

1 **Title:** Non-compliance with point-of-sale tobacco regulations in Argentina

2

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## 3 4 5 **Abstract**

6  
7 **Background:** In Argentina, a national law regulates tobacco marketing at points-of-sale, bans  
8 single cigarette sales, and requires ‘no sale to minors’ signage. Provinces may enact more  
9 stringent regulations, with Cordoba and La Pampa banning all tobacco advertising and the open  
10 display of tobacco products at points-of-sale.

11 **Methods:** We used an observational retail study to assess compliance with tobacco laws at 512  
12 points-of-sale around schools in four cities in four provinces of Argentina: Cordoba (province  
13 of Cordoba), Quilmes (province of Buenos Aires), San Salvador de Jujuy (province of Jujuy),  
14 and Santa Rosa (province of La Pampa).

15 **Results:** Single cigarettes were sold in 75.2% of the points-of-sale, being more prevalent in  
16 kiosks than in neighborhood stores (OR=0.41) and convenience stores (OR=0.09). In 97.5% of  
17 the points-of-sale ‘no sale to minors’ signage was absent. Most (79.1%) points-of-sale openly  
18 displayed tobacco, and approximately one in ten (11.5%) had advertising for cigarettes, in cities  
19 where this is banned (Cordoba, Santa Rosa). In cities where advertising is permitted but subject  
20 to restrictions (Quilmes, San Salvador de Jujuy), 83.1% points-of-sale with adverts violated the  
21 law as the adverts were visible from outside the store.

22 **Conclusions:** Violations of tobacco laws in Argentina are common, with better enforcement  
23 needed.

24  
25 **Keywords:** Compliance, tobacco retailer, Argentina

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## **Introduction**

Tobacco advertising, promotion and sponsorship play an important role in encouraging tobacco use, especially among young people (Organización Panamericana de la Salud, 2019). Following the recommendations of the World Health Organization Framework Convention on Tobacco Control (FCTC), many countries have limited the channels available to tobacco companies to market their products (World Health Organization, 2018). In Argentina, according to the 2018 Global Youth Tobacco Survey, 20.2% of adolescents aged 13-15 used tobacco at that time, one of the highest prevalence rates in the region (Organización Panamericana de la Salud, 2023). While Argentina has not ratified the FCTC, in 2011 it enacted the National Law in Tobacco Control, which aims to discourage tobacco use and reduce tobacco-related harms by regulating the marketing of tobacco products (Ley Nacional de Control de Tabaco N° 26687, 2011). It does not ban all advertising but restricts it to the interior of the point-of-sale. Resultantly, tobacco companies concentrate their marketing resources on this channel (Brown et al., 2023).

The point-of-sale (POS), which is where the actual purchase of cigarettes takes place, offers tobacco companies an important means of communicating with people who currently smoke, have formerly smoked, or may start smoking (Robertson et al., 2016). Exposure to cigarettes and advertising at the POS can foster positive brand imagery (Donovan et al., 2002) and influence adolescents' perceptions of the availability, use, and popularity of cigarettes (Paynter & Edwards, 2009). It can also increase smoking uptake (Slater et al., 2007), with a meta-analysis reporting that in comparison to adolescents with less frequent exposure to tobacco promotion at the POS, adolescents with higher exposure were 32% more likely to be susceptible to smoking and 61% more likely to try smoking (Robertson et al., 2016). This increases with the frequency of POS tobacco-product advertising and promotion (Robertson et al., 2015). Additionally, tobacco advertising at the POS cues cravings (Siahpush, Shaikh,

1 Cummings, et al., 2016), undermines quit attempts (Siahpush, Shaikh, Smith, et al., 2016), and  
2 makes adolescents think it would be easier for them or people their age to purchase cigarettes  
3 in shops, and that they would be less likely to be asked for proof of age compared to shops in  
4 which there is no advertising or tobacco display (Wakefield et al., 2006).

