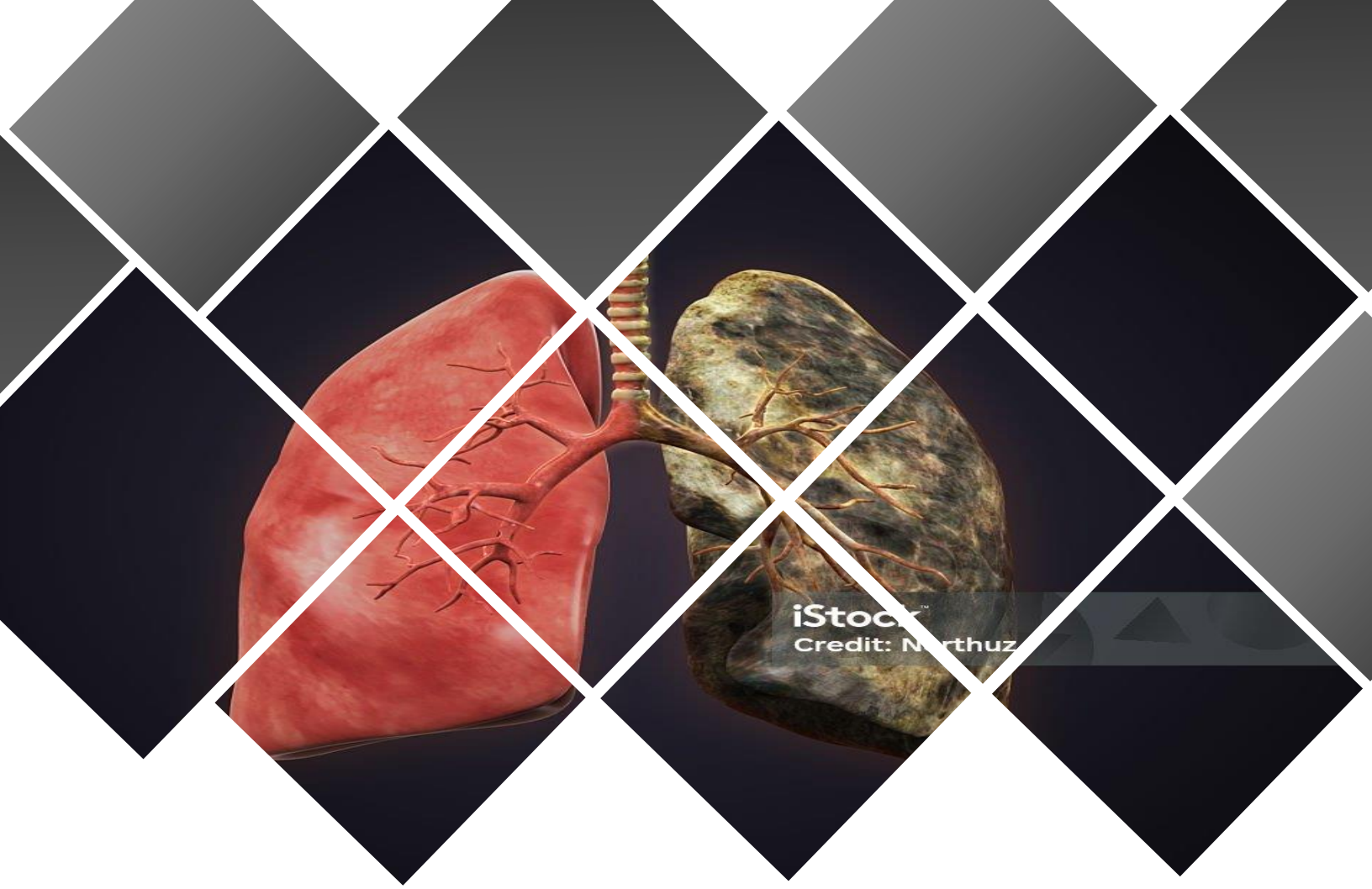


Advocating for a tobacco-free future among the youth through the new control law in Cordoba, Argentina

Term Paper

Advanced Impact Evaluation

Winter Term 2024

Natalia Judith Esquenazi

Table of Contents

Introduction

Even though tobacco is one of the most popular causes of death in the modern era, every year the smoking participation rate increase significantly. The continued prevalence of smoking among youths is a public health issue that many governments across the world have tried to tackle down. The intended success has included a variety of tobacco control policies such as the widespread dissemination of information on the health consequences of cigarette smoking, broadcast of anti-smoking advertisements, limits on tobacco advertising, restrictions on smoking in public places and private workplaces, increased cigarette excise taxes, and various others.

