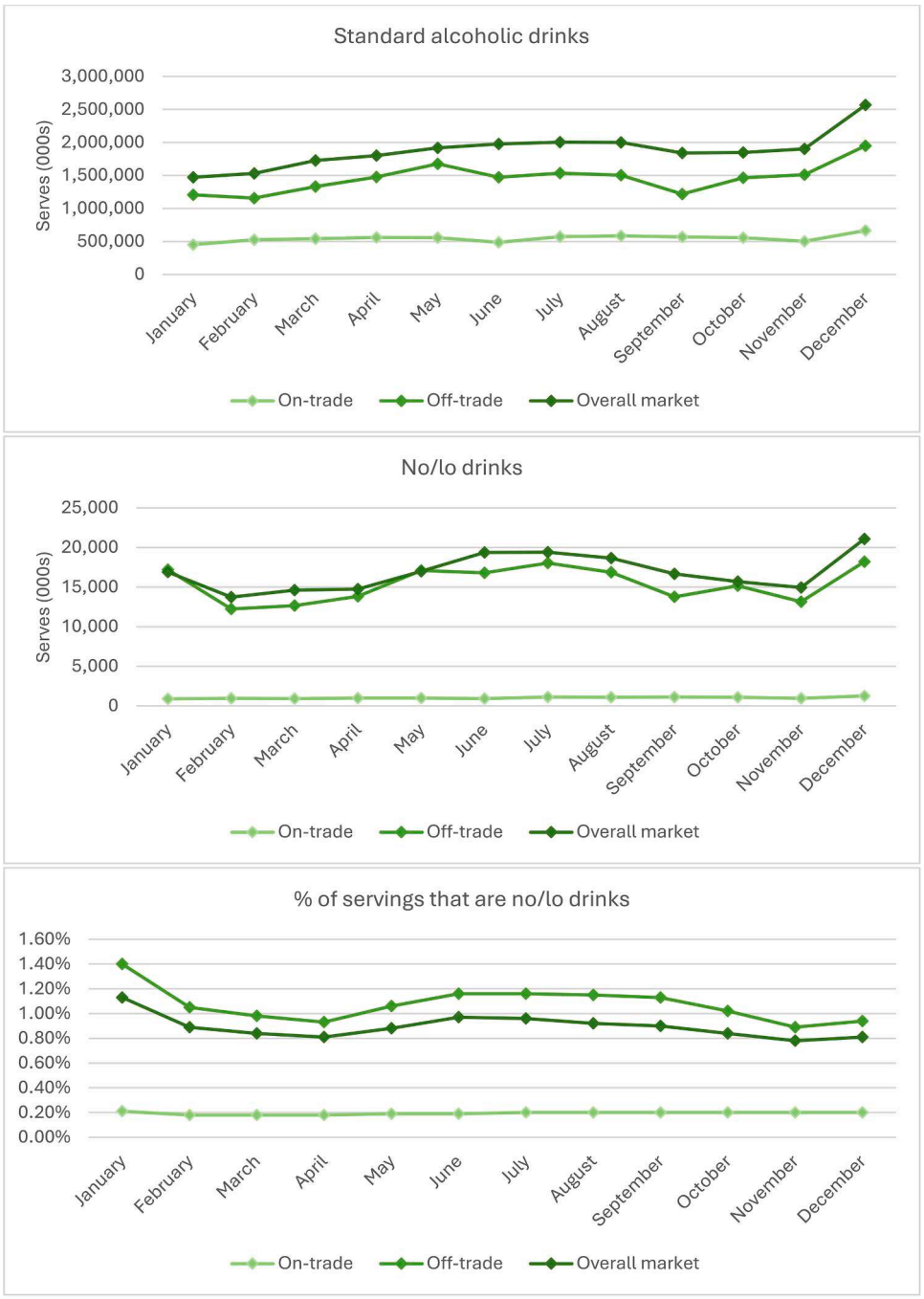

Fig. 2. Mean servings sold of standard alcoholic and no/lo drinks and percentage of servings that are no/lo drinks by trade sector and month across study period.

some weeks in June and December compared to Week 1 in January.

The percentage of total servings sold that were no/lo drinks showed strong seasonal effects. In the overall market, a significantly lower percentage of sales were no/lo drinks in February to December compared to January. The percentage was also significantly lower in December than January in the on-trade. In the off-trade, this percentage was significantly higher in mid-January to early February compared to Week 1 and significantly lower in some but not all weeks from October to December.

