

APPENDIX K

Analysis of Gender Differences in Impact of Smoke-free Policies, Health Warnings, and Restrictions on Tobacco Advertising, Promotion, and Sponsorship

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Executive Summary

Overview and Aims

This chapter presents new primary analyses of datasets from the International Tobacco Control Policy Evaluation Project (ITC Project). The purpose of these analyses was to evaluate the impact of key tobacco control policies implemented in LMICs and HICs and to determine whether there is a differential impact of policies by gender¹. Specifically, the 19 new analyses examined whether the impact of smoke-free laws, pictorial health warnings, plain/standardized packaging, and bans on tobacco advertising, promotion, and sponsorship (TAPS) differed by gender.

Summary of Methods

We reviewed the timelines of tobacco control policy implementation and ITC survey fieldwork for all 29 ITC countries (see United States timeline for example at https://www.itcproject.org/countries/united_states) to identify potential policy impact analyses for this project where ITC surveys were conducted before and after policy implementation. Nineteen ITC new policy impact analyses were identified as follows:

- Smoke-free: 5 analyses: Mexico City, Ireland, Republic of Korea, Brazil, and France;
- Health warnings: 8 analyses: New Zealand, United Kingdom, France, Mexico, Mauritius, Thailand, Malaysia, and Australia (health warnings and plain/standardized packaging); and
- Tobacco advertising, promotion, and sponsorship (TAPS): 6 analyses: Brazil, India, United States, Mexico, United Kingdom, and Uruguay

For each policy domain, we identified key indicators from the surveys to evaluate the impact of policies. For example, key indicators for the evaluation of smoke-free policies included whether respondents (primarily smokers, but in some cases also non-smokers) noticed people smoking in restaurants, bars, and workplaces; whether they have a home smoking ban; and whether smoke-free laws motivated quitting.

While policies varied across countries, all ITC surveys are developed using the same conceptual framework and methods, and the survey questions are designed to be identical or functionally equivalent in order to allow strong comparisons across countries.

The longitudinal cohort design of the ITC surveys allows for not only cross-country comparisons, but also for comparisons to be made before and after the implementation of a tobacco control policy within a country. Therefore, for each country, we selected one survey wave conducted just prior to the policy implementation date (or as close as possible, depending on the survey timeline within the country) as the pre-policy wave and one survey wave conducted after the policy was implemented as the post-policy wave. The difference in the key indicators between the pre- and the post policy wave represents the policy impact. Analyses adjusted for key covariates consistent with ITC analytic procedures.

¹ We define the term “gender” in the analyses according to how ITC survey respondents answer the question asking whether they are male or female.

Further information about the ITC survey design and methods as well as copies of all of the individual surveys for each country are available online at www.itcproject.org.

Description of Analyses

For each outcome measure, we calculated weighted frequencies for the overall sample, and separately for males and females, at both the pre- and post-policy survey waves. For health warnings, analyses were conducted among smokers only; however, for other policy domains where the behaviours of non-smokers were of interest, we conducted the analyses separately for both smokers and non-smokers (in those countries where non-smokers were surveyed). Quitters were also included in those countries where quitter samples were available at both the pre- and post-policy survey waves.

The percentages presented in the tables for each country were estimated from regression models incorporating generalised estimating equations (GEE) that adjusted for age, smoking status, and the number of times respondents were surveyed in each of the countries (referred to as “time in sample” effects)². The estimates were weighted using rescaled cross-sectional weights at the pre-policy wave for respondents surveyed at both waves and rescaled cross-sectional weights at the post-policy wave for respondents recruited at the post-policy wave so that they are nationally representative and can be compared between waves. Different sampling designs used in each of the countries and within-individual correlations were also taken into account in modeling. All analyses were conducted using SUDAAN version 11.

For each outcome variable, two regression models were conducted with the following predictors:

Model 1: Standard covariates (age, smoking status, time in sample) + gender (coded as a dummy variable where males=1 and females=0) + wave (pre-policy wave=0 and post-policy wave=1)

Model 2: Same as Model 1 but with a gender X wave interaction term added

The first model measures the overall main effect of the policy being evaluated (i.e., introduction of smoke-free laws). The “wave” coefficient and its significance test determines whether the implementation of the policy was associated with a significant increase or decrease in that specific outcome measure between the pre- and post-policy survey waves, among the whole sample.

The second model measures the within- and between-gender differences in the overall pre-to-post-policy impact. The within-gender impact was measured by specifying the “gender” variable in the model to equal either “male” or “female” and then testing the difference between the pre- and post-policy frequencies for each gender category. The coefficient of the interaction term shows the between-gender differences in pre-to-post-policy impact. Its interpretation depends on the outcome variable:

- a) If an increase in the outcome measure from pre-to post-policy is desirable for public health (i.e., an increase in smoke-free homes), then a positive coefficient for the

² The time-in-sample variable was not included in the analyses of health warnings in Mauritius because there were very few replenishment respondents in the post-policy wave, and so including the time-in-sample variable would have caused difficulties in the analyses.

interaction term means that the policy impact was greater for males than for females, and a negative coefficient means the impact was greater for females.

- b) If a decrease in the outcome measure is desirable for public health (i.e., decrease in smoking in restaurants), then a positive coefficient for the interaction term means that the policy impact was greater for females, and a negative coefficient means that the impact was greater for males.

The significance test associated with the interaction term signifies whether the gender difference was statistically significant.

Gender differences in the impact of smoke-free laws—Key findings

Table 1 summarizes the overall findings of analyses of gender differences in impact of the various smoke-free laws in Mexico City, Ireland, Republic of Korea, Brazil, and France. Overall, the implementation of comprehensive smoke-free laws in accordance with FCTC Article 8 was associated with a positive impact across key indicators of smoke-free policy effectiveness, with a similar pattern of results for both males and females.

Impact of smoke-free law on exposure to SHS

1. In all 5 countries, comprehensive smoke-free laws led to a decrease in exposure to SHS in bars/pubs and restaurants, with significant reductions in all countries except for Brazil. Similarly, comprehensive smoking bans decreased exposure to SHS in workplaces in all 5 countries, with significant reductions all countries except for Mexico City.
2. Overall, there were few gender differences in the impact of smoke-free laws on exposure to SHS in public venues. In all 5 countries, there was no gender difference in the impact of smoke-free laws on exposure to SHS in bars/pubs. There was a significant gender difference in the impact of smoke-free laws on reducing exposure to SHS in restaurants in 1 out of 5 countries, and on reducing exposure to SHS in workplaces in 2 out of 5 countries. For those indicators of policy impact where gender differences were identified, there was a stronger effect of smoke-free laws on females than males in 2 out of the 3 countries.
 - a. After a comprehensive smoking ban was implemented in **Mexico City**, smokers' noticing of smoking in indoor workplaces decreased among female smokers (from 46% to 14%), but increased among male smokers (from 26% to 32%).
 - b. After a comprehensive smoking ban was implemented in **Ireland**, there was a near total elimination of smoking in restaurants, with a greater decrease in noticing smoking among female smokers (90% to 1%) than male smokers (85% to 2%).
 - c. After smoke-free legislation was expanded to cover all public places in the **Republic of Korea**, noticing smoking in indoor workplaces decreased among male smokers (from 32% to 20%), but increased among female smokers (from 10% to 19%).

Impact of smoke-free law on thinking about quitting

1. In all 5 countries, there was an increase in the percentage of smokers who said that smoking restrictions at work led them to think about quitting/stay quit, with a significant increase in 3 out of 5 countries. In 4 out 5 countries, there was an increase in the percentage of smokers who said that smoking restrictions in public places led them to think about quitting/stay quit, with a significant increase in 2 out of 5 countries.

2. There were no significant gender differences in the impact of smoke-free laws on thinking about quitting across all countries, with the exception of the Republic of Korea, where there was a stronger policy effect on females than males.
 - a. After smoke-free legislation was expanded to cover all public places in the **Republic of Korea**, more smokers said that smoking restrictions at work helped them to think about quitting, with a greater increase among females (2% to 15%) compared to males (7% to 9%).

Home smoking bans

1. In all 5 countries, comprehensive smoke-free laws did not lead to increased smoking in the home. In fact, in all 5 countries, the percentage of smokers who reported having a smoke-free home increased after the smoke-free law, with a significant increase in 3 out of 5 countries.
2. There were no significant gender differences in the impact of smoke-free laws on home smoking bans.

Table 1: Summary of analyses of overall impact and gender differences in policy impact of smoke-free laws

		Home smoking bans		Noticed smoking in bars/pubs		Noticed smoking in restaurants		Noticed smoking in workplace		Smoking restrictions at work helped to think about quitting /staying quit		Smoking restrictions in public places helped to think about quitting/ staying quit	
		Smokers	Non-smokers	Smokers	Non-smokers	Smokers	Non-smokers	Smokers	Non-smokers	Smokers	Quitters	Smokers	Quitters
Mexico City (2008): City level smoke-free law	<i>Overall impact</i>	+		+		+		+ ns		+ ns	+ ns	+ ns	- ns
	<i>Gender difference</i>	ns		ns		ns		F>M		ns	ns	ns	ns
Ireland (2004) National smoke-free law	<i>Overall impact</i>	+ ns		+		+		+		+		- ns	
	<i>Gender differences</i>	ns		ns		F>M		ns		ns	ns	ns	
Republic of Korea (2015): National smoke-free law	<i>Overall impact</i>	+		+		+		+		+		+	
	<i>Gender difference</i>	ns		ns		ns		M>F		F>M		ns	
Brazil (2014): National smoke-free law	<i>Overall impact</i>	+ ns	+	+ ns	+ ns	- ns	- ns	+	+ ns	+	+ ns	+	+ ns
	<i>Gender difference</i>	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
France (2008): National smoke-free law	<i>Overall impact</i>	+	+	+	+	+	+	+	+	+ ns		+ ns	
	<i>Gender difference</i>	ns	ns	ns	ns	ns	ns	ns	ns	ns		ns	

Overall impact: +increased from pre to post policy – decreased from pre to post; **Green** = significant positive impact from pre to post; **Red** = significant negative impact from pre to post; Black = outcome not evaluated

Gender differences: **Blue** = pre to post-policy impact was significantly greater among males (M); **Purple** = significantly greater impact among females (F)

ns = no significant change or no significant gender differences

Gender differences in the impact of pictorial health warnings—Key findings

Table 2 summarizes the overall findings of analyses of gender differences in impact of various pictorial health warning policies in New Zealand, United Kingdom, France, Mexico, Mauritius, Thailand, Malaysia, and Australia (pictorial warnings along with plain/standardized packaging). Overall, countries that strengthened their health warnings by adding pictorial warnings aligning with FCTC Article 11 guidelines showed a positive impact across the key indicators of warning impact, and the pattern for males and females was generally consistent (with the overall trend and with each other).

Overall findings:

- On measures of salience, cognitive, and behavioural impact, there was a positive change from pre- to post-policy in countries where large pictorial warnings were implemented for the first time (i.e., New Zealand, Mauritius, Malaysia). In these countries, the positive impact was largely the same for both males and females.³
- In countries where the policy change was less drastic or did not align with FCTC guidelines (i.e., Australia where the size of pictorial warnings increased; Mexico where pictorial warnings were small (30% of the front), and France and United Kingdom where pictorial warnings were implemented on the backs of packs only), there was little impact overall, or even a negative impact, with few gender differences.

While the impact of health warnings policies was mostly consistent for males and females across countries, there were some gender differences summarized below:

- For measures of salience (noticing and reading warnings closely), the trends in impact were generally consistent between males and females, with no gender differences in the policy impact over time.
- For behavioural measures (giving up a cigarette or avoiding the warnings), there was some evidence of a stronger impact among female smokers in 3 out of 8 countries. In **New Zealand, Mexico, and Australia**, females showed a significantly greater impact than males from pre- to post-policy on one of the two behavioural indicators.
- For thinking about health risks due to warnings, there was a greater increase among females in one country (**Malaysia**); however, this was based on a much smaller sample of female smokers.
- For quit-related outcomes, females showed a greater impact than males on likelihood of quitting in one country (**United Kingdom**), but males showed a greater impact than females on thinking about quitting due to warnings in **Malaysia**.

³ Note that in Malaysia, the analyses were conducted primarily on males because there were few female smokers in the sample.

Table 2: Summary of analyses of overall impact and gender differences in impact of health warning policies

		Noticed warnings	Read warnings closely	Gave up a cigarette because of warnings	Avoided warnings	Warnings made you think about health risks	Warnings made you more likely to quit	Warnings led you to think about quitting	Warnings led you to make a quit attempt/stay quit
		Smokers	Smokers	Smokers	Smokers	Smokers	Smokers	Smokers	Quitters
New Zealand (2008): text to pictorial	<i>Overall impact</i>	+	+	+ ns	+	+	+		
	<i>Gender difference</i>	ns	ns	ns	F>M	ns	ns		
United Kingdom (2009): text to pictorial	<i>Overall impact</i>	+ ns	- ns	+ ns	+	+ ns	+ ns	+ ns	+ ns
	<i>Gender difference</i>	ns	ns	ns	ns	ns	F>M	ns	ns
France (2011): text to pictorial	<i>Overall impact</i>	-	-	-	+	-	- ns	+ ns	
	<i>Gender difference</i>	ns	ns	ns	ns	ns	ns	ns	
Mexico (2010): text to pictorial	<i>Overall impact</i>	+ ns	+ ns	+ ns	+	+ ns	+ ns	+	+
	<i>Gender difference</i>	ns	ns	F>M	ns	ns	ns	ns	ns
Mauritius (2009): text to pictorial	<i>Overall impact</i>	+	+	+	+	+	+	+	
	<i>Gender difference</i>	ns	ns	ns	ns	ns	ns	ns	
Thailand (2005): text to pictorial	<i>Overall impact</i>	+ ns	+ ns	+ ns	+	+ ns	- ns	-	
	<i>Gender difference</i>	ns	ns	ns	ns	ns	ns	ns	

		Noticed warnings	Read warnings closely	Gave up a cigarette because of warnings	Avoided warnings	Warnings made you think about health risks	Warnings made you more likely to quit	Warnings led you to think about quitting	Warnings led you to make a quit attempt/ stay quit
		Smokers	Smokers	Smokers	Smokers	Smokers	Smokers	Smokers	Quitters
Malaysia (2009): text to pictorial	Overall impact	+	+	+	+	+	+	+	
	Gender difference	ns	ns	ns	ns	F>M	ns	M>F	
Australia (2012): larger pictorial + plain packaging	Overall impact	+ ns	=	+ ns	+	+ ns	+ ns	+ ns	- ns
	Gender difference	ns	ns	ns	F>M	ns	ns	ns	ns

Overall impact: +increased from pre to post policy – decreased from pre to post; = no change from pre to post **Green** = significant positive impact from pre to post; **Red** = significant negative impact from pre to post; Black = outcome not evaluated

Gender differences: **Blue** = pre to post-policy impact was significantly greater among males (M); **Purple** = significantly greater impact among females (F)
ns = no significant change or no significant gender differences

Gender differences in the impact of tobacco advertising, promotion, and sponsorship bans—Key findings

Analyses of gender differences in TAPS policy impact were conducted for various policy changes in Brazil, India, United States, Mexico, the United Kingdom, and Uruguay. We did not prepare a table to summarize the overall findings of analyses of gender differences in impact of the various TAPS bans because there were few common measures of impact across countries due to the diverse nature of the policy changes. In general, the findings point to the limited effectiveness of policies that do not meet FCTC Article 13 and its guidelines that call for a comprehensive ban on TAPS with no exemptions. For example, Brazil's 2014 and Mexico's 2009 partial ban on advertising at point-of-sale (POS) (with allowance for the display of tobacco products at POS) resulted in no improvements in key impact indicators. On the other hand, the stronger POS ban in the United Kingdom which banned POS advertising and the display of cigarettes in large retail shops resulted in significant decreases in smokers' noticing of cigarette displays. Similarly, the United States' 2010 partial ban on tobacco sponsorship of sports and entertainment events (with allowance for the use of corporation names in sponsorship) had no impact on smokers' awareness and exposure to tobacco sponsorship of these types of events.

