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Impact of the introduction of standardised packaging on smokers' brand awareness and identification in Australia

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Abstract

Introduction and aims—The introduction of standardised packaging (SP) in Australia in December 2012 has heightened interest in how image and branding might affect smoking. This paper tests the hypothesis that brand awareness and identification among smokers will decline after the introduction of SP.

Design and methods—Longitudinal study of three waves of smokers in Australia, conducted between October 2011–February 2012 (pre-SP) ($n=1104$), February–May 2013 (post-SP1) ($n=1093$), and August–December 2014 (post-SP2) ($n=1090$). We explored the extent of changes in two variables, brand awareness (noticing others with the brand of cigarettes you smoke) and brand identification (perceiving something in common among smokers of your brand), and examined change in a number of other measures of brand appeal, brand characteristics and determinants of brand choice.

Results—Brand awareness ‘at least sometimes’ reduced from 45.3% pre-SP to 26.9% at post-SP2 (odds ratio [OR] 0.35 (0.27–0.45)). Brand identification also decreased from 18.2% to 12.7% (OR 0.62 (0.42–0.91)). Significant decline was also found in measures of perceived brand prestige (OR 0.51 (0.39–0.66)), and choice of brand for health reasons (OR 0.45 (0.32–0.63)). Liking the look of the pack was strongly associated with brand identification, but only post-SP ($P=0.02$ for interaction across the 3 waves).

Discussion—The introduction of SP of tobacco products in Australia has been associated with reductions in brand awareness and identification, and changes in related measures.

Conclusions—The findings support the notion that SP has reduced the capacity for smokers to use pack branding to create and communicate a desired identity.

Keywords

Australia; plain packaging; tobacco; awareness; brand identification; longitudinal study

Consumers can use branded products to express and validate their identity, by associating themselves with desirable attributes that have been linked to users of that brand (typically through advertising or by observing other users); thus they can use brands to communicate their self-image [1]. This is known to occur with cigarette smoking [2]. Cigarettes as products are functionally very similar (notwithstanding some differences in stick design), so branding is particularly important to magnify differentiation between products. It does this by creating associations and images which lead to smokers (and others) developing emotional and symbolic associations which they come to value [3]. Consumers use brand attributes to construct identities, and brands also develop because consumers who use them reinforce the attributes for which they have become known. This is why cigarettes are sometimes called ‘badge products’ [4]; because they are used to help define the person’s identity.

Standardised packaging (SP) of tobacco products, introduced in Australia in December 2012, has the potential to disrupt this use of cigarette brands as part of identity badging. SP consists of two elements. First, plain packaging which is designed to reduce the attractiveness and appeal of tobacco, increases the noticeability and effectiveness of health warnings, and reduce the ability of packaging to mislead consumers about smoking harms [5]. Second, it involves new larger graphic health warnings on the front face of the pack, designed to further highlight the health harms, but which also are likely to distract further from the branding of the pack. This combination of measures should make it harder for smokers to differentiate between brands and thus plausibly diminish the symbolic meanings attached to cigarette brands. However, the extent to which SP will reduce brand awareness and the subsequent inferences made from that will be partly determined by the extent to which smokers take active steps to determine what others are smoking. On theoretical grounds, we would expect SP to be most disruptive to young people who are still shaping their identities [6]. In addition, diminishing the salience of the brand (badge) may also impact strongly on those who identify most with a brand, as it will be more difficult to use the pack in projecting their identity.

The primary aim of this paper is to investigate change from before to after the introduction of SP in two aspects of smokers’ perceptions of cigarette brands expected to be influenced by the introduction of SP: brand awareness, or how noticeable brands are, as measured by the frequency of noticing others with the same brand of cigarettes one smokes; and brand identification, as measured by perceiving there to be something in common among those who smoke the same brand of cigarettes one smokes. The rationale for expecting reduced awareness of others smoking one’s own brand is fairly obvious; the elimination of design elements and the smaller and often less prominent font of the brand name make noticing of the brand name more difficult, so awareness should decline unless knowing is so important that smokers make an extra effort. An impact on brand identification is likely because of the increased difficulty of identifying like-minded others also using the brand. If one’s ability to

notice the brands smoked by others is reduced, one is likely to recognise in turn that others are less able to notice the brand they themselves smoke. We thus predicted a decline in both these perceptions from before to after the policy change. Secondary aims were to examine the characteristics of smokers holding these beliefs before and after the introduction of the policy, and to document longitudinal changes from pre- to post-SP in related measures of brand appeal, brand characteristics and determinants of brand choice.

