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Smoke-free legislation impact on the hospitality sector in the Republic of Georgia

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ABSTRACT

Introduction Comprehensive smoke-free (SF) policies reduce secondhand smoke exposure and improve population-level health outcomes. However, some decision-makers heed the tobacco industry's argument that SF policies negatively impact the hospitality sector. This study examines the intermediate economic impact of the Republic of Georgia's SF legislation (effective since early 2018) on the hospitality sector in Georgia.

Methods Analyses used 2015–2019 hospitality sector data from Georgia's National Statistics Office. Simple linear regression models were conducted to examine the impact of Georgia's SF policy on economic indicators (ie, number of employees, food service facilities, hotels and international visitor trips; employee remuneration; production value; turnover; hospitality sector value added tax (VAT)).

Results Analyses indicated no negative impact on any of the economic indicators. Instead, from 2018 to 2019, the number of food service facilities, hotels and international visitor trips increased by 20%, 17% and 7%, respectively. Additionally, there were increases in the number of employees (9%), average employee remuneration (3%), production values (13%), turnover/total revenue (13%) and VAT (26%). Moreover, the economic indicator values during the studied period were strongly correlated with each other ($p>0.95$) and indicated a consistent and uniform improvement.

Conclusions After the SF legislation went into effect, the hospitality sector demonstrated significant growth and no adverse effects in the economic indicators studied. The findings underscore the importance of maintaining and enforcing SF policies in Georgia and expanding the evidence base for SF policies globally.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Comprehensive smoke-free (SF) policies benefit health and have no negative impact on economy.
⇒ However, the tobacco industry continues to fight SF policies by arguing that they negatively impact businesses, particularly in the hospitality sector.

WHAT THIS STUDY ADDS

⇒ The study provides empirical evidence that Georgia's SF legislation had no negative economic impact on the hospitality sector.
⇒ It demonstrates growth in several economic indicators, including increases in the number of food service facilities, hotels, international visitor trips, employee numbers, remuneration, production values, turnover, and VAT.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ The findings support the continued enforcement of SF policies and provide a strong argument against the notion that such policies harm the hospitality sector.
⇒ The study contributes to the global evidence base, encouraging other regions to adopt or maintain SF policies without fear of economic drawbacks.

INTRODUCTION

Secondhand smoke (SHS) exposure causes heart disease, cancer and many other diseases and is responsible for over 1.2 million deaths[1] and 36.3 million disability-adjusted life years globally every year.[2] Notably, there is no risk-free level of exposure to SHS.[3–5] Smoke-free (SF) policy effectively protects people from the harms of SHS.[6] Smoking bans in public places decrease SHS exposure and improve population-level health outcomes like acute pulmonary and cardiovascular diseases in the short term and smoking-related cancers in the long term.[7–10] Article 8 of the WHO's Framework Convention on Tobacco Control (FCTC) established a standard for SF policy implementation.[11] As of 2023, 74 countries have comprehensive SF laws.[12]

The Republic of Georgia, a European country with a population of 3.7 million[13] ratified the FCTC in May 2006[14] but still experienced one of the highest cigarette use prevalence rates (31.3%; 57% men and 7% women) in the European region among 16–69 years old population in 2016 and high rates of SHS[15] which caused at least 2100 deaths in 2017.[16] The electronic cigarette (e-cigarette) market in Georgia has seen a significant surge in popularity, especially among youth. Between 2021 and 2022, the e-cigarettes market experienced a 4.5-fold increase.[17]

On May 1, 2018, Georgia fully implemented the FCTC SF policy standard prohibiting the use of all tobacco products (including e-cigarette, heated tobacco products (HTPs), hookah) in all public places including the hospitality sector (eg, restaurants, bars, cafes, hotels and other food and placement service providers).[11] Smoking is allowed in casinos and in some slot machine clubs (with 20 or more slot machines and paying an annual fee of GEL 200 000 or more), in pre-detention isolators, on the stages of public theatres, in cigar bars where only