Annual step-changes

Table 4 shows the estimated annual step-change effects for all outcomes and trade sectors. Figure A.2 presents the model outputs alongside the raw data. There was weak evidence that changes in January were associated with large, sustained reductions in the number of servings sold of standard alcoholic drinks in the off-trade (β=−48,383,000 servings; p-value=0.10). Although the direction of annual step-change on other outcomes were in the expected direction they were not statistically significant, and the confidence intervals covered both small increases and decreases.

DISCUSSION

This study provides the first population-level estimates of changes in January on immediate and long-term consumption of standard alcoholic and no/lo drinks in Great Britain. There was evidence of a short-term seasonal effect of January such that sales of standard alcoholic drinks decreased and sales of no/lo drinks increased overall during this period.

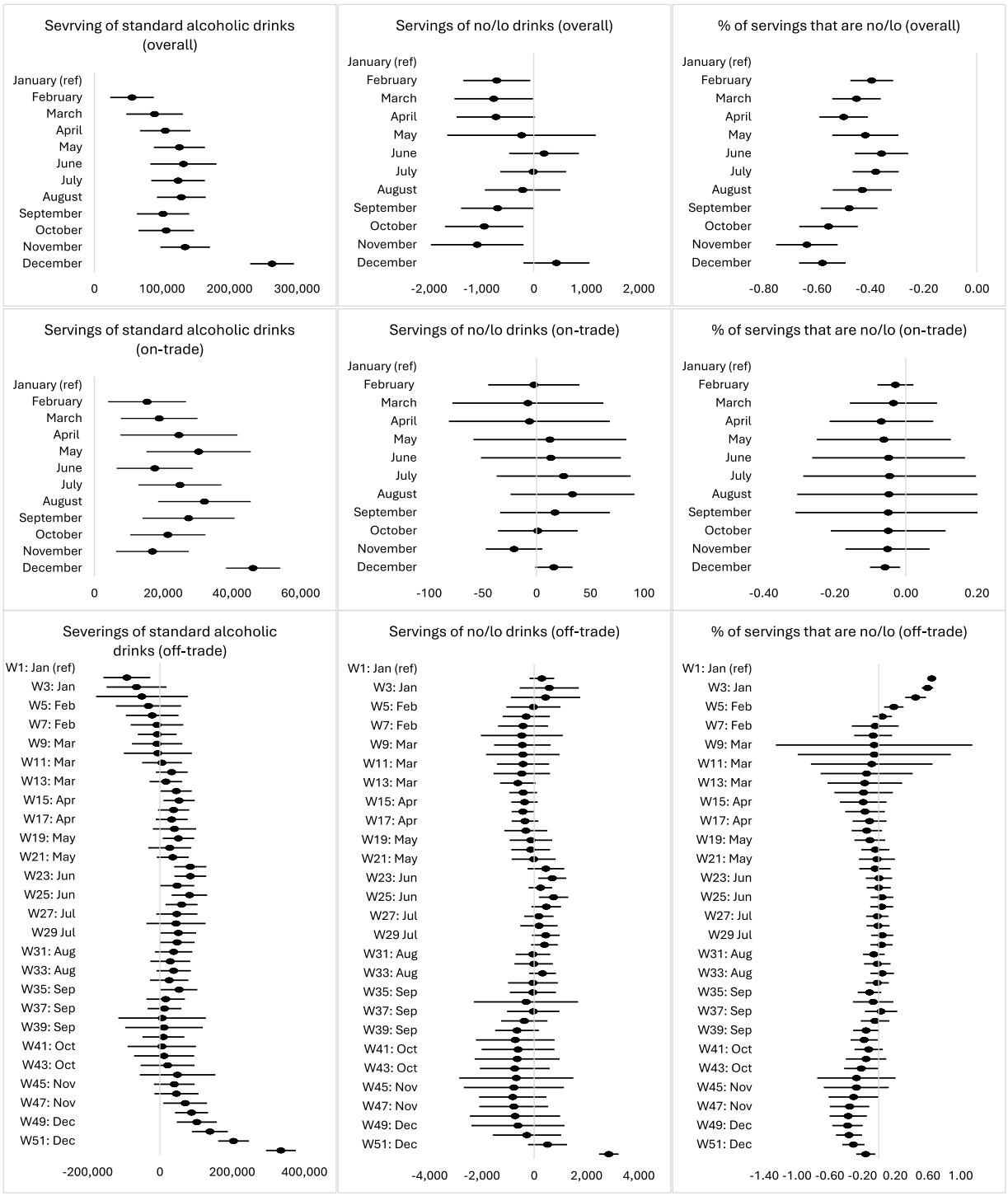

Fig. 3. Temporary seasonality effect on servings of standard alcoholic and no/lo drinks sold and the percentage of servings sold that are no/lo drinks by trade sector. X-axis values are regression coefficients describing different compared to January (overall, on-trade) or Week 1 (off-trade).