In the Americas region, Argentina is a tobacco producer country who has tried to implement control policies over smoking. On a national level, there is a restriction of smoking in public places that was implemented in 2003 to reduce tobacco consumption. However, the most straight forward policy to reduce the availability of tobacco to youths has been implemented on a local level. Until today, Cordoba has been the only state in the country who has incorporated new regulations into the national law. These legislative efforts have included explicit and strict bans over tobacco advertisement, sponsorship and promotion at any point of sale across the state. While these restrictions are designed to benefit public health, their effectiveness requires rigorous assessment through impact evaluation methods.

This paper aims to research the effect of the new tobacco control regulations in Cordoba on cigarette consumption among young individuals. By employing robust impact evaluation methods and matching techniques, it's expected to analyze the causal relationship between advertisement bans and changes in youth smoking behavior. Understanding these effects is important for policymakers and public health decision-makers who seek to make informed decisions and test the effectiveness of tobacco control laws.

The paper structure starts with a comprehensive problem description of cigarette smoking among the youth population in Argentina and Cordoba, and includes an explanation of the new regulations incorporated to reduce consumption. Next, there is a description of the “Health Conditions” survey as the primary data source, including a visualization of the outcome variable tobacco consumption. In this section, it's also explained the methodological framework adopted for the impact evaluation analysis which includes a treatment and control definition, coarsen exact matching techniques, multiple regressions and difference in differences methods. Subsequently, there is an interpretation of model results and further recommendations related to compliance and control.

This analysis's contribution is focused on highlighting the importance of evidence in policymaking and opening the floor to informed discussions in reducing youth smoking prevalence. The findings of this study are expected to inform policymakers and public health officials in Cordoba and support ongoing efforts to promote a tobacco-free environment in Cordoba and beyond.

Problem Description

The context of tobacco smoking in Argentina

Tobacco use is one of the most popular causes of death around the world. Based on the World Health Organization (WHO) records, 8 million people die every year from cigarette smoking and 1 out of 8 million deaths occur in the Americas region. In the Americas, 16% of the population's deaths are related to cardiovascular disease, 25% from cancer, and 52% from chronic respiratory diseases (Crosbie et al. 2022). To some extent, the ascending presence of tobacco enterprises in the region has contributed to a sharp increase in smoking related deaths, including the permanent incorporation of new smokers, especially among young people.

One of the strongest determinants of tobacco smoking is age. Considering that most adults start smoking when they are young, regulations efforts are necessary to prevent a smoking established behavior. Following this, many tobacco control laws intend to reduce smoking initiation, frequency and encourage quitting (Hawkins, Bach, and Baum 2016). A young smoking behavior is more likely to become a regular smoker as an adult because of greater nicotine addiction. It is important to learn about the different law effects by age. However, the evidence about young smokers has been less conclusive for cigarette advertisements bans compared to higher cigarette taxes (Hawkins, Bach, and Baum 2016:680).

In Argentina, one of the main targets of tobacco advertisement campaigns have been the youth population. Most of the digital marketing strategies included contests, promotions and event experiences focused on the youth. Furthermore, tobacco companies continue to sponsor summer events, festivals, beach bars and nightclubs to promote their products and potentially increase their database. The growing evidence on the addictive nature of cigarette smoking has led to greater emphasis on discourage tobacco use among the youth and reduce its availability (Chaloupka and Grossman 1996).

Based on the existing literature, the negative effects associated with young smoking are mostly related to the development of addictive behavior. Youth who smoke regularly are at higher risk of trying other addictive substances (Chaloupka and Grossman 1996). Low-income young smokers can suffer additional negative effects, for example the financial burden of purchasing tobacco products. Given these significant drawbacks, efforts to prevent youth smoking and promote smoking cessation are crucial for public health and the well-being of young individuals.