METHODS

Participants and sampling procedures

The data are from current smokers surveyed across three waves of the Australian arm of the International Tobacco Control Four-Country (ITC-4) Study. The first wave, consisting of 1104 current smokers, was conducted in October 2011–February 2012 prior to the introduction of SP. Two waves of data were collected following the introduction of SP. The first (post-SP1), consisting of 1093 current smokers, was conducted in February–May 2013, while the second (post-SP2), consisting of 1090 current smokers, was conducted in August–December 2014.

The ITC-4 is a longitudinal representative cohort study of adult smokers in the United States, Canada, United Kingdom and Australia conducted via computer-assisted telephone interview in earlier waves (beginning in 2002) and a mix of phone interview and web-based survey in the two recent waves selected for this study. The study recruits only current smokers, but seeks to retain them even if they subsequently quit, with those lost to follow-up replaced by a replenishment sample. All participants prior to the post-SP wave were recruited by phone via a stratified random-digit dialling frame, but new participants at the post-SP wave were recruited by phone from a single source probability-based panel via an address based frame. Recruited participants were asked to complete either a phone or web-based survey, with the proportion of surveys completed on the web increasing markedly across the three waves (see Table 1). Detailed descriptions of the ITC-4 conceptual framework [7] and methods [8] are available elsewhere.

Measures

Brand awareness and identification—The two brand constructs were measured at all three waves by: (a) **Brand awareness:** 'How often do you notice other people with the brand of cigarettes you smoke?' (5-point scale, from 'never' to 'very often'; dichotomised to never, rarely and don't know versus at least sometimes due to skew in the distribution; and (b) **Brand identification:** 'Do you feel there is something in common among the people who smoke your brand of cigarettes (besides the brand)?' (yes vs no and don't know). These questions were asked of all respondents, including those with no regular brand. The participants who reported no regular brand were retained in the analysis as we considered it possible for them to answer the questions in terms of the brand they were currently smoking.

Brand characteristics and determinants of brand choice—Cigarette brand market segment ('value', 'mainstream' or 'premium') [9] was based on price class definitions listed in the grocery trade magazine Retail World [10]. Where a brand was not listed, price per stick

was used to determine the most appropriate classification, based on thresholds used in Retail World. All exclusively roll-your-own cigarette smokers (between 15–19% of the sample across the three waves) were assigned to the 'value' market segment. Brand market share was categorised into high (the five most frequent brands in our sample, including roll-your-own variants of these brands) and low (all other brands). This measure was used to determine whether the two primary brand measures simply function as proxies for the popularity of the brand. Finally, we examined three determinants of brand choice: 'Was part of your decision to smoke (your current brand) based on; (i) your friends smoke them; (ii) it may not be as bad for your health; and (iii) the price.

Brand appeal—We also examined a number of brand-related measures plausibly affected by the introduction of SP. Two measures related to perceptions of the differentiation between brands in quality and prestige: 'Now thinking about the quality of your cigarettes. Would you describe them as: very high quality, high quality, medium quality, or low quality?', with 'don't know' responses coded as medium; and 'How much do brands differ in how prestigious they are?', coded as not at all, don't know, a little, somewhat, or very different. A third measure related more directly to SP: perceptions of the appearance of one's pack ('To what extent, if at all, do you like the look of your cigarette pack?', coded for analysis as not at all, a little/don't know, and somewhat or more because of the skewed distribution of responses).

Demographic and smoking-related factors—A set of standard demographic and smoking-related factors were measured, including age, gender, income (low<\$30,000, high>\$60,000), education (low: high school or less, high: university degree), and minority status in Australia (English not the primary language spoken at home). Smoking-related factors included nicotine dependence as measured by the Heaviness of Smoking Index (HSI) [11], a composite measure of cigarettes per day and time to first cigarette coded as low (0–1 or don't know), moderate (2–3) and high nicotine dependence (4–6), and the number of smokers among their five closest friends (coded as none or don't know, one or two, and more than two).