5         Laws addressing the sale and promotion of tobacco at the POS are important to better  
6 safeguard society, and particularly youth, from the potential harms associated with tobacco use  
7 (Konfino et al., 2014). In Argentina, the focus of this study, a national law regulates how  
8 tobacco products can be marketed in tobacco-selling points-of-sale (Ley Nacional N° 26687 -  
9 República Argentina, 2011). Tobacco advertising, promotion, and sponsorship is only allowed  
10 inside the POS, where it must follow certain guidelines, and must not be visible from the  
11 exterior. According to these guidelines, adverts can only consist of two-dimensional signs, with  
12 a maximum of two signs per manufacturer. Adverts must be less than 30x30 cm, and have a  
13 warning occupying 40% of the surface area. Illuminated signs or screens are banned. There  
14 must be visible signage at the payment area stating that selling tobacco products to minors is  
15 prohibited. The law also bans the sale of single cigarettes. While the national law sets a  
16 minimum standard of protection, it encourages provinces to enact more stringent regulations.  
17 Certain provinces, such as La Pampa and Córdoba, additionally prohibit all tobacco  
18 advertising, promotion and sponsorship, including inside the POS, and ban the open display of  
19 tobacco products (Ley Provincial N° 10661 - Córdoba, 2019; Ley Provincial N°3392 - La  
20 Pampa, 2021). While the Ministry of Health constitutes the enforcement authority, provincial  
21 and local authorities are responsible for monitoring compliance within their respective  
22 jurisdictions. Non-compliance with the law is sanctioned through fines, whose value varies  
23 depending on the specific violation and increases in case of recurrence, as well as the  
24 destruction of materials and products that do not comply with the law, and the closure of  
25 establishments.

1           Legislation alone is insufficient, with it necessary to examine the extent to which laws  
2 are adhered to (Anderson et al., 2020). According to the World Health Organization (WHO),  
3 despite progress in enacting marketing restrictions, compliance is weak in low- and middle-  
4 income countries (LMICs) (Anderson et al., 2020). In Argentina, a LMIC, research highlights  
5 a deficit in compliance with POS regulations such as the requirements of displaying a ‘no sale  
6 to minors’ sign, of having only indoor advertising which is non-visible from the outside, of  
7 including a pictorial health warning on advertising, and of prohibiting the sale of single  
8 cigarettes (Chaname et al., 2024; FIC Argentina, 2022a, 2022c, 2022b, 2023, 2024; Minter et  
9 al., 2017). Recent research found that, on average, 46.7% of the points-of-sale visited across  
10 10 different provinces were not meeting the requirements of the National Law in Tobacco  
11 Control (FIC Argentina, 2024). While these studies are helpful to understand national  
12 compliance and differences by province, they do not explore store-type associations, which has  
13 been repeatedly associated with non-compliance in other countries (Kirchner et al., 2015; Fry  
14 et al., 2017; Sedani et al., 2022; Wheeler et al., 2021).

15           In this study, we assessed compliance with national and local Argentinian laws on  
16 advertising and product display of tobacco products at the POS, the presence of ‘no sale to  
17 minors’ signage, and the sale of single cigarettes. We also explored compliance by type of POS.  
18 Such research is necessary to provide recent data on compliance, if this differs by store type,  
19 and variation across provinces.

20

## 21 **Methods**

22

### 23 *Design*

24

25 A cross-sectional observational study was conducted with tobacco-selling points-of-sale near  
26 schools in Argentina as part of the REMoving the MARKeting Power of cigarettes (REMAP)

1 project. We focused on retailers located in proximity to schools because there is evidence that  
2 tobacco retailers cluster near schools more than expected (Halvorson-Fried et al., 2023), and  
3 stores close to schools, which are often visited by students, have significantly more tobacco  
4 advertisements (Obinwa et al., 2022). Besides, higher tobacco outlet density (Henriksen et al.,  
5 2008) and advertisement density (Mistry et al., 2013) have been associated with higher  
6 smoking prevalence. A similar methodology of conducting observations in points-of-sale in  
7 areas with a high concentration of schools has also been done in previous research (Minter et  
8 al., 2017).

9 Between April and July 2023 we visited points-of-sale in four cities in four provinces: Cordoba  
10 (province of Cordoba), Quilmes (province of Buenos Aires), San Salvador de Jujuy (province  
11 of Jujuy), and Santa Rosa (province of La Pampa). Cities were selected based on their distinct  
12 characteristics: Cordoba is one of the largest in the country, Quilmes has lower socioeconomic  
13 status than the national average, San Salvador de Jujuy is the capital city of a tobacco-growing  
14 province, and Santa Rosa's economy is primarily driven by agriculture. We aimed to visit 125  
15 POS per city, as this sample size was both manageable and sufficient, and in line with the  
16 sample size used in previous studies (Minter et al., 2017, FIC Argentina, 2024).

