

# Plain packaging for cigarettes: evaluating implementation in the UK

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## Abstract

This paper evaluates the merits of adopting plain packaging for all cigarettes sold in the United Kingdom. The author provides the contextual background of anti-tobacco policies and summarise the prevailing theoretical arguments in favour of similar regulations. Opponents of the policy, however, claim that plain packaging will not only prove to be ineffective in the UK, but that it could also have significant negative ramifications. Evidence from Australia, the only country to have implemented such a policy to date, is ambiguous as to whether plain packaging has had an impact on smoking prevalence. This article argues that although plain packaging might not significantly reduce smoking prevalence, the policy has value in that it is the next step in a series of interventions aiming at reducing it in the long run. Since the UK Government has committed to implementing plain packaging in the near future. This article recommends studying the policy's impact on young people in order to improve upon the Australian experience and provide evidence for other countries considering similar legislation.

## EVALUATING IMPLEMENTATION IN THE UK

In 2011, the UK Government published a report titled 'Healthy Lives, Healthy People: A Tobacco Control Plan for England', where it presented its plans for reducing smoking prevalence. The Government pledged to undertake public consultation on the introduction of plain packaging – the mandated removal of all branding material from cigarette packets – with hopes of “reducing the number of young people who take up smoking and supporting adult smokers who want to quit” (Government of the United Kingdom, 2011, p. 22). The purpose of this paper is to evaluate how effectively plain packaging will accomplish the Government’s stated goals.

Since Australia is the only country to have implemented plain packaging, this article examines the limited evidence available regarding the effect this policy has had on reducing the rate of adult smokers. The author argues that the evidence from Australia is far from conclusive and that the decision to implement plain packaging stems primarily from political considerations. In order to contribute to the body of evidence surrounding plain packaging, this article makes recommendations pertaining to how the Government can effectively study the policy’s impact, once it is implemented in the UK. Specifically, it outlines how the effect of plain packaging on youths can be tracked and assessed using currently available survey data on students in England. Since the UK will be an example for other countries considering similar policies, it is prudent to ensure that the impact of this policy is properly documented.

Section I begins by providing a brief overview of plain packaging, as well as other tobacco control mechanisms in the UK. Section II makes the case for plain packaging while Section III outlines opponents’ concerns. Section IV presents evidence from Australia and points out its limitations. Section V provides a discussion of the political context in which plain packaging will be implemented in the UK and makes recommendations for the monitoring and assessment of policy implementation. Section VI concludes.

## POLICY BACKGROUND

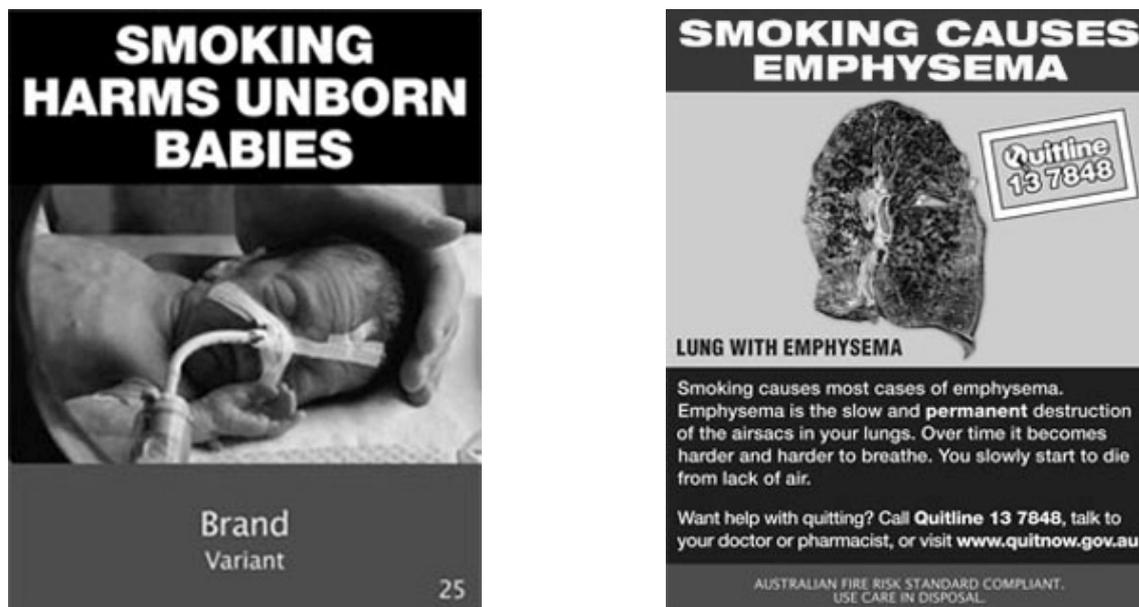
Plain packaging removes all branding and other promotional imagery from cigarette packs and requires all cigarettes to be sold in standardised containers. The policy proposed by the Government requires all packets to be of a common, dull colour, with brand name and variety printed in a standardised font. The only imagery permitted on plain packages is graphic health warnings (Barber and Conway, 2014). The intent behind the policy is to remove manufacturers’ ability to utilise packaging as a form of advertisement for their products, thereby encouraging smokers to quit and discouraging young people from taking up smoking.

