

Effect of comprehensive smoke-free legislation on the tourism industry in countries of the Caribbean Community

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ABSTRACT

Objective. To assess whether the introduction of comprehensive smoke-free legislation affected tourism in four Caribbean Community (CARICOM) countries – Barbados, Guyana, Jamaica, and Trinidad and Tobago.

Methods. We compared the evolution of three tourism variables – tourist arrivals, tourist expenditure, and average length of stay – in a country implementing smoke-free environments (treated country) with the evolution of these variables in the same country if smoke-free legislation had not been implemented. We used a synthetic control method to recreate this counterfactual scenario by constructing a synthetic country using a weighted average of several donor-pool CARICOM countries that did not introduce legislation on smoke-free environments during the period analyzed. We quantified the effect of the smoke-free environments on tourism as the difference between tourism variables in the treated and synthetic country. To assess whether the estimated effect of the smoke-free environments was the result of chance, we compared the effects of legislation in the treated country to placebo effects in the donor pool by assuming comprehensive smoke-free legislation was introduced in the same year as in the treated country.

Results. Implementing smoke-free environments did not affect the arrival of tourists, tourism expenditure, or the average length of stay in the four countries.

Conclusions. Our findings provide strong evidence that public policies banning smoking in public places do not affect hospitality and tourism businesses. Given the economic significance of this industry in the Caribbean, the local evidence provided by this study will help to effectively counteract interference by the tobacco industry and advance towards a smoke-free Caribbean.

Keywords

Smoke-free environments; smoking; public policy; tourism; Caribbean region.

Scientific evidence has unequivocally established that exposure to tobacco smoke causes death, disease, and disability (1) – a fact recognized by the Parties to the World Health Organization Framework Convention on Tobacco Control (WHO FCTC). The coronavirus disease 2019 (COVID-19) pandemic has further highlighted the vulnerability of people exposed to tobacco and suffering from smoking-related diseases, and underscores the importance of tobacco control for population health (2).

Moreover, the total global economic cost of smoking – including the associated health expenditure and productivity losses – is estimated to be about US\$ 1.4 trillion annually, equivalent to 1.8% of the world's annual gross domestic product (GDP) in 2021 (3). Allowing smoking in workplaces and public spaces imposes a heavy financial burden through increased medical costs associated with second-hand tobacco smoke, lost productivity due to illness, higher insurance premiums, and increased cleaning and property maintenance costs (4).

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Article 8 of the WHO FCTC requires the adoption and implementation of effective legislative, executive, administrative, and/or other measures that provide protection from exposure to tobacco smoke in indoor workplaces, indoor public places, public transport, and, as appropriate, in other public places. These measures have been widely shown to provide the only means of effective protection against the hazards of exposure to tobacco smoke. In addition, comprehensive smoke-free laws have been shown to reduce tobacco consumption among smokers and act as a trigger for renewed attempts to quit smoking among those who had previously tried to quit (1).

Despite the strong rationale and evidence of the benefits of protection from exposure to tobacco smoke, such protection in the Caribbean Community (CARICOM) remains uneven and is lagging behind South America, where all countries have implemented 100% smoke-free environments. As of 2021, only seven of the 13 CARICOM Member States that are parties to the WHO FCTC had 100% smoke-free environments, including Antigua and Barbuda (2018), Barbados (2010), Guyana (2017), Jamaica (2013), Saint Lucia (2020), Suriname (2013), and Trinidad and Tobago (2009) (5).

This lack of progress is particularly problematic since, compared to other subregions of the Americas, people in the Caribbean have the highest probability of dying prematurely from noncommunicable diseases. Furthermore, the Caribbean has some of the highest prevalence rates of tobacco use in the Americas among adolescents (6).

Establishing a 100% smoke-free environment has been signaled as a priority by CARICOM leaders. In July 2016, CARICOM heads of state and government pledged to address the banning of smoking in public places (7), and in September 2017, Caribbean ministers of health endorsed the PAHO tobacco control strategy, which includes the achievement of smoke-free environments throughout the Americas by 2022 (8). All 13 CARICOM Member States that are parties to the WHO FCTC should strive to provide universal protection from exposure to tobacco smoke within 5 years of the Treaty's entry into force (9).

