Original investigation

Introduction of Standardized Tobacco Packaging During a 12-Month Transition Period: Findings From Small Retailers in the United Kingdom

Nathan Critchlow PhD, Martine Stead BA,
Crawford Moodie PhD, Douglas Eadie BA, Anne Marie MacKintosh BSc

Institute for Social Marketing, Centre for Tobacco Control Research and UK Centre for Tobacco and Alcohol Studies, Faculty of Health Sciences and Sport, University of Stirling, Stirling, Scotland

Corresponding Author: Nathan Critchlow, PhD, Institute for Social Marketing, Faculty of Health Sciences and Sport, University of Stirling, Stirling FK9 4LA, Scotland. Telephone: +44(0)1786 467382; E-mail: nathan.critchlow@stir.ac.uk

Abstract

Introduction: Factory-made cigarettes (FMC) and roll-your-own (RYO) tobacco have had to be produced in standardized packaging since May 20, 2016 in the United Kingdom, with a minimum pack size of 20 sticks for FMC and 30 g for RYO. Manufacturers and retailers were given a 12-month transition period.

Methods: An observational study was conducted using monthly Electronic Point of Sale data from 500 small retailers in England, Scotland, and Wales, between May 2016 and May 2017. The 20 top selling tobacco products (15 FMC, 5 RYO) were monitored to observe when standardized packs were first introduced, the proportion of retailers selling each fully branded and standardized product, and the average number of monitored fully branded and standardized products sold by each retailer. The number of unique tobacco-related product codes sold by each retailer was also recorded each month.

Results: Eighteen of the fully branded products continued to be sold throughout the transition period and no standardized variants were sold in the first 5 months. It was not until month eleven that the average number of standardized products sold by retailers exceeded the fully branded products. The average number of unique tobacco-related product codes sold by each retailer decreased by a third over the transition period.

Conclusions: Tobacco companies used the transition period to delay the removal of fully branded products and gradually introduce standardized variants. This staggered introduction may have mitigated some of the immediate intended effects of the legislation by desensitizing consumers to new pack designs.

Implications: Evaluation research from countries which have introduced standardized packaging for tobacco products is key to help inform future implementation. This is the first study to monitor the transition from fully branded to standardized products using real-time retail data. The findings demonstrate that tobacco companies delayed the introduction of standardized products and removal of fully branded packaging. Countries seeking to introduce standardized packaging should consider what length of transition is allowed, as the protracted 12-month period in the United Kingdom appeared longer than needed to transition stockholding and may have mitigated immediate intended effects by desensitizing consumers to new pack designs.

Introduction

The United Kingdom Standardized Packaging of Tobacco Products Regulations 2015 and the Tobacco and Related Products Regulations 2016, which transposed into UK law the EU Tobacco Products Directive (EUTPD), came into force on May 20, 2016. These required all factory-made cigarettes (FMC) and roll-your-own (RYO) tobacco for sale in the United Kingdom to be produced in standardized packs, and required FMC to be sold in packs containing a minimum of 20 sticks and RYO in packs containing a minimum of 30 g. Price marking was also removed from packs. A 12-month transition period was permitted from May 20, 2016 to May 20, 2017.¹ This served two main purposes. The first was to provide the tobacco industry with sufficient time to change their manufacturing and distribution to compliant standardized packaging or repackaging all noncompliant variants. The second was to allow retailers sufficient time to sell any noncompliant products and transition stockholding. The 12-month transition period was longer than the 2-month period permitted in Australia, the first country to implement standardized (plain) packaging, and the 9-month period permitted in France, the second country to introduce this measure.

There are at least two reasons why it is important to monitor market changes during the transition to standardized packaging. From a consumer perspective, exploring when new standardized products enter the market, and when they exceed the proportion of fully branded products sold, may help to explain the findings of consumer research which explores the impact of standardized packaging, particularly time series analyses. Examples of the consumer outcomes monitored during the introduction of standardized packaging in Australia include calls to a quit helpline,² changes in affective responses to health warnings or pack attractiveness,³ and smoking attitudes or behaviours.^{4,5} From a policy perspective, other countries are considering the introduction of standardized packaging.⁶ Studying the experiences of countries which have introduced such measures can help inform the decision on what length of transition period to allow for new legislation.