The new regulations incorporated in Cordoba

The framework convention on tobacco control developed by WHO has classified Argentina as a country who partially adopted bans in tobacco advertising, promotion, and sponsorship. The National Tobacco Control Law 26,687 was implemented in 2003, and the major objective was to ban indoor smoking, including public places, theatres and work offices. However, until today advertisement at the point of sale is permitted. Tobacco companies are still allowed to show their brand, the price list and health warnings to consumers (Audisio 2018). Over time, some states have passed comprehensive smoking advertisements laws, including health warnings that must cover 20% of the sign. In this context, there is just one state across the country who explicitly banned product display at the point of sale: Cordoba.

The state of Cordoba is well-known for a strict vice policy. In the past, they forbidden any kind of gambling and implemented the country's strictest alcohol driving limit policy. Following this approach, in 2018 Cordoba decided to incorporate new regulations into the National Tobacco Control Law to reduce smoking rates and its respective negative health consequences among the population. While in the rest of

the country tobacco enterprises were taking advantage of the national law loopholes, Cordoba had the ability to ban any kind of advertisement, sponsorship and promotion at the point of sale. The new regulations incorporated a total ban which includes television, radio, print, internet advertising, point of purchase displays, product placement, and sponsorship of any type of event (Audisio 2018). Additionally, the law prohibited the use of direct or indirect incentives that encourage purchases and offer promotional discounts or gifts for the acquisition or consumption of the cigarette products. Regarding electronic cigarettes, it was forbidden the distribution and commercialization to any person under 18 years old. The government expected a sharp decline in smoking rates after the implementation.

Research Question

What is the effect of the tobacco control law on the average tobacco consumption among young people in Cordoba, Argentina?

Data source and methodology

Data source description

The primary data source used in this research is the survey of Health Conditions developed by the Argentinian National Statistics department in partnership with the Ministry of Health and Social Development. The nationwide survey was first conducted in 2003 and replicated in 2005, 2009, and 2018. The survey has the following major objectives:

- Contribute to generate valid, reliable and updated information about population health risks in Argentina, including tobacco and alcohol consumption, eating habits and obesity.
- Monitor the evolution of the principal health conditions of the population
- Conduct impact assessments of prevention and control public policies
- Create proper measurements for health conditions

The data collection procedure was an onsite survey to respondents up to 18 years old. The questionnaire contains more than 5 sections with questions about individual's general health conditions, tobacco consumption, obesity, eating habits, and more. In addition to this, it is important to mention that respondents' answers in this survey can be classified as self-reported. Considering the existence of methodological and questionnaire inconsistencies across the years, this research study uses surveys results from 2013 and 2018 registered for the state of Cordoba and Buenos Aires, which has a total of 6,147 respondents.

In terms of the survey design, the department implemented a panel data approach which involves observing and registering data from the same respondents over multiple time periods and tracking their behaviors and patterns (INDEC 2019). Following this, the participants were not randomly selected. As mentioned, due to inconsistencies in the survey design and the huge time gap, it wasn't possible to match respondents' IDs over time.

Input variables and outcome

This research study uses a combination of **15** qualitative and quantitative features that are described and classified below:

Variable Name	Description	Type
State	Cordoba and Buenos Aires	Categorical
Region	Metropolitan=1 Pampeana=2	Categorical
Monthly income	Monthly income per capita	Numeric
Income quintile	Income quintile based on monthly income per capita	Ordinal
Income range	Income range based on monthly income	Categorical
Gender	Male=1 Female=2	Categorical
Age	18-98	Numeric
Age range	18-24, 25-34, 35-49, 50-64 and 65+	Categorical
Education level	No education=1 Primary incomplete=2 Primary complete=3 Secondary incomplete=4 Secondary complete=5 University incomplete=6 University complete=7 Special education=8	Categorical
Employment	Employed=1 Unemployed=2 Inactive=3	Categorical
Minimum age	Age when the respondent started smoking	Numeric
Tobacco consumption	Respondents' daily tobacco consumption	Numeric
Weight	Respondents' weight in kilograms	Numeric
Year	2013 and 2018	Categorical