In line with this, the proportion of sales that were accounted for by no/lo drinks also increased. There was weak evidence that large reductions in sales of standard alcoholic drinks each January have driven long-term reductions in the off-trade. Other analyses showed estimated directions of effect in line with our expectations (reductions in standard alcoholic drinks and increases in no/lo drinks sales) but these estimates were highly uncertain and the confidence intervals covered both small increases and decreases. Some of the short-term effects were also inconsistent across trade sectors, with no/lo drinks sales not differing significantly across the year in the on-trade. No/lo drinks sales were also lower in the off-trade in January than in the summer months and December, which are both periods associated with higher sales of standard alcoholic drinks.

Although we did not directly test the impact of Dry January, our findings support claims that such campaigns may successfully promote reduced alcohol consumption in the short-term. This aligns with previous studies showing that the majority of individuals who undertake Dry January self-reported successfully completing it (de Visser et al., 2016; de Visser & Piper, 2020). Participation and completion of Dry January have also been associated with longer-term reductions in alcohol

Table 3
Model coefficients for temporary seasonality effects by outcome and trade sector.

	Servings sold of standard alcoholic drinks (000s)				Servings sold of no/lo drinks (000s)				% of servings sold that are no/lo			
	β	p-value	Lower 95 % CI	Upper 95 % CI	β	p-value	Lower 95 % CI	Upper 95 % CI	β	p-value	Lower 95 % CI	Upper 95 % CI
Overall market (Ref: January)												
February	55,655	<0.001	23,356	87,954	−707	0.03	−1346	−67	−0.39 %	<0.001	−0.47 %	−0.31 %
March	89,047	<0.001	47,184	130,910	−766	0.05	−1515	−17	−0.45 %	<0.001	−0.54 %	−0.36 %
April	104,869	<0.001	67,547	142,192	−726	0.06	−1474	22	−0.50 %	<0.001	−0.59 %	−0.41 %
May	125,839	<0.001	87,968	163,711	−235	0.75	−1651	1181	−0.42 %	<0.001	−0.54 %	−0.29 %
June	131,787	<0.001	82,848	180,727	195	0.57	−471	860	−0.36 %	<0.001	−0.46 %	−0.26 %
July	123,877	<0.001	84,156	163,598	−12	0.97	−642	619	−0.38 %	<0.001	−0.47 %	−0.29 %
August	128,721	<0.001	92,572	164,869	−213	0.56	−934	507	−0.43 %	<0.001	−0.54 %	−0.32 %
September	101,659	<0.001	62,865	140,453	−691	0.05	−1389	6	−0.48 %	<0.001	−0.59 %	−0.37 %
October	106,308	<0.001	65,242	147,375	−948	0.01	−1697	−199	−0.56 %	<0.001	−0.67 %	−0.45 %
November	134,268	<0.001	97,529	171,006	−1081	0.02	−1965	−196	−0.64 %	<0.001	−0.75 %	−0.52 %
December	263,074	<0.001	230,629	295,520	432	0.18	−198	1062	−0.58 %	<0.001	−0.67 %	−0.49 %
On-trade (Ref: January)												
February	15,320	0.01	3979	26,661	−3	0.91	−45	40	−0.03 %	0.26	−0.08 %	0.02 %
March	18,865	<0.001	7731	29,998	−8	0.82	−78	62	−0.03 %	0.58	−0.16 %	0.09 %
April	24,601	<0.001	7559	41,643	−7	0.86	−82	68	−0.07 %	0.36	−0.21 %	0.08 %