Research which has explored the response of tobacco companies to standardized packaging in Australia has focused predominately on changes at the product level. Documented examples include the expansion of lower priced product ranges, twin-pack promotions, variant name changes (e.g. the addition of a color descriptor), brand rationalization, product developments, and expanded product ranges to increase differentiation.^{7–11} In this study, we expand on this research by exploring how tobacco companies introduced new compliant standardized products and withdrew noncompliant products (i.e. fully branded packs and packs containing less than 20 FMC or 30 g RYO) across the 12-month transition period in small retailers in England, Scotland, and Wales.

Methods

Design

An observational study using Electronic Point of Sale (EPOS) data was conducted to monitor the sale of 20 fully branded tobacco products, and their compliant variants under the new legislation (standardized pack and minimum of 20 FMC or 30 g RYO), over the 12-month transition period in small retailers in England, Scotland, and Wales. Small retailers are an important group to investigate, as reportedly half of their consumers purchase tobacco and over half consider tobacco to be important to their overall profits.¹² Data were

obtained from The Retail Data Partnership Ltd (TRDP), an agency which supplies EPOS systems to the independent and convenience retail sector (e.g. hardware and software used for managing stockholding, replenishing stock, and recording sales). Data were collected on a monthly basis from May 2016 (the start of the transition period) to May 2017 (the end of the transition period).

Retailer Sample Selection

The Retail Data Partnership supplies EPOS systems to approximately 2300 small retailers across the United Kingdom. The sample is commercially generated, which means that retailers enter the database after agreeing to purchase TRDP's EPOS system. From this dataset, a stratified random sample of 500 stores was selected. A total of 300 stores were drawn from England along with 100 in each of Scotland and Wales, to ensure a minimum of 100 stores in each country. No retailers were selected from Northern Ireland, as the sampling frame contained fewer than 10 stores in this country. In England, the sampling frame was further stratified by nine regions (eg, "London" or "North East"). In Scotland, Wales and each of the nine Government Office Regions in England, the sample was stratified by deprivation level (based on Indices of Multiple Deprivation score of the retail outlet postcode) and a random selection of stores was selected.

It was possible for retailers to drop out of TRDP's database (eg, by ceasing trading or switching to a different EPOS system). In anticipation of this, a buffer sample of 75 stores was selected from the remaining sample frame after the main sample of 500 had been drawn. The selection procedure for the buffer sample was identical to that of the main sample. In the event of a drop-out, the store was replaced with the nearest match from the buffer sample. The buffer sample was replenished as and when required throughout the study period. At each replenishment stage, unused stores in the replenishment sample were combined with unused stores in the sample frame as a whole (including new stores), and a new buffer sample was drawn using identical procedures as described above.

Monitored Tobacco Products

In the retail data, all tobacco products were identified through a Universal Product Code (UPC) (ie, barcode). Each variation in product characteristic, such as a change in pack size or from fully branded to standardized packaging, generated a new UPC. This provided the ability to monitor individual products throughout the transition period. The approach is similar to research which has used stock keeping units (SKUs) to examine market changes following the introduction of standardized packaging in Australia.⁹ Forty tobacco products were selected to include both the 20 best-selling fully branded products (price-marked and nonprice-marked variants were combined and treated as one product) and the 20 standardized products which would replace them by the end of the transition period. The first step in selection was to identify the 15 top selling FMC and 5 top selling RYO products, based on cumulative sales value (£) in the period March 2015–March 2016 (Table 1). The next step was to identify the equivalent standardized products (Table 2). Anticipated names were identified using data from other studies into tobacco companies' use of packaging and brand strategy.^{13,14} These names were confirmed through monthly screening of the wholesaler product listings, manufacturer databases, pack purchases, and open source information (eg, review of trade press articles).