To date, Australia is the only country to have implemented plain packaging regulations. The *Tobacco Plain Packaging Act 2011* requires that all cigarettes be sold in standardised packs beginning on 1 December 2012 (Commonwealth of Australia, 2011). New Zealand, France and the Republic of Ireland have declared intentions to do the same, and have introduced legislation to that effect (Bender, 2014; Department of Health (Republic of Ireland), 2013; Houses of Oireachtas, 2013). The European Union has expressed interest in considering plain packaging, but it was not included in the Tobacco Products Directive adopted in 2014.<sup>16</sup>

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<sup>16</sup> For further information regarding the Directive, please see the European Commission’s website: [http://ec.europa.eu/health/tobacco/products/index\\_en.htm](http://ec.europa.eu/health/tobacco/products/index_en.htm).

Figure 1. Front and back of plain packages in Australia



Source: Department of Health and Ageing, 2012.

In 2012, the UK Government opened public consultation on the subject of plain packaging. 53 per cent of respondents indicated support for the policy (Department of Health Tobacco Programme, 2013). Following the publication of responses to the consultation, the Government declared its intention to wait until further evidence of the impact of the policy in Australia could be better understood (Hansard Society, 2013a). The Opposition and anti-smoking campaigners accused the Government of being in the pocket of Big Tobacco, attributing the decision to abandon plain packaging to the undue influence of Lynton Crosby – a political consultant for the Conservative Party and a former lobbyist for Philip Morris International (Snowdon, 2014). Following this political backlash, Parliamentary Under-Secretary of State for Health Jane Ellison announced that the Government had commissioned Sir Cyril Chantler to conduct an independent review to determine the merits of plain packaging (Hansard Society, 2013b). In anticipation of the results of the Chantler Review, the Government then followed in Ireland's footsteps by including provisions in the Children and Families Bill 2014 that allow the Secretary of State for Health to implement plain packaging regulations in the future (Parliament, 2014). The results of the review were published in April 2014 and expressed enthusiastic support for the policy, hailing plain packaging as a positive step towards improving public health by reducing the number of young people who take up smoking (Chantler, 2014). The Government has now declared its official intent to implement plain packaging regulations (Hansard Society, 2014). Members of Parliament will be asked to vote on the regulations prior to the May 2015 General Election (Wintour, 2015).

Smoking prevalence has been on the decline in the developed world for the past several decades. In England in particular, 20 per cent of adults reported smoking in 2010, which is down from 39 per cent in 1980. 23 per cent of students aged 11 to 15 reported smoking at least once in 2012, compared to 49 per cent in 1996. This downward trend can partially be explained by the fact that the price of tobacco in the UK increased by 191 per cent between 1980 and 2012, making tobacco products approximately 32 per cent less affordable today than

they were in 1980 (Lifestyle Statistics, Health and Social Care Information Centre, 2013). An additional component of this downward trend might be explained by recent tightening of tobacco regulations.

Smoking has been banned in almost all enclosed public places in the UK since July 2007 (Smith, 2011). Multiple studies have shown that smoking bans result in significantly less exposure to second-hand smoke (Bauld, 2011). For example, the smoking ban in the UK resulted in an overall reduction in second-hand smoke exposure in bars by 84 to 93 per cent (Semple et al., 2010). Furthermore, the proportion of smokers actively trying to quit increased from 5.7 per cent immediately before the ban to 8.6 per cent immediately after the ban, equating to approximately 300,000 additional quit attempts in England (Hackshaw et al., 2010). However, the effect of the ban on long-term quitting appears not to have been sustained: data from the Office of National Statistics demonstrates that the number of smokers in Great Britain has remained relatively constant since 2006.<sup>17</sup> Since April 2012, large retailers have been prohibited from displaying cigarettes for sale in plain view.<sup>18</sup> The motivation behind the policy is similar to that of plain packaging: removing the visual presence of cigarettes should help curb the number of young people taking up smoking by removing visual temptation of colourful displays (Department of Health, 2012).

## THE CASE FOR PLAIN PACKAGING

Since almost all forms of advertising for tobacco products are already prohibited in the UK, proponents argue that removing logos and colour schemes from packets will eliminate the tobacco industry's last ability to advertise its product. In addition to outright advertisement, packaging helps to reinforce brand loyalty and to identify brand differentiation in the market (Moodie et al., 2012).<sup>19</sup> In an attempt to further decrease any aesthetic pleasure derived from packaging, the Australian Act required that graphic images detailing the risks of smoking, which have been mandated since 2006, be increased in size to cover 75 per cent of the front and 90 per cent of the back of packets (Department of Health and Ageing, 2012).