Tobacco industry interference has been repeatedly identified as a main factor delaying the enactment of FCTC-compliant tobacco control laws in the Caribbean (10). As in other countries and jurisdictions worldwide, when smoke-free legislation is under consideration, the industry warns that hospitality and tourism businesses will be hurt by a smoking ban (1).

However, many methodologically sound research studies directly discredit these assertions. Studies using objective and reliable measures consistently conclude that smoke-free laws do not have an adverse impact on the patronage, employment, sales or profits of restaurants, bars, or establishments catering to tourists. At worst, the laws have no effect at all on business activity and many studies have found a small positive effect (11).

The argument that smoke-free environments harm the hospitality and tourism industries is particularly strong in the Caribbean, where tourism is the dominant industry in several economies and a significant focus of development in many others (12). Although some studies have shown that smoke-free laws do not have a harmful effect on the tourism and hospitality industry of small island states and territories heavily dependent on these sectors (13–15), economic studies focusing on the Caribbean are lacking. The availability of a Caribbean-specific analysis would be a powerful tool to effectively counteract the

tobacco industry's claims, particularly in the context of the COVID-19 pandemic, which has brought tourism in the region to a temporary standstill and hence has had a significant impact on GDP and employment (16).

Against this background, we assessed the effect of smoke-free environments on the tourism industry in four CARICOM Member States that have implemented WHO FCTC-compliant legislation on smoke-free environments for at least 12 months: Barbados (2010), Guyana (2017), Jamaica (2013), and Trinidad and Tobago (2009). Since the year of implementation, our dataset includes 10 years for Barbados, 3 years for Guyana, 7 years for Jamaica, and 11 years for Trinidad and Tobago. Guyana is the only case with fewer than 5 years after implementation so it is possible that our results may not fully capture the effect of smoke-free environments. Suriname implemented smoke-free environments in 2013 but data were unavailable to analyze this case. Antigua and Barbuda and Saint Lucia enacted smoke-free environments in 2018 and 2020, respectively; since our analysis was until 2019, they were not included in this study. Our analysis considers the potential differences in the implementation of smoke-free environments by studying each country separately before grouping them as a CARICOM community.

METHODS

This study used a quasi-experimental method with synthetic controls to estimate the effect of the implementation of smoke-free environments on the tourism industry. The effect on tourism was measured through three outcome variables: 1) inbound tourism arrivals; 2) inbound tourism expenditure; and 3) average length of stay. To identify potential effects on these variables, their evolution was compared in the four countries that had implemented comprehensive smoke-free environments for at least 12 months (Barbados, Guyana, Jamaica, and Trinidad and Tobago), so-called treated countries, against a counterfactual scenario of no policy implementation.

This counterfactual scenario was recreated using a synthetic control method (17, 18). Synthetic countries were built using a weighted average of control countries selected from a donor pool. The donor pool included CARICOM Member States, CARICOM associated states and Caribbean countries that had not implemented comprehensive smoke-free environments during the study period, namely: Antigua and Barbuda, Aruba, Bahamas, Belize, Cayman Islands, Curaçao, Dominica, Grenada, Haiti, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, and Sint Maarten (CARICOM donor pool of countries). Therefore, the resulting synthetic countries provided a counterfactual scenario that could better represent the pre-legislation trends in the absence of smoke-free environments.

Data for outcome variables – inbound tourism arrivals, tourism expenditure, and average length of stay – were obtained from the World Tourism Organization (UNWTO) (<https://www.unwto.org/tourism-statistics-data>). Predictor variables – per capita GDP in logs, GDP growth rate, value indices of imports and exports in logs, and expenses for travel items – were extracted from the World Bank database on development indicators (<https://databank.worldbank.org/source/world-development-indicators>). The study used annual data for the period 1995–2019, covering the pre-legislation period for each country that implemented smoke-free environments, as well as at least 3 years following the introduction of smoke-free

environments. Predictor variables were selected to describe countries' socioeconomic status and based on their potential impact on the outcome variables. The set of predictor variables was also selected based on their lower root mean prediction error. In addition, pre-implementation values of the outcome variables were used as predictor variables.