Data analysis

The raw data were converted to Australian population estimates, with sampling weights calibrated to smoking prevalence by sex and age within each state and territory based on 2011 census and 2013 National Drug Survey data. Change over time (from pre- to post-SP1 and post-SP2) in brand awareness and identification along with other brand-related measures was analysed using generalised estimating equations (GEE) by testing for a main effect of survey wave while controlling for potential confounders: demographics (age, gender, ethnicity, income and level of education), year of recruitment and mode of survey (internet or telephone). The advantages of using GEE to analyse longitudinal data include the use of all available data points and providing a method for handling the correlated nature of repeated measurements. As the dependent variables were all treated as binary for the purpose of analysis, we used binomial distribution and logit link function for the models. We assumed a working correlation structure which was unstructured given the large sample and used robust variance to compute the p-values for the parameter estimates [12]. Overall, 1924

respondents provided at least one data point across the three survey waves (1000 with 1 data point, 496 with 2 data points and 428 with 3 data points), giving a total of 3276 person-wave observations for the GEE analysis.

GEE models were also used to explore correlates of brand awareness and identification and whether they differed between pre-SP and post-SP by testing for interactions by survey waves.

In all analyses, $P < 0.05$ denoted statistical significance.

RESULTS

Unweighted sample characteristics are shown in Table 1. The prevalence of reporting no usual brand increased from 5.6% pre-SP to 8.3% post-SP2 (adjusted odds ratio [OR] 1.48, 95% confidence interval [CI] 1.03–2.13).

Change from pre- to post-SP in levels of brand awareness and identification

Pre-SP, the two brand measures were only weakly correlated ($r_s = 0.22$, $P < 0.001$). As can be seen in Table 2, just under half (45.3%) answered that they noticed other people with the same brand of cigarettes they smoked at least sometimes, with 15.2% responding 'often' or 'very often'. Only 18.2% agreed that there was something in common among the people who smoked their brand of cigarettes.

Post-SP, the two measures remained weakly correlated ($r_s = .25$, $P < 0.001$ at post-SP1 and $r_s = 0.17$, $P < 0.001$ at post-SP2). Brand awareness (i.e. noticing others) reduced markedly over time, with only 34.0% reporting this at least sometimes at post-SP1 and 26.9% at post-SP2. At post-SP2, 'never' was reported by over a third (36.1%), while there was a notable increase over the three-year period in the proportion responding that they did not know (from 0.7% pre-SP to 6.7% at post-SP2). GEE analyses controlling for demographics, survey mode and year of recruitment confirmed a significant reduction in brand awareness from pre-SP to post-SP1 (OR 0.57, 95% CI 0.47–0.71, $P < 0.001$), and a further significant reduction from post-SP1 to post-SP2 (OR 0.61, 95% CI 0.48–0.77, $P < 0.001$).

Brand identification (i.e., something in common) also decreased between waves to 15.4% at post-SP1 and 12.7% at post-SP2. The reduction from pre-SP to post-SP1 did not reach statistical significance in the GEE analysis (OR 0.77, 95% CI 0.54–1.10, $P = 0.15$), but by post-SP2 the change from pre-SP had reached significance (OR 0.62, 95% CI 0.42–0.91, $P < 0.05$).

Change from pre- to post-SP in other brand-related measures

As well as pre- to post-SP change in the primary measures of brand awareness and identification, Table 2 shows change in the measures of brand characteristics/determinants of brand choice, and brand appeal, again adjusted for potential confounds. There was a significant reduction from pre- to post-SP in the proportion that perceived their brand to be of high or very high quality, an increase in the proportion that stated brands do not differ in prestige (or did not know), and a marked increase in the proportion that did not like the look

of their own pack. All these pre- to post-SP changes in brand appeal were sustained to the SP2 wave, but did not further change from post-SP1 to post-SP2.

The policy change was associated with a significant increase to post-SP1 in the odds of respondents' smoking a brand in the 'value' segment, and a parallel reduction in the prevalence of premium brands, which was maintained to post-SP2. There was a significant reduction in the proportion of smokers that said they chose their brand for health reasons.