Table 1. Per cent of Retailers ($n = 500$) Selling the Monitored Fully Branded Tobacco Products Over the 12-Month Transition Period

Product name by price segment	% Retailers selling product in each wave of data												
	May 2016	Jun 2016	July 2016	Aug 2016	Sept 2016	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017
Value ($n = 5$)													
Carlton King Size 19 sticks	10	8	7	10	10	18	48	68	76	77	78	78	68
Carlton Superkings 19 sticks	35	17	12	12	15	61	82	88	87	86	81	36	14
Players King Size 18 sticks	81	81	83	84	84	85	87	89	90	77	17	6	3
Players Superkings 18 sticks	84	84	85	87	86	90	93	93	90	61	10	2	0.8
Rothmans Superkings Value Blue 18 sticks	6	4	2	2	1	1	1	1	0.2	0.4	0.2	—	—
Mid-range ($n = 13$)													
Amber Leaf Rolling Tobacco 25 g	94	95	96	96	96	97	92	85	23	3	2	0.2	0.4
Gold Leaf 25 g	82	84	84	84	86	85	86	88	85	86	50	4	0.6
Golden Virginia Classic 25 g	80	80	77	31	9	3	3	2	1	2	1	1	0.2
Golden Virginia Smooth 25 g	69	69	69	69	70	66	68	75	33	16	13	5	2
John Player Special King Size Blue 19 sticks	93	93	94	94	93	94	93	93	93	91	32	10	3
John Player Special Silver 25 g	28	28	29	29	29	30	27	27	33	36	42	32	8
Lambert & Butler King Size 20 sticks	22	48	78	82	84	86	87	89	87	32	13	5	3
Lambert & Butler King Size Blue 19 sticks	77	77	76	77	76	76	75	75	76	76	75	75	67
Mayfair King Size 19 sticks	92	92	94	94	92	90	92	91	90	86	34	12	6
Richmond King Size 19 sticks	19	19	66	76	80	80	82	82	79	39	20	14	8
Richmond Superkings 19 sticks	85	84	85	85	84	85	83	84	83	75	36	17	9
Rothmans King Size Value Blue 18 sticks	5	2	2	2	2	1	1	1	0.4	1	-	1	-
Sterling King Size Dual 17 sticks	95	95	96	96	96	95	96	96	97	96	33	12	6
Premium ($n = 2$)													
Benson & Hedges Gold 20 sticks	81	80	81	82	80	78	78	80	80	78	78	26	7
Marlboro King Size Gold 20 sticks	84	84	84	84	85	84	83	83	82	81	39	12	5

Table 2. Per cent of Retailers ($n = 500$) Selling the Monitored Standardized Tobacco Products Over the 12-Month Transition Period

	% Retailers selling product in each wave of data							
Product name by price segment	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017
Value ($n = 5$)								
Carlton King Size Red 20 sticks	—	—	—	1	27	48	50	81
Carlton Superkings Red 20 sticks	—	—	—	3	39	57	51	86
JPS Players King Size Real Red 20 sticks	—	—	—	8	72	83	87	92
JPS Players Superkings Real Red 20 sticks	—	—	—	41	83	90	91	93
Rothmans Superkings Blue 20 sticks	—	—	—	1	18	55	59	61
Mid-range ($n = 13$)								
Amber Leaf Original Rolling Tobacco 30g	6	20	71	94	96	96	93	78
Gold Leaf JPS Quality Blend 30g	—	—	—	—	35	85	93	97
Golden Virginia Bright Yellow 30g	—	—	31	51	58	73	78	80
Golden Virginia The Original 30g	—	—	—	21	66	90	94	95
JPS King Size Real Blue 20 sticks	—	—	—	1	65	83	87	93
John Player Special Silver 25g	—	—	—	—	—	—	—	—
Lambert & Butler King Size Original Silver 20 sticks	—	—	2	63	85	89	91	93
L&B Blue King Size Real Blue 20	—	—	—	6	40	49	45	72
Mayfair King Size 20 sticks	—	—	—	5	56	80	85	89
Richmond King Size Real Blue 20 sticks	—	—	1	40	61	67	72	78
Richmond Superkings Real Blue 20 sticks	—	—	—	4	42	65	74	79
Rothmans King Size Blue 20 sticks	—	—	—	15	56	67	69	70
Sterling King Size Dual 20 sticks	—	—	—	0.2	78	93	94	96
Premium ($n = 2$)								
Benson & Hedges King Size Gold 20 sticks	—	—	—	—	1	51	71	77
Marlboro King Size Gold 20 sticks	—	—	—	0.2	40	70	77	81

Note: No standardized variant was released for John Player Special Silver 25 g. This product was delisted, as the manufacturers stopped producing the 'Silver' range for RYO. None of the monitored standardized products appeared in the retailer sample before October 2016.