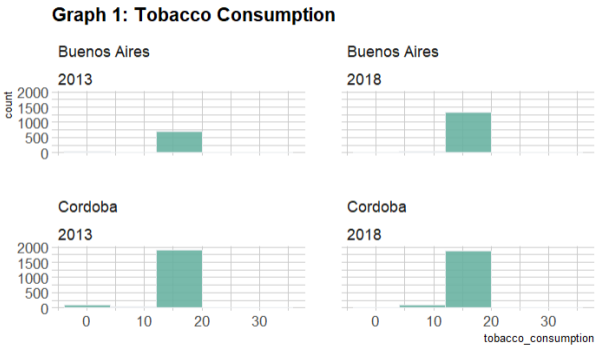
Table 1: Features descriptive statistics

```
       id                    state       region    monthly_income     income_range    income_quintile     gender          age
 Min.   :4.509e+04   Buenos Aires:2126   1:2126   Min.   :     0   Min.   : 0.00   Min.   :1.000   female:3445   Min.   :18.00
 1st Qu.:6.913e+08   Cordoba     :4021   2:4021   1st Qu.:  5000   1st Qu.: 6.00   1st Qu.:2.000   male  :2702   1st Qu.:31.00
 Median :1.375e+09                               Median : 12000   Median :10.00   Median :4.000                 Median :44.00
 Mean   :1.555e+09                               Mean   : 18979   Mean   :19.61   Mean   :3.389                 Mean   :47.21
 3rd Qu.:2.077e+09                               3rd Qu.: 25000   3rd Qu.:13.00   3rd Qu.:5.000                 3rd Qu.:62.00
 Max.   :4.293e+09                               Max.   :300000   Max.   :99.00   Max.   :5.000                 Max.   :98.00
                                                                  NA's   :1549    NA's   :10
  marital_status                education         employment    min_con_age    tobacco_consumption     weight         year
 divorced: 348   university complete  :1657   employed  :4188   Min.   : 5.00   Min.   : 0.0        Min.   : 39.00   2013:2790
 married :1890   secondary complete  :1308   inactive  :1767   1st Qu.:15.00   1st Qu.:14.0        1st Qu.: 62.00   2018:3357
 single  :3281   primary complete    : 998   unemployed: 192   Median :16.00   Median :14.0        Median : 72.00
 widow   : 628   university incomplete: 860                    Mean   :17.68   Mean   :13.9        Mean   : 82.84
                 secondary incomplete : 822                   3rd Qu.:18.00   3rd Qu.:14.0        3rd Qu.: 84.00
                 primary incomplete   : 429                   Max.   :99.00   Max.   :30.0        Max.   :999.00
                 (Other)              :  73                   NA's   :2963                        NA's   :95
 age_range
 18-24: 693
 25-34:1274
 35-49:1539
 50-64:1279
 65+  :1362
```

The outcome variable is **tobacco consumption,** which has a greater average in 2018 for both states compared to 2013 results. In particular, the descriptive statistics show that the average consumption in 2013 for Buenos Aires has been lower (13.34) compared to Cordoba (13.40). However, Cordoba shows a slightly lower consumption average (14.29) in 2018 in comparison with Buenos Aires results (14.37).

Table 2: Overall tobacco consumption in Cordoba and Buenos Aires

state <fctr>	year <fctr>	avg <dbl>
Buenos Aires	2013	13.34748
Buenos Aires	2018	14.37901
Cordoba	2013	13.40472
Cordoba	2018	14.29723



Treatment and control group

The treatment and control groups have been defined by the state of residence and age group of participants. Following this, the treatment group includes young respondents from Cordoba subjected to the tobacco control law, while the control group contains young participants from Buenos Aires where there weren't any new regulations incorporated to the law.

To facilitate the analysis and interpretation of coefficients, this research study evaluates different results using two definitions of the young population. One includes respondents between 18 to 24 years old and can be considered as youth population, while the second one includes respondents between 25 to 34 years old and represents the young adults' group.

The descriptive statistics on tobacco use among young people indicated that, over time, Cordoba has consistently shown a higher average consumption rate than Buenos Aires. However, with regards to the young adult's group there has been a decline in daily consumption in the year 2018.