A number of studies have found evidence that plain packaging reduces the appeal of smoking. Proponents also argue that since plain packages lack distracting colours and logos, they cause smokers to pay more attention to health warnings displayed on packets (Ibid.). Finally, proponents of plain packaging argue that regular packets can mislead consumers into thinking that certain brands or varieties are less harmful than others. Specifically, gold colours tend to be perceived as healthier while red packs are perceived to contain stronger cigarettes than lighter colour packs (Moodie et al., 2012).

There has always been a healthy debate regarding the role of the state in regulating personal behaviours like smoking. Opponents of plain packaging and similar regulations often claim that limiting certain behaviours is an over reach of the 'nanny state.' However, there is a place for sensible regulation in the interest of promoting rational behaviour for the public good.

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<sup>17</sup> "General Lifestyle Survey" data, as cited in Roxby (2012).

<sup>18</sup> The ban goes into effect for small retailers in April 2015.

<sup>19</sup> Moodie et al. (2012), commonly referred to as the Stirling Review, conducted a systematic review of the body of literature pertaining to plain packaging. For a complete list of studies cited by the authors, please refer to the full Review.

While neoclassical economists tend to assume that individuals behave rationally, there is a fair amount of irrational behaviour that can be observed in the real world. Most of the population is well aware that smoking is harmful to one's health, yet smokers behave irrationally by choosing to participate in behaviour that they know causes them harm. This irrational behaviour also imposes negative externalities directly on individuals through second-hand smoke exposure, as well as on society through increased health care costs incurred by smokers that must be covered by the taxpayer. Smoking has been estimated to directly cost the NHS £2.7 billion annually (Callum et al., 2010). When loss of productivity, costs of cleaning up discarded cigarette butts, fires caused by cigarettes, and early deaths causing decreases in economic output are also considered, smoking is estimated to cost the UK £13.74 billion (Nash and Featherstone, 2010).<sup>20</sup> It can therefore be argued that there is a role for government intervention to persuade people to behave in a way that suits not only their own best interests, but society's as well.

The challenge then becomes finding a feasible way to make smokers behave more rationally. Such a policy is referred to as 'paternalistic,' in that it restricts the individual's ability to act in a way that is not in their best interest. Camerer et al. (2002) introduce the idea of 'asymmetric paternalism,' arguing that "*a regulation is asymmetrically paternalistic if it creates large benefits for those who make errors, while imposing little or no harm on those who are fully rational*" (p. 1212). If we apply this line of thinking to plain packaging, we assume that plain packaging benefits smokers by encouraging them to behave in their own best interest by smoking less, while exerting no negative externalities on non-smokers. Opponents take issue with the latter part of this assumption, which will be discussed in the following section.

Thaler and Sunstein (2008) extend this argument by introducing the ideal of 'libertarian paternalism.' The authors argue that individuals should be left completely free to make their own decisions, but that there is also an inherent public interest in encouraging people to make rational choices. We can acknowledge that simply banning tobacco products would probably be the most effective way to change the irrational behaviour of smokers. However, that type of policymaking is extremely paternalistic and likely to meet intense opposition. Rather, Thaler and Sunstein (2008) argue that governments can leave individuals free to choose their own actions, but can 'nudge' them towards making more rational decisions through libertarian paternalistic policymaking. Plain packaging can be thought of as a public intervention that is intended to 'nudge' smokers towards quitting smoking without actually forcing them to do so.

## ARGUMENTS AGAINST PLAIN PACKAGING

It is difficult to make a case against any action that might hinder the ability of tobacco companies to sell products that are known to kill their consumers. However, there is some evidence that suggests that plain packaging might not be the most effective way to reduce smoking prevalence. Opponents additionally argue that plain packaging might do more harm than good. Each of these claims is discussed in detail below.

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<sup>20</sup> Nash and Featherstone further calculate that HM Treasury receives approximately £10 billion in tobacco tax revenue annually, leaving a net cost of £3.74 billion to society.

## Plain packaging is ineffective

The main argument against plain packaging is that it simply will not reduce smoking rates. Opponents argue that people smoke for many reasons not having to do with the way cigarettes are packaged, so the policy will make little to no difference. Bishop and Yoo (1985) studied the impact of 'health scares,' advertising and tobacco taxes on cigarette demand in the United States between 1954 and 1980, arguing that the demand for cigarettes is fairly price elastic. They find that while advertising did have a small, positive effect on demand for cigarettes, increasing tobacco taxes had a much larger impact on reducing demand. While this line of research does not necessarily suggest that plain packaging will be entirely ineffective, it does suggest that its effect might be relatively insignificant when compared to policies that increase the price of cigarettes.