The synthetic control methodology was used to construct three synthetic control countries for each of the four treated countries: one synthetic country reproducing the inbound tourism arrivals; a second synthetic country mirroring the inbound tourism expenditure; and a third replicating the average length of stay. Each synthetic control country was constructed as a weighted average of countries in the donor pool. Weights were chosen using an optimization algorithm to ensure that the treated and synthetic countries were as similar as possible in the pre-legislation predictor variables. The algorithm considers that not all predictor variables contribute equally to reproduce the outcome variable and therefore defines the weights by minimizing the root mean squared distance (or error) between the outcome variable in the treated and synthetic control countries in the pre-implementation period.

After constructing the synthetic control countries based on the pre-implementation trends, the effect of smoke-free environments was quantified in each post-implementation year as the difference in the outcome variable between the treated country and its counterfactual synthetic country. In addition, placebo tests (19) were conducted to assess whether the estimated effects of smoke-free environments were merely the result of chance by comparing the legislation effects in the treated country to the placebo effects obtained for each country in the donor pool. For this purpose, placebo tests fictitiously assumed that comprehensive smoke-free legislation had been introduced in the donor pool countries in the same year as in the treated country. If the estimated impact produced by the placebo effects yields many effects as large as the treated country estimate, then it is likely that the estimated effect was observed by chance. The *p*-values for these placebo tests were computed and a 5% significance level was considered to reject the null hypothesis that the impact was not by chance.

To complement this inference procedure, the effect of smoke-free environments in the treated country and all the placebo effects were combined in a difference-in-differences regression analysis (20–22). In this analysis, the dependent variable combines the estimated effects of the comprehensive smoke-free legislation in the treated and donor pool countries. The explanatory variables are a binary variable indicating the treated country, a time dummy variable adopting the unit value since the year of implementation of the smoke-free legislation, and the interaction between these two dummy variables. The coefficient on the interaction variable measures the average effect of the legislation on smoke-free environments over the entire post-intervention period, including the year of implementation. The usual *t*-test on this coefficient indicates the statistical significance of the implementation of smoke-free environments over the outcome variable.

RESULTS

Table 1 shows descriptive statistics for the outcome variables in the four treated countries, the donor pool countries, and the synthetic control countries during the smoke-free environment

TABLE 1. Descriptive statistics across the smoke-free environment pre-implementation years

Variable	Treated countries ^a	Donor countries ^b	Synthetic controls ^c
International tourism, number of arrivals (log of thousands)	6.57	6.51	6.61
International tourism, total expenditure (log of millions)	20.03	19.17	19.98
International tourism, average length of stay (number of days or nights)	2.54	2.06	2.54
GDP per capita (in logs)	9.48	8.96	9.24
GDP growth rate (annual %)	3.18	2.84	2.60
Current GDP (in logs)	22.12	20.87	20.25
Import value index (in logs)	4.84	4.70	4.82
Export value index (in logs)	4.83	4.60	4.64
Outbound tourism expenditure (US\$ in logs)	18.64	17.22	18.01

GDP, gross domestic product.

^a Barbados, Guyana, Jamaica, and Trinidad and Tobago.

^b Antigua and Barbuda, Aruba, Bahamas, Belize, Cayman Islands, Curaçao, Dominica, Grenada, Haiti, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines and Sint Maarten.

^c Synthetic controls are different for each treated country. Overall, they include Antigua and Barbuda, Aruba, Bahamas, Belize, Dominica, Haiti, Saint Kitts and Nevis, Saint Lucia, and Saint Vincent and the Grenadines.