Gender differences in policy impact were identified only in the United States and the United Kingdom. Significant differences between males and females in policy impact are described below

1. After the introduction of stronger restrictions on tobacco sponsorship in the **United States**, awareness of sporting events sponsored by tobacco brands decreased among male smokers (13% to 8%) but increased among female smokers (11% to 21%).
2. After the implementation of a partial ban on POS tobacco advertising and promotion in the **United Kingdom**, there was a greater decrease in noticing cigarette displays in shops among female smokers (90% to 56%) than male smokers (89% to 68%).

Limitations

Time frame: The analyses only evaluated the short term impact of policies implemented within a country (i.e., a single post-policy survey wave was selected). Expanding the analyses to include multiple follow-up survey waves would enable greater power to evaluate the long term impact of policies. While multiple post-policy survey waves are not available in every country, the ITC Project is an ongoing study that will continue to provide more data in the future.

Sample size: An advantage of the ITC Project is the large, often nationally representative samples of respondents. However, for the purposes of our analyses, the sample sizes were restricted to smaller subgroups (i.e., smokers, quitters, males, females) who responded to the measures of interest. Therefore, in some countries, the sample sizes for certain measures were quite low and resulted in wide confidence intervals for the estimates presented.

Selection of measures: For each analysis, we selected outcome measures relevant to the policy being evaluated. However, the ITC surveys include a much broader range of measures that were not included in the current analyses, some of which could also be used to assess policy impact. For example, smokers' intentions to quit, quit attempts, frequency of cigarette

consumption, and use of cessation services are more general behavioural outcomes that may change as a result of stronger tobacco control policies.

Possible confounding variables: While the analyses adjust for some variables (age, smoking status, and time in sample), we did not control for all possible sociodemographic and smoking-related variables that could have affected the results (i.e., ethnicity, education, income, heaviness of smoking, past quit attempts, etc.).

Inability to disentangle policy effects: While our analyses focused on data collected as close to the date of implementation of a single policy as possible and we focused on outcomes relevant to that specific policy, there may have been other policies implemented within a country during the same time frame that may have affected the results as well. Therefore, we cannot fully disentangle the effects of a single policy from the overall tobacco control policy environment within each country. This, of course, is a challenge for any policy evaluation, so it is not unique to the ITC Project. It should be noted, however, that focusing on outcomes that are specific to the policy implemented allows for greater confidence that pre- post-policy differences reflect the impact of that policy compared to other policies that might have also been implemented between the pre- and post-post surveys. For example, using noticing warnings as an indicator for evaluating the introduction of pictorial warnings is a good measure because it is specific to warnings; it is hard to imagine that increases in tobacco taxes would affect this outcome measure.

Conclusions

1. The analyses of overall impact of the implementation of smoke-free and health warning policies generally showed a positive impact across key indicators of policy impact in countries where implementation was strong and consistent with the Article 8 and Article 11 guidelines of the WHO Framework Convention on Tobacco Control. Partial bans on TAPS did not consistently show positive impacts across all countries, pointing to the importance of enacting and enforcing comprehensive bans according to Article 13 and its guidelines.
2. Overall, there were no consistent gender differences in the impact of smoke-free laws, pictorial health warnings, and TAPS bans.
3. There were few gender differences overall in policy impact, suggesting that policies affect males and females in similar ways. This was generally the case for both strong and weak tobacco control policies.
4. Among the gender differences in policy impact that were found, the majority of policy impact indicators showed a stronger impact among females compared to males.
 - a. Comprehensive smoke-free laws led to larger reductions in female smokers' exposure to second-hand smoke in restaurants in Ireland, and indoor workplaces in Mexico City; and were more effective at encouraging female smokers to think about quitting in the Republic of Korea.
 - b. Pictorial health warnings were more effective for motivating female smokers to give up a cigarette (Mexico), avoid the warnings (New Zealand and Australia),

think about the health risks of smoking (Malaysia), and to quit (United Kingdom) than male smokers.

- c. Bans on POS tobacco advertising and promotion in the United Kingdom resulted in larger decreases in exposure to cigarette product displays among female smokers compared to male smokers.
5. There is a strong need for continued gender-based analyses of tobacco control policy impact to better understand differences between males and females in responses to policies and to inform future policy development.

ITC Smoke-Free Policy Impact Analyses

Impact of the City-Level Smoke-free Law in Mexico City

Country: Mexico (Mexico City)

Policy Change (Date): City-level smoke-free law (Implemented April 2008)

Country (sampling)	Mexico City
Pre-policy wave (dates)	Wave 2 (Oct. – Dec. 2007)
Post-policy wave (dates)	Wave 3 (Nov. – Dec. 2008)
Sample	Wave 2: 224 smokers (134 males, 90 females) 37 quitters (16 males, 21 females) Wave 3: 350 smokers (208 males, 142 females) 47 quitters (23 males, 24 females)

Summary of Policy Change(s):

Prior to 2008, only government buildings and hospitals in Mexico were covered by smoke-free laws. In February 2008, Mexico City passed a comprehensive local level law banning smoking in all enclosed public places, public transportation, and workplaces. The law took effect in April 2008. In August 2008, national legislation was implemented that banned smoking in public places and workplaces; however, the law was not comprehensive as designated smoking areas were permitted according to regulations that were published in June 2009.[1]

Summary of Findings (see Table 1):

Our 6 indicators of impact of the Mexico City smoking ban focused on 3 key areas: 1) Exposure to SHS in bars, restaurants, and workplaces; 2) Thinking about quitting/actual quitting due to smoking restrictions and work and in public places and 3) Home smoking bans.

Exposure to SHS: The comprehensive city-level smoking ban that was implemented in 2008 ahead of national legislation was effective in reducing exposure to second-hand smoke (SHS) in public venues.

- After the ban, there was an overall significant decrease in the prevalence of smoking in restaurants (82% to 8%) and bars (99% to 31%).
- However, after the ban, there was no evidence of impact of the smoke-free law on smoking in workplaces overall, as the level of reported exposure to SHS in indoor workplaces did not significantly change.⁴
- **Males reported significant reductions in noticing smoking in restaurants and bars, and females reported significant reductions across all three venues (restaurants, bars, and workplaces).**
- **There was a significant gender difference in SHS exposure at work – while exposure decreased among females after the ban, there was an increase among males (although it was not significant).**

Impact of smoke-free law on quitting:

- There was no change in the percentage of smokers and quitters who said that smoking restrictions in public places and workplaces made them think about quitting or led them to quit.
- **This was the case for both male and female smokers.**

⁴ Note that these results were based on a smaller sample size (smokers who were in paid work and reported working inside a building; n= 24 females and 50 males at Wave 2; 39 females and 70 males at Wave 3)

Home smoking bans:

- After the ban, there was a significant increase in the implementation of complete smoking bans in the home among smokers (34% to 53%).
 - **Both male and female smokers reported an increase in home smoking bans, but the increase was not significant among females.**
1. Thrasher JF, Swayampakala K, Arillo-Santillán E, *et al.* Differential impact of local and federal smoke-free legislation in Mexico: a longitudinal study among adult smokers. *Salud Publica Mex* 2010;**52 Suppl 2**:S244–53.

Table 1: Key findings from the ITC Mexico City 2007 and 2008 Surveys on the impact of the 2008 smoke-free law

	Home smoking bans	Noticed smoking in bars/pubs	Noticed smoking in restaurants	Noticed smoking in workplace
	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)
Overall impact from pre to post policy	34.2 (26.9-42.4) to 52.8 (42.4-62.9)**	98.5 (89.1-99.8) to 30.8 (21.4-42.2)***	81.8 (72.5-88.5) to 8.3 (5.0-13.3)***	32.9 (17.6-53.0) to 25.4 (16.2-37.5)
Males	30.4 (20.9-41.9) to 54.3 (42.0-66.1)**	97.8 (85.3-99.7) to 33.9 (21.9-48.4)***	80.8 (68.3-89.1) to 7.7 (4.0-14.4)***	25.9 (12.7-45.6) to 31.7 (20.2-46.0)
Females	39.6 (30.7-49.3) to 50.6 (37.9-63.2)	100.0 to 24.8 (13.5-41.2)***	83.1 (74.0-89.5) to 9.0 (3.6-20.9)***	45.6 (24.5-68.5) to 14.1 (6.0-29.9)*
Gender differences in policy impact	<i>ns</i>	<i>ns</i>	<i>ns</i>	F>M*

	Smoking restrictions at work “very much” helped to think about quitting/staying quit		Smoking restrictions in public places “very much” helped to think about quitting/staying quit	
	% Smokers (95% CI)	% Quitters (95% CI)	% Smokers (95% CI)	% Quitters (95% CI)
Overall impact from pre to post policy	13.3 (7.6-22.4) to 20.1 (15.7-25.4)	6.2 (1.7-20.4) to 11.8 (3.1-36.3)	16.0 (9.8-25.0) to 25.8 (18.8-34.3)	10.2 (3.5-26.4) to 9.5 (1.9-36.3)
Males	15.1 (8.5-25.6) to 21.1 (15.9-27.4)	2.7 (0.2-31.0) to 10.4 (1.2-51.8)	19.7 (12.4-29.7) to 26.1 (18.0-36.2)	2.4 (0.2-26.8) to 15.6 (2.4-57.6)
Females	10.7 (5.5-19.9) to 18.7 (12.4-27.2)	9.3 (2.6-28.7) to 13.1 (4.0-35.1)	10.6 (4.4-23.4) to 25.4 (16.9-36.3)	15.6 (5.0-39.3) to 5.2 (1.1-21.8)
Gender differences in policy impact	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>

Notes:

Overall impact: **Green** = significant positive impact from pre to post-policy; **Red** = significant negative impact from pre to post-policy

Gender differences: **Blue** = pre to post-policy impact was significantly greater among males (M); **Purple** = significantly greater impact among females (F)

ns = no significant change or no significant gender differences

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Impact of the National Smoke-free Law in Ireland

Country: Ireland

Policy Change (Date): National smoke-free law (implemented March 2004)

Country (sampling)	Ireland (nationally representative)
Pre-policy wave (dates)	Wave 1 (Dec. 2003 – Jan. 2004)
Post-policy wave (dates)	Wave 2 (Dec. 2004 – Jan. 2005)
Sample	Wave 1: 1071 smokers (457 males, 614 females) Wave 2: 1032 smokers (423 males, 609 females)

Summary of Policy Change(s):

Prior to 2004, smoking was prohibited in a limited number of public places in Ireland, and workplace smoking bans could be imposed by employers on a voluntary basis. On March 29th, 2004, Ireland became the first country in the world to implement comprehensive smoke-free legislation in all indoor workplaces, including bars and restaurants.

Summary of Findings (see Table 1):

Our 6 indicators of impact of the Ireland smoking ban focused on 3 key areas: 1) Exposure to SHS in bars/pubs, restaurants, and workplaces; 2) Thinking about quitting due to smoking restrictions and work and in public places and 3) Home smoking bans.

Exposure to SHS: The 2004 comprehensive smoke-free law led to dramatic reductions in smokers' exposure to SHS in workplaces and hospitality venues in the 9 to 10 month period after the law was implemented.

- Noticing smoking decreased to near-zero levels among smokers who visited bars/pubs (from 98% to 5%) and restaurants (from 87% to 2%).
- Noticing smoking in workplaces decreased significantly among smokers who worked indoors (from 61% to 13%).
- **Both males and females reported significant reductions in smoking across all three venues (indoor workspaces, restaurants, and bars/pubs).**
- **Females reported slightly greater reductions in smoking in restaurants than males.**

Impact of smoke-free law on thinking about quitting:

- Workplaces: There was an increase in smokers reporting that smoking restrictions at work “very much” helped them to think about quitting (16% to 24%).
- Public places: There was no increase in thinking about quitting “very much” due to smoking restrictions in public places.
- **Males were more likely to report that workplace smoking restrictions increased their thinking about quitting after the ban; females were also more likely to report this after the ban, but the increase was not significant.**

Home smoking bans:

- The smoke-free law did not lead to a significant increase in banning smoking in their own home (16% to 19%)**.
- **This was the case for both male and female smokers.**

** In the *Tobacco Control* article reporting the results of the evaluation of the Ireland smoke-free law (Fong et al., 2006), there was a significant increase overall in the percentage of smokers reporting having a home smoking ban, from 15% to 20%, $p < .05$. However, as noted in the introduction to this section, for the purposes of this review, a more limited set of covariates/control variables were included, and that difference explains the difference between the significant result of the *Tobacco Control* article and the non-significant result presented here. [1].

- 1 Fong GT, Hyland A, Borland R, Hammond D, Hastings G, McNeill A, et al. Reductions in tobacco smoke pollution and increases in support for smoke-free public places following the implementation of comprehensive smoke-free workplace legislation in the Republic of Ireland: findings from the ITC Ireland/UK Survey. *Tob Control*. 2006 Jun;15(S3):iii51-58.

Table 1: Key findings from the ITC Ireland 2003/04 and 2004/05 Surveys on the impact of the 2004 smoke-free law

	Home smoking bans	Noticed smoking in bars/pubs	Noticed smoking in restaurants	Noticed smoking in workplace	Smoking restrictions at work “very much” helped to think about quitting	Smoking restrictions in public places “very much” helped to think about quitting
	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)
Overall impact from pre to post policy	15.9 (12.9-19.5) to 18.7 (15.0-23.1)	98.3 (96.9-99.1) to 5.4 (3.2-9.0)***	87.4 (83.9-90.3) to 1.7 (0.9-3.3)***	60.5 (53.7-66.9) to 13.1 (9.3-18.3)***	15.7 (13.1-18.7) to 23.6 (19.2-28.6)*	28.9 (25.1-33.0) to 27.1 (22.7-31.8)
Males	18.2 (14.2-22.9) to 21.8 (16.7-27.9)	97.5 (94.9-98.8) to 6.3 (3.2-12.0)***	84.9 (80.0-88.7) to 2.1 (0.9-4.8)***	69.2 (61.3-76.1) to 18.9 (13.3-26.2)***	14.4 (11.1-18.4) to 23.6 (18.0-30.3)*	26.2 (21.6-31.4) to 25.0 (19.6-31.3)
Females	13.5 (10.2-17.6) to 15.4 (11.6-20.2)	99.2 (98.2-99.6) to 4.4 (2.4-7.7)***	90.0 (86.4-92.7) to 1.2 (0.6-2.7)***	49.4 (41.6-57.3) to 5.9 (3.0-11.3)***	17.1 (13.8-21.0) to 23.6 (18.6-29.4)	31.7 (26.8-37.0) to 29.2 (24.1-34.9)
Gender differences in policy impact	<i>ns</i>	<i>ns</i>	F>M*	<i>ns</i>	<i>ns</i>	<i>ns</i>

Notes:

Overall impact: Green = significant positive impact from pre to post-policy; Red = significant negative impact from pre to post-policy

Gender differences: Blue = pre to post-policy impact was significantly greater among males; Purple = significantly greater impact among females

ns = no significant change or no significant gender differences

p*<.05; *p*<.01; ****p*<.001

Impact of the National Smoke-free Law in the Republic of Korea

Country: Republic of Korea

Policy Change (Date): National smoke-free law (implemented January 2015)

Country (sampling)	Republic of Korea (17 geographic strata: Seoul, Sejong (2016 Survey only), Busan, Daegu, Incheon, Gwangju, Daejeon, Ulsan, Gyeonggi, Gangwon, Chungbuk (Northern Chungcheong), Chungnam (Southern Chungcheong), Jeonbuk (Northern Jeolla), Jeonnam (Southern Jeolla), Gyungbuk (Northern Gyeongsang), Gyungnam (Southern Gyeongsang), Jeju)
Pre-policy wave (year)	Oct. – Dec. 2010
Post-policy wave (year)	Jun. – Jul. 2016 *New cohort
Sample	2010 Wave: 1,560 smokers (1484 males, 76 females); 193 quitters (186 males, 7 females) 2016 Wave: 2,000 smokers (1800 males, 200 females)

Summary of Policy Change(s):

In 2011, a comprehensive smoking ban was introduced for some public places, including public transport facilities, government buildings, medical care facilities, nurseries, all schools except university campuses, large restaurants and bars, and large buildings and theaters. Smoking was banned in restaurants larger than 150 m² (effective December 8th, 2012), and in restaurants larger than 100 m² (effective January 1st, 2014). As of January 1st, 2015, smoking is prohibited in all restaurants, cafes, and bars, with no exemptions based on the size of the venue. However, owners are still permitted to install designated smoking areas that meet the Ministry of Health standards.