A recent study commissioned by Philip Morris International found that the Australian policy had not reduced smoking prevalence (London Economics, 2013). The study finds that before plain packaging implementation, 20.4 per cent of adult respondents smoked daily, 2.1 per cent weekly, and 2.3 per cent less than weekly. In July 2013, those numbers had remained relatively constant: 20.0, 2.1, and 2.2 per cent, respectively. However, due to the policy's relatively short lifespan thus far, further studies should be done once a longer time series of data is available in order to better evaluate long-term quitting behaviour.

## Plain packaging increases the illicit trade of tobacco

If plain packaging helps to remove consumers' branding preferences, then it follows that smokers might simply choose to smoke the cheapest brands available to them (Morris, 2014). There are many who are concerned that this will promote the illicit cigarette trade. KPMG (2013) conducted a study (commissioned by several tobacco companies) to measure the amount of 'illicit whites' in circulation, using both consumer surveys and counts of discarded packets. They found that between June 2012 (pre-plain packaging) and June 2013 (post-plain packaging), the share of illicit cigarette consumption in Australia increased from 11.8 per cent to 13.3 per cent of total consumption. This effect could be compounded if plain packets are easier to counterfeit, but so far no definitive evidence has been found to support or negate this claim. Opponents argue that we should be concerned about illicit tobacco because it deprives companies of their profits and governments of their tax revenue. Additionally, there are also reports that terrorist organisations, such as the Irish Republican Army, engage in the illicit tobacco market in order to fund their activities (Flannagan, 2013; Sauviller, 2013).

## Plain packaging violates intellectual property rights

Most of the big tobacco companies have declared that Australia's plain packaging law has violated their intellectual property rights by illegally acquisitioning companies' trademarks (Rimmer, 2013). Honduras, Ukraine, the Dominican Republic, Cuba, and Indonesia have filed suit against Australia with the World Trade Organisation (WTO), claiming that the law violates various intellectual property stipulations of the Agreement on Trade Related Aspects of Intellectual Property (TRIPS), the General Agreement on Tariffs and Trade (GATT), and the Agreement on Technical Barriers to Trade (TBT). Several other countries have joined in the consultations regarding the complaints (Department of Foreign Affairs and Trade, 2014). Opponents argue that lengthy litigation involving the WTO is time-consuming and a drain on public resources.

## Impact on small retailers

A survey commissioned by Philip Morris Limited of small shop owners in Australia following the implementation of plain packaging showed that 9 out of 10 small shops saw customer interaction time increase, largely due to the difficulty in identifying which packet of cigarettes the customer would like to purchase (Roy Morgan Research, 2013). Furthermore, shop owners reported additional staff hours spent conducting inventory management, and 75 per cent of shop owners believe the policy has had a negative impact on their business.

## THE AMBIVALENT EVIDENCE FROM AUSTRALIA

Most of the studies mentioned in the previous section should be taken with a grain of salt, as they were commissioned by tobacco companies who have an interest in preventing the implementation of policies that further regulate their products. There has been, however, some independent research to assess the impact of plain packaging.<sup>21</sup> While the three studies analysed in this paper provide some limited evidence of a positive effect of plain packaging, they are far from presenting a reliable, causal relationship between plain packaging and the reduction of smoking prevalence in Australia.

## Cross-sectional survey of smokers' perceptions and intentions

Cancer Council Victoria conducted the first quantitative study of the effect of plain packaging on smoking prevalence during the new law's implementation period. The study made use of the annual Victoria Smoking and Health survey, which contacted by phone approximately 4,000 individuals in the state of Victoria; 572 respondents were current smokers. The survey asked respondents whether they were smoking from plain or branded packs, as well as a series of questions relating to their satisfaction with their cigarettes, thoughts of quitting, and awareness of health risks posed by smoking (Wakefield et.al., 2013)

The study found that 30.6 per cent of respondents currently smoking from plain packs reported perceiving their cigarettes to be of lower quality than they were one year ago, compared with 18.1 per cent of branded pack smokers. Plain pack smokers also felt their cigarettes were less satisfying overall than they were one year ago (26.2 per cent compared to 14.9 per cent of branded pack smokers). However, it should be noted that all of these results become statistically insignificant at the 10 per cent level when control variables are included in the regressions. Furthermore, plain pack smokers were more likely to have thought about quitting smoking at least once per day in the last week (36.8 per cent) than branded pack smokers (21.8 per cent). The study also found no significant difference between plain and branded pack smokers in terms of their thoughts of the harmful effects of smoking and of their long-term intention to quit (Ibid).