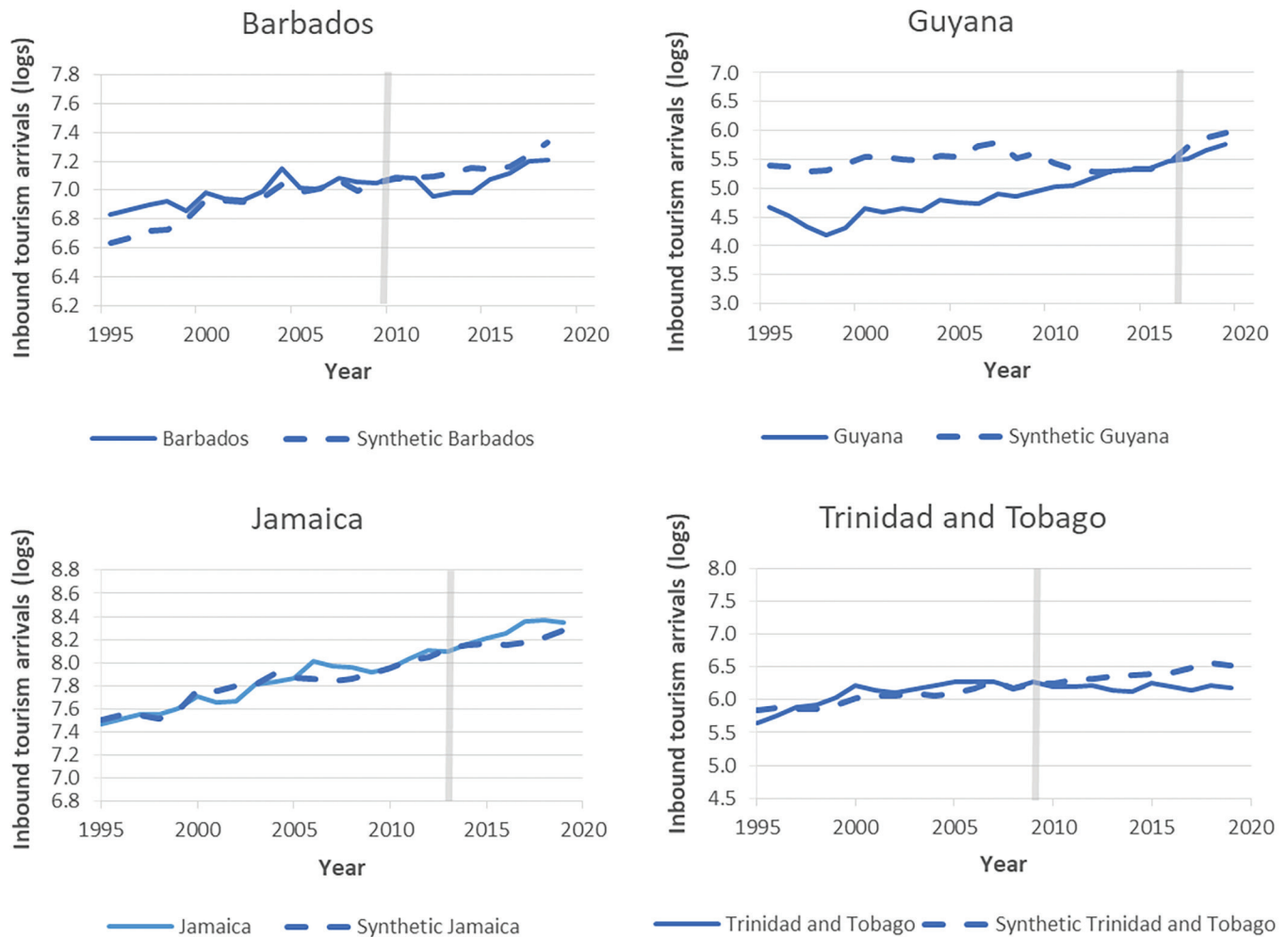
Source: Authors' estimates using the World Tourism Organization and the World Bank world development indicators databases.

pre-implementation period. The first three rows of Table 1 show the mean values of the outcome variables and the remaining six rows display the average values of the predictor variables. As shown in the table, the weighted averages of the synthetic controls adequately reproduce the pre-legislation average values of the predictor variables and the temporal trends of the outcome variables. Difference-in-means hypothesis tests suggest there were no statistical differences in these variables between the treatment and control groups.

Effect on inbound tourism arrivals

Figure 1 shows the evolution of tourism arrivals (in logs) before and after implementation of legislation on smoke-free environments in the four treated countries (Barbados, Jamaica, Guyana, and Trinidad and Tobago) and their respective synthetic counterfactual countries. In all four cases, the graphs show a good adjustment in the temporal trends of tourism arrivals before implementation of smoke-free environments. Following implementation of legislation on smoke-free environments, inbound tourism arrivals increased in Barbados (by 13%), Guyana (28%), and Jamaica (29%) and their synthetic counterfactuals increased by 28%, 29%, and 17%, respectively. In the case of Trinidad and Tobago, arrivals remained almost constant, while a slightly upward trend was seen in the country's synthetic counterfactual. The data in this last case do not allow us to confirm that the implementation of smoke-free environments did not affect the inbound tourism arrivals.