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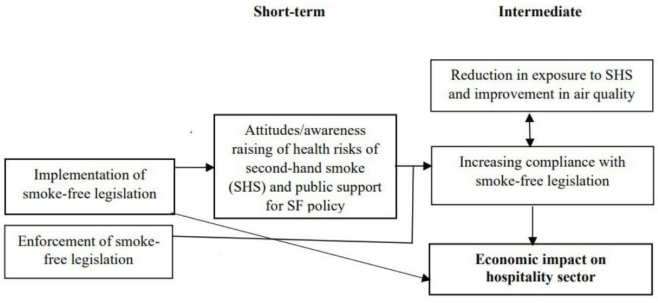

Figure 1 Logic model of expected outcomes associated with smoke-free legislation (adapted from the CDC's Outcomes Indicator Framework to smoke-free policy implementation in relation to hospitality sector economic indicator outcomes). CDC, Centers for Disease Control and Prevention, SF, smoke-free.

cigar smoking is allowed, and in prisons, which can designate smoking cells for people who smoke. Smoking is also permitted in airport transit zones with specially designated smoking areas. Palliative and psychiatric clinics can also permit specific patients to smoke if they have separate and isolated spaces for patients in critical condition.[18] A 2016 nationwide survey before the adoption of the SF legislation reported that a smoking ban was supported by 79% of clients visiting restaurants, cafes and other food service places (n=1054).[19] Also, 69% reported that they would not change the frequency of their visits to food service facilities after the implementation of SF legislation. Additionally, 17.3% indicated that their visits would increase and only 9.8% stated their visits would decrease following the implementation of SF legislation.[19] Nonetheless, some decision-makers argued during the debates in the Parliament that the SF legislation would negatively affect the economy, particularly the hospitality sector, predicting most facilities would be forced to close.[20]

Globally, hundreds of studies have shown that SF policies have no negative influence on the hospitality sector and, in some cases, have led to positive business growth. Meta-analyses of studies from the USA, Canada, South America, Europe, Australia and other countries found that SF policy and regulations do not have a negative impact on the hospitality industry, revenues, profits and employment of restaurants, bars and hotels.[21–23] Several studies, which found a negative impact of SF policy on the hospitality sector, were funded by the tobacco industry.[24 25]

Various studies have used different frameworks and indicators for measuring the impact of SF policies. The most relevant framework for our study is an Outcomes Indicator Framework developed by the US Centers for Disease Control and Prevention. This framework includes a high-level logic model and evidence-based outcome indicators for each tobacco prevention and control goal area (figure 1).[26–28] A similar model was used in the study where authors additionally included long-term indicators, which we excluded from our model, focusing solely on short and intermediate outcomes related to the economic impact on the hospitality sector which was the aim of our study.[27]

Prior studies in the Republic of Georgia have examined measurable indicators for some SF policy related outcomes. For instance, public support for smoking prohibition in public places (including hospitality sector) increased from 79% in 2016 to 85% for 2018.[19 29] Awareness regarding harm of SHS increased and health conditions improved after a new SF legislation.[30–33] Smoking among the general population declined from 31% (57% men and 7% women) in 2016 to 28% (49.5% men and 8.5% women) in 2019.[34] Survey data from the WHO STEP-wise approach to noncomunnicable disease risk factor surveillance (STEPS) 2016 and Tobacco National Survey 2019 show that SHS exposure declined by 4.4 percentage points (from 43% to 38.6% accordingly) in homes and by 4.7% (from 15.8% to 11.1% accordingly) at workplaces in Georgia.[15 34] Data show that the average air pollution level in venues in the hospitality sector fell by approximately 91% after the smoking prohibition was introduced in 2018, compared with 2017.[32]

For all sectors, the level of compliance with SF legislation was around 95% in 2018 and 96% in 2019. For the hospitality sector, the compliance level with SF regulations was very high and varied from 96.4% to 99.5% (average 98%) by hospitality sector facilities for 2018–2019.[32]

However, no prior studies have assessed the economic impact of the SF legislation on the hospitality sector in Georgia. This study aims to assess changes in hospitality sector economic indicators after SF legislation implementation. The importance of our study lies in its focus on the unique socioeconomic and cultural context of Georgia which may yield different outcomes from SF legislation compared with other regions. Local data are essential to inform effective policy-making in Georgia. Understanding these effects is crucial for guiding law-makers and decision-makers in strengthening, maintaining and enforcing SF policies to suit the local context, ensuring the health and economic well-being of the population.