While this study is significant in that it makes the first quantitative contribution to the body of evidence surrounding plain packaging, there are significant concerns relating to its robustness. To begin, no baseline data was collected: respondents were asked how their perceptions of and attitudes towards smoking had changed over the past year. A more reliable method would have been to track respondents' perceptions over

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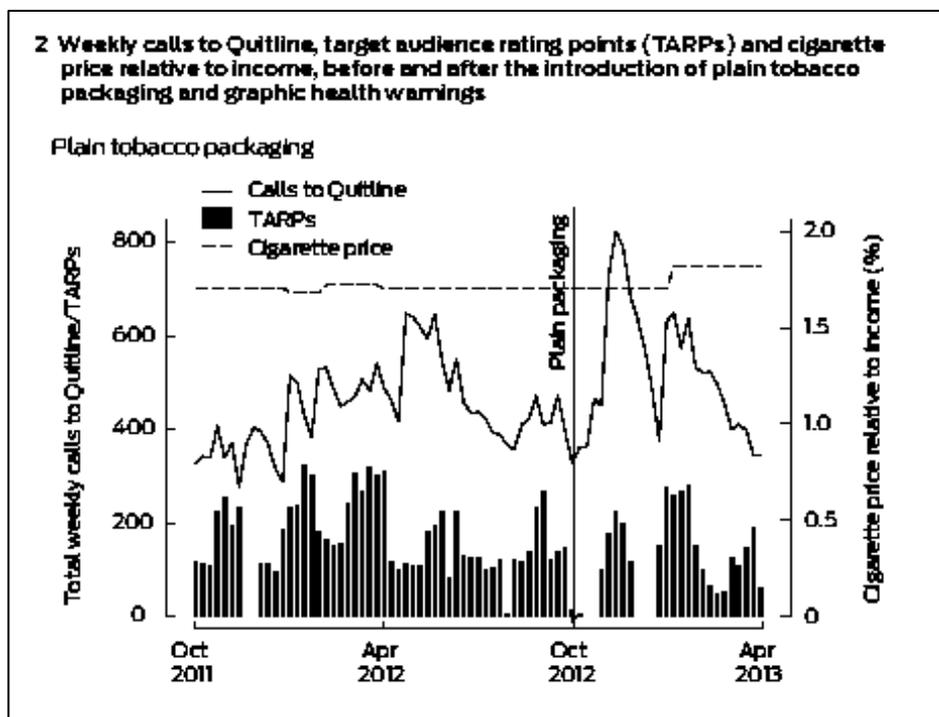
<sup>21</sup> Please note that this information was up-to-date as of 1 May 2014. There have been additional studies conducted in Australia since that date, but they are not reviewed in this paper for the sake of brevity. The conclusions of these studies do not alter the author's opinion of the potential efficacy of plain packaging in the UK.

time in order to observe changes in real time and avoid the human error inherent in recalling past opinions. The authors also note that plain pack smokers were more likely to perceive their cigarettes to be of lower quality earlier on in the policy's phase-in period. They suggest that this might be due to direct comparison between plain and branded packs and that this effect probably diminished as branded packs were removed from circulation. Furthermore, since the Act required the size of graphic health warnings to be increased in conjunction with the standardisation of packages, there is no way to separate the effect of the images from the removal of all branding. Finally, the study does not determine whether or not plain pack smokers are more likely to quit smoking all together. As this is one of the chief goals of the policy, it would be prudent to measure the policy's impact in number of people who have quit as a direct result of the policy as opposed to other confounding factors (such as public awareness campaigns or increased tobacco taxes).

### Seeking smoking cessation help via Quitline

A subsequent study examined the increase in calls to a national smoking cessation help line during plain packaging implementation and compared that growth to the increase in calls received during the implementation of graphic health warnings in 2006, controlling for changes in tobacco prices, seasonal trends, and anti-smoking advertising campaigns. Plain packaging legislation increased calls to the Quitline by 78 per cent (compared to 84 per cent after the introduction of graphic health warnings). The increase in calls lasted longer following plain packaging, with each week following implementation retaining 86 per cent of the previous week's calls. This is double the retention of calls following the introduction of graphic health warnings, where each week retained 40 per cent of the previous week's calls (Young et al., 2014).

Figure 2. Note: TARPS measure anti-tobacco television advertising



Source: Young et al., 2014.

This study poses similar concerns to those of the previous study. To begin, the number of calls to a smoking cessation help line is an indirect measure of smokers' intention to quit smoking. Furthermore, this study does not solve the problem of disentangling the effect of plain packaging from the simultaneous increase in size of graphic health warnings on packages. Finally, plain packaging legislation requires that the font size of the Quitline number printed on packs be increased. Therefore, the results could be capturing the more conspicuous presence of the phone number, rather than the actual effect of plain packaging on smoking behaviour.