To assess whether these differences between the trends in inbound tourism arrivals after the implementation of the smoke-free environments were statistically significant, placebo effects were estimated for each of the countries in the donor pool. Figure 2 shows the *p*-values for these placebo effects, where the vertical axis in each of the panels shows the probability that the effect of the smoke-free environments is due to

FIGURE 1. Tourist arrivals in the four treated countries and their synthetic counterfactuals

Note: The grey vertical line in each of the panels indicates the year in which smoke-free environment legislation was introduced in the treated country.
Source: Authors' estimates using the World Tourism Organization and the World Bank world development indicators databases.

chance and the horizontal axis presents the number of years since implementation of the smoke-free environments. In all cases and for all years, the probability of the effect of smoke-free legislation happening by chance was greater than a 5% significance level, suggesting that the implementation of legislation on the smoke-free environments had no statistically significant effect on the arrival of tourists.

To complement this inference strategy, Table 2 shows the estimation of the difference-in-differences equation. The table presents the average total effect of smoke-free environments on tourism arrivals for each individual country and for the four countries together. The coefficient on the interaction T×D was not statistically significant for Barbados, Guyana, and Trinidad and Tobago, suggesting that implementation of a comprehensive smoke-free legislation did not affect inbound tourism arrivals. In the case of Jamaica, the table shows a positive and statistically significant coefficient indicating that the average effect of smoke-free environments increased the inbound tourism arrivals. Finally, the last column of the table shows the results for all four countries combined. Again, the coefficient on the interaction variable was not statistically significant,

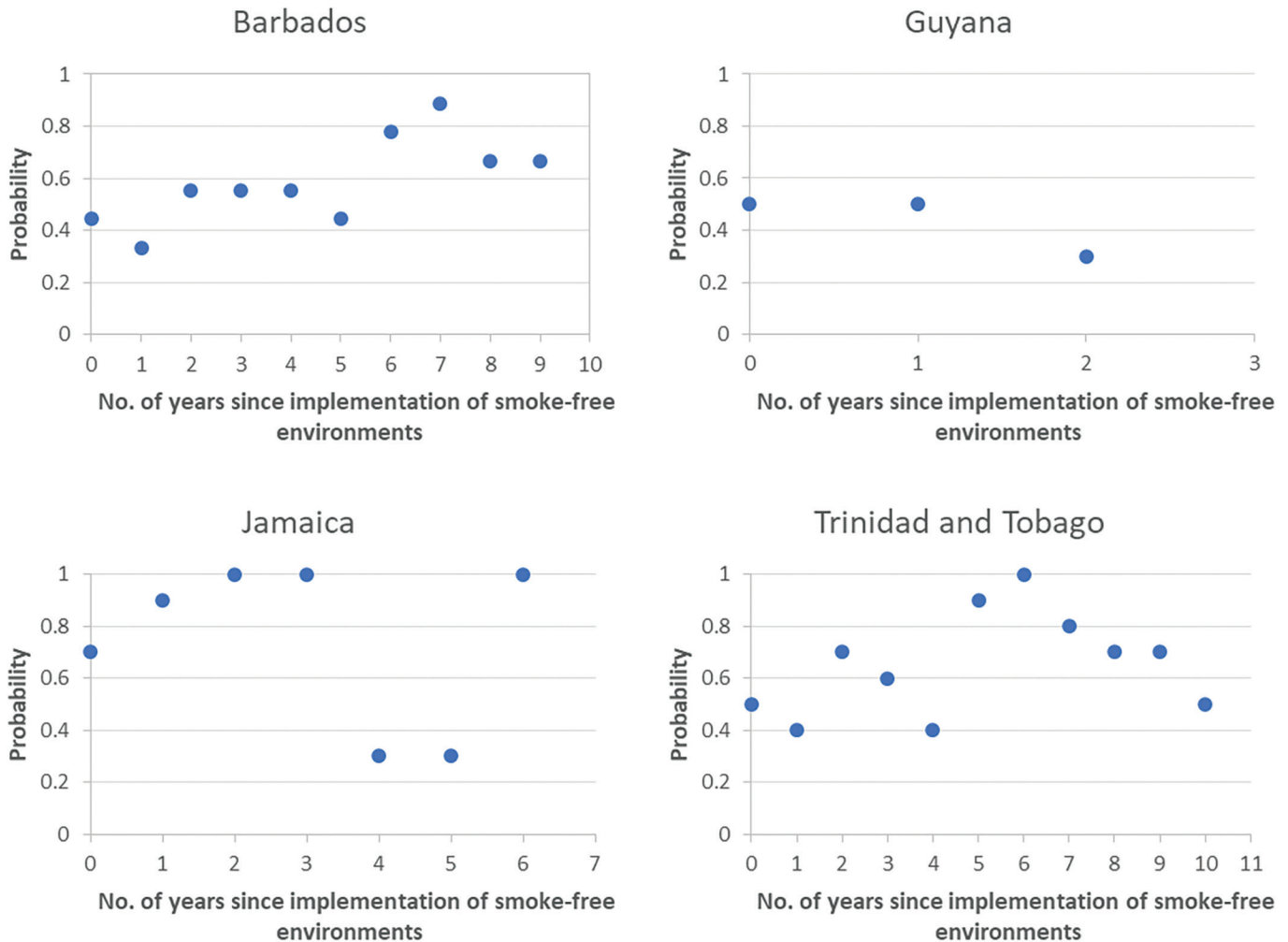
suggesting that smoke-free environments did not reduce tourist arrivals in these CARICOM countries.