17

### 18 ***Procedure***

19 Cities were divided into areas classified according to their socio-economic status (SES): high,  
20 middle, and low. The classification was based on the percentage of households with unmet  
21 basic needs according to national data (Instituto Nacional de Estadística y Censos, 2012).

22 Within each SES, we randomly selected middle and high schools from a list of all the schools  
23 per city provided by the Ministry of Education. To do so, we assigned a number to each school  
24 and conducted a random draw. Then, we located the selected schools in Google Maps and pre-  
25 established a route around each of them. The route was created using a modified TPackSS  
26 methodology (TPackSS, 2023), see Figure 1. During fieldwork, we followed the pre-

1 established routes around selected schools and visited all the points-of-sale we encountered on  
2 our way until we reached the desired number of observed points-of-sale per city, with  
3 approximately one-third of the sample in each SES.

4

5 **[Figure 1 near here; figure caption → Figure 1: Route around each school]**

6

7 To collect information at the POS we used a checklist developed by the team, which was based  
8 on past research (Barnoya et al., 2010; Barnoya et al., 2021; FIC Argentina, 2022a), and was  
9 piloted prior to use. It assessed general information about the POS (store type, location, etc),  
10 the display and advertising of tobacco and nicotine products and accessories, and compliance  
11 with national and local regulations. The checklist was completed covertly at each POS using  
12 the KoboCollect® App ([www.kobotoolbox.org/](http://www.kobotoolbox.org/)) on a mobile phone. When permission was  
13 granted, we also took photographs of the POS to subsequently check the information about  
14 compliance that was collected. To assess the sale of single cigarettes, we attempted to buy one  
15 in every POS we visited.

16

### 17 *Analysis*

18 Points-of-sale were classified into five categories (Kiosk, Neighborhood Store, Convenience  
19 Store, Supermarket, Petrol Station, see Supplementary Material - Table 1). For analytic  
20 purposes, given the limited number of supermarkets (n=15), these were included as  
21 Neighborhood Stores, since both sell a variety of products and in Argentina typically share a  
22 similar level of informality. Petrol Stations (n=13) were categorized under Convenience Stores  
23 because both are typically formal shops affiliated with chains. The same grouping by store type  
24 has been reported in other studies (Levinson et al., 2018; Sedani et al., 2022).

25 Cities were categorized as having Permissive Regulation or Restrictive Regulation  
26 based on whether they only adhere to the National law or have stricter provincial laws. Quilmes

1 and San Salvador de Jujuy are ‘Cities with Permissive Regulation’, with Santa Rosa and  
2 Cordoba ‘Cities with Restrictive Regulation.’

3 We first explored aspects of the law that are common to points-of-sale in all four cities,  
4 specifically the requirement to display ‘No sale to minors’ signage and a ban on selling single  
5 cigarettes. In cities with permissive regulation, we assessed the presence of more than two  
6 adverts per producer, visibility of advertising from the exterior of the POS, and presence of  
7 special features in adverts, such as lighting or movement. In cities with restrictive regulation,  
8 we assessed the presence of any advertising and the display of factory-made cigarettes and roll-  
9 your-own (RYO) tobacco, given that both are prohibited.

10 We used logistic regressions to explore the association between: 1) the sale of single  
11 cigarettes and type of POS, and 2) the display of tobacco products in restrictive cities and type  
12 of POS. In both models, city and SES were included as control variables. Odds ratios (OR) and  
13 their corresponding 95% confidence intervals (CI) were estimated. Data analysis was  
14 performed in R (R Core Team, 2022).

15

## 16 *Ethics*

17 The study was approved by the Ethics Committee of the Hospital de Clínicas, Universidad de  
18 Buenos Aires, and from the University of Stirling. No informed consent was required from  
19 retailers.