May	30,326	<0.001	15,142	45,509	12	0.73	−59	84	−0.06 %	0.52	−0.25 %	0.13 %
June	17,563	<0.001	6490	28,636	13	0.69	−52	78	−0.05 %	0.66	−0.26 %	0.17 %
July	24,863	<0.001	12,776	36,950	25	0.43	−37	88	−0.05 %	0.72	−0.29 %	0.20 %
August	32,017	<0.001	18,530	45,504	33	0.26	−24	91	−0.05 %	0.72	−0.31 %	0.21 %
September	27,390	<0.001	13,993	40,787	17	0.51	−34	68	−0.05 %	0.71	−0.31 %	0.21 %
October	21,358	<0.001	10,407	32,309	1	0.95	−36	38	−0.05 %	0.55	−0.21 %	0.11 %
November	16,886	<0.001	6312	27,461	−21	0.12	−47	5	−0.05 %	0.40	−0.17 %	0.07 %
December	46,174	<0.001	38,295	54,053	16	0.07	−1	34	−0.06 %	0.01	−0.10 %	−0.02 %
	Servings sold of standard alcoholic drinks (000s)				**Servings sold of no/lo drinks (000s)**				**% of servings sold that are no/lo**			
	β	p-value	Lower 95 % CI	Upper 95 % CI	β	p-value	Lower 95 % CI	Upper 95 % CI	β	p-value	Lower 95 % CI	Upper 95 % CI
Off-trade (Ref: W1: Jan)												
W2: Jan[1]	−91,460	0.01	−156,469	−26,451	296	0.22	−175	767	0.65	<0.001	0.62 %	0.68 %
W3: Jan	−64,608	0.13	−147,684	18,469	578	0.32	−550	1707	0.60	<0.001	0.53 %	0.67 %
W4: Jan	−49,560	0.44	−176,680	77,560	436	0.52	−891	1762	0.45	<0.001	0.32 %	0.58 %
W5: Feb	−31,584	0.49	−121,791	58,624	−28	0.96	−1065	1009	0.19	<0.001	0.07 %	0.30 %
W6: Feb	−21,242	0.57	−94,038	51,554	−302	0.51	−1205	601	0.04	0.47	−0.07 %	0.16 %
W7: Feb	−7995	0.83	−80,892	64,902	−423	0.39	−1382	536	−0.04	0.78	−0.33 %	0.25 %
W8: Feb	−7491	0.78	−61,182	46,201	−471	0.56	−2037	1096	−0.07	0.57	−0.30 %	0.16 %
W9: Mar	−7590	0.83	−77,322	62,142	−451	0.41	−1533	631	−0.06	0.93	−1.26 %	1.15 %
W10: Mar	−5642	0.91	−99,872	88,588	−434	0.55	−1840	972	−0.05	0.91	−0.99 %	0.88 %
W11: Mar	6017	0.83	−49,198	61,231	−426	0.40	−1424	573	−0.08	0.82	−0.83 %	0.66 %
W12: Mar	32,810	0.15	−11,393	77,013	−474	0.39	−1554	607	−0.15	0.61	−0.71 %	0.42 %
W13: Mar	16,614	0.47	−28,564	61,791	−623	0.07	−1304	58	−0.17	0.47	−0.63 %	0.29 %
W14: Apr	45,149	0.04	2143	88,156	−417	0.12	−950	116	−0.18	0.31	−0.54 %	0.17 %
W15: Apr	53,235	0.02	9914	96,557	−368	0.15	−872	135	−0.19	0.19	−0.47 %	0.10 %
W16: Apr	37,997	0.09	−5298	81,292	−430	0.05	−861	0	−0.17	0.18	−0.41 %	0.08 %
W17: Apr	32,745	0.15	−11,479	76,968	−349	0.18	−860	162	−0.11	0.29	−0.32 %	0.10 %
W18: May	40,446	0.19	−19,508	100,400	−319	0.45	−1143	506	−0.14	0.13	−0.33 %	0.04 %
W19: May	51,343	0.02	7978	94,707	−122	0.77	−936	691	−0.11	0.26	−0.30 %	0.08 %
W20: May	27,318	0.37	−32,431	87,068	−132	0.73	−873	610	−0.04	0.65	−0.21 %	0.13 %
W21: May	35,738	0.11	−8338	79,813	−16	0.97	−858	825	−0.02	0.85	−0.24 %	0.20 %
W22: Jun	84,090	<0.001	39,567	128,613	450	0.21	−253	1154	−0.05	0.64	−0.24 %	0.15 %
W23: Jun	84,208	<0.001	40,098	128,319	694	0.01	158	1231	<0.001	0.96	−0.16 %	0.16 %
W24: Jun	47,557	0.05	−17	95,131	239	0.30	−212	690	<0.001	1.00	−0.15 %	0.15 %
W25: Jun	81,654	<0.001	32,469	130,839	744	0.01	180	1307	0.04	0.57	−0.10 %	0.18 %
W26: Jun	59,906	0.01	15,429	104,383	463	0.11	−104	1030	0.04	0.60	−0.10 %	0.18 %