Effect of smoke-free environments on tourism expenditures and average length of stay

A synthetic control method was used to complement our findings by considering the effects of the comprehensive smoke-free legislation on the inbound tourism expenditure and the average length of stay. Placebo tests for tourism expenditure and for average length of stay suggested that smoke-free environments did not affect expenditure nor the average length of stay. This was found in all four case studies and for both the year of implementation of the smoke-free environments and all post-implementation years, which implies that the observed effect on tourism expenditure and the average length of stay was largely due to chance.

Table 3 shows the average total effect of smoke-free environments on tourism expenditure and on the average length of stay for the four countries combined. For both indicators, the table shows a negative and not statistically significant coefficient on

FIGURE 2. Probability that the effect on tourist arrivals happened by chance



Note: The impact of the smoke-free environments for the year of implementation and for each year post-implementation is the difference between the inbound tourism arrivals in the treated country and its synthetic country counterfactual.
 Source: Authors' estimates using the World Tourism Organization and the World Bank world development indicators databases.

TABLE 2. Average effect of smoke-free environments on tourist arrivals

Dependent variable ^a	Barbados	Guyana	Jamaica	Trinidad and Tobago	Aggregate effect
D	0.0098** (0.0041)	-0.7532*** (0.1098)	-0.0098 (0.0302)	-0.2363*** (0.0627)	-0.2863*** (0.0649)
T	-0.0079 (0.0099)	-0.0519 (0.0955)	-0.1251 (0.0863)	-0.0117 (0.1103)	-0.0422 (0.0362)
T×D	-0.0146 (0.0107)	0.4687 (0.3169)	0.1946** (0.0920)	-0.0962 (0.1229)	0.1849 (0.1180)
Intercept	0.0012 (0.0030)	0.1236*** (0.0331)	0.0157 (0.0248)	0.1910*** (0.0560)	0.0803*** (0.0197)
Average p-value	0.74	0.47	0.87	0.38	-

^aCombined effect.
 Notes: D is a dummy variable for the case study, T is a dummy variable indicating years from implementation of smoke-free environments until the end of the sample period, and T×D is the interaction of these two variables. Robust standard errors are shown in parenthesis. Statistical significance: ** p < 0.05; *** p < 0.01.
 Source: Authors' estimates using the World Tourism Organization and the World Bank world development indicators databases.

TABLE 3. Average effect of smoke-free environments on tourist expenditure and average length of stay

Dependent variable ^a	Inbound tourism expenditure	Average length of stay
D	0.0408*** (0.0131)	0.0401*** (0.0126)
T	-0.0058 (0.0169)	0.0071 (0.0069)
T×D	-0.0384 (0.0557)	-0.0668 (0.0427)
Intercept	-0.0072 (0.0074)	-0.0019 (0.0038)

^aAggregated effect.
 Notes: D is a dummy variable for the case study, T is a dummy variable indicating years from implementation of smoke-free environments until the end of the sample period, and T×D is the interaction of these two variables. Robust standard errors are shown in parenthesis. Statistical significance: *** p < 0.01.
 Source: Authors' estimates using the World Tourism Organization and the World Bank world development indicators databases.

the interaction of the binary indicator of implementation of smoke-free environments and the time dummy variable indicating years since implementation of smoke-free environments. These data suggest that implementation of a comprehensive

smoke-free legislation did not affect tourism expenditure nor the average length of stay in the four implementing countries.