Table 3: Youth tobacco consumption in Cordoba and Buenos Aires

state <fctr>	year <fctr>	avg <dbl>
Buenos Aires	2013	12.54545
Buenos Aires	2018	14.01835
Cordoba	2013	12.84354
Cordoba	2018	14.19574

Table 4: Young adult's tobacco consumption in Cordoba and Buenos Aires

state <fctr>	year <fctr>	avg <dbl>
Buenos Aires	2013	12.90683
Buenos Aires	2018	14.68016
Cordoba	2013	13.09751
Cordoba	2018	14.43765

Matching and regressions

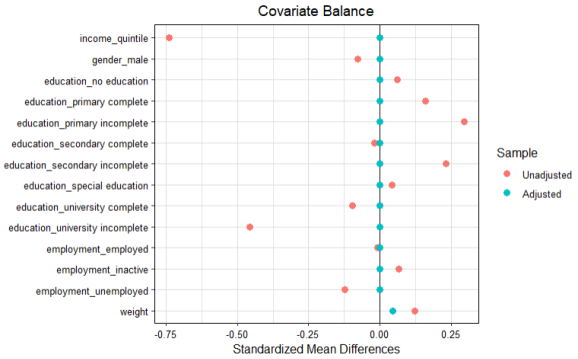
Considering the lack of randomized control trials, this research study implements matching techniques with the major objective of creating a comparable treatment and control group. Finding an apples-to-apples comparison based on similar observed characteristics between the treatment and control group is important to estimate the casual effect of the intervention (Dayal & Murugesan 2023:109). In

addition to this, matching guarantees the robustness of the casual estimations results obtained by analyzing observational data (Dayal & Murugesan 2023:111).

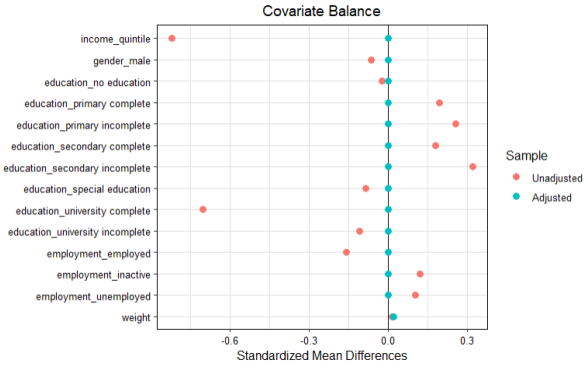
In casual inference analysis it is important to recognize that the young and young adults' population in Cordoba (treated) might have different characteristics than in Buenos Aires (not treated). By selecting a combination of relevant variables, it is possible to create pairs of individuals who are similar. This study selected the following pre-treatment variables: income quintile, employment, gender, education and weight. Following this, it is expected that the only difference between treated and not treated individuals is being subject to the new tobacco control law.

The matching method implemented in this study is coarsen exact matching. This method is very efficient in finding similar pairs, instead of looking for an exact match based on gender, income quintile or education, it creates brackets for each variable and match individuals within the same interval (Dayal & Murugesan 2023:116). This is a chance to increase the likelihood of finding a match between treated and not treated groups, and finally create an apples-to-apples comparison. The multiple regression models and difference in differences method have been implemented using the adjusted dataset.

Graph 2: Coarsen exact matching youth population



Graph 3: Coarsen exact matching young adults



Multiple regression and difference in differences

Initially, this study implements a multiple linear regression to estimate the relationship between the dependent variable and the selected independent variables. In this case, the dependent variable is tobacco consumption, and the independent variables consists in treatment and other co-variables such as income quintile, gender, education, employment and weight. The multiple regression is based on a linearity assumption, it is intended to fit a linear equation to the observed data and, following this, a change in the dependent variable is proportional to the change in the independent variables (Stock & Watson 2018). The most common method to estimate a linear regression model is ordinary least squares (OLS), which minimizes the sum of the squared differences between the observed and predicted values. The linear equation can be written as follows:

$$\gamma i\ (tobacco\ \ consumption) = \ \beta 0 + \ \beta 1Xi(treatment) + \beta 2Xi(year) + \beta 3Xi(income\ quntile) + \beta iXi \ldots + \in$$

The multiple regression is implemented for both the youth and young adults' groups, and the intention is to compare the treatment coefficient results between them. However, the coefficient should not be interpreted as a casual effect and the existence of omitted variables might create biases on the estimation.