Number of Unique Tobacco-Related UPCs Sold Each Month

Monthly data were also obtained for the number of unique tobacco-related UPCs sold by each retailer. This information provided broader insight into the overall tobacco market (beyond the monitored products) and was collected to explore whether the range of products available to consumers increased or decreased as the standardized packaging and EUTPD legislations were implemented.

Analysis

All data were analyzed using SPSS version 23 (SPSS, Inc., Chicago, IL). At the product level, the proportion (%) of retailers selling each of the fully branded or standardized tobacco products was calculated for each month of the transition period. Price-marked and nonprice-marked UPCs for the same product were combined to form an overall profile for fully branded products (price-marked variants were not permitted under the standardized packaging and EUTDP legislation). At the retailer level, the average number of monitored fully branded and standardized tobacco products sold was calculated for each month of the transition period, for all 20 fully branded and 20 standardized products and by price segment (value, mid-price, or premium, as defined by the data supplier). The average number of unique tobacco-related UPCs sold by each retailer was also calculated for each month of the transition period. Three bivariate Pearson's correlations were used to explore the association between stage of transition period (in months) and the average number of fully branded products sold by each retailer, average number of standardized products sold by each retailer, and average number of unique tobacco-related UPCs sold by each retailer.

Results

Trends in Retailers Selling Fully Branded Tobacco Products

In the first month of the transition period, all 20 of the monitored fully branded products were sold in the retailer sample (Table 1) and the average number of fully branded products sold by each retailer was 12.22 (SD = 2.83) (Table 3). Over the first 9 months of the transition period, all 20 fully branded products continued to be sold in the retailer sample, and there was little variation in the average number of the products sold by each retailer (M range: 12.22–13.89; SD range: 2.44–2.83). From month 10 (February 2017), the average number of fully branded products sold by each retailer began to steadily decline, reaching a low of 2.33 (SD = 1.16) in the final month of the transition period (May 2017). By the end of the transition period, only two of the fully branded tobacco products had ceased to be sold by all retailers (Rothman's King Size and Superkings Value Blue 18 sticks), albeit both products had only been sold by a small proportion of retailers at any other point in the transition period (Table 1). A bivariate Pearson's correlation showed a significant and strong negative correlation between month of transition period and the average number of fully branded tobacco products sold by each retailer, $r(13) = -0.73, p < .005$.

Trends in Retailers Selling Standardized Tobacco Products

In the first 5 months of the transition period, none of the 20 monitored standardized tobacco products were sold in the retailer sample (May–September 2016). A small number of the standardized tobacco products first began to be sold in the sixth ($n = 1$) and eighth month

Table 3. Average Number of the Monitored Fully Branded and Standardized Products Sold by Retailers, and Average Number of Tobacco-Related UPCs, Across the Transition Period