DISCUSSION

Using a synthetic control method to analyze the impact of smoke-free legislation on the tourism industry in four CARICOM countries, we found that the implementation of the smoke-free environments did not affect the arrivals of tourists, the expenditure of those tourists or their average length of stay. We found this for each country individually (Barbados, Guyana, Jamaica, and Trinidad and Tobago) and also for the four countries as a whole – demonstrating that the implementation of smoke-free environments is not a harmful policy for the tourism industry.

This evidence is consistent with that found in the United Kingdom of Great Britain and Northern Ireland in 2007 and in Spain in 2011 (23), and with findings from a study on the smoke-free legislation implemented in Hawaii in 2006 (13). Moreover, the statistics of the World Tourism Organization do not show falls in the arrival of tourists in countries that have implemented smoke-free laws (24).

There is also evidence from different countries that smoke-free environments may provide health-related benefits, such as immediate health improvements for individuals and populations. For example, studies in the United States (25), Scotland (26), Italy (27), Uruguay (28), Argentina (29), and Canada (25) suggest that reductions in hospital admissions due to acute myocardial infarction (heart attack) may occur with smoking bans. In addition to direct effects on health, comprehensive bans on smoking in indoor workplaces and public places have been associated with reduced social acceptability of smoking and have been shown to reduce tobacco consumption (30). According to a World Bank analysis, smoking bans can decrease tobacco consumption by between 4% and 10% (31). Reviews of studies in Australia, Canada, Germany, and the United States found that smoke-free workplaces result in a 29% reduction in consumption by smokers on average (1). All this evidence confirms that comprehensive smoke-free legislation produces economic benefits by reducing health care expenditure and the financial burden caused by tobacco consumption and second-hand exposure to tobacco smoke.

The tobacco industry has used several arguments against strong and comprehensive smoke-free laws arguing that these smoking bans harm the economy, in particular the hospitality and tourism industries (23). However, the evidence presented in this paper and the earlier literature cited overwhelmingly demonstrate that smoking bans in alignment with the WHO FCTC Article 8 confer health and economic benefits with no negative economic impact on businesses in the hospitality and tourism sectors. Thus, these results are an important contribution to mobilize the required support and political will to achieve the goal of a smoke-free Caribbean by 2022, as several countries develop their tobacco-control legislation and regulations. More importantly, smoke-free environments may serve as an entry point for comprehensive tobacco-control legislation.

This study has some limitations. Importantly, we had to rely on a quasi-experimental design since national policy interventions such as smoke-free legislations are typically not amendable to being evaluated using randomized control trials. Quasi-experimental approaches, in general, limit our ability to rule out all confounding factors and the potential influence of

other interventions. At the same time, the main strength of this study is the use of a synthetic control method that produced estimates for different tourism outcome variables which can be attributed directly to the implementation of smoke-free environments. The main challenge in estimating an aggregated intervention effect using observational data is selecting the appropriate control countries for comparison. The synthetic control method provides an ideal counterfactual scenario by creating a synthetic country representing what would have happened with tourism if smoke-free legislation had not been implemented.

The synthetic control method allowed us to assess whether the estimated effects could be attributed to processes other than the smoke-free legislation. We compared the impact of the implementation of smoke-free environments in four CARICOM countries to placebo effects, which were obtained for each country of the donor pool by artificially assuming that smoke-free environments had been implemented in those countries. In all cases, the placebo effects were stronger than the estimated effect in the country implementing smoke-free environments, indicating that it is highly unlikely the implementation of smoke-free legislation affected the tourism industry.

In conclusion, our findings provide strong evidence that public policies banning smoking in public places do not affect hospitality and tourism businesses. Smoke-free environments covering all indoor public places, workplaces and public transport are part of the menu of best-buy policies considered most cost-effective and feasible to implement to prevent noncommunicable diseases (32) as recommended in the WHO Global Action Plan for the prevention and control of noncommunicable diseases 2013–2020. Given the significance of the tourism industry to the economies of Caribbean countries and the changes that are taking place therein to face the increasing competition for key customer segments from other regions, such as Central America, South America, and Asia, this study provides strong evidence that public policies banning smoking in public places do not affect hospitality and tourism businesses.