Summary of Findings (see Table 1):

Our 6 indicators of impact of the Republic of Korea smoke-free law focused on 3 key areas: 1) Exposure to SHS in bars/pubs, restaurants, and workplaces; 2) Thinking about quitting due to smoking restrictions and work and in public places; and 3) Home smoking bans.

Impact of smoke-free law on exposure to SHS: After the 2011 national smoke-free law was expanded to cover all public places in 2015, there were significant reductions in smokers' exposure to SHS in public venues.

- Noticing smoking decreased significantly among smokers who visited restaurants (from 67% to 11%), and bars (from 95% to 19%).
- Noticing smoking in workplaces decreased significantly among smokers who worked indoors (from 30% to 20%).
- **Both male and female smokers reported significant reductions in smoking in bars/pubs, and restaurants.**
- **There was a gender difference in the impact of the law in workplaces - male smokers reported a significant decrease in noticing smoking in workplaces; females reported an increase in smoking in workplaces, but the increase was non-significant.**

Impact of smoke-free law on thinking about quitting:

- Workplaces: There was in a significant increase in smokers' reporting that smoking restrictions at work "very much" helped them to think about quitting (7% to 10%).
- Public places: There was a significant increase in smokers' reporting that smoking restrictions in public places "very much" helped them to think about quitting (7% to 12%).
- **Female smokers reported a significantly greater increase in thinking about quitting due to workplace smoking restrictions after the law than male smokers.**

- **Both male and female smokers were more likely to report that smoking restrictions in public places increased their thinking about quitting after the smoke-free law.**

Impact of smoke-free law on home smoking bans:

- There was a significant increase in the percentage of smokers who reported having smoke-free homes (from 52% to 61%) after the smoke-free law.
- **This was the case for both male and female smokers.**

Table 1: Key findings from the ITC Republic of Korea 2010 and 2016 Surveys on the impact of the 2015 smoke-free law

	Home smoking bans	Noticed smoking in bars/pubs	Noticed smoking in restaurants	Noticed smoking in workplace	Smoking restrictions at work “very much” helped to think about quitting	Smoking restrictions in public places “very much” helped to think about quitting
	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)
Overall impact from pre to post policy	51.8 (48.3-55.3) to 60.8 (58.0-63.5) ^{***}	94.9 (93.3-96.2) to 19.1 (16.7-21.9) ^{***}	66.5 (62.8-70.1) to 11.3 (9.7-13.2) ^{***}	30.3 (26.4-34.6) to 20.1 (17.5-23.0) ^{***}	6.5 (4.9-8.5) to 9.6 (8.1-11.3) [*]	7.0 (5.4-8.9) to 12.1 (10.4-14.1) ^{***}
Males	54.3 (50.6-57.9) to 62.5 (59.6-65.3) ^{**}	94.9 (93.3-96.2) to 19.3 (16.7-22.1) ^{***}	67.6 (63.9-71.1) to 11.0 (9.3-13.0) ^{***}	31.7 (27.5-36.1) to 20.2 (17.4-23.2) ^{***}	6.9 (5.2-9.1) to 9.0 (7.6-10.8)	7.3 (5.6-9.5) to 12.0 (10.2-14.0) ^{**}
Females	26.0 (15.9-39.3) to 42.8 (35.1-50.8) [*]	95.0 (86.3-98.3) to 17.1 (11.8-24.2) ^{***}	55.6 (39.8-70.3) to 14.5 (9.7-21.2) ^{***}	10.0 (2.4-33.8) to 19.4 (12.6-28.8)	2.4 (0.5-9.6) to 14.7 (9.9-21.3) ^{***}	3.6 (1.1-11.1) to 13.4 (8.5-20.7) [*]
Gender differences in policy impact	<i>ns</i>	<i>ns</i>	<i>ns</i>	M>F [*]	F>M ^{**}	<i>ns</i>

Notes:

Overall impact: **Green** = significant positive impact from pre to post-policy; **Red** = significant negative impact from pre to post-policy

Gender differences: **Blue** = pre to post-policy impact was significantly greater among males; **Purple** = significantly greater impact among females

ns = no significant change or no significant gender differences

p*≤.05; *p*≤.01; ****p*≤.001

Impact of the National Smoke-Free Law in Brazil

Country: Brazil

Policy Change (Date): National smoke-free law (Implemented Dec. 2014)

Country (sampling)	Rio de Janeiro, São Paulo, and Porto Alegre (not nationally representative)
Pre-policy wave (dates)	Wave 2 (Oct. 2012-Feb. 2013)
Post-policy wave (dates)	Wave 3 (Sept. 2016-March 2017)
Sample	Wave 2: 1,097 smokers (377 males, 720 females); 608 non-smokers (199 males, 409 females); 125 quitters (52 males, 73 females) Wave 3: 1216 smokers (602 males, 614 females) 470 non-smokers (164 males, 306 females) 142 quitters (55 males, 87 females)

Summary of Policy Change(s):

In December 2014, a national smoking ban was implemented in all closed and partially enclosed public areas, public transportation, and workplaces, with only a few exceptions. Before the national law, some cities had already implemented local level smoke-free legislation, including the ITC cities: a partial smoke-free law was implemented in Porto Alegre in 2007 (DSRs permitted) and complete bans were implemented in Sao Paulo in Aug 2009 (2 months after Wave 1) and in Rio in Nov 2009 (5 months after Wave 1). The national law overrode these local level laws, although subnational jurisdictions may implement smoke-free laws that are more stringent than the national law (i.e. 100% smoke-free in all public places with no exceptions).

Summary of Findings (see Table 1):

Our 6 indicators of impact of the Brazil smoking ban focused on 3 key areas: 1) Exposure to SHS in bars/pubs, restaurants, and workplaces; 2) Thinking about quitting/staying quit due to smoking restrictions and work and in public places and 3) Home smoking bans.

Exposure to SHS:

- After the national smoke-free law, there was little change in exposure to SHS in restaurants and bars, as reported by smokers and non-smokers. However, noticing smoking in restaurants was already quite low before the national law in the ITC cities (i.e., less than 10%), due to the subnational city-level smoking bans that had been in place since 2007-08. [1]
- Noticing smoking in indoor workplaces decreased significantly overall (20% to 13%) among smokers who work indoors.
- **Among males, there were no significant changes in exposure to SHS in bars or workplaces, but there was a significant decrease in noticing smoking in restaurants among male non-smokers.**
- **There were no significant changes in exposure in any of the venues for female smokers and female non-smokers.**

Impact of smoke-free law on thinking about quitting:

- Workplaces and public places: There was an increase in smokers reporting that smoking restrictions at workplaces (28% to 39%) and public places (28% to 34%) “very much” helped them to think about quitting.
- **This pattern was the same for both male and female smokers, although the increase in thinking about quitting due to restrictions in public places was not significant for females.**
- However, there was no impact of the smoke-free law on quitters remaining quit.
- **The lack of impact on quitters was true for both male quitters and female quitters**

Home smoking bans:

- After the smoke free law, there was a significant increase in non-smokers banning smoking in their own home (79% to 87%) among non-smokers, but there was no change among smokers.
 - **The increase was significant among female non-smokers, but not for male non-smokers.**
1. Mendes FL, Szklo AS, Perez C de A, *et al.* Perceived enforcement of anti-smoking laws in bars and restaurants of three Brazilian cities: data from the ITC Brazil survey. *Cad Saude Publica* 2017;**33**.

Table 1: Key findings from the ITC Brazil 2012/13 and 2016/17 Surveys on the impact of the 2014 smoke-free law

	Home smoking bans		Noticed smoking in bars/pubs		Noticed smoking in restaurants	
	% Smokers (95% CI)	% Non-smokers (95% CI)	% Smokers (95% CI)	% Non-smokers (95% CI)	% Smokers (95% CI)	% Non-smokers (95% CI)
Overall impact from pre to post policy	46.3 (42.5-50.1) to 47.7 (43.9-51.5)	78.7 (74.4-82.5) to 86.8 (82.7-90.1)**	21.1 (17.1-25.8) to 18.5 (15.0-22.6)	27.1 (21.5-33.6) to 20.9 (15.9-27.0)	8.3 (4.3-15.5) to 7.1 (3.5-13.7)	7.8 (5.1-11.7) to 3.5 (1.6-7.3)
Males	47.8 (42.1-53.5) to 49.6 (44.8-54.5)	78.8 (71.6-84.6) to 85.3 (78.2-90.4)	22.6 (17.0-29.4) to 20.7 (16.2-25.9)	30.1 (21.9-39.7) to 26.5 (19.0-35.6)	8.2 (3.8-16.7) to 6.1 (2.5-14.1)	8.1 (4.5-14.4) to 1.3 (0.2-7.7)**
Females	44.5 (39.9-49.2) to 45.3 (39.7-51.1)	78.6 (73.3-83.1) to 88.0 (83.1-91.6)**	18.8 (13.9-25.0) to 15.4 (10.4-22.1)	24.1 (17.7-31.8) to 15.2 (9.5-23.5)	8.5 (4.2-16.3) to 8.2 (4.0-16.0)	7.5 (4.5-12.2) to 5.1 (2.0-12.4)
Gender differences in policy impact	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>

	Noticed smoking in workplace		Smoking restrictions at work “very much” helped to think about quitting/staying quit		Smoking restrictions in public places “very much” helped to think about quitting/staying quit	
	% Smokers (95% CI)	% Non-smokers (95% CI)	% Smokers (95% CI)	% Quitters (95% CI)	% Smokers (95% CI)	% Quitters (95% CI)
Overall impact from pre to post policy	19.6 (15.2-24.9) to 13.1 (9.8-17.2)*	14.5 (10.6-19.7) to 12.0 (7.6-18.5)	27.9 (23.2-33.1) to 39.2 (34.5-44.1)**	25.0 (13.4-41.6) to 46.1 (28.6-64.6)	27.6 (24.2-31.2) to 34.4 (30.9-38.0)**	38.0 (26.8-50.7) to 42.9 (31.9-54.7)
Males	23.6 (17.2-31.5) to 15.6 (11.4-21.0)	16.0 (10.6-23.6) to 11.8 (6.2-21.2)	27.3 (20.8-34.9) to 37.5 (32.0-43.4)*	20.8 (8.7-42.2) to 46.0 (25.9-67.5)	27.8 (22.6-33.8) to 36.6 (32.1-41.4)*	34.8 (20.7-52.3) to 34.4 (21.4-50.2)
Females	13.6 (9.2-19.5) to 9.2 (5.2-15.8)	13.0 (7.9-20.6) to 12.2 (6.4-22.1)	28.9 (23.1-35.5) to 42.0 (34.2-50.2)*	33.3 (16.4-56.0) to 46.3 (23.3-71.0)	27.3 (23.5-31.5) to 31.8 (26.9-37.1)	42.8 (27.8-59.3) to 55.8 (40.9-69.7)
Gender differences in policy impact	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>

Notes:

Overall impact: Green = significant positive impact from pre to post-policy; Red = significant negative impact from pre to post-policy

Gender differences: Blue = pre to post-policy impact was significantly greater among males (M); Purple = significantly greater impact among females (F)

ns = no significant change or no significant gender differences

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$.

Impact of the National Smoke-free Law in France

Country: France

Policy Change (Date): National smoke-free law (fully implemented in Jan. 2008)

Country (sampling)	Continental France, excluding the four overseas departments of Guadeloupe, Martinique, French Guiana, and Réunion.
Pre-policy wave (dates)	Wave 1 (Dec. 2006 – Feb. 2007)
Post-policy wave (dates)	Wave 2 (Sept. – Nov. 2008)
Sample	Wave 1: 1735 smokers (898 females, 837 males) 515 non-smokers (334 females, 181 males) Wave 2: 1540 smokers (837 females, 703 males) 515 non-smokers (338 females, 177 males) 164 quitters (73 females, 91 males)

Summary of Policy Change(s):

The comprehensive smoke-free law in France was implemented in two phases. Smoking was banned in workplaces, shopping centres, airports, train stations, hospitals and schools on February 1st, 2007. On January 1st, 2008, the ban was extended to hospitality venues (restaurants, cafés, bars, hotels, casinos, and nightclubs). Although the law permits smoking in separately ventilated smoking rooms, except on health premises and premises for use by minors, the ban is considered to be comprehensive because these designated smoking rooms are subject to extensive and costly technical requirements and are rare in France.

Summary of Findings (see Table 1):

Our 6 indicators of impact of the France smoking ban focused on 3 key areas: 1) Exposure to SHS in bars/pubs, restaurants, and workplaces; 2) Thinking about quitting due to smoking restrictions and work and in public places and 3) Home smoking bans.