Product name by price segment	Wave of data												
	May 2016	Jun 2016	July 2016	Aug 2016	Sept 2016	Oct 2016	Nov 2016	Dec 2016	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017
Fully branded packs													
N retailers selling fully branded products	500.0	497.0	500.0	499.0	497.0	497.0	500.0	500.0	499.0	500.0	495.0	482.0	452.0
Average n of fully branded products sold (SD) (max = 20)	12.22 (2.83)	12.33 (2.65)	13.02 (2.76)	12.80 (2.67)	12.68 (2.44)	13.13 (2.53)	13.56 (2.70)	13.89 (2.73)	12.84 (2.68)	11.00 (2.64)	6.61 (2.33)	3.66 (1.76)	2.33 (1.16)
Average n of value products sold (SD)	2.15 (1.02)	1.95 (0.87)	1.90 (0.84)	1.96 (0.82)	1.98 (0.84)	2.56 (0.95)	3.11 (0.99)	3.37 (0.97)	3.44 (0.95)	3.02 (1.04)	1.89 (0.82)	1.27 (0.72)	0.94 (0.63)
Average n of mid-range products sold (SD) (max = 5)	8.43 (1.96)	8.72 (1.92)	9.47 (2.11)	9.18 (2.04)	9.04 (1.84)	8.93 (1.81)	8.85 (1.92)	8.89 (1.90)	7.78 (1.86)	6.39 (1.79)	3.54 (1.72)	1.98 (1.28)	1.25 (0.87)
Average n of premium products sold (SD) (max = 13)	1.64 (0.63)	1.65 (0.64)	1.66 (0.64)	1.67 (0.64)	1.66 (0.62)	1.63 (0.65)	1.60 (0.65)	1.64 (0.63)	1.62 (0.66)	1.60 (0.69)	1.18 (0.69)	0.40 (0.59)	0.14 (0.38)
Average n of premium products sold (SD) (max = 2)													
Standardized packs													
Number of retailers selling standardized packs	0.0	0.0	0.0	0.0	0.0	32.0	99.0	385.0	490.0	499.0	498.0	500.0	499.0
Average n of standardized products sold (SD)	0.0 (—)	0.0 (—)	0.0 (—)	0.0 (—)	0.0 (—)	1.0 (0.0)	1.0 (0.0)	1.35 (0.50)	3.60 (1.63)	10.21 (3.07)	13.98 (3.06)	14.59 (3.02)	15.92 (2.88)
Average n of value products sold (SD)	0.0 (—)	0.0 (—)	0.0 (—)	0.0 (—)	0.0 (—)	0.0 (—)	0.0 (—)	0.0 (—)	0.54 (0.69)	2.40 (1.21)	3.35 (1.24)	3.37 (1.20)	4.13 (1.09)
Average n of mid-range products sold (SD) (max = 5)	0.0 (—)	0.0 (—)	0.0 (—)	0.0 (—)	0.0 (—)	1.0 (0.0)	1.0 (0.0)	1.35 (0.50)	3.06 (1.30)	7.39 (2.22)	9.41 (2.00)	9.74 (1.94)	10.21 (1.82)
Average n of premium products sold (SD) (max = 12)	0.0 (—)	0.0 (—)	0.0 (—)	0.0 (—)	0.0 (—)	0.0 (—)	0.0 (—)	0.0 (—)	0.0 (—)	0.42 (0.52)	1.22 (0.78)	1.47 (0.74)	1.58 (0.69)
Average number of tobacco related UPCs sold by each retailer (SD)	123.60 (44.24)	124.21 (42.92)	130.32 (44.88)	130.68 (44.65)	127.15 (42.84)	124.23 (41.89)	120.45 (41.09)	120.74 (42.15)	120.49 (42.13)	119.86 (43.67)	118.67 (45.32)	95.85 (38.76)	82.30 (32.06)

($n = 3$) of the transition period, although most were first sold in either month 9 or 10 ($n = 15$) (January and February 2017) (Table 2). The average number of monitored standardized products sold by each retailer increased from 3.60 (SD = 1.63) to 10.21 (SD = 3.07) between January and February 2017, and to 15.92 (SD = 2.88) by the final month of the transition period (May 2017) (Table 3). By the end of the transition period, standardized variants had been observed for 19 of the 20 fully branded products monitored (John Player Special Silver 25 g RYO was delisted without a direct standardized variant). A bivariate Pearson's correlation showed a significant and strong positive correlation between month of transition period and the average number of standardized tobacco products sold, $r(13) = 0.88$, $p < .001$.

Transition From Fully Branded to Standardized Tobacco Products

The average number of fully branded tobacco products sold by each retailer remained above the average number of standardized products until month 11 of the transition period (March 2017) (Table 3). In the final months of the transition period (April–May 2017), the average number of fully branded tobacco products sold by each retailer sharply declined, and the average number of standardized products increased correspondingly. By the final month of the transition period retailers were selling, on average, 13.59 more of the monitored standardized products ($M = 15.92$, SD = 2.88) than fully branded products ($M = 2.33$, SD = 1.16).

Number of Unique Tobacco-Related UPCs

For the first 11 months of the transition period (to March 2017), there was little variation in the average number of unique tobacco-related UPCs sold by each retailer (M range: 118.67–130.68; SD range: 41.09–45.32) (Table 3). In the final 2 months, however, the average number of tobacco-related UPCs sold by each retailer decreased to 82.30 (SD = 32.06), 33% lower than at the start of the transition period ($M = 123.60$; SD = 44.24). A bivariate Pearson's correlation showed a significant and strong negative correlation between month of transition and the average number of tobacco-related UPCs sold, $r(13) = -0.75$, $p < .005$.