To estimate the casual effect of the tobacco control law in Cordoba (treatment) on youth and young adult's cigarette consumption, this research study implements the quasi-experimental method difference-in-differences (DID). DID is focused on finding a similar trend in the outcome variable before the

intervention between the treatment and control group. This assumption is called parallel trends and, if it's accomplished, indicates that any difference in the outcome variable after the intervention can be attributed to the treatment itself (Dayal & Murugesan 2023:229). In this scenario, treated youth or young adults in Cordoba should exhibit a similar cigarette consumption trend than youth or young adults in Buenos Aires before the tobacco control law modification. If that is true, it is possible to interpret the effect of the new regulations on consumption controlling by any time-invariant differences also called omitted variable bias. The DID equation can be written as follows:

$$\gamma it = \beta 0 + \beta 1 Di + \beta 2 Tt + \gamma (Di\ x\ Tt) + \in$$

- γit: tobacco consumption for an individual i and time period t
- $\beta 0$: intercept
- $\beta 1 Di$: coefficient for the treatment effect
- $\beta 2 Tt$: coefficient for the time effect
- $\gamma (Di\ x\ Tt)$: coefficient for the interaction between treatment and time

Models' interpretation

Regressions with matching

The multiple regression results are important for a later comparison with the difference in differences coefficients. The result for treated young people show a negative and non-significant coefficient in model 1 (-0.06), while after the incorporation of covariables in model 2 (0.29) and in model 3 (0.19) the treatment coefficient becomes positive. The tobacco control law and new regulations in Cordoba don't seem to have a negative and strong relationship with young tobacco use. Even in model 1, where the treatment coefficient is negative, there is still a weak and non-significant relationship. The covariables that are relevant for young smokers are the year and gender, youth tobacco consumption shows higher results for 2018 compared to 2013 and it's mostly common among women.

With regards to young adults, the treatment coefficient shows a value of -0.19 in model 1 and 0.12 for both model 2 and 3. These results are quite different compared to the youth, treated young adults in model 1 show a stronger and negative, but still non-significant, relationship with tobacco use. Considering the covariables, year and income quintile are relevant for young adults. In other words, in 2018 young adults smoking increased and mostly happened among those with higher income.

Multiple regression results youth population

	Model 1	Model 2	Model 3
(Intercept)	13.47 *	12.09 *	12.19 *
	[12.98; 13.96]	[10.89; 13.29]	[10.44; 13.93]
treattreat	-0.06	0.29	0.19
	[-0.66; 0.53]	[-0.34; 0.93]	[-0.43; 0.81]
year2018		1.49 *	1.53 *
		[0.90; 2.08]	[0.93; 2.13]
income_quintile		0.13	0.16
		[-0.09; 0.35]	[-0.07; 0.40]
employmentinactive		-0.30	0.10
		[-0.98; 0.37]	[-0.65; 0.85]
employmentunemployed		-1.49	-1.05
		[-5.56; 2.57]	[-5.01; 2.92]
gendermale			-0.61 *
			[-1.18; -0.03]
educationsecondary complete			-0.23
			[-1.13; 0.67]
educationsecondary incomplete			0.26
			[-0.60; 1.13]
educationuniversity complete			-0.16
			[-1.19; 0.86]
educationuniversity incomplete			-0.74
			[-1.64; 0.16]
weight			0.01
			[-0.01; 0.02]
R^2	0.00	0.06	0.08
Adj. R^2	-0.00	0.05	0.06
Num. obs.	471	471	471
RMSE	3.07	2.98	2.97

* Null hypothesis value outside the confidence interval.

Multiple regression results young adults

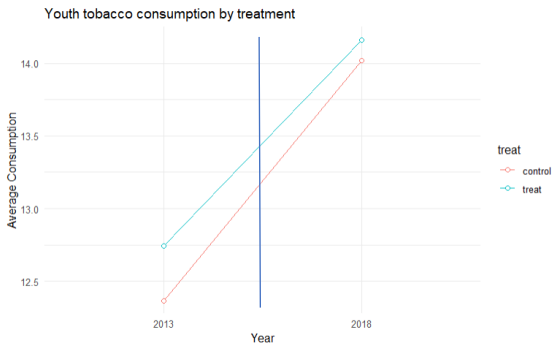
	Model 1	Model 2	Model 3
(Intercept)	13.97 *	12.41 *	7.80
	[13.69; 14.25]	[11.65; 13.18]	[-2.94; 18.54]
treattreat	-0.19	0.12	0.12
	[-0.54; 0.15]	[-0.25; 0.49]	[-0.26; 0.50]
year2018		1.31 *	1.27 *
		[1.00; 1.62]	[0.96; 1.58]
income_quintile		0.19 *	0.16
		[0.05; 0.33]	[-0.00; 0.32]
employmentinactive		-0.56	-0.48
		[-1.37; 0.24]	[-1.32; 0.36]
employmentunemployed		0.68	0.61
		[-2.53; 3.88]	[-2.65; 3.86]
gendermale			0.03
			[-0.32; 0.39]
educationprimary complete			4.16
			[-6.59; 14.90]
educationprimary incomplete			3.94
			[-6.88; 14.77]
educationsecondary complete			4.63
			[-6.07; 15.33]
educationsecondary incomplete			4.48
			[-6.23; 15.19]
educationuniversity complete			4.66
			[-6.05; 15.36]
educationuniversity incomplete			4.52
			[-6.18; 15.23]
weight			0.00
			[-0.01; 0.01]
R^2	0.00	0.08	0.08
Adj. R^2	0.00	0.07	0.07
Num. obs.	1071	1071	1071
RMSE	2.70	2.61	2.60