(*continued on next page*)

Table 3 (*continued*)

	Servings sold of standard alcoholic drinks (000s)				Servings sold of no/lo drinks (000s)				% of servings sold that are no/lo			
	β	p-value	Lower 95 % CI	Upper 95 % CI	β	p-value	Lower 95 % CI	Upper 95 % CI	β	p-value	Lower 95 % CI	Upper 95 % CI
	Servings sold of standard alcoholic drinks (000s)				**Servings sold of no/lo drinks (000s)**				**% of servings sold that are no/lo**			
	β	p-value	Lower 95 % CI	Upper 95 % CI	β	p-value	Lower 95 % CI	Upper 95 % CI	β	p-value	Lower 95 % CI	Upper 95 % CI
W27: Jul	46,987	0.11	−9903	103,876	180	0.53	−383	743	−0.02	0.80	−0.15 %	0.12 %
W28: Jul	44,589	0.29	−37,214	126,392	185	0.61	−529	899	−0.01	0.92	−0.15 %	0.13 %
W29: Jul	51,089	0.04	1832	100,346	446	0.10	−85	976	0.04	0.52	−0.09 %	0.18 %
W30: Jul	47,846	0.05	−548	96,240	395	0.13	−119	908	0.03	0.62	−0.10 %	0.17 %
W31: Aug	38,021	0.15	−13,819	89,861	−46	0.89	−709	617	−0.06	0.38	−0.19 %	0.07 %
W32: Aug	28,762	0.31	−26,547	84,070	−18	0.96	−754	717	−0.02	0.84	−0.18 %	0.15 %
W33: Aug	38,010	0.12	−9641	85,661	320	0.22	−194	834	0.04	0.56	−0.10 %	0.19 %
W34: Aug	25,798	0.34	−27,265	78,862	−44	0.93	−999	910	−0.02	0.81	−0.16 %	0.12 %
W35: Sep	53,040	0.04	2342	103,739	−48	0.92	−930	835	−0.11	0.13	−0.26 %	0.03 %
W36: Sep	16,052	0.55	−37,139	69,242	−311	0.76	−2307	1685	−0.07	0.59	−0.32 %	0.18 %
W37: Sep	12,862	0.59	−34,069	59,794	−34	0.95	−1038	970	0.03	0.77	−0.17 %	0.23 %
W38: Sep	6175	0.92	−114,899	127,249	−377	0.40	−1262	508	−0.04	0.62	−0.22 %	0.13 %
W39: Sep	11,243	0.84	−96,052	118,538	−653	0.13	−1490	184	−0.15	0.06	−0.31 %	0.00 %
W40: Oct	9673	0.74	−48,370	67,715	−723	0.35	−2226	780	−0.18	0.04	−0.34 %	−0.01 %
W41: Oct	5295	0.91	−89,339	99,930	−617	0.39	−2011	777	−0.12	0.16	−0.29 %	0.05 %
W42: Oct	11,814	0.78	−71,402	95,031	−651	0.43	−2277	974	−0.15	0.22	−0.40 %	0.09 %
W43: Oct	21,297	0.58	−53,553	96,147	−741	0.28	−2078	596	−0.21	0.05	−0.42 %	0.00 %
W44: Nov	48,943	0.36	−55,507	153,393	−681	0.54	−2864	1501	−0.27	0.27	−0.75 %	0.21 %
W45: Nov	40,029	0.16	−16,375	96,433	−775	0.43	−2689	1139	−0.27	0.18	−0.67 %	0.12 %
W46: Nov	46,012	0.14	−15,011	107,035	−818	0.21	−2108	471	−0.31	0.05	−0.61 %	0.00 %
W47: Nov	69,957	0.02	9461	130,453	−779	0.25	−2098	539	−0.36	<0.001	−0.60 %	−0.11 %
W48: Nov	87,637	<0.001	41,901	133,373	−731	0.41	−2456	995	−0.37	<0.001	−0.60 %	−0.14 %
W49: Dec	102,138	<0.001	46,847	157,428	−619	0.50	−2400	1162	−0.38	<0.001	−0.57 %	−0.20 %
W50: Dec	138,409	<0.001	88,587	188,232	−274	0.68	−1583	1034	−0.36	<0.001	−0.52 %	−0.20 %
W51: Dec	203,773	<0.001	161,314	246,231	512	0.18	−234	1257	−0.31	<0.001	−0.44 %	−0.17 %
W52: Dec	335,041	<0.001	293,869	376,214	2858	<0.001	2485	3231	−0.16	0.01	−0.27 %	−0.04 %

[1] Months corresponding to weeks are approximate and will change across years. They are provided only to guide interpretation of findings.