20

## 21 **Results**

22 We visited 512 outlets, 278 (54.3%) in Quilmes and San Salvador de Jujuy, cities with  
23 permissive regulations, and 234 (45.7%) in Cordoba and Santa Rosa, cities with restrictive  
24 regulations. In all cities, most points-of-sale were neighborhood stores, followed by kiosks and  
25 convenience stores. Table 1 shows the distribution of points-of-sale by SES and type.

26

1 [Table 1 near here]

2

3 Table 2 includes non-compliance with the national law across the four cities, and non-  
4 compliance with local regulations in permissive and restrictive cities. The mandatory ‘No sale  
5 to minors’ sign was absent in 499 (97.5%) points-of-sale. In 82 (16.0%) points-of-sale single  
6 cigarettes were visibly displayed, although not in any convenience stores, and in 385 (75.2%)  
7 points-of-sale single cigarettes were sold (i.e. available for sale even though not visibly  
8 displayed), more commonly kiosks and neighborhood stores than convenience stores ( $p < 0.05$ ).

9 In cities with permissive regulations, 65 (23.4%) points-of-sale featured tobacco  
10 advertising. This was much more prevalent in convenience stores than in kiosks and  
11 neighborhood stores ( $p < 0.05$ ). Among points-of-sale with advertising, the most frequent  
12 violation of the law was the display of advertising that could be seen from outside the store  
13 ( $n = 54$ , 83.1%), followed by adverts containing special features ( $n = 41$ , 63.1%). Adverts with  
14 special features were mainly observed in convenience stores, in which 90.9% of the stores with  
15 adverts had special features, mostly 3d characteristics and lighting. Finally, 36 (55.4%) stores  
16 had more than two adverts per producer.

17 In cities with restrictive regulations, 185 (79.1%) points-of-sale displayed tobacco  
18 products, mainly factory-made cigarettes, with 71 (30.3%) displaying RYO tobacco. Tobacco  
19 display was most common at neighborhood stores, followed by kiosks and convenience stores.  
20 Despite the ban, advertising was displayed in 27 (11.5%) points-of-sale.

21

22 [Table 2 near here]

23

24 Table 3 shows the association between type of POS and sale of single cigarettes (model 1), and  
25 type of POS and display of tobacco products (model 2). Compared to kiosks, neighborhood  
26 stores ( $OR = 0.41$ , 95% CI: 0.21-0.75) and convenience stores were less likely to sell single

1 cigarettes (OR=0.09, 95% CI: 0.03-0.25). In cities with restrictive regulations, compared to  
2 kiosks, neighborhood stores were more likely to display tobacco (OR=2.15, 95% CI: 1.01-  
3 4.63). No significant differences were found between convenience stores and kiosks.

4

5 [Table 3 near here]

6

## 7 **Discussion**

8 This study provides insight into non-compliance with local and national tobacco control laws  
9 in points-of-sale near schools across four cities in Argentina and by type of POS. We observed  
10 non-compliance in all cities and store types. Previous research has similarly revealed non-  
11 compliance with POS regulations in Argentina and other LMICs (Anderson et al., 2020; FIC  
12 Argentina, 2022a, 2024), attributing this to weak enforcement, limited resources, and poor  
13 coordination between government entities at federal and state levels (Reynales-Shigematsu et  
14 al., 2019). Lack of awareness among retailers and the public about tobacco control regulations  
15 may also be a contributing factor (Quedley et al., 2008).

16 We found that the absence of ‘No sale to minors’ signage was the most frequent  
17 violation across cities. In 2010, 57% of points-of-sale in Buenos Aires displayed such signage  
18 (Barnoya et al., 2010), but only 35% had a clearly visible ‘No sale to minors’ sign in 2016  
19 (Minter et al., 2017). That only 2.5% of points-of-sale we visited displayed proper signage is  
20 consistent with this pattern and testament to declining compliance. Non-compliance was also  
21 evident for the sale of single cigarettes, which was very common in kiosks and neighborhood  
22 stores. In Buenos Aires in 2016 (Minter et al., 2017), 93.9% of stores denied selling single  
23 cigarettes, whereas we identified in other locations in Argentina very high availability of single  
24 cigarettes. This suggests that compliance with this aspect of the law is also decreasing over  
25 time. In restrictive cities, a 2024 study found that advertising and tobacco display were present  
26 in three quarters of points-of-sale, in violation of the local laws (FIC Argentina, 2024).