* Null hypothesis value outside the confidence interval.

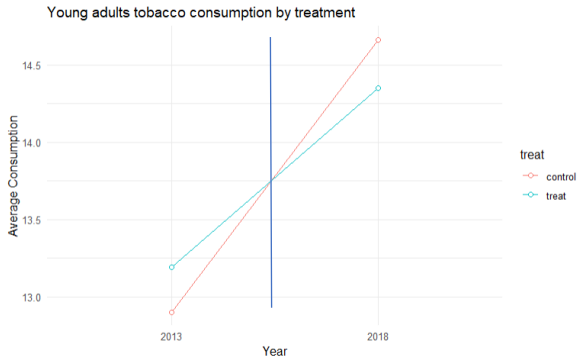
Parallel trends and difference in differences

As mentioned before, parallel trends are the fundamental assumption in difference in differences models. In this case, graph 4 shows that in absence of treatment the trends in cigarette smoking for treated and control youth have followed the same pattern over time. However, graph 5 shows a violation of the parallel trend's assumption, which means that there might be limitations on interpretation of the treatment effect. It is important to acknowledge the inherent uncertainties in the estimation process of the young adult's treatment effect. In terms of the trend patterns, it is crucial to acknowledge the huge data gap that exists; nonetheless, both line charts depict a rise in average cigarette consumption between 2013 and 2018.

Graph 4: Parallel trend youth population



Graph 5: Parallel trend young adults



The time invariance assumption supports the idea that the average cigarette use of youth in Cordoba should be the same in 2013 and 2018 if not for the treatment. However, it is possible to observe a consumption increase in Cordoba from 12.84 in 2013 to 14.19 in 2018, which indicates a positive difference of 1.35 and is not aligned with the new regulation's objective. The state invariance assumption compares Cordoba and Buenos Aires average cigarette consumption, which should be the same if not for the treatment. In this case, the average cigarette use difference between 14.19 and 14.01 is 0.18 and corresponds with the multiple regression results from above.

The average treatment effect shows a negative coefficient of -0.12, which indicates that the new regulations were effective in reducing youth cigarette consumption in Cordoba. The difference in differences model provides slightly greater negative coefficient of -0.24. Even though the coefficient is non-significant, it suggests that treated youth individuals in Cordoba decreased their average tobacco use after the treatment.

Counterfactual: 12.84 + (14.01 – 12.54) = 14.31

Average treatment effect: 14.19 – 14.31 = -0.12

Table 5: Time and state invariance assumption in youth tobacco consumption

Year	Buenos Aires	Cordoba
2013	12.54	12.84
2018	14.01	14.19

Difference in Differences young population

```
============================
             Model 1
----------------------------
(Intercept)    12.37 *
              [11.11; 13.63]
treat           0.38
              [-0.99;  1.74]
time            1.65 *
              [ 0.35;  2.96]
treat * time   -0.24
              [-1.69;  1.21]
----------------------------
R^2             0.06
Adj. R^2        0.05
Num. obs.     471
RMSE            2.99
============================
* 0 outside the confidence interval.
```

Regarding young adults in Cordoba, there was an increase in tobacco consumption from 13.09 in 2013 to 14.43 in 2018, which indicates a positive difference of 1.34. In 2018, young adults' average consumption in Cordoba was lower (14.43) than in Buenos Aires (14.68) where the new regulations were not implemented. In other words, even though the average consumption increased among young adults in Cordoba, it was lower by 2018 compared to Buenos Aires results.