METHODS

Logic model

The current study specified expected short-term (up to 8 months: From 1 May 2018 to 31 December 2018) and

Table 1 Hospitality sector economic indicators during 2015–2019

Economic indicators/year	2015	2016	2017	2018	2019
Number of international visitor trips (thousands)*	5256	5393	6483	7203	7726
Number of employees	31 333	35 133	40 313	41 924	45 929
Monthly salary (GEL)	564	627	673	827	854
Turnover (million GEL)	1070	1307	1562	1812	2089
VAT (million GEL)	417	608	700	789	1075
Production value (million GEL)	1057	1325	1565	1816	2101
Number of food service facilities	3229	4021	3990	4143	5169
Number of hotels	1025	1496	1586	1717	2063

National Statistics Office of Georgia, 2023, except.
**Georgian National Tourism Administration, 2022.*
VAT, value added tax.

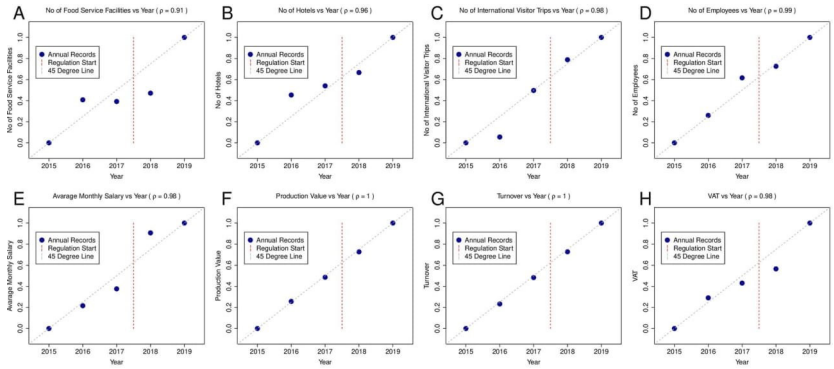

Figure 2 Pairwise correlations between hospitality sector economic indicators and year variable.

intermediate (>8–20 months: To 31 December 2019) economic outcomes of the SF legislation in the hospitality sector (figure 1).

Economic data sources

Given that the SF legislation entered into effect on 1 May 2018, we analysed data from 2015 to 2019 (before the COVID-19 pandemic in 2020) assessing business activity before and after the SF legislation changes[35] including data from the National Statistics Office of Georgia[36] capturing the number of food service facilities, number of hotels, number of employees in the hospitality sector, employee remuneration, production value, turnover and value added tax (VAT) in the hospitality sector as well as data from the Georgian National Tourism Administration[37] regarding the annual number of international visitor trips to Georgia. Data from 2015 to 2017 provide baseline (ie, pre-SF legislation) data and financial indicators are presented in Georgian national currency—GEL (the average exchange rate during 2015–2019 was around US dollar 1=GEL 2.5).[38] The term 'turnover' for this study purpose means 'total revenue' in this business sector.