1 Similarly, we found that 79% of stores displayed tobacco.

2 Our findings highlight distinct patterns of non-compliance across different types of  
3 points-of-sale, as reported elsewhere (Barnoya et al., 2010; Kirchner et al., 2015; Sedani et al.,  
4 2022; Wheeler et al., 2021). Kiosks and neighborhood stores, which were less likely than  
5 convenience stores to display ‘No sale to minors’ signage, were more likely than convenience  
6 stores to sell single cigarettes, and more likely to display tobacco in cities where this is not  
7 permitted. In contrast to convenience stores, which are usually part of larger companies or  
8 franchises and therefore likely to have stricter compliance standards, neighborhood stores and  
9 kiosks are informal and often independently owned. It has been suggested that they may be less  
10 aware of legal requirements or expect more lax government control (Quedley et al., 2008).  
11 However, it may also be that tobacco sales contribute a higher proportion of overall revenue  
12 for kiosks and neighborhood stores, thus providing a greater incentive to promote tobacco sales.  
13 Selling cigarettes by the stick rather than by the pack can also increase profit margins.

14 With respect to failing to comply with tobacco advertising regulations, this was most  
15 evident in convenience stores. Convenience stores may be more appealing to tobacco  
16 companies than kiosks and neighborhood stores as they are often part of formal chains, have  
17 higher sales volumes, and are typically larger and therefore offer greater opportunities for  
18 displaying a greater quantity of advertising (Barnoya et al., 2010; Cohen et al., 2008; Lee et  
19 al., 2015; Usidame et al., 2019). Tobacco companies often provide retailers with advertising  
20 and promotional materials, such as displays and shelving units, through formalized agreements  
21 and incentives in exchange for prime product placement and adherence to promotional  
22 guidelines (Berman et al., 2012; Freeman et al., 2022; Lavack & Toth, 2006). This strategy  
23 aims to maximize visibility and boost sales. When providing retailers with promotional  
24 materials, it has been suggested that tobacco companies may exploit legal loopholes, make  
25 loose interpretations of the law, or violate it altogether (FIC Argentina & Alianza de Controle  
26 do Tabagismo, 2015). Other Latin American countries, including Brazil, Chile and Costa Rica,

1 have banned tobacco advertising but not tobacco displays. As there are no regulations  
2 indicating what displays should be like in these countries, they have become increasingly  
3 appealing and sophisticated (FIC Argentina & Aliança de Controle do Tabagismo, 2015).

4 Reducing non-compliance in Argentina, as well as other countries in the region and  
5 other LMICs, could be achieved with greater enforcement. Monitoring needs to be conducted  
6 periodically, unannounced, with punitive measures for non-compliant retailers that serve as a  
7 deterrent (Public Health Law Center, 2022). In some cities in the USA, Canada, and some  
8 countries in Europe, licensing has been introduced to limit the number of retailers that can sell  
9 tobacco and assist in monitoring and enforcement (Henriksen, 2012; Kuipers et al., 2022).  
10 Licensing also has the advantage of generating revenue through license fees, which can be  
11 allocated to enforcement efforts. While evidence on its effectiveness is limited, a combination  
12 of licensing, enforcement, education, and promotion restrictions is considered good practice  
13 (Smyth et al., 2015). In Argentina, the law mandates that all tobacco retailers must have a  
14 specific authorization to sell tobacco. However, we found no evidence of this requirement  
15 being enforced. Licensing may be challenging to control in Argentina given the extensive and  
16 unregulated informal market, as is often the case in LMICs (Medina & Schneider, 2018). It  
17 might also be challenging to achieve because, while the legislation designates the Ministry of  
18 Health as the national enforcement authority, it also assigns enforcement responsibilities to  
19 provinces at the local level. This has the drawback that the effectiveness of these regulations is  
20 hindered by challenges in coordination between multiple sectors at the federal and national  
21 level. Clearer leadership and defined enforcement responsibilities are necessary to ensure  
22 compliance with the law.