Impact of smoke-free law on reported smoking (and thus exposure) to SHS:

The 2008 national smoke-free law in France led to dramatic reductions in smokers' and non-smokers' exposure to SHS in public venues:

- Noticing smoking decreased significantly from over 90% of smokers and non-smokers who visited bars/pubs to less than 5%
- Similarly, noticing smoking in restaurants was nearly eliminated, with significant decreases in noticing smoking among both smokers (from 71% to 2%) and non-smokers (48% to 4%).
- Noticing smoking in workplaces decreased significantly among smokers (49% to 21%) and non-smokers (37% to 21%) who worked indoors.
- **These reductions in noticing smoking in bars, restaurants, and workplaces were significant among both male and female smokers and non-smokers.**

Impact of smoke-free law on thinking about quitting:

- There was no change in the percentage of smokers who reported that smoking restrictions at work “very much” helped them to think about quitting (9% to 10%). Similarly, there was no change in the percentage of smokers who reported that smoking restrictions in public places “very much” helped them to think about quitting (10% to 13%).
- **This was the case for both male and female smokers.**

Home smoking bans:

- After the smoke-free law, there was a significant increase in the percentage of smokers (from 23% to 30%) and non-smokers (39% to 52%) who reported banning smoking in their own homes.
- **Male smokers and non-smokers showed a significant increase in home smoking bans. Female smokers also showed a significant increase, but the increase was not significant among female non-smokers.**

Table 1: Key findings from the ITC France 2006/07 and 2008 Surveys on the impact of the 2008 smoke-free law

	Home smoking bans		Noticed smoking in bars/pubs		Noticed smoking in restaurants	
	% Smokers (95% CI)	% Non-smokers (95% CI)	% Smokers (95% CI)	% Non-smokers (95% CI)	% Smokers (95% CI)	% Non-smokers (95% CI)
Overall impact from pre to post policy	22.5 (19.9-25.3) to 29.6 (26.3-33.1)**	39.3 (32.1-47.1) to 52.2 (44.8-59.5)*	97.0 (95.6-98.0) to 3.8 (2.5-5.9)***	94.3 (90.4-96.7) to 3.7 (2.0-6.8)***	71.2 (63.4-78.0) to 2.0 (1.1-3.7)***	47.7 (35.7-60.0) to 3.6 (1.7-7.5)***
Males	24.1 (20.8-27.8) to 32.6 (28.3-37.2)**	37.7 (28.7-47.7) to 52.7 (43.5-61.8)*	97.5 (95.7-98.5) to 4.2 (2.4-7.2)***	96.2 (90.9-98.5) to 2.4 (0.8-7.3)***	72.0 (63.9-78.9) to 2.8 (1.4-5.5)***	48.2 (34.6-62.0) to 1.0 (0.1-8.7)***
Females	20.5 (17.4-23.9) to 25.9 (22.2-30.0)*	40.6 (32.7-48.9) to 51.8 (43.3-60.2)	96.4 (94.4-97.7) to 3.3 (2.0-5.4)***	92.4 (86.9-95.7) to 5.0 (2.5-9.7)***	70.3 (61.7-77.6) to 1.1 (0.5-2.2)***	47.4 (35.0-60.1) to 5.8 (3.0-11.1)***
Gender differences in policy impact	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>

	Noticed smoking in workplace		Smoking restrictions at work “very much” helped to think about quitting	Smoking restrictions in public places “very much” helped to think about quitting
	% Smokers (95% CI)	% Non-smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)
Overall impact from pre to post policy	48.9 (44.4-53.4) to 21.3 (17.9-25.1)***	37.2 (27.9-47.4) to 20.8 (14.2-29.3)*	8.9 (7.2-10.8) to 10.4 (7.9-13.7)	10.2 (8.5-12.2) to 12.6 (10.1-15.5)
Males	54.3 (48.8-59.6) to 26.3 (21.5-31.6)***	42.7 (30.3-56.1) to 24.4 (15.7-36.1)*	9.0 (6.9-11.6) to 9.3 (6.3-13.4)	9.6 (7.6-12.2) to 12.6 (9.6-16.3)
Females	42.1 (36.8-47.5) to 15.0 (11.7-19.0)***	31.8 (22.8-42.3) to 17.2 (10.5-26.8)*	8.7 (6.7-11.2) to 12.0 (8.7-16.2)	10.9 (8.8-13.5) to 12.6 (9.6-16.3)
Gender differences in policy impact	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>

Notes:

Overall impact: **Green** = significant positive impact from pre to post-policy; **Red** = significant negative impact from pre to post-policy

Gender differences: **Blue** = pre to post-policy impact was significantly greater among males (M); **Purple** = significantly greater impact among females (F)

ns = no significant change or no significant gender differences

p*≤.05; *p*≤.01; ****p*≤.001

ITC Health Warnings/Plain (Standardized) Packaging Policy Impact Analyses

Impact of Pictorial Health Warnings in New Zealand

Country: New Zealand

Policy Change (Date): Change from text-only warnings on 29% of front and back of packs to pictorial warnings on 30% of front and 90% of back of packs (Feb. 2008)

Country (sampling)	Stratified sample across the country, with oversampling of Māori, Pacific, and Asian members of the population
Pre-policy wave (dates)	Wave 1 (Mar. 2007 – Feb. 2008)
Post-policy wave (dates)	Wave 2 (Apr. 2008 – Jan. 2009)
Sample	Wave 1: 1236 smokers (467 males, 769 females) Wave 2: 761 smokers (285 males, 476 females)

Summary of Policy Change(s):

Pictorial warnings were introduced in New Zealand in February 2008, with a six-month phase in period for compliance (until August 2008). The pictorial warnings replaced 5 rotating text health warnings (in English and Māori), required on 29% of the front and back of the pack since 2000. Pictorial warnings were required to cover 30% of the front and 90% of the back of tobacco packages, and included two sets of 7 warnings each, to be rotated every 12 months. The text for the warnings was in English and Māori, and images were sourced from pictorial warnings previously implemented in other countries, such as Australia and Canada.

While the warnings aligned with most of the recommendations of FCTC Article 11, the Guidelines state that warnings should cover at least 50% of **both** the front and back of packs to be most effective.

Summary of Findings (See Table 1):

Our 6 indicators of impact of the New Zealand pictorial health warnings focused on 4 key areas: 1) Warning salience: noticing and reading the warnings; 2) Behavioural reactions: gave up a cigarette and avoided the warnings; 3) Thinking about the health risks because of the warnings; and 4) Likelihood of quitting because of the warnings.

After the pictorial warnings were introduced, there was an increase in nearly all of the key measures of health warning impact, demonstrating the effectiveness of implementing large, graphic health warnings on both sides of all tobacco packages.

Warning salience:

- Overall, the percentage of smokers who reported noticing health warnings “often” or “very often” and the percentage who said they read warnings closely “often/very often” in the last month significantly increased (from 53% to 71% for noticing, and from 30% to 40% for reading closely).
- **Both male and female smokers reported significant increases in both of these measures of salience.**

Behavioural reactions to the warnings:

- After pictorial warnings were introduced, the percentage of smokers who avoided the warnings significantly increased (from 15% to 40%).
- However, the percentage of smokers who reported giving up a cigarette because of the warnings did not significantly change (13% to 16%).
- **This was the case for both male and female smokers on each of these measures.**
- **The increase in avoidance was greater for female smokers compared to males.**

Thinking about the health risks because of the warnings:

- After pictorial warnings were introduced, thinking about the health risks of smoking “somewhat/a lot” increased significantly (from 34% to 46%).
- **This was the case for both male and female smokers.**

Likelihood of quitting because of the warnings:

- There was a significant increase in the percentage of smokers who said that health warnings made them “somewhat/a lot” more likely to quit (from 21% to 28%).
- **Female smokers showed a significant increase.**
- **Male smokers showed an increase, but it was not significant.**

Table 1: Key findings from the ITC New Zealand 2007/08 and 2008/09 Surveys on the impact of the 2008 health warnings

	Noticed warnings “often/very often”	Read warnings closely “often/very often”	Gave up a cigarette because of warnings	Avoided warnings	Warnings made you think about health risks “somewhat/a lot”	Warnings made you “somewhat/ a lot” more likely to quit
	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)
Overall impact from pre to post policy	53.4 (49.7-57.1) to 71.0 (66.4-75.2)***	29.6 (26.2-33.3) to 39.9 (35.5-44.4)***	12.5 (10.5-14.9) to 15.6 (12.7-19.0)	15.3 (12.8-18.2) to 39.7 (35.2-44.4)***	33.6 (30.2-37.2) to 45.8 (41.3-50.4)***	20.6 (17.7-23.8) to 27.5 (23.7-31.7)**
Males	49.0 (43.2-54.9) to 67.7 (60.6-74.0)***	26.7 (21.7-32.4) to 35.2 (28.7-42.2)*	11.0 (8.2-14.6) to 15.7 (11.2-21.5)	14.0 (10.2-18.8) to 33.2 (26.9-40.3)***	29.8 (24.9-35.2) to 41.7 (34.8-49.0)**	18.4 (14.4-23.1) to 24.6 (19.2-31.1)
Females	57.8 (53.1-62.5) to 74.3 (68.7-79.1)***	32.5 (28.1-37.1) to 44.5 (38.8-50.4)***	14.1 (11.4-17.3) to 15.4 (12.0-19.5)	16.6 (13.5-20.3) to 46.2 (40.4-52.1)***	37.4 (32.9-42.1) to 49.8 (44.0-55.7)***	22.8 (19.0-27.2) to 30.4 (25.4-35.8)**
Gender differences in policy impact	<i>ns</i>	<i>ns</i>	<i>ns</i>	F>M*	<i>ns</i>	<i>ns</i>

Notes:

Overall impact: **Green** = significant positive impact from pre to post-policy; **Red** = significant negative impact from pre to post-policy

Gender differences: **Blue** = pre to post-policy impact was significantly greater among males; **Purple** = significantly greater impact among females

ns = no significant change or no significant gender differences

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Impact of Pictorial Health Warnings in the United Kingdom

Country: United Kingdom

Policy Change (Date): Change from text to pictorial warnings on 40% of back of packs, with no change to text warning on 30% of front of packs (Effective October 2009 for cigarettes; Sept 2010 for other tobacco products)

Country (sampling)	Representative sample from each region of the country
Pre-policy wave (dates)	Wave 7 (Oct. 2008 – July 2009)
Post-policy wave (dates)	Wave 8 (July 2010 – June 2011)
Sample	Wave 7: 1487 smokers (660 males, 827 females) 336 quitters (152 males, 184 females) Wave 8: 977 smokers (433 males, 544 females) 348 quitters (166 males, 182 females)

Summary of Policy Change(s):

In 2003, the United Kingdom introduced text warnings on 30% of the front and 40% of the back of tobacco packages, replacing previous small text warnings that covered only 6% of the front and back of the pack. On October 1, 2008, new legislation was implemented that required the text warnings on 40% of the backs of packs to be replaced with one of 14 pictorial warnings, with no change to the text warnings on 30% of the front of packs. The warnings were surrounded by a black border, which brought the total area occupied by health warnings to 43% of the front of packs and 53% of the back. There was a one-year compliance period for manufacturers, meaning that all cigarette packs had to carry the pictorial warnings starting October 1, 2009. For other tobacco products, the compliance deadline was September 30, 2010.

The new health warnings did not meet the recommendations of FCTC Article 11 Guidelines, which call for pictorial warnings to appear on at least 50% of **both** the front and back of packs. Evidence from the ITC Project shows that warnings that appear only on the backs of packs are less effective. [1,2]

Our 8 indicators of impact of the UK pictorial health warnings focused on 4 key areas: 1) Warning salience: noticing and reading the warnings; 2) Behavioural reactions: gave up a cigarette and avoided the warnings; 3) Thinking about the health risks because of the warnings; and 4) Quit intentions and likelihood of quitting because of the warnings.

Summary of Findings (see Table 1):

After the change from 40% text to 40% pictorial warnings on the backs of packs, there was no overall change on most of the key measures of warning impact, demonstrating the weak impact of adding pictorial warnings to only the back of tobacco packs.

Warning salience:

- After the new health warnings were introduced, the percentage of smokers who reported noticing warnings or reading warnings closely “often” or “very often” in the last month remained the same (from 56% to 58% for noticing, and from 29% to 28% for reading closely).
- **This was the case for both male and female smokers.**

Behavioural reactions to the warnings:

- There was no significant change in the percentage of smokers who gave up a cigarette at least once because of the warnings (from 10% to 13%).
- However, there was a significant increase in avoiding the warnings – the only measure that showed an impact (from 15% to 21%).
- **Female smokers showed a significant increase in avoidance but no change in giving up a cigarette.**
- **Male smokers did not significantly change on either measure of behaviour.**

Thinking about the health risks because of the warnings:

- There was no change in thinking about the health risks “somewhat/a lot” (30% to 32%).
- **This was the case for both male and female smokers.**

Quit intentions and likelihood of quitting because of the warnings:

- After the pictorial warnings, there was no change in the overall percentage of smokers who said that warnings made them “somewhat/a lot” more likely to quit (18% to 19%), or in the percentage of smokers who said that health warnings were a reason for thinking about quitting in the last 6 months (from 9% to 11%).
- There was also no change in the percentage of quitters who said warnings were a reason for their recent quit attempt or for staying quit (12% to 14%).
- **This was the case for both male and female quitters. However, male smokers did show a significant increase in thinking about quitting.**
- **The difference between male and female smokers in the pre- to post-policy change was significant for likelihood of quitting (females increased and males decreased, but not significantly).**

1. ITC Project. FCTC Article 11: Tobacco Warning Labels. Evidence and Recommendations from the ITC Project. Waterloo, Ontario, Canada: 2009.
2. ITC Project. Pictorial health warnings in India: Why larger warnings should be implemented without delay. ITC Fact Sheet #1. Waterloo, Ontario, Canada: 2015.

Table 1: Key findings from the ITC United Kingdom 2008/09 and 2010/11 Surveys on the impact of the 2009 health warnings

	Noticed warnings “often/very often”	Read warnings closely “often/very often”	Gave up a cigarette because of warnings	Avoided warnings
	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)
Overall impact from pre to post policy	56.4 (52.8-59.9) to 58.0 (53.8-62.1)	28.9 (25.9-32.0) to 27.8 (24.1-31.9)	10.1 (8.3-12.2) to 13.3 (10.5-16.7)	15.1 (12.7-17.8) to 21.0 (17.7-24.6)**
Males	55.1 (50.0-60.2) to 57.6 (51.7-63.3)	24.6 (20.7-29.0) to 25.6 (20.5-31.3)	8.3 (6.3-10.9) to 9.8 (6.8-14.0)	11.1 (8.3-14.6) to 14.8 (10.9-19.7)
Females	57.6 (53.1-62.0) to 58.4 (52.9-63.7)	33.2 (29.3-37.4) to 30.2 (25.2-35.7)	11.9 (9.2-15.3) to 16.9 (12.8-22.1)	19.3 (15.8-23.3) to 27.4 (22.7-32.7)**
Gender differences in policy impact	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>

	Warnings made you think about health risks “somewhat/a lot”	Warnings made you “somewhat/a lot” more likely to quit	Warnings led you to think about quitting “very much”	Warnings “very much” led you to make a quit attempt/stay quit
	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Quitters (95% CI)
Overall impact from pre to post policy	30.2 (27.2-33.4) to 31.6 (27.8-35.7)	18.4 (16.0-21.2) to 18.8 (15.5-22.5)	8.8 (7.1-10.9) to 10.8 (8.3-14.0)	11.6 (8.2-16.2) to 14.3 (10.7-18.8)
Males	26.4 (22.4-31.0) to 29.0 (23.9-34.7)	19.2 (15.6-23.4) to 15.6 (11.7-20.4)	7.4 (5.2-10.4) to 11.2 (7.8-15.7)*	11.1 (6.6-18.2) to 14.3 (9.5-20.9)
Females	34.1 (29.9-38.5) to 34.3 (29.2-39.7)	17.6 (14.6-21.1) to 22.1 (17.6-27.4)	10.3 (7.8-13.4) to 10.4 (7.0-15.1)	12.2 (7.7-18.7) to 14.4 (9.7-20.8)
Gender differences in policy impact	<i>ns</i>	F>M*	<i>ns</i>	<i>ns</i>

Notes:

Overall impact: **Green** = significant positive impact from pre to post-policy; **Red** = significant negative impact from pre to post-policy

Gender differences: **Blue** = pre to post-policy impact was significantly greater among males; **Purple** = significantly greater impact among females

ns = no significant change or no significant gender differences

p*≤.05; *p*≤.01; ****p*≤.001

Impact of Pictorial Health Warnings in France

Country: France

Policy Change (Date): Change from text to pictorial warnings on 40% of back of packs, with no change to text warning on 30% of front of packs (Implemented Apr. 2011)

Country (sampling)	Continental France, excluding the four overseas departments of Guadeloupe, Martinique, French Guiana, and Réunion
Pre-policy wave (dates)	Wave 2 (Sept. – Nov. 2008)
Post-policy wave (dates)	Wave 3 (Sept. – Dec. 2012)
Sample	Wave 2: 1540 smokers (703 males, 837 females) Wave 3: 1420 smokers (635 males, 785 females)

Summary of Policy Change(s):

Since January 2003, text health warnings were required on 30% of the front and 40% of the back of cigarette packs in France. In April 2010, a new law was introduced that required the text warnings on 40% of the backs of packs to be replaced with pictorial warnings, with no change to the text warnings on 30% of the front of packs. There was a one-year phase-in period for the pictorial warnings on cigarette packs (and two years for roll-your-own tobacco packages), so the law was effective starting in April 2011.