### Behaviour at outdoor cafés

Another recent study examined smoking rates at 480 cafes in Melbourne and Adelaide that allow outdoor smoking, both before (October 2011-April 2012) and after (October 2012-April 2013) plain packaging implementation (Zacher et al., 2014). Field workers observed the rate of active smokers (number of individuals currently smoking compared to patrons not smoking), the number of cigarette packages sitting on patrons' tables, and whether those packages were in plain view or covered up. The study found that the rate of packs clearly displayed on tables declined by 15 per cent following the implementation of plain packaging. This could include smokers who keep their packs concealed in a bag or pocket, as well as smokers who cover the packs with a phone or wallet while it sits on the café table, thereby indicating defensive behaviour against the new packages. The authors also found that the rate of active smoking declined by 23 per cent, but attributed this decline to a lack of preparedness for public smoking, rather than as indicative of pure quitting behaviour (Zacher et al., 2014).

While this study is so far the most direct measure of the impact of plain packaging, there are still several issues to consider. First, since the study examines smoking in public, it probably captures the effect of the negative stigma associated with smoking, which may or may not be due to plain packaging. Public awareness campaigns associated with the law's implementation are probably also at play here. Furthermore, the study does not examine smoking behaviour in private places. The reduction in active smoking observed could simply be explained by individuals choosing to smoke at home as opposed to out where they can be seen, due to an increasingly negative stigma. There are also external validity concerns with this study. Since smoking in public places is not permitted in many parts of Australia, the study would not explain behaviour in those locations in the same way that it does in Melbourne and Adelaide where outdoor café smoking is still permitted. Finally, since the study was conducted during initial implementation of plain packaging policy, the results should not be considered to be a permanent change. This concern relates to all three studies mentioned – more permanent results will only become available several years from now.

### DISCUSSION AND RECOMMENDATIONS FOR FUTURE STUDY

While the evidence from Australia does not prove that plain packaging is ineffective, it also does not provide much certainty of how effective this policy might be when implemented elsewhere. Why, then, has the Government committed to implementing a policy that might prove to make little to no difference in the fight against smoking prevalence in the UK? It is entirely possible that the decision to implement plain packaging has been made due to political considerations stemming from the Crosby scandal; perceived deference to Big Tobacco would be damaging for the Conservative Party leading up to the 2015 General Election.

It is also likely that plain packaging is simply another step in the decades-old effort to ‘nudge’ individuals away from smoking. We can better understand plain packaging in the context of the Advocacy Coalition Framework, whereby policies demonstrate the beliefs of their creators (Sabatier and Jenkins-Smith, 1993). In this case, plain packaging should be thought of not as a stand-alone policy, but rather as contributing to the overall effort of bans on advertising, indoor smoking, and tobacco displays, with the ultimate goal of making smoking less convenient and less prevalent in society. If one views plain packaging in this light, then the possibility that the policy will have no effect on smoking prevalence is almost irrelevant. Rather, the policy must be implemented in order to continue the anti-smoking movement and it may be possible that future reforms would not be possible if this rung in the ladder were missing. This paper has cited statistics that show that the rate of smokers in the UK has declined over the past several decades, largely due to the work done by this anti-tobacco advocacy coalition. Whether or not plain packaging will contribute significantly to this trend remains to be seen. As such, I outline below how the Government can assess the impact of plain packaging and improve upon the Australian experience.

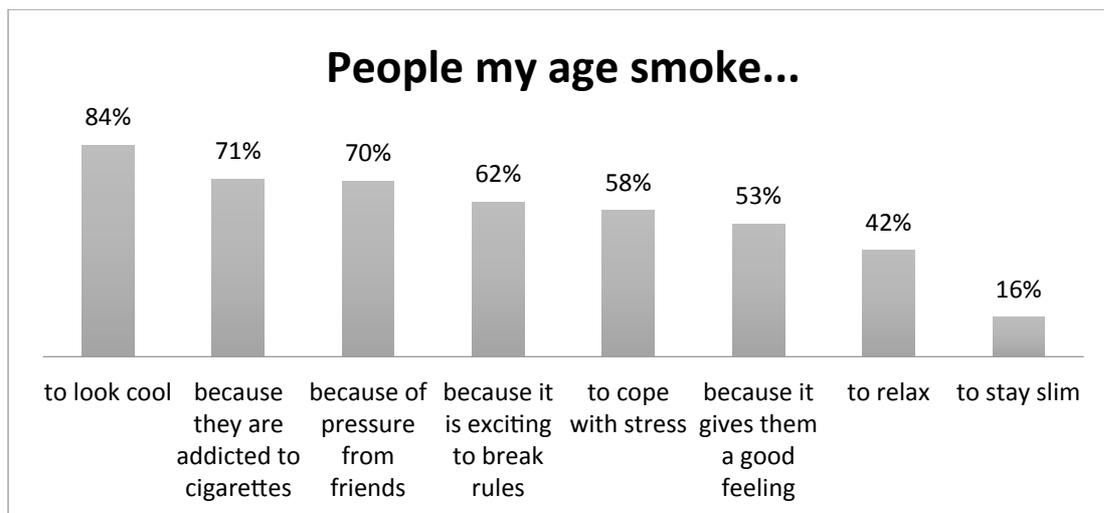
### **Proposal: Study the effect of plain packaging on children’s perceptions about smoking**