Our primary data source is the National Statistics Office of Georgia, a dedicated statistical organisation responsible for collecting and conducting specific surveys in Georgia. Data collection typically occurs on an annual basis with some datasets available quarterly. The office ensures the accuracy, precision and consistency of the statistics employing scientific criteria in selecting standards, methodology and resources. The methodology is transparent and open serving as the foundation for producing reliable statistics.[39 40]

Data analysis

The economic indicator (ei) variables were adjusted for inflation (i) over the studied time period. More specifically, this adjusted economic indicator (ei_a) was calculated using the formula:

$$ei_a = ei - ei \times i$$

For the initial analysis, the adjusted economic indicators for the 5-year period were standardised to a (0;1) scale for easier visualisations and plotted both against a given year as well as against the number of months within the given year when the policy was effective. In particular, in 2015, 2016 and 2017, the SF legislation was effective for 0 months, while in 2018, it was effective for 8 months, and in 2019, it was effective for 12 months. Individual linear regressions were also fit for economic indicators versus the year variable and the variable containing the number of months the ban was effective. The corresponding correlation coefficients (ρ, rho) of the economic indicators with the year variable and with the variable containing the number of months the policy was effective were computed and rounded up to two decimal points. R software for statistical computing V.4.2.2 was used for data analysis and for visualisations. We considered other approaches (eg, time series analysis, joint point regression) but chose linear regression because the number of available time points was limited which makes certain approaches (eg, joint point analysis) less reliable, feasible and/or appropriate.

RESULTS

Number of hospitality sector facilities and international visitor trips

The total number of hospitality sector facilities increased from 4254 in 2015 to 7232 in 2019. From 2017 to 2018 (the year

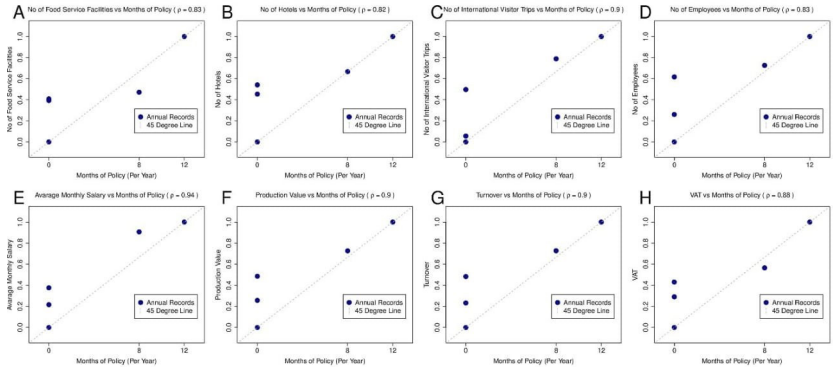

Figure 3 Pairwise correlations between hospitality sector economic indicators and months SF legislation in effect variable. SF, smoke-free.

Table 2 Linear regression model for hospitality sector economic indicators vs number of months the smoke-free legislation was effective in that year

Economic indicators vs months of SF legislation	Beta coefficient	Std. error of beta coefficient	P value
Number of international visitor trips (thousands)	172.59	48.92	0.04
Number of employees	8.44	3.27	0.08
Monthly salary (GEL)	20.98	4.48	0.02
Turnover (million GEL)	64.09	17.79	0.04
VAT (million GEL)	37.91	11.57	0.04
Production value (million GEL)	64.73	18.34	0.04
Number of food service facilities	101.28	39.79	0.08
Number of hotels	54.25	22.27	0.09

SF, smoke-free; VAT, value added tax.

when the SF legislation was implemented), there was a 5% increase in the number of such facilities (5576 in 2017 to 5860 in 2018) and a 19% increase from 2018 to 2019 (table 1). Food service facilities (not located in hotels) and hotels increased from 2018 to 2019 (after the SF policy) by 20% and 17%, respectively (table 1). Tourism activity also increased each year during 2015–2019. Specifically, the total number of international visitor trips during the year before the SF regulations (2017) was 6483 million and increased by 720 000 (10%) in 2018 and by 523 000 (7%) in 2019 (table 1).