Discussion

The tobacco products monitored in this study continued to be sold in fully branded packs in small retailers in England, Scotland, and Wales up until the final month of the transition period (May 2017). It was not until the later stages of the transition period that the standardized variants of these products began to appear in retailers and the average number of standardized tobacco products sold by each retailer exceeded that of fully branded products. The findings therefore suggest that the tobacco companies planned for, and took full advantage of, the 12-month transition period permitted in United Kingdom.

There are several possible explanations for the timing of the phasing out of fully branded packs and the phasing in of standardized packs. As fully branded packaging is known to influence smoking attitudes and behaviors, maximizing the transition period prolonged use of this marketing technique.^{15,16} Premium cigarette brands, for example, which offer tobacco companies greater profitability, are partly reliant on their fully branded packaging to justify their higher price point.¹³ This could explain why it was not until the penultimate

months of transition that the two premium brand products monitored in our study were replaced with standardized variants in most retailers, although this delay could also be due to a slower turnover of premium products compared to value or mid-price. The delayed transition is also consistent with advice in the trade press which suggested that retailers should rotate their stock as standardized packs began to filter through, to ensure that fully branded products were still sold first before the deadline.^{17,18} From an industry and retail perspective, it may be argued that this rotation was intended to mitigate some of the suggested unintended negative consequences, such as retailer and consumer confusion over mixed product availability.^{19–22} Using the full transition period also allowed gradual phasing in of standardized products. In Australia, the shorter transition period was reported to have an immediate effect on consumer behavior.^{2–4,23} As tobacco companies have a history of designing marketing activities to reduce the effectiveness of legislation,²⁴ the gradual transition in the United Kingdom may have been intended to mitigate immediate effects by desensitizing consumers to the standardized pack designs and raising awareness of new variants' names.

The 12-month transition period for standardized packaging allowed in the United Kingdom was longer than the periods permitted in other countries with similar legislation, such as France (9 months) and Australia (2 months). It is possible that the UK Government allowed a longer transition period to reduce potential reimbursement expenses to tobacco companies or retailers, although as the costs of implementing the new legislations have not been disclosed it remains unclear to what extent (if at all) this was a factor. Evidence also suggests that tobacco companies have frequently engaged in activities which intend to delay, or stop, the introduction of standardized packaging legislation.^{25–27} Our results therefore suggest that consideration should be given to what transition period is allowed, and the justification, implications, and processes involved in this decision.

There are several avenues for future research. The data only represent a cross-section of small retailers, and further investigation is required to understand transition across the wider UK tobacco market (eg, supermarkets). The average number of unique tobacco-related UPCs sold in the final month was approximately a third lower than during the rest of transition period. It is plausible that this reflects the removal of price-marked products, which would have had different UPCs to nonprice-marked products, although it is also possible that this is the result of other market changes such as brand rationalization. Research in Australia has found that standardized packaging did not inhibit, and perhaps even encouraged, brand and variant expansion or diversification, an increase in the range of pack sizes (the Australian legislation did not mandate minimum pack sizes), and other packaging developments.^{8,9,11,28} Similar research exploring tobacco companies' brand strategies in the United Kingdom would be of value. The results also show that many of the monitored products had a name change in the transition to standardized variants (eg, addition of color or product descriptor). Further research exploring changes to brand variant names, and the impact that these name changes have on consumers, is warranted.

As this study only considered which fully branded and standardized tobacco products were sold, and when, during the transition period, future research should also consider other market changes. For instance, advice from tobacco companies in the trade press highlighted that price remained an important marketing strategy beyond the EUTPD and standardized packaging legislations.^{17,18} Further

research should therefore consider how price was used as marketing strategy as fully branded products were removed²⁹ and whether pricing (per cigarette and per gram) changed because of the new minimum pack sizes (20 for FMCs and 30 g for RYO). Related to this, research exploring whether retailers adhered to recommended retail price (RRP) as consumers moved toward standardized, nonprice-marked packs, would help understand whether confounding factors may have impacted on purchasing decisions. Finally, time-series research exploring how reported market changes are reflected in the smoking attitudes and behavior of consumers throughout the transition period (if at all) would be of value, as to would research which compares the impact of protracted (as in the United Kingdom) versus immediate or short-term compliance deadlines (as in Australia).