The new health warnings did not meet the recommendations of FCTC Article 11 Guidelines, which call for pictorial warnings to appear on at least 50% of **both** the front and back of packs. Evidence from the ITC Project shows that warnings that appear only on the backs of packs are less effective. [1,2]

Summary of Findings (see Table 1):

Our 7 indicators of impact of the France pictorial health warnings focused on 4 key areas: 1) Warning salience: noticing and reading the warnings; 2) Behavioural reactions: gave up a cigarette and avoided the warnings; 3) Thinking about the health risks because of the warnings; and 4) Quit intentions and likelihood of quitting because of the warnings.

After the change from 40% text to 40% pictorial warnings on the backs of packs, there was a negative change on several of the key measures of warning impact, demonstrating the weak impact of adding pictorial warnings to only the back of tobacco packs.

Warning salience:

- After pictorial warnings were introduced, there was a significant decrease among smokers in noticing the warnings “often/very often” (from 56% to 47%) and reading warnings closely “often/very often” in the last month (24% to 19%).
- **Both male and female smokers reported significant decreases in both of these measures of salience.**

Behavioural reactions to the warnings:

- After the new warnings, reported giving up a cigarette because of the warnings (24% to 19%) decreased significantly.
- However, there was a significant positive effect on avoidance – smokers were more likely to report avoiding the warnings (12% to 19%).
- **Both male and female smokers showed a decrease in giving up a cigarette, but it was only significant for females.**
- **Both male and female smokers showed a significant increase in avoidance.**

Thinking about the health risks because of the warnings:

- After the pictorial warnings, there was a significant decrease in the percentage of smokers who said that warnings made them think about the health risks of smoking “somewhat/a lot” (from 77% to 70%).
- **This was the case for both male and female smokers.**

Quit intentions and likelihood of quitting because of the warnings:

- After the pictorial warnings, there was no change in the percentage of smokers who said warnings made them “somewhat/a lot” more likely to quit (23% to 21%), or in the percentage of smokers who said that health warnings were “very much” a reason that led them to think about quitting in the last 6 months (5% to 7%).
- **This was the case for both male and female smokers.**

1. ITC Project. FCTC Article 11: Tobacco Warning Labels. Evidence and Recommendations from the ITC Project. Waterloo, Ontario, Canada: 2009.
2. ITC Project. Pictorial health warnings in India: Why larger warnings should be implemented without delay. ITC Fact Sheet #1. Waterloo, Ontario, Canada: 2015.

Table 1: Key findings from the ITC France 2008 and 2012 Surveys on the impact of the 2011 health warnings

	Noticed warnings “often/very often”	Read warnings closely “often/very often”	Gave up a cigarette because of warnings	Avoided warnings
	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)
Overall impact from pre to post policy	55.8 (52.6-58.9) to 46.8 (43.4-50.2)***	23.8 (21.3-26.6) to 18.7 (16.3-21.4)**	23.7 (21.1-26.6) to 19.4 (17.0-22.1)*	12.4 (10.5-14.5) to 18.5 (16.2-21.1)***
Males	54.7 (50.4-59.0) to 45.8 (41.3-50.4)**	23.3 (20.0-27.0) to 18.3 (15.1-22.1)*	24.3 (20.8-28.3) to 21.2 (17.9-24.8)	10.0 (7.7-12.8) to 15.5 (12.6-18.8)**
Females	57.0 (52.9-61.0) to 47.9 (43.6-52.3)**	24.4 (21.1-28.2) to 19.1 (16.0-22.7)*	23.0 (19.6-26.8) to 17.2 (14.2-20.7)*	15.3 (12.6-18.5) to 22.2 (18.9-26.0)**
Gender differences in policy impact	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>

	Warnings made you think about health risks “somewhat/a lot”	Warnings made you “somewhat/a lot” more likely to quit	Warnings led you to think about quitting “very much”
	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)
Overall impact from pre to post policy	76.8 (74.1-79.3) to 70.4 (67.1-73.5)**	23.3 (20.6-26.3) to 20.6 (18.0-23.6)	5.0 (3.7-6.7) to 7.3 (5.5-9.4)
Males	78.0 (74.3-81.4) to 70.9 (66.4-74.9)**	25.6 (22.0-29.7) to 24.2 (20.4-28.5)	4.9 (3.2-7.3) to 6.3 (4.3-9.2)
Females	75.2 (71.6-78.6) to 69.9 (65.6-73.8)*	20.5 (17.3-24.1) to 16.4 (13.6-19.6)	5.2 (3.5-7.5) to 8.4 (6.1-11.4)
Gender differences in policy impact	<i>ns</i>	<i>ns</i>	<i>ns</i>

Notes:

Overall impact: **Green** = significant positive impact from pre to post-policy; **Red** = significant negative impact from pre to post-policy

Gender differences: **Blue** = pre to post-policy impact was significantly greater among males; **Purple** = significantly greater impact among females

ns = no significant change or no significant gender differences

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Impact of Pictorial Health Warnings in Mexico

Country: Mexico

Policy Change (Date): Change from text-only warnings on 50% of the back of packs to pictorial warnings on 30% of the front and text warnings on 100% of the back and side of packs (Sept. 2010)

Survey locations	Seven cities in Mexico (Mexico City, Tijuana, Guadalajara, Leon, Monterrey, Puebla, and Mérida)
Pre-policy wave (years)	Wave 4 (Jan. – Feb. 2010)
Post-policy wave (years)	Wave 5 (Apr. – May 2011)
Sample	Wave 4: 1853 smokers (1174 males, 679 females) 275 quitters (156 males, 119 females) Wave 5: 1764 smokers (1120 males, 644 females) 368 quitters (219 males, 149 females)

Summary of Policy Change(s):

Since 2004, health warnings in Mexico were text-only and appeared on 50% of the back of packs. Starting in September 2010, new legislation increased the size of the text-only warnings on the back of packs to 100% of the pack surface, and introduced pictorial warnings on 30% of the front of packs. The law also introduced a new requirement for text warnings on 100% of one side of packs. The legislation specified four sets of two pictorial warnings each, to be rotated every three months during the year.

While the new warnings met the minimum requirements of FCTC Article 11, the Guidelines state that pictorial warnings should cover at least 50% of **both** the front and back of packs to be most effective.

Summary of Findings (See Table 1):

Our 8 indicators of impact of the Mexico pictorial health warnings focused on 4 key areas: 1) Warning salience: noticing and reading the warnings; 2) Behavioural reactions: gave up a cigarette and avoided the warnings; 3) Thinking about the health risks because of the warnings; and 4) Quit intentions and likelihood of quitting because of the warnings.

The findings showed mixed evidence on the impact of the 2010 policy change from text-only to pictorial and text warnings. Overall, there was little increase in most of the measures of health warning impact, but there was a significant positive impact on some behaviours such as avoidance and motivation to quit.

Warning salience:

- After the introduction of pictorial warnings on 30% of the front of packs and the increase in size of the text warnings from 50% to 100% of the back of packs, there was no overall change in noticing warnings or reading the warnings closely “often/very often” in the last month among smokers (from 44% to 46% for noticing; and from 30% to 33% for reading).
- **There was no change among male smokers for either measure of salience.**
- **There was a significant increase in reading warnings among female smokers.**

Behavioural reactions to the warnings:

- After the pictorial warnings were introduced, there was no change in the percentage of smokers who said they gave up a cigarette because of the warnings (from 29% to 34%).
- However, there was a significant increase in avoiding the warnings (from 13% to 19%).
- **Among male smokers, there was a significant increase in avoidance but no change in giving up a cigarette.**
- **Among female smokers, there was no change in avoidance but there was a significant increase in giving up a cigarette.**
- **There was a significant gender difference in giving up a cigarette before and after the new warnings.**

Thinking about the health risks because of the warnings:

- After the new warnings, there was no change in thinking about the health risks of smoking “somewhat/a lot” because of warnings (28% to 33%)
- **Male smokers showed no change in thinking about health risks.**
- **Female smokers showed a significant increase.**

Quit intentions and likelihood of quitting because of the warnings:

- After the new warnings, there was no change in thinking about quitting “somewhat/a lot” because of warnings (22% to 25%).
- However, the new warnings also appeared to increase likelihood of quitting – there was a significant increase in the percentage of smokers who said health warnings were a reason for thinking about quitting in the last 6 months (from 13% to 23%) and in the percentage of quitters who said that warnings were a reason that led them to quit (from 9% to 25%).
- **Male smokers and quitters showed a significant increase in likelihood of quitting due to warnings.**
- **Female smokers and quitters showed a significant increase on all three measures of quit-related behaviour.**

Table 1: Key findings from the ITC Mexico 2010 and 2011 Surveys on the impact of the 2010 health warnings

	Noticed warnings “often/very often”	Read warnings closely “often/very often”	Gave up a cigarette because of warnings	Avoided warnings
	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)
Overall impact from pre to post policy	44.2 (40.7-47.9) to 46.1 (42.0-50.2)	30.1 (27.0-33.4) to 32.6 (29.5-35.8)	29.1 (26.0-32.4) to 33.6 (30.1-37.3)	13.2 (11.1-15.8) to 18.5 (15.4-22.1)*
Males	44.4 (39.8-49.0) to 44.1 (39.5-48.8)	28.9 (25.3-32.9) to 29.4 (26.0-33.1)	30.4 (27.0-34.0) to 31.9 (28.3-35.9)	11.6 (9.4-14.4) to 16.8 (13.4-20.7)*
Females	44.0 (39.3-48.8) to 49.5 (44.1-54.9)	32.0 (27.7-36.6) to 37.9 (33.2-42.9)*	26.9 (22.7-31.6) to 36.4 (31.1-42.2)**	16.0 (12.6-20.1) to 21.6 (16.7-27.4)
Gender differences in policy impact	<i>ns</i>	<i>ns</i>	F>M*	<i>ns</i>

	Warnings made you think about health risks “somewhat/a lot”	Warnings made you think about quitting “somewhat/a lot”	Warnings led you to think about quitting “very much”	Warnings “very much” led you to quit
	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Quitters (95% CI)
Overall impact from pre to post policy	28.4 (25.0-32.2) to 33.3 (29.8-37.0)	21.5 (18.5-24.9) to 25.1 (22.2-28.1)	13.2 (11.1-15.7) to 22.5 (19.1-26.2)***	8.8 (5.7-13.3) to 25.1 (19.3-32.0)***
Males	27.7 (23.7-32.0) to 30.4 (26.6-34.5)	21.2 (17.8-25.0) to 22.4 (19.3-25.7)	13.3 (10.9-16.2) to 20.8 (17.6-24.4)***	8.3 (4.9-13.7) to 26.5 (19.2-35.3)***
Females	29.8 (25.4-34.6) to 38.3 (33.1-43.8)*	22.1 (18.1-26.7) to 29.7 (25.1-34.8)*	13.0 (10.1-16.6) to 25.3 (20.3-31.2)***	9.6 (4.8-18.5) to 23.0 (15.0-33.6)*
Gender differences in policy impact	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>

Notes:

Overall impact: **Green** = significant positive impact from pre to post-policy; **Red** = significant negative impact from pre to post-policy

Gender differences: **Blue** = pre to post-policy impact was significantly greater among males; **Purple** = significantly greater impact among females

ns = no significant change or no significant gender differences

p*≤.05; *p*≤.01; ****p*≤.001

Impact of Pictorial Health Warnings in Mauritius

Country: Mauritius

Policy Change (Date): Change from text-only to pictorial health warnings covering 60% of both the front and 70% back of cigarette packs (implemented June 2009, in circulation October 2009)

Country (sampling)	Mauritius (nine districts: Black River, Flacq, Grand Port, Moka, Pamplemousses, Plaines Wilhems, Port Louis, Rivière du Rempart, Savanne)
Pre-policy wave (dates)	Wave 1 (Apr. – May 2009)
Post-policy wave (dates)	Wave 2 (Aug. – Nov 2010)
Sample	Wave 1: 598 smokers (562 males, 36 females) Wave 2: 553 smokers (524 males, 29 females)

Summary of Policy Change(s):

Between 1999 and 2009, a single text-only warning that read “GOVERNMENT WARNING: Smoking causes cancer, heart disease and bronchitis” was required on the side of cigarette packages in Mauritius. In 2009, Mauritius became the first country in the WHO African region to implement pictorial health warnings. A set of eight rotating images were required to cover 60% of the front (in French) and 70% of the back (in English) of cigarette packages. The size of these pictorial health warnings exceed the minimum FCTC Article 11 guidelines which recommend that warnings cover at least 50% of both the front and back of packs. Text warnings were also required on 65% of the side of cigarette packs in both French and English. The new pictorial health warnings were implemented on June 1st, 2009, and were in public circulation as of October 17th, 2009.

Summary of Findings (see Table 1):

Our 7 indicators of impact of the Mauritius pictorial health warnings focused on 4 key areas: 1) Warning salience: noticing and reading the warnings; 2) Behavioural reactions: gave up a cigarette and avoided the warnings; 3) Thinking about the health risks because of the warnings; and 4) Quit intentions: thinking about quitting and likelihood of quitting.

Warning salience:

- After pictorial warnings were introduced, there was a significant increase among smokers in noticing the warnings “often/very often” (58% to 84%), and reading/looking closely “often/very often” (30% to 53%).
- **Both male and female smokers reported significant increases in both of these indicators of salience.**

Behavioural reactions to the warnings:

- After pictorial warnings were introduced, avoiding the warnings (from 11% to 34%), and reported giving up a cigarette because of the warnings (21% to 29%) increased significantly.
- **Both male and female smokers reported significant increases on both of these behavioural reactions to the warnings.**

Thinking about the health risks because of the warnings:

- After pictorial warnings were introduced, thinking about the health risks of smoking “somewhat/ a lot” increased significantly (24% to 41%).
- **Male smokers showed a significant increase.**
- **Female smokers showed an increase, but it was not significant.**

Quit intentions and likelihood of quitting because of the warnings:

- After pictorial warnings were introduced, thinking about quitting because of the warnings (32% to 54%) and likelihood of quitting because of the warnings (14% to 26%) increased significantly.
- **Male smokers showed a significant increase on both of these measures.**
- **Female smokers showed a significant increase in thinking about quitting because of the warnings, but a non-significant increase in the likelihood of quitting because of the warnings.**

Table 1: Key findings from the ITC Mauritius 2009 and 2010 Surveys on the impact of the 2009 pictorial health warnings^{vi}

	Noticed warnings “often/very often”	Read/looked closely at warnings “often/very often”	Gave up a cigarette because of warnings	Avoided warnings	Warnings made you think about health risks “somewhat/a lot”	Warnings made you “somewhat/a lot” more likely to quit	Warnings led you to think about quitting “very much”
	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)
Overall impact from pre to post policy	57.7 (49.8-65.3) to 83.7 (76.6-89.0) ^{***}	29.7 (23.0-37.3) to 52.5 (45.1-59.7) ^{***}	21.2 (16.5-26.8) to 29.3 (24.3-34.8) [*]	10.5 (7.8-13.8) to 34.3 (28.6-40.5) ^{***}	23.6 (18.9-29.1) to 41.4 (36.1-47.0) ^{***}	13.6 (9.8-18.5) to 26.3 (21.1-32.1) ^{***}	31.8 (25.8-38.4) to 53.7 (47.7-59.6) ^{***}
Males	57.8 (49.8-65.4) to 84.5 (77.6-89.6) ^{***}	29.6 (22.8-37.4) to 51.8 (43.9-59.5) ^{***}	22.9 (17.9-28.8) to 30.3 (25.4-35.7) [*]	11.3 (8.6-14.7) to 34.8 (29.1-41.1) ^{***}	24.1 (19.1-30.0) to 42.3 (36.8-48.0) ^{***}	14.4 (10.5-19.6) to 27.5 (22.3-33.4) ^{***}	32.3 (26.3-39.1) to 54.3 (47.8-60.7) ^{***}
Females	56.8 (42.4-70.0) to 73.7 (57.9-85.1) [*]	30.5 (15.1-52.1) to 61.1 (45.7-74.5) [*]	0 (0.0-0.0) to 17.1 (6.7-37.3) [*]	1.6 (0.2-10.4) to 27.9 (14.3-47.3) ^{**}	17.5 (7.1-36.9) to 30.6 (15.5-51.5)	2.8 (0.5-13.3) to 10.6 (3.6-27.5)	24.5 (10.4-47.7) to 46.3 (33.7-59.4) [*]
Gender differences in policy impact	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>

Notes:

Overall impact: **Green** = significant positive impact from pre to post-policy; **Red** = significant negative impact from pre to post-policy

Gender differences: **Blue** = pre to post-policy impact was significantly greater among males; **Purple** = significantly greater impact among females

ns = no significant change or no significant gender differences

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

^{vi} Pictorial health warnings were implemented on June 1st, 2009, and were in public circulation as of October 17th, 2009.