Figure 2 presents correlation coefficients for the year variable and the number of: Food service facilities (ρ=0.91; figure 2A), hotels (ρ=0.96; figure 2B) and international trips (ρ=0.98; figure 2C). Figure 3 presents correlation coefficients for number of months the SF legislation was effective in a given year indicating strong associations with the number of: food service facilities (ρ=0.83; figure 3A), hotels (ρ=0.82; figure 3B) and international visitor trips (ρ=0.9; figure 3C). Linear regression indicated a significant positive relationship between the number of months the SF legislation was effective in a given year and the number of international trips (p=0.039) indicating an increase in the number of trips after the SF legislation (table 2). However, linear regression indicated non-significant relationships (but with positive regression coefficients) between the number of months the SF legislation was effective and the number of food service facilities or hotels (table 2).

Number of hospitality sector employees and their average monthly salary (remuneration)

The number of hospitality sector employees and average monthly salary (remuneration) for hospitality sector employees (GEL) increased during 2015–2019. The number of employees increased by 4% from 2017 to 2018 and by 9% from 2018 to 2019 (table 1). Average remuneration increased by GEL 154 (19%) in 2018 and by GEL 27 (3%) in 2019. Annual inflation level was 2.6% in 2018 and 4.9% in 2019[41] meaning that the inflation-adjusted remuneration increased by GEL 150 (18%) and by GEL 26 (3%), respectively.

The number of hospitality sector employees was positively associated with the year variable (ρ=0.99; figure 2D) and the number of months the SF legislation was effective in a given year (ρ=0.83; figure 3D). Linear regression indicated a non-significant but positive association between the number of months the SF legislation was effective in a given year and the number of employees (table 2).

Similarly, there were strong positive correlations between the average monthly salary and the year variable (ρ=0.98; figure 2E) and the number of months the SF legislation was effective in a given year (ρ=0.94; figure 3E). The linear regression model indicated a significant positive relationship between the number of months the SF legislation was effective in a given year and the average monthly salary (p=0.018) indicating an increase in the average monthly salary after the SF legislation (table 2).

Production value, turnover/total revenue and VAT in hospitality sector

Production value, turnover (total revenue) and VAT in the hospitality sector (all in million GEL) increased during 2015–2019. In 2018 and 2019, production value increased by 14% and 13%, respectively, turnover increased by 14% and 13% and paid VAT increased by 11% and 26% (table 1). The very low level of inflation during 2018 (2.6%) and 2019 (4.9%) had no substantial influence on production value, turnover and paid VAT during these time periods.

There were strong correlations between the production values/turnover in the hospitality sector and year variable (ρ = ~1 for each; figure 2F,G) and number of months the SF legislation was effective in a given year (ρ = ~0.9 for each; figure 3F,G). Similarly, there were significant positive correlations between VAT in the hospitality sector and the year variable (ρ=0.98; figure 2H) and the number of months the SF legislation was effective in a given year (ρ=0.88; figure 3H). Linear regression indicated significant positive relationships between the number of months the SF legislation was effective in a given year and the production value (p=0.039), turnover (p=0.037) and VAT (p=0.047) indicating increases in each outcome after the SF legislation was implemented (table 2).

DISCUSSION

This is the first study to evaluate changes in economic indicators in the hospitality sector after the implementation of a SF legislation in Georgia. Our results suggest that there was no evidence the SF legislation negatively impacted the hospitality sector in the Republic of Georgia; instead, all economic indicators increased including the number of food service facilities, hotels, international visitor trips and employees; employee average salaries; production values; turnover (total revenue); and VAT in the hospitality sector up to 2019. We did not collect the above data for 2020–2021 because of the COVID-19 pandemic that had serious consequences on the hospitality sector in Georgia. These findings are in line with positive expectations before the SF legislation implementation. A 2016 survey showed that 87% of respondents would react positively to such regulations with only 6.1% expressing discomfort. Additionally, 9.8% of respondents believed the SF policy would reduce visits to food service facilities while another 17.3% anticipated an increase.[19]