Proper data analysis should be conducted in order to better understand the effect of plain packaging on smoking prevalence and the potential impacts of adopting plain packaging. I propose an analysis of the smoking behaviour of children in England, with particular focus on how their perceptions of smoking and of the behaviour of their peers change over time. The Government has repeatedly stated that one of its main intentions behind introducing plain packaging is to prevent children from taking up smoking. Specifically, proponents argue that children are especially susceptible to the colours and logos currently displayed on packs: removing this imagery should eliminate some of the glamour that children associate with smoking. There have so far been no Australian studies examining the policy’s impact on children, rendering it difficult to anticipate its potential impact on young people in the UK. This study would therefore be the first of its kind, making valuable contributions to the body of knowledge surrounding smoking cessation policies.

The Health & Social Care Information Centre has conducted the ‘Smoking, Drinking and Drug Use among Young People in England’ annually since 1998. This survey is conducted in secondary schools across the country and provides valuable information regarding preferences of 11-15 year-olds towards smoking. In 2012, the survey added questions asking students why people their age choose to smoke. Since proponents argue that plain packaging will reduce some of the glamour of cigarette packets, it would logically follow that one could measure changes in students’ beliefs about the coolness of smoking in order to measure the effect of plain packaging.

Figure 3 demonstrates that the desire to look cool is the primary reason why respondents think people their age choose to smoke. The author’s recommendation is that the question of why young people choose to smoke be repeated for all subsequent survey waves, in order to measure changes in the rate at which students believe their peers smoke to look cool. If plain packaging is indeed effective, then this rate should decrease over time.

Figure 3. People my age smoke because...



Source: Health and Social Care Information Centre (2013).

We cannot, however, simply attribute a change in students' perception of the coolness of smoking to plain packaging. Statistical analysis should be used to identify the magnitude of plain packaging's influence on young people and rule out any other factors that might also contribute to changes in perceptions of smoking. In the 2012 survey, each respondent was given a unique serial number by which they could be tracked in the future. Since the survey comprised of students in years 7 to 11 in school, this information could be used to construct a panel dataset that will cover a time period of five years. Researchers would begin with the cohort of year 7 students in 2012 ( $n=1,481$ ) and track their survey responses through year 11, or 2016. This would provide researchers with a window covering just prior to and just after plain packaging implementation.<sup>22</sup> Based on the experience with graphic health warnings in Australia (Young et al., 2014), we would expect to see the largest effect of the policy on smoking perceptions within the first few years of implementation, levelling off further in the future.

The proposed model would use an OLS regression of the following form:

$$LookCool_{it} = \beta_1 PlainPack_t + \beta_2 X_{it} + \alpha_i + \epsilon_{it}$$

Where:

$LookCool_{it}$  measures student  $i$ 's perception in year  $t$  about whether his or her peers choose to smoke in order to look cool

$PlainPack_t$  is a dummy variable that equals 1 in years subsequent to plain packaging implementation and 0 in years prior

$X_{it}$  is a vector of control variables affecting individual  $i$  in year  $t$

$\alpha_i$  captures individual fixed effects

<sup>22</sup> This assumes that plain packaging will be implemented in late 2014 or early 2015, based on statements made by ministers. If implementation is delayed, then the panel should be shifted to begin with a later wave of the survey.

The difficulty in conducting such an analysis lies in the need to control for all factors other than plain packaging that might influence students' perceptions of smoking. For example, schools provide anti-smoking education in order to inform students of health risks, as well as to eliminate some of the habit's mystique. Students who view anti-smoking advertisements on television are also likely to have different perceptions of smoking than those who do not. Furthermore, whether or not students currently smoke, drink, or do drugs could also impact their perception of the coolness of smoking. Summary statistics for these and other potential control variables contained within the survey are outlined in Table 1. Individual fixed effects would capture unobservable factors that vary between individuals but are relatively constant over time. This could include factors such as whether students have a personal history with smoking-related deaths in the family, which is likely to influence a student's perception of smoking in addition to the influence plain packaging might have. Fixed effects would also capture individual characteristics of respondents, such as race or socioeconomic status, that are unobservable in this case because they are not included in the survey.