Impact of Pictorial Health Warnings in Thailand

Country: Thailand

Policy Change (Date): Change from text-only to pictorial health warnings covering 50% of both the front and back of cigarette packs (implemented March 2005)

Country (sampling)	Bangkok and two provinces in each of Thailand's four regions (Chiang Mai, Phrae, Nakhon Ratchasima, Nong Khai, Nakhon Pathom, Samut Sakhon, Nakhon Si Thammarat, and Songkhla)
Pre-policy wave (dates)	Wave 1 (Jan. – Mar. 2005)
Post-policy wave (dates)	Wave 2 (Aug. – Sept. 2006)
Sample	Wave 1: 2000 smokers (1842 males, 158 females); Wave 2: 1866 smokers (1710 males, 156 females)

Summary of Policy Change(s):

Since 1997, a single text-only warning was required on 33% of the front and back of cigarette packages in Thailand. On March 25th, 2005, Thailand implemented legislation that required a set of six rotating pictorial warnings to be displayed on 50% of the front and back of cigarette packages. The 2005 pictorial health warnings meet FTC Article 11 guidelines that call for pictorial warnings covering at least 50% of both the front and back of packs.

Summary of Findings (see Table 1):

Our 7 indicators of impact of the Thailand pictorial health warnings focused on 4 key areas: 1) Warning salience: noticing and reading the warnings; 2) Behavioural reactions: gave up a cigarette and avoided the warnings; 3) Thinking about the health risks because of the warnings; and 4) Quit intentions and likelihood of quitting because of the warnings.

Warning salience:

- After pictorial warnings were introduced, there was no change among smokers in noticing the warnings “often/very often” (63% to 70%), and reading/looking closely at the warnings “often/very often” (47% to 52%).
- **Female smokers reported a significant increase in noticing the warnings; male smokers also reported an increase, but the increase was not significant.**
- **Male and female smokers did not differ in reading/looking closely at the warnings.**

Behavioural reactions to the warnings:

- After pictorial warnings were introduced, there was no change in reported giving up a cigarette because of the warnings (50% to 45%).
- After pictorial warning were introduced, avoiding the warnings increased significantly (39% to 44%).
- **Male and female smokers did not differ in reported giving up a cigarette because of the warnings.**
- **Male smokers reported a significant increase in avoiding the warnings; female smokers reported a decrease, but the decrease was not significant.**

Thinking about the health risks because of the warnings:

- After pictorial warnings were introduced, there was no change in thinking about the health risks of smoking “somewhat/a lot.”
- **Male and female smokers did not differ.**

Quit intentions and the likelihood of quitting because of the warnings:

- After pictorial warnings were introduced, there was no change in likelihood of quitting because of the warnings (64% to 60%).
- After the pictorial warnings were introduced, thinking about quitting because of the warnings decreased significantly (28% to 20%).
- **Male and female smokers did not differ in likelihood of quitting because of the warnings.**
- **Male smokers showed a significant decrease in thinking about quitting because of the warnings; female smokers also showed a decrease, but the decrease was not significant.**

Table 1: Key findings from the ITC Thailand 2005 and 2006 Surveys on the impact of the 2005 pictorial health warnings

	Noticed warnings “often/very often”	Read/looked closely at warnings “often/very often”	Gave up a cigarette because of warnings	Avoided warnings	Warnings made you think about health risks “somewhat/a lot”	Warnings made you “somewhat/a lot” more likely to quit	Warnings led you to think about quitting “very much”
	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)
Overall impact from pre to post policy	62.9 (57.7-67.8) to 69.5 (63.7-74.7)	46.9 (42.1-51.8) to 52.0 (47.4-56.5)	50.0 (44.6-55.4) to 45.4 (40.2-50.7)	39.0 (35.4-42.8) to 43.6 (40.5-46.7)*	63.1 (58.0-67.9) to 67.6 (63.9-71.0)	64.2 (59.8-68.4) to 60.0 (56.1-63.7)	28.3 (21.3-36.6) to 19.5 (16.7-22.6)*
Males	63.4 (57.9-68.5) to 69.6 (63.7-75.0)	47.3 (42.4-52.3) to 52.0 (47.4-56.7)	50.2 (44.6-55.9) to 45.2 (39.9-50.5)	38.8 (34.9-42.7) to 43.7 (40.5-46.9)*	63.4 (58.1-68.4) to 67.8 (64.1-71.3)	64.2 (59.5-68.5) to 60.5 (56.5-64.4)	28.5 (21.3-37.0) to 19.3 (16.5-22.4)*
Females	54.9 (45.7-63.7) to 67.0 (60.5-72.9)*	39.1 (28.2-51.2) to 51.5 (43.7-59.1)	45.5 (36.7-54.7) to 49.5 (41.0-58.1)	43.7 (35.7-52.0) to 41.6 (32.8-50.9)	57.4 (45.6-68.5) to 62.9 (53.2-71.6)	65.1 (54.3-74.6) to 50.8 (39.2-62.3)	25.4 (16.4-37.2) to 23.6 (16.1-33.1)
Gender differences in policy impact	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>

Notes:

Overall impact: Green = significant positive impact from pre to post-policy; Red = significant negative impact from pre to post-policy

Gender differences: Blue = pre to post-policy impact was significantly greater among males; Purple = significantly greater impact among females

ns = no significant change or no significant gender differences

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Impact of Pictorial Health Warnings in Malaysia

Country: Malaysia

Policy Change (Date): Change from text-only on the side of the pack to pictorial health warnings covering 40% front and 60% back of cigarette packs (implemented at manufacturer level in January 2009, and retailer level in June 2009)

Country (sampling)	Seven states in Malaysia: Kedah, Penang, Selangor, Johore, Terengganu, Sabah, Sarawak
Pre-policy wave (dates)	Wave 3 (Feb. – Sept. 2008)
Post-policy wave (dates)	Wave 4 (Jul. – Nov. 2009)
Sample	Wave 3: 1809 smokers (1786 males, 23 females) Wave 4: 1872 smokers (1852 males, 20 females)

Summary of Policy Change(s):

In Malaysia, a single text-only warning on the side of cigarette packages was first introduced in 1979. The text-only warning was printed in Malay on one side of the cigarette pack and in English on the other side of the pack which stated: “Amaran Kerajaan Malaysia: Merokok Membahayakan Kesihatan” (in Malay) and “Warning by the Malaysian Government: Smoking is hazardous to health” (in English).

In 2009, Malaysia implemented legislation that required a set of six rotating pictorial health warnings covering 40% of the front and 60% of the back of cigarette packages, with accompanying text warnings in Malay on front panel and English on the back panel. The new pictorial health warnings were implemented at the manufacturer level effective January 2nd, 2009, and at the retail level effective June 1st, 2009. The 2009 pictorial health warnings did not meet FCTC Article 11 guidelines that call for pictorial warnings covering at least 50% of both the front and back of packs.

Summary of Findings (see Table 1):

Our 7 indicators of impact of the Malaysia pictorial health warnings focused on 4 key areas: 1) Warning salience: noticing and reading the warnings; 2) Behavioural reactions: gave up a cigarette and avoided the warnings; 3) Thinking about the health risks because of the warnings; and 4) Quit intentions and likelihood of quitting because of the warnings.

Warning salience:

- After pictorial warnings were introduced, there was a significant increase among smokers in noticing the warnings “often/very often” (54% to 67%), and reading/looking closely the warnings “often/very often” (36% to 52%).
- **Male smokers reported a significant increase in noticing the warnings; females also reported an increase, but the increase was not significant.**
- **Male smokers reported a significant increase in reading/looking closely at the warnings; female smokers reported a decrease, but the decrease was not significant.**

Behavioural reactions to the warnings:

- After pictorial warnings were introduced, reported giving up a cigarette because of the warnings (25% to 54%), and avoiding the warnings (10% to 30%) increased significantly.
- **Both male and female smokers reported a significant increase in giving up a cigarette because of the warnings.**
- **Male smokers reported a significant increase in avoiding the warnings; female smokers reported a decrease, but the decrease was not significant.**

Thinking about the health risks because of the warnings:

- After pictorial warnings were introduced, thinking about the health risks “somewhat/a lot” increased significantly (44% to 59%).
- **Both male and female smokers showed a significant increase.**
- **The increase was significantly greater among female smokers than males.**

Quit intentions and likelihood of quitting because of the warnings:

- After pictorial warnings were introduced, the likelihood of quitting because of the warnings (34% to 53%), and thinking about quitting because of the warnings (9% to 17%) increased significantly.
- **Male smokers showed a significant increase in likelihood of quitting because of the warnings; females also showed an increase, but the increase was not significant.**
- **Male smokers showed a significant increase in thinking about quitting because of the warnings; female smokers showed a decrease, but the decrease was not significant, resulting in a significant gender difference in the impact of the law.**

Table 1: Key findings from the 2008 and 2009 ITC Malaysia Surveys on the impact of the 2009 pictorial health warnings

	Noticed warnings “often/very often”	Read/looked closely at warnings “often/very often”	Gave up a cigarette because of warnings	Avoided warnings	Warnings made you think about health risks “somewhat/ a lot”	Warnings made you “somewhat/ a lot” more likely to quit	Warnings led you to think about quitting “very much”
	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)
Overall impact from pre to post policy	54.0 (47.8-60.1) to 67.0 (62.5-71.2)**	36.4 (30.6-42.6) to 52.0 (49.0-55.0)***	24.5 (19.8-30.0) to 54.1 (49.5-58.7)***	9.8 (6.8-13.9) to 30.4 (25.9-35.3)***	44.1 (39.9-48.4) to 58.7 (55.1-62.2)***	34.3 (30.6-38.2) to 52.6 (47.9-57.3)***	9.1 (5.8-14.1) to 16.7 (13.4-20.7)*
Males	54.6 (47.9-61.2) to 67.4 (63.3-71.2)**	35.6 (29.6-42.0) to 52.1 (48.7-55.5)***	24.6 (19.9-30.0) to 53.1 (48.4-57.8)***	9.2 (6.6-12.7) to 30.9 (26.1-36.1)***	44.9 (41.1-48.8) to 58.1 (54.3-61.7)***	34.6 (31.6-37.8) to 52.8 (47.6-57.9)***	7.6 (4.8-11.7) to 16.8 (13.2-21.2)**
Females	39.4 (16.8-67.6) to 59.1 (25.3-86.1)	55.6 (38.7-71.4) to 49.4 (20.3-78.9)	23.6 (6.4-58.0) to 77.1 (48.7-92.3)**	25.8 (7.0-61.8) to 17.6 (5.9-42.0)	24.8 (7.1-58.6) to 73.6 (56.8-85.5)**	25.8 (7.1-61.2) to 48.0 (21.9-75.3)	57.7 (17.3-89.9) to 13.6 (1.8-57.7)
Gender differences in policy impact	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	F>M*	<i>ns</i>	M>F*

Notes:

Overall impact: **Green** = significant positive impact from pre to post-policy; **Red** = significant negative impact from pre to post-policy

Gender differences: **Blue** = pre to post-policy impact was significantly greater among males; **Purple** = significantly greater impact among females

ns = no significant change or no significant gender differences

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Impact of Larger Pictorial Health Warnings on Plain Packages in Australia

Country: Australia

Policy Change (Date): New, larger pictorial health warnings on front of cigarette packs from 30% to 75% with no change in size of pictorial warnings on 90% back of cigarette packs, and introduction of plain packaging (implemented December 2012)

Survey locations	Australia (nationally representative)
Pre-policy wave (years)	Wave 8.5 (Sept. 2011 – Feb. 2012)
Post-policy wave (years)	Wave 9 (Feb. – May 2013)
Sample	Wave 8.5: 1104 smokers (502 males, 602 females) 403 quitters (181 males, 222 females) Wave 9: 1093 smokers (507 males, 586 females) 399 quitters (184 males, 215 females)

Summary of Policy Change(s):

Pictorial warnings covering 30% of the front and 90% of the back of cigarette packages were first introduced in Australia in March 2006. In December 2012, Australia became the first country in the world to implement legislation requiring standardized or plain packaging for all tobacco products, in accordance with FCTC Article 11 guidelines. A new set of seven pictorial warnings was also introduced to replace the first set of pictorial warnings that had been in circulation since 2006. The size of the new pictorial warnings was increased from 30% to 75% of the front and remained at 90% of the back of cigarette packages, which exceeds the minimum FCTC Article 11 guidelines. Four of the seven pictorial warnings featured new graphic images. A new set of 13 information messages about the health effects of chemicals in tobacco smoke was also required on one side of cigarette packs to replace the previous single information message.[1]

Summary of Findings (see Table 1):

Our 2 indicators of the effectiveness of Australia's plain packaging focused on 2 key elements that smokers notice first when looking at a cigarette pack: 1) the pack warnings, or 2) other aspects of the pack such as branding.

Our 7 indicators of impact of the Australia pictorial health warnings focused on 4 key areas: 1) Warning salience: noticing and reading the warnings; 2) Behavioural reactions: gave up a cigarette and avoided the warnings; 3) Thinking about the health risks because of the warnings; and 4) Quit intentions, likelihood of quitting because of the warnings, and likelihood of staying quit because of the warnings.