Correlates of the brand awareness and identification measures

Results of the GEE analyses examining the associations between the two brand measures and the socio-demographic, smoking and brand-related variables are displayed in Table 3. For brand awareness, GEE analysis indicated no significant by-wave interactions. Of note, older age was associated with less brand awareness, while having more smoker friends, choosing their brand because their friends smoke it and a belief that brands differ in prestige were associated with greater brand awareness. Awareness and identification were strongly associated with each other.

For brand identification, the main effects were similar to those found for awareness. However, the minority from non-English speaking backgrounds reported greater identification, as did those who reported having chosen their brand for health reasons. There was a significant by-wave interaction for 'like look of own pack' ($P=0.02$) (see Table 4) and a marginal interaction effect for nicotine dependence ($P=0.07$). The minority of smokers who reported that they liked the look of their pack 'at least somewhat' at both post-SP waves had much higher odds of perceiving something in common with others smoking the same brand than those who did not like the look of their pack but this was not the case at pre-SP wave.

It is notable that the expected age relationships with brand awareness and identification were present, but weak, and no longer significant for brand identification in the multivariate analyses. There was a trend for males to be lower in brand identification in the crude analysis, but this effect became non-significant in the adjusted multivariate analyses.

DISCUSSION

This study of smokers surveyed prior to and on two occasions after the introduction of SP of tobacco products in Australia shows a significant reduction in brand awareness, the proportion of smokers who notice others smoking the same brand of cigarettes at least some of the time, and a reduction in brand identification, the perception that they have something in common with others smoking the same brand. These findings suggest that SP has reduced smokers' ability to recognise what cigarette brands other smokers are using, and lends support to the notion that the policy has had the effect of reducing the capacity for smokers to use branding as a means of creating and communicating a desired identity [1,13].

The pattern of relationships between these two measures and their correlates examined on two occasions after the introduction of SP provides evidence of convergent validity of the measures. For example those who were part of a social network containing more smokers, and those who chose their brand because their friends smoked it, were more likely to both

have heightened awareness and higher identification. There were also differences, for example that those smoking minority brands were more likely to perceive something in common with others smoking the same brand, and those who believed there are differences in brand prestige were more likely to notice the brands smoked by others. The former effect may be related to the higher brand identification among non-English speaking background smokers, and thus be related to some broader form of group identification. Neither awareness nor identification was related to brand segment (value, mainstream or premium).

As predicted, young people were more likely to report both higher awareness and identification, although much of this effect was mediated by other variables. Young people are known to place particular value on the symbolic properties of cigarette brands, using them to construct social persona which they then communicate to their peers [14,15]. Our sample underrepresented young smokers due to the maturation of the ITC cohort and higher drop out of younger people. We might expect a stronger effect for adolescents and young adults (aged 18–24).

Brand identification became significantly more strongly associated over time with liking the look of one's own pack 'at least somewhat'. This finding is interesting. Understandably, reports of liking the look of one's own pack declined markedly following SP, and the few still reporting liking the pack may be those who are most committed to smoking.

Similar to Wakefield, Germain, and Durkin [13], we found that many smokers believe there are differences between cigarette brands in prestige and quality (probably because of price differences), perceptions which may also contribute to identity formation. These measures of brand appeal, along with 'like the look of one's own pack', also declined following the introduction of SP.

As well as the aforementioned limitation regarding the age of the sample, other limitations need to be borne in mind. The findings may have underestimated the true effects of the change to SP. Influences of branding on identity are not likely to be fully conscious, so the measures used here only represent the more conscious aspects of brand influence, rather than the more implicit ways in which people form relationships with brands, and use them to create meaning and structure [16]. Secondly, these findings apply only to current smokers, not to those who have subsequently ceased smoking (as no data were collected about ex-smokers' brand awareness and identification).

In conclusion, the data suggest that brand awareness and identification have reduced significantly in the two-year period following the introduction of SP, yet cigarette brands continue to be salient aspects of identity among some subgroups of smokers. It will be important to look at effects of brand identity on quitting activity, especially in samples with a greater proportion of younger smokers, and to continue monitoring the trends observed here to determine their persistence over time.

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Table 1

Sample characteristics by survey year.