Table 1. Control variables: summary statistics

<b>CONTROL VARIABLES: SUMMARY STATISTICS</b>					
Explanatory Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Received helpful information about smoking in school	7589	0.72	0.45	0	1
Received helpful information about smoking from the media	7589	0.75	0.44	0	1
Seen cigarettes on display in shops in the past year	7589	0.90	0.30	0	1
Currently smoke	7364	0.07	0.26	0	1
Currently drink	7589	0.37	0.48	0	1
Currently do drugs	7589	0.05	0.22	0	1

Additional public interventions would also need to be controlled for. For example, increases in tobacco taxes, resulting in raised cigarette prices, are likely to significantly affect young people, as they generally lack substantial disposable income. Time fixed effects cannot be used to control for additional, unobserved factors that would affect all students equally but change over time, such as on-going implementation of the display ban. Because events like this coincide with the timing of plain packaging implementation, they would be perfectly collinear, biasing the results. This could be controlled for by including student responses to the survey question, "Have you seen cigarettes on display at a shop within the past year?" However, this is unlikely to capture the aggregate effect the display ban might have on attitudes towards smoking in general.

Some of the other responses to the "people my age smoke" survey question could also be used as a counterfactual to check the robustness of results. For example, it could reasonably be expected that the "because they are addicted to cigarettes" and "because it gives them a good feeling" responses remain relatively constant over time and not be affected by plain packaging. If rates of these responses remain relatively constant while the "to look cool" response rate changes, researchers could be more confident that it is the plain packaging effect that is being captured by the regression, as opposed to other factors that affect smoking rates.

Finally, the author recommends that plain packaging implementation does not coincide with any other changes to cigarette packets. Since Australia increased the size of graphic health warnings on packets at the same time all branding schemes were removed, it is impossible to isolate the effect of one change from another. It would be wise to phase-in any changes to the size or content of graphic health warnings at a later time, so that both effects may be assessed separately, holding all else constant.

## Considerations

This methodology is not without limitations. First, it is possible that the perception of the coolness of smoking is correlated with additional unobserved variables. Because tobacco policy is generally approached from multiple directions, it is possible that the estimates would also be picking up additional anti-smoking efforts, such as public advertising campaigns. We can attempt to control for this at the individual level by asking students whether they viewed anti-smoking advertisements. However, it is impossible to say whether the full effect can be captured by a survey question or if advertising has a more subconscious effect on respondents. Researchers would need to be wary of this and other potential sources of omitted variable bias.

Another option to minimise bias would be to phase-in implementation of plain packaging throughout the UK. If, for example, plain packaging were to be implemented in Scotland one or two years following implementation in England, researchers could simultaneously compare changing perceptions of the coolness of smoking in an environment with the policy and an environment without. Such a difference-in-differences method would require smoking behaviour in Scotland and England to be fairly identical in order to satisfy the parallel trends assumption (Stock and Watson, 2012). If the trends were similar enough and such data were to be made available, this strategy could improve upon the method previously outlined by eliminating some of the remaining omitted variable bias that could not be mitigated by fixed effects.

Finally, it is worth noting that the perception of the coolness of smoking is an indirect way to measure the impact of plain packaging on children, a critique made previously of the studies conducted in Australia. A more direct way to measure the impact of this policy would be to include survey questions pertaining to whether or not students took up smoking, and why they chose to do so. Since it is impossible to prove a negative – as one cannot survey students with questions such as, “would you have started smoking if it weren’t for plain packaging?” – researchers are limited to measuring observable behaviours. As such, the author believes that measuring the impact of plain packaging through changes in the coolness factor is the most effective option, given currently available data.

## CONCLUSION

This paper has argued that while reduced smoking prevalence is a worthwhile policy objective, there is little quantitative evidence that plain packaging will achieve that goal. Proponents argue that plain packaging will encourage smokers to quit and deter young people from taking up smoking by removing the allure of colourful packaging. Studies from Australia, however, do not show any causal impact of plain packaging on decreasing the rate at which people smoke. This does not mean that plain packaging is entirely without value. While the policy may not make a stand-alone contribution to the fight against smoking, it could contribute to the overall push towards reducing the prevalence of tobacco in our daily lives. The Government should weigh this value

against opponents' arguments relating to the potential harmful effects of plain packaging as they proceed with implementing the policy.

In light of the position of plain packaging in the larger advocacy coalition against smoking, there are political realities that require the Government to honour their commitment to introduce plain packaging. The Government has a responsibility to effectively monitor the impact of the policy as implementation goes forward. As one of the first few countries to mandate plain packaging, the UK should provide evidence and examples for other countries that might consider similar regulations. There are currently no published studies pertaining to how effective plain packaging has been in deterring children from starting to smoke. To that end, the article outlines a methodology that researchers might use to study the impact of plain packaging on young people's perceptions of the coolness of smoking. If plain packaging is in fact effective in the UK, then the rate at which young people perceive smoking to be a cool behaviour should significantly decline in the wake of implementation. This would provide the first substantial evidence that plain packaging has reduced the number of smokers and could be used as a foundation for evidence-based policymaking in the future.

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