Responses to plain packaging:

- After larger pictorial warnings were introduced along with plain packaging, there was a significant increase among smokers in noticing warning labels first when looking at a pack (31% to 75%).
- After larger pictorial warnings were introduced along with plain packaging, there was a significant decrease among smokers in noticing of other aspects of the pack such as branding first (69% to 25%).
- **Both male and female smokers reported significant positive changes in both of these measures of plain packaging effectiveness.**

Warning salience

- After larger pictorial warnings were introduced along with plain packaging, there was no change among smokers in noticing the warnings “often/very often” (44% to 49%), and reading/looking at the warnings “often/very often” (17% at pre- and post).^{vii}
- **Female smokers reported a significant increase in noticing the warnings; male smokers also reported an increase, but the increase was not significant.**
- **Male and female smokers did not differ in reading/looking closely at the warnings.**

Behavioural reactions to the warnings:

- After larger pictorial warnings were introduced along with plain packaging, there was no change in reported giving up a cigarette because of the warnings (13% to 14%).
- After larger pictorial warnings were introduced along with plain packaging, avoiding the warnings increased significantly (15% to 32%).
- **Male and female smokers did not differ in giving up a cigarette because of the warnings.**
- **Both male and female smokers reported a significant increase in avoiding the warnings.**
- **The increase in avoidance was significantly greater among female smokers than males.**

Thinking about the health risks because of the warnings:

- After larger pictorial warnings were introduced along with plain packaging, there was no change in thinking about the health risks of smoking “somewhat/a lot” (35% to 38%).
- **Male and female smokers did not differ.**

Likelihood of quitting because of the warnings, quit intentions, and likelihood of staying quit because of the warnings:

- After larger pictorial warnings were introduced along with plain packaging, there was no change among smokers in the likelihood of quitting because of the warnings (23% to 27%), and thinking about quitting because of the warnings (9% to 12%).^{vii}
- After larger pictorial warnings were introduced along with plain packaging, there was no change among quitters in the likelihood of staying quit because of the warnings (17% to 15%).
- **Male and female smokers did not differ on any of these indicators.**

1. Australian Government Department of Health. Health warnings. 2012.
<http://www.health.gov.au/internet/main/publishing.nsf/Content/tobacco-warn>
2. Yong HH, Borland R, Hammond D, Thrasher JF, Cummings KM, Fong GT. Smokers' reactions to the new larger health warning labels on plain cigarette packs in Australia: findings from the ITC Australia project. *Tob Control*. 2016 Mar;25(2):181-187

^{vii} It should be noted that because we used consistent analytic methods across the various health warnings analyses for this study, our methods differed from those used in the Yong et al. (2016) paper. Although we found increases in these indicators, they were not statistically significant as reported in the Yong et al. paper. [2]

Table 1: Key findings from ITC Australia 2011/12 and 2013 Surveys on the impact of the 2012 pictorial health warnings

	Noticed warning labels first when looking at cigarette pack	Noticed other aspect of pack such as branding first when looking at cigarette pack	Noticed warnings "often/very often"	Read/looked closely at warnings "often/very often"	Gave up a cigarette because of warnings	Avoided warnings	Warnings made you think about health risks "somewhat/a lot"	Warnings made you "somewhat/a lot" more likely to quit	Warnings led you to think about quitting "very much"	Warnings led you stay quit "very much"
	%Smokers (95% CI)	%Smokers (95% CI)	%Smokers (95% CI)	%Smokers (95% CI)	%Smokers (95% CI)	%Smokers (95% CI)	%Smokers (95% CI)	%Smokers (95% CI)	%Smokers (95% CI)	%Quitters (95% CI)
Overall impact from pre to post policy	31.4 (27.4-35.6) to 75.0 (71.3-78.4)***	68.6 (64.4-72.6) to 25.0 (21.6-28.7)***	44.2 (40.2-48.3) to 48.8 (44.6-53.1)	17.4 (14.5-20.7) to 17.4 (14.1-21.4)	13.0 (10.4-16.1) to 14.3 (11.4-17.7)	15.4 (12.5-18.8) to 32.3 (28.4-36.4)***	35.0 (31.2-39.0) to 38.0 (34.0-42.2)	22.6 (19.3-26.4) to 27.2 (23.4-31.4)	9.1 (7.0-11.7) to 12.3 (9.8-15.3)	16.7 (12.5-22.0) to 15.4 (11.1-20.8)
Males	31.5 (26.1-37.4) to 75.0 (69.6-79.6)***	68.5 (62.6-73.9) to 25.1 (20.4-30.4)***	45.7 (40.0-51.6) to 49.0 (43.0-55.0)	16.4 (12.6-21.1) to 17.5 (12.9-23.4)	11.1 (8.2-14.7) to 12.0 (8.6-16.4)	13.4 (9.8-18.2) to 24.7 (19.8-30.3)***	32.1 (27.0-37.7) to 36.7 (31.3-42.4)	20.6 (16.3-25.8) to 26.4 (21.4-32.1)	8.0 (5.3-11.9) to 11.7 (8.5-16.0)	16.1 (10.6-23.5) to 14.8 (9.1-23.1)
Females	31.2 (26.3-36.6) to 75.1 (70.1-79.6)***	68.8 (63.4-73.7) to 24.9 (20.5-29.9)***	42.4 (37.4-47.5) to 48.6 (43.3-54.0)*	18.6 (14.7-23.2) to 17.3 (13.4-22.0)	15.3 (11.4-20.4) to 17.1 (12.8-22.3)	17.8 (14.0-22.5) to 41.4 (36.0-47.0)***	38.6 (33.5-43.9) to 39.6 (34.3-45.1)	25.1 (20.5-30.3) to 28.3 (23.3-33.9)	10.4 (7.5-14.1) to 13.0 (9.8-17.1)	17.6 (12.3-24.6) to 16.1 (11.0-23.0)
Gender differences in policy impact	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	F>M**	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>

Notes:
Overall impact: Green = significant positive impact from pre to post-policy; Red = significant negative impact from pre to post-policy
Gender differences: Blue = pre to post-policy impact was significantly greater among males; Purple = significantly greater impact among females
ns = no significant change or no significant gender differences
 * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

ITC Tobacco Advertising, Promotion, and Sponsorship Policy Impact Analyses

Impact of the Ban on Point-of-Sale Advertising in Brazil

Country: Brazil

Policy Change (Date): Ban on point-of-sale (POS) advertising (Dec. 2014)

Country (sampling)	Three cities: Rio de Janeiro, São Paulo, and Porto Alegre (not nationally representative)
Pre-policy wave (dates)	Wave 2 (Oct. 2012 — Feb. 2013)
Post-policy wave (dates)	Wave 3 (Sept. 2016 — Mar. 2017)
Sample	Wave 2: 1,097 smokers (377 males, 720 females); 608 non-smokers (199 males, 409 females); Wave 3: 1216 smokers (602 males, 614 females) 470 non-smokers (164 males, 306 females)

Summary of Policy Change(s):

Since 2000, Brazil has had a partial ban covering most forms of TAPS, except advertising at POS. Legislation to ban POS advertising was passed in December 2011, but did not come into effect until December 2014. While tobacco advertising at POS was banned under the 2014 law, there are no restrictions on the display of tobacco products at POS, thus allowing the tobacco industry to continue to market their products through POS displays. Evidence from other countries has shown that a comprehensive ban that includes POS product displays is more effective at reducing exposure to tobacco promotion. [1]

Summary of Findings (see Table 1):

We assessed the impact of Brazil's partial ban on POS advertising by asking smokers to report their exposure to any form of tobacco promotion in the last six months. Findings showed that the law had no effect on smokers' exposure to tobacco promotion.

- Two years after the POS ban, the percentage of smokers who reported noticing any form of tobacco promotion "often/very often" significantly *increased* compared to the pre-policy survey wave two years before the ban (from 22% to 35%).
- There was no change in the percentage of non-smokers who noticed things that promote tobacco (from 24% to 25%).
- **This was the case among both male and female smokers and non-smokers.**

1. ITC Project. ITC Brazil Project Report. Findings from the Wave 1 to 3 Surveys (2009-2016/17). Waterloo, Ontario, Canada: 2017

Table 1: Key findings from the ITC Brazil 2012/13 and 2016/17 Surveys on the impact of the 2014 POS ban

	Noticed any tobacco promotion “often/very often”	
	% Smokers (95% CI)	% Non Smokers (95% CI)
Overall impact from pre to post policy	22.1 (18.9-25.6) to 34.5 (30.8-38.4)***	24.1 (20.0-28.8) to 25.2 (20.7-30.2)
Males	20.9 (16.2-26.5) to 33.0 (28.3-38.0)**	23.9 (17.7-31.4) to 21.8 (15.6-29.7)
Females	23.5 (19.7-27.7) to 36.2 (30.7-42.2)***	24.4 (19.4-30.1) to 27.8 (22.0-34.3)
Gender differences in policy impact	<i>ns</i>	<i>ns</i>

Notes:

Overall impact: **Green** = significant positive impact from pre to post-policy; **Red** = significant negative impact from pre to post-policy

Gender differences: **Blue** = pre to post-policy impact was significantly greater among males; **Purple** = significantly greater impact among females

ns = no significant change or no significant gender differences

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Impact of Restrictions on Use of Tobacco Products in Films and Television in India

Country: India

Policy Change (Date): Ban on display and use of tobacco products in films and television (2011-12)

Country (sampling)	One major city and surrounding rural area in each of four states (Maharashtra, Bihar, Madhya Pradesh, and West Bengal)
Pre-policy wave (dates)	Wave 1 (Aug. 2010 – Oct. 2011)
Post-policy wave (dates)	Wave 2 (Oct. 2012 – Sept. 2013) ⁸
Sample	Wave 1: 7875 tobacco users (5337 males, 2538 females) 2333 non users (780 males, 1553 females) Wave 2: 7368 tobacco users (4992 males, 2376 females) 2409 non users (810 males, 1599 females)

Summary of Policy Change(s):

Tobacco advertising, promotion, and sponsorship was banned in India in 2003 under the country's primary tobacco control legislation, the 2003 Cigarettes and Other Tobacco Products Act (COTPA). The law included a ban on the depiction of tobacco products in film and on television, which was amended in May 2005 to clarify the requirements of the ban. However, the rules were relaxed in 2006 to allow depictions of tobacco in certain cases, and the ban on smoking in films was later struck down by the High Court in 2008, meaning that the rules were not in effect from 2008 until 2012.

In 2011, the Government notified new “Film Rules” to reduce tobacco imagery on screen as an amendment to the COTPA, which came into effect on October 2, 2012. The rules specify that all Indian and foreign films and television programs produced on or after that date that depict tobacco products must include a total of 100 seconds of Government-produced anti-tobacco announcements and health disclaimers (a 30-second ad and a 20-second audio-visual disclaimer on the health risks, each shown once at the beginning and once in the middle of the film/program), as well as a static health warning shown on screen during any display of tobacco products. In addition, any display of tobacco products must be strongly justified, and the display of brands and product placement is prohibited. Any films/television programs produced before October 2012 must also include an anti-tobacco ad and health warning.

Summary of Findings (see Table 1):

We assessed the impact of India's ban on the display and use of tobacco in films/television by asking tobacco users and non users to report their exposure to: 1) any form of tobacco promotion; 2) tobacco advertising on television and in cinema halls; 3) use of tobacco in entertainment media; and 4) anti-tobacco information on television and in cinema halls. Findings showed mixed evidence on the impact of the law on reducing tobacco promotion and increasing anti-tobacco exposure. The law appears to have been most effective for television programs compared to films.

Exposure to tobacco promotion

- After the new rules, there was no change overall in the percentage of tobacco users (from 9% to 7%) and non users (12% to 11%) who reported noticing any form of tobacco promotion “often”.
- **This was the case for both males and females.**

⁸ Note: The post-policy survey wave started in the same month as the new rules took effect, and the survey questions asked about experiences in the last six months. Therefore, some respondents may not have been exposed to the new rules yet when answering the questions.

Advertising on television/films

- After the legislation, awareness of tobacco advertising on television significantly decreased among both tobacco users (from 33% to 18%) and non users (41% to 20%).
- However, there was no change in awareness of tobacco advertising in cinema halls (remained at 8% among tobacco users; and from 10% to 9% among non users).
- **This pattern was the same for both male and female tobacco users and non users.**

Tobacco use in entertainment media

- After the legislation, almost half of tobacco users and non users still noticed tobacco use in the entertainment media “often”, and there was no significant change from pre to post policy (34% to 47% among tobacco users; 43% to 46% among non users).
- **This was the case for both males and females.**

Anti-tobacco advertising on television/films

- After the new rules, reported exposure to anti-tobacco information on television and films increased overall. Among tobacco users, there was an increase in noticing anti-tobacco information on television (64% to 84%) and in cinema halls (23% to 35%) “often”, although the change was not significant for cinemas. Among non-users, there was a significant increase in noticing anti-tobacco information on both television (72% to 89%) and cinema halls (31% to 48%).
- **This pattern was consistent for both males and females.**

Table 1: Key findings from the TCP India 2010/11 and 2012/13 Surveys on the impact of the 2012 TAPS ban

	Noticed any tobacco promotion “often”		Noticed tobacco advertising on TV		Noticed tobacco advertising in cinema halls	
	% Tobacco Users (95% CI)	% Non Users (95% CI)	% Tobacco Users (95% CI)	% Non Users (95% CI)	% Tobacco Users (95% CI)	% Non Users (95% CI)
Overall impact from pre to post policy	8.8 (6.2-12.4) to 7.4 (5.1-10.6)	12.3 (8.4-17.8) to 10.7 (7.5-15.0)	32.7 (24.5-42.1) to 18.3 (13.0-25.2)*	41.1 (32.3-50.4) to 20.2 (15.9-25.3)***	8.3 (5.5-12.4) to 8.4 (5.4-12.9)	10.0 (6.3-15.4) to 8.8 (5.9-13.1)
Males	9.9 (6.8-14.1) to 8.2 (5.4-12.2)	15.7 (10.5-22.9) to 14.0 (9.2-20.9)	34.9 (26.8-44.0) to 21.0 (15.0-28.7)*	45.5 (35.9-55.3) to 22.5 (16.8-29.4)***	9.3 (6.3-13.6) to 9.7 (6.2-14.9)	13.6 (8.6-20.8) to 11.8 (7.5-18.2)
Females	6.7 (4.8-9.4) to 5.8 (3.4-9.7)	9.8 (6.5-14.6) to 8.1 (5.6-11.7)	27.9 (19.2-38.5) to 12.4 (8.4-18.1)**	37.9 (29.3-47.2) to 18.5 (14.7-23.0)***	5.8 (3.4-9.9) to 5.2 (2.8-9.4)	7.3 (4.4-11.9) to 6.6 (4.2-10.2)
Gender differences in policy impact	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>

	Saw people using tobacco in entertainment media “often”		Noticed anti-tobacco advertising on TV		Noticed anti-tobacco advertising in cinema halls	
	% Tobacco Users (95% CI)	% Non Users (95% CI)	% Tobacco Users (95% CI)	% Non Users (95% CI)	% Tobacco Users (95% CI)	% Non Users (95% CI)
Overall impact from pre to post policy	34.1 (26.2-43.1) to 46.7 (36.8-56.9)	43.3 (34.8-52.3) to 46.2 (38.2-54.4)	63.7 (55.6-71.1) to 84.4 (80.1-87.8)***	71.5 (60.9-80.2) to 89.2 (85.6-92.0)**	23.1 (16.8-30.8) to 35.4 (27.1-44.7)	30.8 (24.2-38.3) to 47.8 (38.4-57.3)*
Males	34.0 (26.2-42.8) to 47.8 (38.4-57.4)	44.8 (35.6-54.4) to 49.0 (40.4-57.6)	65.1 (57.1-72.3) to 87.1 (83.0-90.3)***	72.0 (60.8-81.0) to 91.3 (87.7-94.0)***	26.1 (19.4-34.2) to 40.3 (31.1-50.2)	42.0 (33.0-51.6) to 59.4 (49.2-68.9)*
Females	34.4 (25.7-44.4) to 44.3 (32.2-57.1)	42.2 (33.9-51.0) to 44.1 (35.9-52.7)	60.8 (51.4-69.5) to 78.5 (72.9-83.3)***	71.1 (60.4-80.0) to 87.6 (83.3-90.9)**	15.5 (9.8-23.7) to 23.5 (15.9-33.3)	22.2 (16.7-28.9) to 38.9 (29.4-49.4)*
Gender differences in policy impact	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>

Notes:

All questions have a time frame of the last 6 months.