In terms of limitations, we used a stratified sample of small retailers in England, Scotland, and Wales, and therefore do not provide insight into trends for larger retailers. In addition, while we intentionally monitored the 20 top selling tobacco products in small retailers, and the number of unique-tobacco related UPCs sold, our findings are not necessarily representative of all products (ie, only two premium products were monitored), nor did we consider smaller pack sizes which would have been most affected by the enforced pack size increases (eg, 10 packs of FMCs). Furthermore, the results only provide insight into the number of retailers which sold the tobacco products each month, but not the total volume of sales. It is possible, particularly as standardized packs were being introduced or fully branded packs withdrawn, that only a small volume of each were sold by retailers.

Conclusion

In conclusion, this study suggests that tobacco companies took full advantage of the transition period to delay the withdrawal of fully branded products and limit the sale of standardized products until compliance became mandatory. Doing so prolonged the use of fully branded packaging and may have mitigated some of the immediate intended effects of the legislation by desensitizing consumers to the new pack designs. With virtually no standardized products sold in the first 7 months of the transition period, the results also suggest that 12 months was longer than needed to transition stockholding and allow noncompliant, fully branded packaging to be sold. Other countries which are planning to implement standardized packaging should therefore consider what length of transition period is allowed, and the rationale and implications of this. The results also suggest a need to explore other tobacco brand strategies following the new legislations, for example, innovation in product names and pack design, and use of other marketing strategies (eg, price and RRP).

Funding

This work was supplied by Cancer Research UK (C24178/A22568).

Declaration of Interests

None declared.

Acknowledgments

The authors thank The Retail Data Partnership Ltd (TRDP) for supplying and offering technical support on the EPOS data.

References

1. Department of Health. *Tobacco Packaging Guidance: Guidance for Retailers, Manufacturers and Distributors of Tobacco Products, Enforcement Agencies and the Public on Changes to Tobacco Packaging From 20 May 2016*. London: Department of Health; 2017.
2. Young JM, Stacey I, Dobbins TA, Dunlop S, Dessaix AL, Currow DC. Association between tobacco plain packaging and QuitLine calls: a population-based, interrupted time-series analysis. *Med J Aust*. 2014;200(1):29–32.
3. Dunlop SM, Dobbins T, Young JM, Perez D, Currow DC. Impact of Australia's introduction of tobacco plain packs on adult smokers' pack-related perceptions and responses: results from a continuous tracking survey. *BMJ Open*. 2014;4(12):e005836.
4. Wakefield M, Hayes L, Durkin S, Borland R. Introduction effects of the Australian plain packaging policy on adult smokers: a cross-sectional study. *BMJ Open*. 2013;3(7):e003175.
5. Wakefield M, Coomber K, Zacher M, Durkin S, Brennan E, Scollo M. Australian adult smokers' responses to plain packaging with larger graphic health warnings 1 year after implementation: results from a national cross-sectional tracking survey. *Tob Control*. 2015;24(suppl 2):ii17–ii25.
6. Bonadio E. How big tobacco is losing the fight to stop plain packaging of cigarettes. *The Conversation*. May 19, 2017. <https://theconversation.com/how-big-tobacco-is-losing-the-fight-to-stop-plain-packaging-of-cigarettes-77263>. Accessed June 1, 2017.
7. Greenland SJ. How the tobacco industry is gaming Australian health regulations. *The Conversation*. November 1, 2016. <https://theconversation.com/how-the-tobacco-industry-is-gaming-australian-health-regulations-67156>. Accessed May 5, 2017.
8. Greenland SJ. The Australian experience following plain packaging: the impact on tobacco branding. *Addiction*. 2016;111(12):2248–2258.
9. Greenland SJ, Johnson L, Seifi S. Tobacco manufacturer brand strategy following plain packaging in Australia: implications for social responsibility and policy. *Soc Responsibility J*. 2016;12(6):321–334.
10. Moodie C. Commentary on Greenland (2016): tobacco companies' response to plain packaging in Australia and implications for tobacco control. *Addiction*. 2016;111(12):2259–2260.
11. Scollo M, Ockleston J, Bayly M, Lindorff K, Wakfield M. Tobacco product developments coinciding with the implementation of plain packaging in Australia. *Tob Control*. 2014;24:116–122.
12. Action on Smoking and Health. *Survey of Small Retailers in Great Britain: Data Report*. London: Action on Smoking and Health; 2016.
13. Moodie C, Angus K, Ford A. The importance of cigarette packaging in a 'dark' market: the 'Silk Cut' experience. *Tob Control*. 2014;23(3):274–278.
14. Moodie C, Hastings G. Making the pack the hero, tobacco industry response to marketing restrictions in the UK: findings from a long-term audit. *Int J Ment Health Addiction*. 2011;9(1):24–38.
15. Centre for Tobacco Control Research. *The Packaging of Tobacco Products*. Stirling: University of Stirling; 2012.
16. Wakefield M, Morley C, Horan JK, Cummings KM. The cigarette pack as image: new evidence from tobacco industry documents. *Tob Control*. 2002;11:73–80.
17. Imperial Tobacco. Part 4: Partnering for success...Through EUTPD II and standardised packaging. *Convenience Store*. 2016;Nov 4: 28–39.
18. Japan Tobacco International. Your guides through change: profiling the JTI sales force. *Convenience Store*. 2017;Feb 24: 30–31.
19. Association of Convenience Stores. *Standardised packaging consultation: Response by ACS (the Association of Convenience Stores) and supported by the Northern Ireland Independent Retail Trade Association (NIIRTA)*. June 26, 2014. <https://www.gov.uk/government/consultations/standardised-packaging-of-tobacco-products-draft-regulations>. Accessed July 4, 2017.
20. Evans-Reeves KA, Hatchard JL, Gilmore AB. 'It will harm business and increase illicit trade': an evaluation of the relevance, quality and transparency of evidence submitted by transnational tobacco companies to the UK consultation on standardised packaging 2012. *Tob Control*. 2014; 24: e168–e177.