Variables (%)	Pre-SP (2012) N=1104	Post-SP Year 1 (2013) N=1093	Post-SP Year 2 (2014) N=1090
Age in years			
18–29	6.3	4.5	8.1
30–39	12.0	11.4	12.5
40–54	41.7	38.3	37.2
55+	40.0	45.8	42.3
Gender			
Male	45.5	46.4	46.0
Female	54.5	53.6	54.0
Ethnicity			
Main language English	89.9	92.5	93.1
Language other than English	10.1	7.5	6.9
Education			
Low	53.7	54.5	57.0
Medium	27.0	28.6	26.2
High	19.3	16.8	16.8
Income			
Low	26.4	29.8	28.9
Medium	27.0	26.3	26.0
High	41.1	35.6	35.7
No information	5.6	8.3	9.4
Heaviness of Smoking Index			
Low	24.2	25.3	327.8
Medium	45.4	43.8	43.5
High	30.4	30.9	23.7
Has a 'usual' brand	94.4	94.8	91.7
Survey mode			
Web	38.7	49.4	73.4
Phone	61.3	50.6	26.6
Year of recruitment			
In sample in 2010	75.8	52.3	38.4
2011	24.3	12.4	7.3
2013	--	35.2	17.9
2014	--	--	36.4

Note: Percentages are based on unweighted data. -- Not applicable. HIS, Heaviness of Smoking Index.

Table 2

Weighted prevalence estimates of brand and related measures before and after implementation of standardised packaging (SP).

Variables	Pre-SP (2012) N=1104	Post-SP Year 1 (2013) N=1093	Post-SP Year 2 (2014) N=1090
Brand awareness and identification			
Brand awareness (noticing others)			
Very often	4.0	2.3	1.2
Often	11.2	7.6	4.2
Sometimes	30.0	24.1	21.5
Rarely/ Don't know	33.3	33.3	37.0
Never	21.4	32.7	36.1
At least sometimes	45.3	34.0	26.9
AOR At least sometimes vs Other	Ref	0.57 (0.47–0.71) ***	0.35 (0.27–0.45) ***
Brand identification (something in common)			
Yes	18.2	15.4	12.7
No/Don't know	81.8	84.6	87.3
AOR Yes vs Other	Ref	0.77 (0.54–1.10)	0.62 (0.42–0.91) *
Brand appeal			
Perceived quality of own brand			
Very high/High	47.4	42.7	39.3
Medium/Low	48.0	48.8	50.5
Don't Know	4.6	8.5	10.2
AOR Very high/high vs Other	Ref	0.76 (0.63–0.92) **	0.64 (0.51–0.81) ***
How much do brands differ in prestige			
Not at all	19.1	25.3	22.4
A little/Somewhat/Very different	74.9	60.1	61.0
Don't know	6.0	14.6	16.6
AOR At least a little vs Other	Ref	0.49 (0.40–0.61) ***	0.51 (0.39–0.66) ***
Like the look of own pack			
Not at all	46.0	74.9	74.2
A little/Don't Know	24.6	17.9	19.1
Somewhat/Quite a lot/Very much	29.4	7.2	6.7
AOR Not at all vs Other	Ref	3.83 (2.97–4.95) ***	3.91 (3.02–5.07) ***
Brand characteristics and determinants of brand choice			
Brand segment			
Value	45.7	56.4	56.6
Mainstream	34.4	31.7	27.1
Premium	19.5	11.6	15.6
AOR Value vs Other	Ref	1.25 (1.10–1.42) **	1.40 (1.18–1.66) ***
Brand market share			

Variables	Pre-SP (2012) N=1104	Post-SP Year 1 (2013) N=1093	Post-SP Year 2 (2014) N=1090
High	53.0	55.8	52.8
AOR High vs Low	Ref	1.01 (0.84–1.21)	0.86 (0.70–1.06)
Chose brand because friends smoke it			
Yes	23.7	23.6	19.8
AOR Yes vs No/Don't know	Ref	1.13 (0.88–1.45)	0.90 (0.63–1.28)
Chose brand for health reasons			
Yes	16.9	9.1	8.2
AOR Yes vs No/Don't know	Ref	0.50 (0.38–0.67) ***	0.45 (0.32–0.63) ***
Chose brand for price			
Yes	45.3	44.1	51.0
AOR Yes vs No/Don't know	Ref	0.86 (0.71–1.04)	1.10 (0.90–1.35)

Note: AOR, adjusted odds ratio, adjusted for age, sex, income, education, ethnicity, survey mode, and year of recruitment;

*
 $P < 0.05$;

**
 $P < 0.01$;

 $P < 0.001$.