Overall impact: **Green** = significant positive impact from pre to post-policy; **Red** = significant negative impact from pre to post-policy

Gender differences: **Blue** = pre to post-policy impact was significantly greater among males; **Purple** = significantly greater impact among females

ns = no significant change or no significant gender differences

p*≤.05; *p*≤.01; ****p*≤.001

Impact of the Ban on Tobacco Sponsorship in the United States

Country: United States

Policy Change (Date): Ban on tobacco sponsorship (2010)

Country (sampling)	United States (nationally representative)
Pre-policy wave (dates)	Wave 7 (Oct. 2008 – July 2009) Wave 7.5 (Nov. 2009 – Jan. 2010)
Post-policy wave (dates)	Wave 8 (July 2010 – June 2011) Wave 9 (Aug. 2013 – Mar. 2015)
Sample	Wave 7: 1518 smokers (687 males, 831 females) Wave 7.5: 619 smokers (296 males, 323 females) Wave 8: 1262 smokers (591 males, 671 females) ^{ix} Wave 9: 2611 smokers (1258 males, 1353 females)

Summary of Policy Change(s):

The Family Smoking Prevention and Tobacco Control Act of 2009 gave the US FDA authority to regulate the marketing of tobacco products. Under the 2009 Act, various forms of tobacco promotion were banned, including tobacco brand sponsorship of sports and entertainment events, non-tobacco merchandise bearing tobacco product logos, and free samples of products. New rules that placed further restrictions on sponsorship of sporting and entertainment events took effect in June 22, 2010. The rules also included other measures to restrict tobacco marketing activities, especially those designed to appeal to youth, such as banning free samples and gifts, sales to minors, and “kiddie packs” of fewer than 20 cigarettes.

While the rules prohibit tobacco companies from using any brand name or logo in sponsorship, the name of a corporation is allowed to be used if it was registered prior to 1995 and does not include any brand name.

Summary of Findings (see Table 1):

We assessed the impact of the US ban on sponsorship by asking smokers to report their exposure to: 1) sporting events sponsored by tobacco brands/companies; 2) arts events sponsored by tobacco brands; and 3) free samples or free gift offers from tobacco companies. Findings suggest that the legislation had no impact on awareness and exposure to various forms of tobacco sponsorship of sporting and cultural events.

Sponsorship of sports events

- After the ban, there was no significant change in the percentage of smokers who noticed sporting events sponsored either by a tobacco brand name (from 12% to 14%) or tobacco company (13% to 12%) in the last six months.
- **Male smokers showed a decrease in noticing, but it was not significant.**
- **Female smokers showed an increase, but it was not significant.**
- **There was a significant gender difference in the pre-to post-policy impact.**

Sponsorship of arts events

- After the ban, there was no significant change in awareness of tobacco brand sponsorship of music, art, or fashion events (from 4% to 6%).
- **This was the case for both male and female smokers.**

^{ix} Note: The survey questions asked about the last six months, a time period which may have included some months before the law took effect (in June 2010). Therefore, those surveyed between July-December 2010 at Wave 8 were excluded from the analyses.

Noticing free samples/gifts

- After the ban, there was no significant change in the percentage of smokers who noticed free samples of cigarettes (17% to 15%) or special offers on other products when purchasing cigarettes (remained at 25%).
- **This was the case for both male and female smokers.**

Table 1: Key findings from the ITC United States 2008-10 and 2010-15 Surveys on the impact of the 2010 sponsorship ban

	Noticed sporting event sponsored by tobacco brand†	Noticed sporting event sponsored by tobacco company†	Noticed arts event sponsored by tobacco brands	Noticed free samples of cigarettes†	Noticed free gifts/offers on other products when buying cigarettes
	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)
Overall impact from pre to post policy	11.7 (9.8-14.0) to 13.8 (8.8-21.0)	13.0 (11.0-15.2) to 12.2 (7.8-18.6)	3.9 (2.8-5.5) to 6.1 (4.7-7.8)	16.6 (14.2-19.2) to 14.6 (9.1-22.5)	25.2 (22.5-28.1) to 25.0 (21.1-29.4)
Males	12.6 (9.8-16.1) to 8.0 (4.0-15.4)	13.7 (10.8-17.2) to 9.3 (4.9-16.8)	4.1 (2.8-6.1) to 6.5 (4.8-8.8)	17.0 (13.7-21.0) to 16.5 (8.6-29.3)	26.3 (22.4-30.5) to 24.1 (18.6-30.5)
Females	10.7 (8.4-13.6) to 20.7 (12.3-32.6)	12.1 (9.8-15.0) to 15.7 (9.1-25.8)	3.7 (2.3-5.9) to 5.6 (4.0-7.7)	16.0 (13.0-19.6) to 12.4 (7.4-20.1)	24.0 (20.4-27.9) to 26.1 (21.2-31.7)
Gender differences in policy impact	M>F*	ns	ns	ns	ns

Notes:

All questions have a time frame of the last 6 months.

† For the pre-policy results, data from Waves 7 and 7.5 were combined. For the post-policy results, Waves 8 and 9 were combined, except for questions marked with †, which were not asked at Wave 9.

Overall impact: Green = significant positive impact from pre to post-policy; Red = significant negative impact from pre to post-policy

Gender differences: Blue = pre to post-policy impact was significantly greater among males; Purple = significantly greater impact among females

ns = no significant change or no significant gender differences

*p≤.05; **p≤.01; ***p≤.001

Impact of Partial Ban on Tobacco Advertising and Promotion in Mexico

Country: Mexico

Policy Change (Date): Partial ban on tobacco advertising and promotion (implemented June 2009)

Country (sampling)	Mexico (seven cities: Mexico City, Guadalajara, Tijuana, Ciudad Juárez (Wave 3 only), León (Wave 4 only), Monterrey, Puebla, and Mérida)
Pre-policy wave (dates)	Wave 3 (Nov. – Dec. 2008)
Post-policy wave (dates)	Wave 4 (Jan. – Feb. 2010)
Sample	Wave 3: 1861 smokers (1162 males, 699 females) Wave 4: 1853 smokers (1174 males, 679 females)

Summary of Policy Change(s):

In June 2009, Mexico implemented a partial ban on tobacco advertising and promotion. The law only permits tobacco advertising and promotion aimed at adults through adult magazines, personal communication by mail, or within adult-only establishments. The regulations only permit advertising in adult-only establishments in the form of print media. Point-of-sale advertising of tobacco products in these venues must be limited to the display of lists with tobacco product names and prices (written in black print on a white background). The partial ban on POS advertising does not meet FCTC Article 13 and its guidelines that call for a comprehensive ban on all forms of tobacco advertising, promotion, and sponsorship, with no exemptions.

Summary of Findings (see Table 1):

We assessed the impact of the partial ban on POS tobacco advertising in Mexico by asking smokers to report their exposure to cigarette advertising in shops where tobacco products are sold. Findings showed that the partial ban had no effect on smokers' exposure to the tobacco marketing in retail locations.

- After the POS ban, there was no difference in the percentage of smokers who noticed cigarette advertising in shops where tobacco products are sold. The overall level was very high (82% before the ban to 84% after the ban).
- **Male and female smokers did not differ.**

Table 1: Key findings from the ITC Mexico 2008 and 2010 Surveys on the impact of the 2009 partial POS tobacco advertising ban

	Noticed any cigarette advertising in shops where tobacco products are sold
	% Smokers (95% CI)
Overall impact from pre to post policy	81.8 (78.2-84.9) to 83.5 (80.1-86.4)
Males	82.1 (78.0-85.6) to 83.2 (79.3-86.5)
Females	81.2 (76.7-85.0) to 84.0 (79.7-87.5)
Gender differences in policy impact	<i>ns</i>

Notes:

Overall impact: **Green** = significant positive impact from pre to post-policy; **Red** = significant negative impact from pre to post-policy

Gender differences: **Blue** = pre to post-policy impact was significantly greater among males; **Purple** = significantly greater impact among females

ns = no significant change or no significant gender differences

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Impact of TAPS Bans in the United Kingdom

Country: United Kingdom (nationally representative)

Policy Change (Date): Partial ban on tobacco advertising and product displays at point-of-sale (POS) in large retail shops implemented in England (April 2012), Northern Ireland (October 2012), Wales (December 2012), and Scotland (April 2013).

Country (sampling)	United Kingdom (England, Northern Ireland, Wales, Scotland)
Pre-policy wave (dates)	Wave 8 (Jul. 2010 – Jun. 2011)
Post-policy wave (dates)	Wave 9 (Feb. – Sept. 2013)
Sample	Wave 8: 977 smokers (433 males, 544 females) Wave 9: 1103 smokers (541 males, 562 females)

Summary of Policy Change(s):

Partial bans on the advertising and display of tobacco products at POS were implemented across the United Kingdom from 2012 to 2013. The partial ban applied to large retail shops with a floor area greater than 280 m², and came into force in England on April 6th, 2012,^x In Northern Ireland on October 31st, 2012,^{xi} in Wales on December 3rd, 2012,^{xii} and in Scotland on April 29th, 2013.^{xiii} The law did not meet FCTC Article 13 and its guidelines that call for a comprehensive ban on POS tobacco advertising and promotion, with no exemptions.

Summary of Findings (see Table 1):

We assessed the impact of the UK's partial ban on POS advertising by asking smokers to report their exposure to: 1) promotion of smoking, and 2) cigarette advertising and promotion in shops. Findings showed that the POS ban led to a significant reduction in smokers' exposure to tobacco marketing in retail shops.

Exposure to promotion of smoking

- After the POS ban, there was no difference in the percentage of smokers who “often/very often” noticed things that promote smoking. But the overall level was very low (4% before the ban to 3% after the ban).
- **Male and female smokers did not differ.**

Exposure to cigarette advertising and promotion in shops

- After the POS ban, there was a significant decrease in the percentage of smokers who reported seeing cigarette packages being displayed in shops in the last month, including on shelves or on the counter (from 90% to 62%).
- After the POS ban, there was a significant decrease in the percentage of smokers who noticed signs or pictures or things like clocks with cigarette brands or logos inside shops in the last month (25% to 14%).

^x Department of Health. The Tobacco Advertising and Promotion (Display) (England) Regulations 2010 No. 445.

^{xi} Department of Health, Social Services and Public Safety. The Tobacco Advertising and Promotion (Display) Regulations (Northern Ireland) 212 No. 246.

^{xii} Department of Health. The Tobacco Advertising and Promotion (Display) (Wales) Regulations 2012 No. 1285 (W.163).

^{xiii} Department of Health and Social Care. The Sale of Tobacco (Display of Tobacco Products and Prices etc.) (Scotland) Regulations 2013 No. 85.

- **After the POS ban, both male and female smokers were significantly less likely to notice (1) cigarette packages displayed in shops, and (2) signs, pictures, logos, and branding in shops.**
- **Female smokers reported significantly greater decreases in noticing of cigarette packages in shops than male smokers, but did not differ from males in the decrease in noticing of signs, pictures, logos, and branding in shops.**

Table 1: Key findings from the ITC United Kingdom 2010/11 and 2013 Surveys on the impact of the 2012-2013 TAPS bans

	Noticed things that promote smoking “often/very often”	Noticed cigarette packages displayed in shops	Noticed signs or pictures or other items with cigarette brands or logos in shops
	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)
Overall impact from pre to post policy	4.1 (2.2-7.5) to 3.4 (2.1-5.3)	89.7 (86.9-91.9) to 62.0 (57.4-66.3)***	24.6 (20.4-29.4) to 14.0 (11.1-17.6)**
Males	4.5 (2.0-9.5) to 3.9 (2.2-6.6)	89.2 (85.4-92.1) to 67.5 (61.8-72.7)***	30.1 (24.0-37.0) to 16.9 (12.6-22.3)**
Females	3.7 (1.9-6.9) to 2.8 (1.5-5.3)	90.2 (86.5-93.0) to 56.2 (50.6-61.7)***	18.7 (14.4-23.9) to 10.9 (8.0-14.6)***
Gender differences in policy impact	<i>ns</i>	F>M**	<i>ns</i>

Notes:

Overall impact: Green = significant positive impact from pre to post-policy; Red = significant negative impact from pre to post-policy

Gender differences: Blue = pre to post-policy impact was significantly greater among males; Purple = significantly greater impact among females

ns = no significant change or no significant gender differences

p*≤.05; *p*≤.01; ****p*≤.001

Impact of TAPS Bans in Uruguay

Country: Uruguay

Policy Change (Date): Partial ban on most forms of tobacco advertising and promotion, and comprehensive ban on all forms of tobacco sponsorship (implemented April 2008)

Country (sampling)	Five cities in Uruguay: Montevideo, Salto (Wave 2 only), Maldonado (Wave 2 only), Durazno (Wave 2 only), and Rivera (Wave 2 only)
Pre-policy wave (dates)	Wave 1 (Nov. – Dec. 2006)
Post-policy wave (dates)	Wave 2 (Oct. 2008 – Feb. 2009)
Sample	Wave 1: 887 smokers (415 males, 472 females) Wave 2: 1294 smokers (629 males, 665 females)

Summary of Policy Change(s):

In April 2008, Uruguay implemented a partial ban on tobacco advertising and promotion via radio, television, newspapers, and other printed media; and a comprehensive ban on all forms of tobacco sponsorship, including industry sponsorship of national/international events or activities, donations, offer or supply of free tobacco products, promotional discounts/gifts/prizes, brand stretching, and tobacco product vending machines. The display of health warnings about the dangers of tobacco use were also required at point-of-sale (POS) locations. However, tobacco advertising and product displays at POS were still permitted. The 2008 tobacco advertising, promotion, and sponsorship (TAPS) ban did not align with FCTC Article 13 and its guidelines that call for a comprehensive ban on all forms of TAPS.

Summary of Findings (see Table 1):

We assessed the impact of the Uruguay TAPS ban by asking smokers to report their exposure to tobacco advertising via three media channels covered by the law: 1) television, 2) radio, and 3) newspapers or magazines. Findings showed that the TAPS ban led to a dramatic reduction in tobacco advertising across all of three media channels.

- After the TAPS ban, there was a significant decrease in the percentage of smokers who noticed tobacco advertising on television (82% to 38%), radio (58% to 24%), and in newspapers or magazines (38% to 22%).
- **Male and female smokers did not differ.**

Table 1: Key findings from the ITC Uruguay 2006 and 2008-09 Surveys on the impact of the 2008 TAPS ban

	Noticed tobacco advertising on television [†]	Noticed tobacco advertising on radio [†]	Noticed tobacco advertising in newspapers or magazines [†]
	% Smokers (95% CI)	% Smokers (95% CI)	% Smokers (95% CI)
Overall impact from pre to post policy	82.4 (77.1-86.7) to 38.0 (32.1-44.2)***	57.8 (51.4-63.9) to 24.3 (20.0-29.2)***	38.2 (33.2-43.5) to 22.4 (18.9-26.4)***
Males	83.6 (76.8-88.6) to 40.4 (33.7-47.5)***	63.3 (55.2-70.7) to 27.4 (21.8-33.9)***	37.5 (30.9-44.6) to 23.0 (18.1-28.7)**
Females	81.2 (74.9-86.3) to 35.8 (29.3-42.7)***	52.6 (45.2-59.9) to 21.3 (16.8-26.6)***	38.9 (32.8-45.4) to 21.9 (17.6-26.9)***
Gender differences in policy impact	<i>ns</i>	<i>ns</i>	<i>ns</i>

Notes:

Overall impact: **Green** = significant positive impact from pre to post-policy; **Red** = significant negative impact from pre to post-policy

Gender differences: **Blue** = pre to post-policy impact was significantly greater among males; **Purple** = significantly greater impact among females

ns = no significant change or no significant gender differences

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

[†] Please note that the survey question and response options were slightly different at each wave. At Wave 1, respondents were asked if they noticed cigarettes or tobacco products being advertised on television, radio, and newspapers or magazines in the last 6 months, with two response options: (1) yes, and (2) no. At Wave 2, respondents were asked when they last saw or heard an advertisement for brands of cigarettes or tobacco on television, radio, and newspapers or magazines, with six response options: (1) in the last 7 days, (2) more than a week ago but less than a month, (3) 1 to 6 months, (4), 6 months to 1 year, (5) more than 1 year ago, and (6) never. The percentages of respondents who noticed tobacco advertising on television, radio, and newspapers or magazines at Wave 2 were calculated based on combined response options (i.e., total number of respondents who selected response options 1-3 divided by total number of respondents who selected response options 1-6) to allow for comparability with responses to the survey question at Wave 1.