Author contributions. MGR and EPL conceived and designed the study. All authors drafted the article, interpreted the data, revised the analyses critically, and approved the final version of the article.

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Conflicts of interest. None declared.

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Efecto de una legislación integral sobre ambientes libres de humo en la industria del turismo en los países de la Comunidad del Caribe

RESUMEN

Objetivo. Evaluar si la introducción de una legislación integral sobre ambientes libres de humo tuvo algún efecto sobre el turismo en cuatro países de la Comunidad del Caribe (CARICOM): Barbados, Guyana, Jamaica y Trinidad y Tobago.

Métodos. Comparamos la evolución de tres variables turísticas (llegada de turistas, gasto de los turistas y duración promedio de la estancia) en un país que ha establecido entornos libres de humo de tabaco (país tratado) con la evolución de estas variables en el mismo país si no se hubiera adoptado una legislación sobre ambientes libres de humo. Se empleó un método de control sintético para recrear este escenario contrafáctico mediante la construcción de un país sintético utilizando un promedio ponderado de varios países del grupo de donantes de CARICOM que no habían introducido una legislación relativa a entornos libres de humo durante el período analizado. Se cuantificó el efecto de los entornos libres de humo de tabaco sobre el turismo como la diferencia entre las variables turísticas en el país tratado y el sintético. Para evaluar si el efecto estimado de los entornos libres de humo fue estadísticamente significativo, se compararon los efectos de la legislación en el país tratado con los efectos placebo en el grupo de donantes mediante la suposición de que se hubiese introducido una legislación integral sobre ambientes libre de humo en el mismo año que en el país tratado.

Resultados. La implementación de entornos sin humo de tabaco no tuvo ningún efecto en la llegada de turistas, el gasto de los turistas o la duración promedio de la estancia en los cuatro países.

Conclusiones. Nuestros hallazgos ofrecen una prueba sólida de que las políticas públicas que prohíben fumar en lugares públicos no afectan a las empresas de hospitalidad y turismo. Dada la importancia económica de esta industria en el Caribe, la evidencia local proporcionada por este estudio ayudará a contrarrestar eficazmente la interferencia de la industria tabacalera y avanzar hacia una Comunidad del Caribe libre de humo de tabaco.

Palabras clave Ambientes libres de humo; fumar; política pública; turismo; Región del Caribe.

Efeito de uma lei antifumo abrangente sobre a indústria do turismo em países da Comunidade do Caribe

RESUMO

Objetivo. Avaliar se a promulgação de uma lei antifumo abrangente afetou o turismo em quatro países da Comunidade do Caribe (CARICOM), a saber: Barbados, Guiana, Jamaica e Trinidad e Tobago.

Métodos. Comparamos a evolução de três variáveis relacionadas ao turismo (desembarque de turistas, despesas de turistas e duração média da estadia) em um país que havia implementado ambientes livres de fumo (país tratado) com a evolução dessas variáveis no mesmo país se a lei antifumo não tivesse sido implementada. Usamos um método de controle sintético para recriar esse contrafactual, construindo um país sintético usando uma média ponderada de vários países doadores da CARICOM que não promulgaram leis sobre ambientes livres de fumaça durante o período analisado. Quantificamos o efeito dos ambientes livres de fumo no turismo como a diferença entre as variáveis de turismo no país tratado e no país sintético. Para avaliar se o efeito estimado dos ambientes livres de fumo foi resultado do acaso, comparamos os efeitos da legislação do país tratado com os efeitos placebo no grupo de doadores, supondo que uma lei antifumo abrangente havia sido promulgada no mesmo ano que no país tratado.

Resultados. A implementação de ambientes livres de fumo não afetou o desembarque de turistas, as despesas de turistas ou a duração média da estadia nos quatro países.

Conclusões. Nossas constatações fornecem evidências robustas de que as políticas públicas que proíbem o fumo em locais públicos não afetam o setor de hospitalidade e turismo. Considerando a importância econômica desta indústria para o Caribe, as evidências locais fornecidas por este estudo ajudarão a combater efetivamente a interferência da indústria do tabaco e a avançar rumo a um Caribe livre do fumo.

Palavras-chave Ambientes livres de fumo; fumar; política pública; turismo; Região do Caribe.