Table 3

Correlates of smokers' brand awareness and brand identification.

Variables	Brand Awareness		Brand Identification	
	Crude OR (95% CI) N=1900–1924	AOR (95% CI) N=1846	Crude OR (95% CI) N=1899–1922	AOR (95% CI) N=1846
Brand awareness			P<0.001	P<0.001
Never	--	--	Ref	Ref
Rarely/Don't know	--	--	1.06 (0.58–1.95)	1.01 (0.65–1.56)
Sometimes	--	--	2.14 (1.16–3.94) *	1.80 (1.18–2.76) **
Often	--	--	4.23 (2.14–8.37) ***	3.34 (1.90–5.85) ***
Very often	--	--	6.90 (2.84–16.74) ***	6.09 (2.77–13.40) ***
Brand identification	P<0.001	P<0.001		
No/ Don't know	Ref	Ref	--	--
Yes	2.58 (1.88–3.52) ***	2.15 (1.58–2.93) ***	--	--
Demographics				
Age in years	P<0.001	P=0.09	P<0.05	P=0.54
18–29	Ref	Ref	Ref	Ref
30–39	0.63 (0.39–1.02)	0.78 (0.48–1.27)	0.40 (0.20–0.81) *	0.63 (0.33–1.19)
40–54	0.48 (0.31–0.74) **	0.65 (0.42–1.00)	0.44 (0.24–0.81) **	0.74 (0.42–1.29)
55+	0.40 (0.26–0.62) ***	0.58 (0.37–0.92) *	0.40 (0.22–0.74) **	0.69 (0.38–1.27)
Gender	P=0.14	P=0.05	P<0.05	P=0.08
Female vs Male	0.85 (0.68–1.05)	0.79 (0.62–1.00)	0.69 (0.50–0.94) *	0.76 (0.56–1.03)
Ethnicity	P=0.32	P=0.93	P<0.01	P<0.05
Non-English speaking vs English-speaking	1.20 (0.84–1.73)	0.98 (0.65–1.48)	1.845 (1.23–2.77) **	1.58 (1.04–2.42) *
Income	P=0.05	P<0.01	P=0.47	P=0.11
Low	Ref	Ref	Ref	Ref
Medium	1.14 (0.85–1.51)	1.02 (0.75–1.38)	0.77 (0.53–1.11)	0.70 (0.47–1.04)
High	0.78 (0.59–1.03)	0.65 (0.48–0.88) **	0.86 (0.6–1.20)	0.88 (0.58–1.33)
No information	0.88 (0.55–1.41)	0.78 (0.43–1.41)	1.29 (0.46–3.62)	1.55 (0.74–3.24)
Education	P=0.75	P=0.31	P=.78	P=0.30
Low	Ref	Ref	Ref	Ref
Medium	1.03 (0.80–1.32)	0.86 (0.65–1.14)	1.11 (0.78–1.59)	1.29 (0.92–1.80)
High	0.92 (0.70–1.21)	0.79 (0.56–1.10)	1.14 (0.74–1.74)	1.00 (0.64–1.57)
Smoking-related				
HSI [†]	P=0.33	P=0.30	P=0.67	P=0.33
Low	Ref	Ref	Ref	Ref
Medium	1.00 (0.78–1.28)	1.10 (0.85–1.43)	1.00 (0.72–1.40)	1.26 (0.87–1.82)
High	1.20 (0.90–1.60)	1.29 (0.93–1.79)	1.22 (0.75–1.99)	1.39 (0.88–2.19)
Number of 5 closest friends smoking	P<0.001	P<0.01	P<0.001	P<0.01