Table 4
Annual step change effects for all outcome measures and trade sectors.

Trade sector	β	p-value	95 % CI
Servings sold of standard alcoholic drinks (thousands)			
Overall market	−18,566	0.53	−76,276; 39,143
On-trade	−5336	0.48	−20,036; 9.364
Off-trade	−48,383	0.10	−106.104; 9338
Servings sold of no/lo drinks (thousands)			
Overall market	443	0.44	−690; 1577
On-trade	34	0.21	−18; 86
Off-trade	550	0.41	−771; 1871
% of servings sold that are no/lo drinks			
Overall market	0.15	0.15	−0.05; 0.35
On-trade	0.02	0.63	−0.07; 0.64
Off-trade	0.28	0.12	−0.06; 0.10

consumption and binge drinking at 6-months follow-up (de Visser et al., 2016), leading to some improvements in self-reported physical health and wellbeing (de Visser & Piper, 2020). However, the present study found no strong evidence that population-level reductions in drinking during January has a long-term impact on alcohol consumption trends. Similarly, another study, which examined trends in self-reported alcohol consumption between 2015 and 2018, also found no significant association between increased Dry January participation and long-term changes in the proportion of people drinking monthly or less frequently, or in mean weekly alcohol consumption among drinkers (Case et al., 2021). As only a small minority of people who reduce their consumption during January engage in the official Dry January intervention with its full range of support, confirmation of our results would suggest that attempts to temporarily abstain or reduce alcohol consumption do not lead to long-term benefits or may require more intensive support to do so.

Our results for no/lo drinks suggest that when individuals cut down on alcohol consumption during January, they may be replacing standard alcoholic drinks with no/lo alternatives in the off-trade, but not in the on-trade. This difference could reflect the social nature of on-trade drinking environments, where alcohol use may be reinforced by peers. Research shows that drinking behaviours can be shaped by close social connections, and efforts to reduce or abstain may be less likely to take hold in settings where others are drinking (van den Ende et al., 2024). Additionally, some individuals may consume alcohol in social settings to reduce discomfort or anxiety and enhance enjoyment, which could discourage switching to no/lo options in these contexts (Caumiant et al., 2023). Conversely, people may find it easier to consume no/lo drinks in private settings where there are fewer external pressures and intoxication is less integral to the reasons for drinking. Nonetheless, other evidence suggests that increased availability of no/lo beers in on-trade establishments such as bars and pubs may still result in the consumption of fewer standard alcoholic beers (De-loyde et al., 2023). The switch from standard alcoholic to no/lo drinks also coincides with the increased marketing of no/lo products during January (Nicholls, 2022).

It is also notable that no/lo drinks sales rose during periods of high sales for standard alcoholic drinks, including the summer months and December. This suggests that the population-level relationship between these product categories may differ across the year. In addition to no/lo drinks providing an alternative to standard alcoholic drinks during the lighter drinking month of January, people may also use no/lo drinks to moderate their alcohol consumption or participate in occasions without drinking during periods when the population is consuming more alcohol.

Although population-level changes in alcohol sales during January are not sustained, short periods of abstinence or reduction may still yield short-term health benefits. Participants in one-month alcohol abstinence campaigns like Dry January have reported improvements in sleep, weight loss, energy, and increased physical activity and dietary quality (de Ternay et al., 2022). Some studies also suggest reductions in blood pressure, insulin resistance, weight, and cancer-related growth factors following temporary abstinence among drinkers exceeding national guidelines (Mehta et al., 2018). However, these benefits may not be maintained once drinking resumes, and some evidence suggests that reductions in alcohol use may partly reflect regression to the mean, as participants often report higher-than-average consumption at baseline (Butters et al., 2023; McCambridge et al., 2014; Munsterman et al., 2018). Together, these findings indicate that while short-term abstinence can offer immediate health gains, caution is warranted when interpreting the long-term impact of such campaigns.