The average treatment effect shows a much lower negative value (-1.25) for young adults in comparison with youth individuals (-0.12). The difference in differences coefficient (-0.60) also indicates a higher decline in tobacco consumption among young adults in Cordoba after the treatment compared to youth treated individuals (-0.24).

Counterfactual: 13.90 + (14.68 – 12.90) = 15.68

Average treatment effect: 14.43 – 15.68 = -1.25

Table 6: Time and state invariance assumption in young adult's tobacco consumption

Year	Buenos Aires	Cordoba
2013	12.90	13.09
2018	14.68	14.43

Difference in Differences young adults' population

```
============================
             Model 1
----------------------------
(Intercept)     12.90 *
               [12.37; 13.43]
treat            0.29
               [-0.33;  0.90]
time             1.76 *
               [ 1.16;  2.36]
treat * time    -0.60
               [-1.32;  0.11]
----------------------------
R^2              0.07
Adj. R^2         0.06
Num. obs.     1071
RMSE             2.62
============================
* 0 outside the confidence interval.
```

Final recommendations

- Based on the existing literature, a complete ban over tobacco advertisement, sponsorship and partnerships at the point of sale has been proved to be easier to implement and effective in reducing exposure to tobacco products among youth individuals compared to other regulations.
- The efforts that Cordoba has made to implement new regulations in the tobacco control law have reduced cigarette consumption by -0.24 in youth individuals and -0.60 in young adults. However, there is not sufficient evidence to affirm that the coefficients have statistical significance and it's suspected the existence of biases.
- There are many compliance issues that should be analyzed by the authorities. Tobacco industries have developed strategies to exploit loopholes and advertise their products, especially to young people. There should be more control over mobile apps that combine promotion of products jointly with cigarette packs.
- It is important to monitor social media in terms of tobacco advertisements as a channel to continue recruiting and targeting young people into smoking initiation. This might be an explanation why it's not possible to find better results in declining youth smoking rate.

References

1. Audisio, Lucrecia. 2018. “Prohibida la publicidad y promoción del tabaco en Córdoba.” Web de Noticias - Gobierno de Córdoba (blog). October 10, 2018. https://prensa.cba.gov.ar/salud-2/cordoba-prohibe-la-publicidad-promocion-y-patrocinio-del-tabaco/.
2. Chaloupka, Frank, and Michael Grossman. 1996. “Price, Tobacco Control Policies and Youth Smoking.” w5740. Cambridge, MA: National Bureau of Economic Research. https://doi.org/10.3386/w5740.
3. Crosbie, Eric, Patricia Gutkowski, Gianella Severini, María Elisabet Pizarro, Sara Perez, Beatriz Albuquerque De Figueiredo, Diego Rodríguez, and Ernesto M. Sebrié. 2022. “Progress in Adopting Bans on Tobacco Advertising, Promotion, and Sponsorship in the Americas: Lessons from Uruguay and Argentina.” Revista Panamericana de Salud Pública 46 (October): 1. https://doi.org/10.26633/RPSP.2022.102
4. Dayal, V., & Murugesan, A. (2023) Demystifying Casual Inference. Public Policy Applications with R. Springer.
5. Hawkins, Summer Sherburne, Nicoline Bach, and Christopher F. Baum. 2016. “Impact of Tobacco Control Policies on Adolescent Smoking.” Journal of Adolescent Health 58 (6): 679–85. https://doi.org/10.1016/j.jadohealth.2016.02.014.
6. “INDEC: Instituto Nacional de Estadística y Censos de La República Argentina.” n.d. Accessed April 9, 2024. https://www.indec.gob.ar/indec/web/Institucional-Indec-BasesDeDatos-2.
7. Stock, James H, y Mark W Watson. 2018. Introduction to Econometrics (4th Edition). United States: Pearson Education, Inc. https://www.princeton.edu/~mwatson/Stock-Watson_4E/Stock_Watson_4E_AnswersToReviewTheConcepts.
8. Wilson, Lisa M., Erika Avila Tang, Geetanjali Chander, Heidi E. Hutton, Olaide A. Odelola, Jessica L. Elf, Brandy M. Heckman-Stoddard, et al. 2012. “Impact of Tobacco Control Interventions on Smoking Initiation, Cessation, and Prevalence: A Systematic Review.” Journal of Environmental and Public Health 2012: 1–36. https://doi.org/10.1155/2012/961724.