Variables	Brand Awareness		Brand Identification	
	Crude OR (95% CI) N=1900–1924	AOR (95% CI) N=1846	Crude OR (95% CI) N=1899–1922	AOR (95% CI) N=1846
None/Don't know	Ref	Ref	Ref	Ref
One or two	1.38 (1.05–1.81) *	1.10 (0.82–1.48)	2.43 (1.63–3.62) ***	2.08 (1.33–3.24) **
More than two	2.20 (1.67–2.90) ***	1.52 (1.13–2.03) **	3.30 (2.15–5.08) ***	2.24 (1.45–3.47) ***
Brand appeal				
Perceived quality of own brand	P=.13	P=0.72	P<0.05	P=0.52
Low/medium	Ref	Ref	Ref	Ref
High/Very high	1.07 (0.88–1.30)	0.91 (0.72–1.15)	1.33 (1.03–1.71) *	1.14 (0.86–1.51)
Don't know	0.75 (0.54–1.04)	0.92 (0.63–1.34)	0.82 (0.42–1.61)	1.34 (0.66–2.74)
How much do brands differ in prestige	P<0.001	P<0.01	P<0.001	P<0.01
Not at all	Ref	Ref	Ref	Ref
A little/Somewhat/Very	1.95 (1.55–2.46) ***	1.61 (1.25–2.07) ***	1.17 (0.82–1.66)	0.97 (0.70–1.33)
Don't know	1.12 (0.80–1.57)	1.17 (0.81–1.69)	0.51 (0.31–0.84) **	0.48 (0.28–0.80) **
Like look of own pack [†]	P<0.001	P=0.34	P<0.001	P<0.01
Not at all	Ref	Ref	Ref	Ref
A little/Don't know	1.26 (1.01–1.58) *	1.13 (0.88–1.44)	0.97 (0.66–1.42)	0.87 (0.57–1.35)
Somewhat or more	1.91 (1.48–2.47) ***	1.24 (0.91–1.68)	2.15 (1.49–3.10) ***	1.87 (1.22–2.86) **
Brand characteristics & determinants of brand choice				
Brand segment	P=0.17	P=0.72	P=0.09	P=0.73
Value	Ref	Ref	Ref	Ref
Mainstream	1.25 (0.98–1.60)	1.13 (0.83–1.53)	0.74 (0.51–1.06)	0.89 (0.61–1.31)
Premium	1.00 (0.75–1.35)	1.07 (0.74–1.54)	1.15 (0.76–1.75)	0.85 (0.51–1.43)
Brand market share	P=0.32	P=0.25	P<0.001	P<0.01
High vs low	1.11 (0.90–1.38)	1.18 (0.89–1.56)	0.56 (0.41–0.77) ***	0.57 (0.40–0.82) **
Chose brand: friends smoke it	P<0.001	P<0.001	P<0.001	P<.01
Yes vs no/Don't know	2.38 (1.88–3.01) ***	2.02 (1.57–2.59) ***	2.38 (1.79–3.15) ***	1.71 (1.24–2.35) **
Chose brand: health	P=0.69	P=0.15	P<0.001	P<0.01
Yes vs no/Don't know	1.06 (0.80–1.39)	0.81 (0.60–1.08)	2.01 (1.41–2.85) ***	1.73 (1.21–2.47) **
Chose brand: price	P=0.55	P=0.42	P=0.89	P=0.64
Yes vs no/Don't know	1.06 (0.87–1.31)	1.11 (0.87–1.41)	1.02 (0.73–1.43)	0.92 (0.66–1.29)

Note: --, not applicable; AOR, adjusted odds ratios where models adjusted for variables in the table along with survey mode, year of recruitment and whether smoke a regular brand; CI, confidence interval.

* $P<0.05$;

** $P<0.01$;

*** $P<0.001$.

[†], significant interaction with survey wave on brand identification.

Table 4

Results showing the correlate of brand identification with a significant interaction with survey wave.

Variables	Pre-SP	Post-SP Year 1	Post-SP Year 2
	AOR (95% CI) N=1044	AOR (95% CI) N N=1026	AOR (95% CI) N=1035
Like look of own pack	$P=0.07$	$P<0.01$	$P<0.01$
Not at all	Ref	Ref	Ref
A little/Don't know	0.52 (0.29–0.93) *	1.17 (0.48–2.85)	0.84 (0.41–1.72)
Somewhat or more	0.92 (0.54–1.58)	3.50 (1.58–7.73) **	3.89 (1.83–8.26) ***

SP, standardised packaging; AOR, adjusted odds ratios where models adjusted for variables shown in Table 3 along with survey mode, year of recruitment and whether smoke a regular brand; CI, confidence interval.

* $P<0.05$;

** $P<0.01$;

*** $P<0.001$.