These findings carry implications for alcohol policy and public health interventions. Governments and health agencies could consider year-round promotion of no/lo alternatives, extending beyond January, to sustain momentum in shifting drinking norms. Regulation or incentivisation of no/lo product availability in retail and hospitality sectors may further help normalise their use. Finally, incorporating no/lo options and standard drink education into broader harm reduction strategies such as minimum unit pricing, advertising restrictions, or server training programs may offer a comprehensive approach to reducing alcohol-related harms.

This is the first study to investigate how population-level sales of no/lo and standard alcoholic drinks change during January. It uses high frequency time series data on alcohol sales, which affords greater statistical power for time series analyses and is a more robust measure of alcohol consumption than self-reported survey data (Gmel & Rehm, 2004). Although previous literature illustrates reductions in alcohol consumption following participation in the formal Dry January intervention, our study includes consumption by those not participating and those participating but not formally registered for Dry January and therefore provides a population-level indication of the overall impact of behavioural changes during January on sales of no/lo and standard alcoholic drinks. While this analysis focuses on the UK context, many countries have implemented similar temporary abstinence campaigns (e.g., in Canada, France, the Netherlands, Belgium, Hungary, New Zealand, and Australia (De Ternay et al., 2022)). These campaigns may be more effective in the short-term rather than in driving longer-term reductions in population-level alcohol consumption.

The study has some limitations. The primary outcome used was servings and we assumed that standard servings sizes for alcoholic drinks were the same as those for no/lo drinks, which may not be the case and may result in the inaccurate measurement of no/lo sales. However, our measures remain substantially more accurate than the standard beverage-specific, quantity-frequency measures commonly used in self-report surveys, which typically underestimate alcohol consumption by as much as 60 % and assume a single alcoholic strength and serving size for each beverage type (Meier et al., 2013). Our assumptions on standard serving sizes are empirically based but cannot account for variations across products (e.g. beers are commonly served or packaged in 568 ml [pint], 500 ml, 440 ml or 330 ml containers) or self-poured servings of wine and spirits at home. This may affect the precision of our estimates but is unlikely to affect the patterns of results or our main conclusions. A further limitation arises from weeks ending on the first three days of a month being assigned to the preceding month and, conversely, weeks starting on the last three days of a month being assigned to the following month. Weeks in the on-trade and off-trade datasets also ended on different days. These classification problems may have led to some misassignment of sales to months, particularly when combining data in the overall market. However, the overall effect of this is likely to be small. Finally, although sales data are more accurate than survey data, they may still be biased due to stockpiling behaviours or wastage (i.e. drinks that are purchased but not consumed) (Meier et al., 2013).

Further research into changes in alcohol consumption in January among various sub-populations, including those in different socioeconomic groups and heavier drinkers, could yield different findings compared to those for the general population. This research may also provide insights into which segments of the population could benefit

from targeted campaigns encouraging uptake of no/lo drinks to support reduced alcohol consumption. While this study identifies shifts in alcohol sales during January, it cannot disentangle the specific contributions of Dry January participation, general New Year's resolutions, or commercial promotion of no/lo products. Further drivers may include increased marketing of no/lo drinks, greater health consciousness among consumers and consumer preferences for alternatives to soft drinks, which are sometimes viewed as not adult drinks. Future research combining data from sales records, individual-level behavioural surveys or campaign engagement metrics could help clarify these drivers. Furthermore, assessing the impact of changes during January on different beverage types, especially those commonly consumed like beer compared to those with underdeveloped no/lo markets such as wine, would offer additional insights that help to explain our results. Replication of our results in future will also be beneficial as the no/lo drinks market continues to evolve and its role in shaping alcohol consumption patterns evolves with it.

Conclusion

While January is associated with a temporary shift in consumer behaviour, marked by decreased alcohol sales and increased no/lo sales, we found that this did not appear to cause substantial changes that were sustained over time. Campaigns promoting abstinence in January may encourage short-term reductions in alcohol consumption and this may be facilitated by replacing standard alcoholic drinks with no/lo alternatives. Future strategies could focus on leveraging these temporary shifts to encourage longer-term behavioural change, particularly during summer and winter holiday seasons where alcohol consumption remains highest.

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Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work the authors did not use generative AI and AI-assisted technologies.

CRediT authorship contribution statement

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Declaration of competing interest

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.drugpo.2025.104939.

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