The results of other studies conducted in Georgia show improvement in some pulmonary and cardiovascular diseases of the Georgian population after the SF legislation was implemented in May 2018.[31–33] The hospitality sector likely played a positive role in this improvement due to the above-mentioned dramatic decrease of SHS exposure in such facilities. These findings are similar to other findings from different countries where SF legislation were implemented.[27 42–45] These studies showed no negative impact of the SF legislation on the hospitality sector in other countries: rather there was a positive impact on the economic indicators. Georgia also had positive economic indicators due to stabile economic growth before and after SF

legislation. For example, in 2017, the gross national income (GNI) per capita was US dollars 4040 experiencing a decrease of 0.98%. By 2018, it rose to US dollars 4460 marking a significant growth of 10.40%. Subsequently, in 2019, it reached US dollars 4690 with a growth rate of 5.16%. This indicates that the year SF legislation was enacted, there was a notable increase in GNI growth by 10.40% followed by a slight decrease to 5.15% the following year.[46]

It is noteworthy that Georgia had a high level of compliance with SF legislation in the hospitality sector, reaching 97% during 2018–2019,[32] attributed to robust public support. Public support increased by 6% just after the SF regulations entered into force and reached 85% in June 2018 compared with 79% in 2016.[19 29] If enforcement of the new regulations in the hospitality sector had been low, the number of customers would have likely remained unchanged with the regulations having no impact. However, if enforcement was high, some people who smoke might have avoided food outlets posing a risk to the business. Despite the high level of compliance with the SF legislation, it had no negative impact on the hospitality sector. Moreover, air quality improved by 91% and became close to international standards.[32] Also, SHS exposure decreased by 4.7% in working places for 2019.[34] These positive outcomes, together with no negative economic changes in the hospitality sector after the SF legislation implementation, demonstrate a positive population-level impact of the SF legislation in Georgia.

However, it is important to note that this achievement in the field of public health must be sustained and ongoing support from the government as well as local and international stakeholders is necessary to ensure a healthier environment in the hospitality sector even after the COVID-19 pandemic. A new challenge that Georgia faces at this stage is the emergence of new products and their increased usage among the population. The secondhand aerosol of novel tobacco products is also dangerous for non-users.[47–49] To address this issue, stricter policies and educational campaigns are needed to prevent the use of e-cigarettes and HTPs in Georgia. Additionally, Georgia should work towards harmonising its regulations regarding tobacco-related products (ie, herbal, non-nicotine e-cigarettes, etc) with those of the European Union including implementing restrictions on flavours and additives. This will help prevent youth from initiating tobacco use and protect everyone from the harmful effects of secondhand smoke.

Limitations and suggested further work

The primary limitation of this study is the restricted number of available and reported data points coupled with infrequent data reporting between 2015 and 2019. Consequently, due to the limited 5-year sample, more advanced methods such as multivariate regression and multiple testing corrections for individual regressions, time series analysis were not considered for the analysis. The goal was to provide detailed summaries of the available data. Moreover, the use of aggregate data on a country level could potentially lead to ecological fallacies, so the currently available data and analysis should serve as a foundation for further monitoring.

Our analyses also did not account for other external factors (eg, a marketing campaign promoting tourism[50]) that could have contributed to increased revenues and economic indicators in the hospitality industry.

To precisely identify the contribution of enacted regulations to the above-mentioned growth of hospitality business sector, observation during the longer time period (after COVID-19 pandemic era) and further analyses are needed. With additional data, we can continue building on the existing framework and add other, more long-term, indicators to the model, such as additional reduction of SHS exposure, sustained cultural change, reduction in smoking prevalence and tobacco consumption, reduction in tobacco-related morbidity and mortality, reduction in costs to health services of tobacco-related illness and reduction in health inequalities.

CONCLUSION

Hospitality industry economic indicators showed no evidence of negative impacts of Georgia's 2018 SF legislation. In fact, all relevant economic indicators showed continued growth after the SF legislation was implemented due to economic growth in the country. Findings underscore the importance of maintaining SF policies in Georgia, and build the evidence base for SF policies globally.

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