21. Scollo M, Zacher M, Durkin S, Wakefield M. Early evidence about the predicted unintended consequences of standardised packaging of tobacco products in Australia: a cross-sectional study of the place of purchase, regular brands and use of illicit tobacco. *BMJ Open*. 2014;4(8):e005873.
22. Scottish Grocers' Federation. *Standardised Packaging of Tobacco Products: Consultation Response from the Scottish Grocers' Federation*. Edinburgh: Scottish Grocers' Federation; 2012.
23. Zacher M, Bayly M, Brennan E, et al. Personal tobacco pack display before and after the introduction of plain packaging with larger pictorial health warnings in Australia: an observational study of outdoor café strips. *Addiction*. 2014;109(4):653–662.
24. Hoek J. Tobacco promotion restrictions: ironies and unintended consequences. *J Bus Res*. 2004;57(11):1250–1257.
25. D'Arcy C. ASH Ireland criticises delay in plain tobacco packaging. *Irish Times*. May 30, 2016. www.irishtimes.com/news/health/ash-ireland-criticises-delay-in-plain-tobacco-packaging-1.2665989. Accessed May 11, 2017.
26. Karla A, Bansal P, Wilson D, Lasseter T. Inside Philip Morris' campaign to subvert the global anti-smoking treaty. *Reuters Investigates*. July 13, 2017. www.reuters.com/investigates/special-report/pmi-who-ctct/. Accessed July 20, 2017.
27. Woodward A. Big tobacco on the warpath against plain packaging in New Zealand. *The Conversation*. August 23, 2012. <https://theconversation.com/big-tobacco-on-the-warpath-against-plain-packaging-in-new-zealand-8912>. Accessed July 20, 2017.
28. Scollo M, Bayly M, White S, Lindorff K, Wakefield M. Tobacco product developments in the Australian market in the 4 years following plain packaging [published online ahead of print October 9, 2017]. *Tob Control*. 2017. doi: 10.1136/tobaccocontrol-2017-053912.
29. Scollo M, Bayly M, Wakefield M. Did the recommended retail price of tobacco products fall in Australia following the implementation of plain packaging? *Tob Control*. 2014; 24: 90–93.