23 Another strategy that has been suggested for improving compliance is focusing on  
24 retailer education, since in many cases they might be unaware of the specificities of the law  
25 (Quedley et al., 2008). Berman et. al (2012) recommended sharing pamphlets with retailers  
26 describing what is permissible and what is not under the law, together with the rationale behind

1 it. The author also suggests inviting retailers to contact the enforcement agency for more  
2 information on compliance with the law, and making sure the enforcement agency is ready to  
3 assist retailers with compliance. Future studies should evaluate the degree to which retailers  
4 are familiar with the existing laws and regulations.

5 Our study has several limitations. First, the sample is not representative of the country.  
6 However, we selected cities from several parts of the country to increase diversity, together  
7 with schools from neighborhoods with different SES. Second, we did not report other aspects  
8 of the law, such as advert size or whether they included warnings. We excluded these for  
9 practical reasons, given the codebook captured a lot of information and we felt it preferable to  
10 focus on compliance with the number of adverts, sale of single cigarettes, and presence of no  
11 sale to minors signage.

12 In conclusion, our study shows that non-compliance with national and local regulations  
13 in Argentina is common, and that non-compliance was evident across all three types of points-  
14 of-sale. Stronger and better coordinated enforcement is needed, and interventions aimed at  
15 reinforcing compliance should contemplate differences between types of points-of-sale.  
16 Implementing stricter controls on advertising in convenience stores and the display of tobacco  
17 products in neighborhood stores would be advisable, together with the sale of single cigarettes  
18 in kiosks. Future studies should explore the extent to which retailers are familiar with the law,  
19 as well as their relationships with the tobacco industry.

20

## 21 **Acknowledgements**

22 The REMAP Team comprises Raul Mejia, María Belén Arnaudo and Emilia Elicabe (CEDES,  
23 Argentina), Blanca Llorente (Fundación Anáas, Colombia), Attila Pohlmann and Daniela  
24 Valdivieso (Universidad San Francisco de Quito, Ecuador), Sophia Mus, Aiken Chew and  
25 Gustavo Dávila (Fundación Aldo Castañeda and Universidad Landivar, Guatemala), Inti  
26 Barrientos, Carlos Filiberto Miguel-Aguilar and Mariel Cristina Palacios (INSP, México),

1 Alfonso Zavaleta, Eva Chanamé and Abel Limache-García (CEDRO, Perú), James Thrasher  
2 (Arnold School of Public Health, University of South Carolina) and Crawford Moodie, Isabelle  
3 Uny, Catherine Best and Georgia Alexandrou (Institute for Social Marketing and Health,  
4 University of Stirling).

5

6 The authors acknowledge the use of ChatGPT (OpenAI) to assist in refining the clarity and  
7 coherence of the manuscript text. It was used exclusively for language editing.

8

### 9 **Declaration of interest Statement**

10 The authors report there are no competing interests to declare.

11

### 12 **Funding**

13 This work is part of the 'REmoving the MArketing Power of cigarettes' (REMAP) project,  
14 funded by the Medical Research Council under Grant MR/X004279/1.

15

### 16 **References**

17 Anderson, C. L., Mons, U., & Winkler, V. (2020). Global progress in tobacco control: The  
18 question of policy compliance. *Global Health Action*, 13(1), 1844977.

19 <https://doi.org/10.1080/16549716.2020.1844977>

20 Barnoya, J., Mejia, R., Szeinman, D., & Kummerfeldt, C. E. (2010). Tobacco point-of-sale  
21 advertising in Guatemala City, Guatemala and Buenos Aires, Argentina. *Tobacco*  
22 *Control*, 19(4), 338–341. <https://doi.org/10.1136/tc.2009.031898>

23 Barnoya, J., Monzon, D., Pinetta, J., Grilo, G., & Cohen, J. E. (2021). New tobacco products,  
24 old advertising strategies: Point-of-sale advertising in Guatemala. *Tobacco Control*,  
25 30(5), 591–593. <https://doi.org/10.1136/tobaccocontrol-2020-055681>

26 Berman, M., Miura, M., & Bergstresser, J. (2012). *Tobacco Product Display Restrictions*.

1 Center for Public Health and Tobacco Policy.  
2 [https://publichealthlawcenter.org/sites/default/files/resources/nycenter-syn-  
4 tobproductdisplaybans-2013.pdf](https://publichealthlawcenter.org/sites/default/files/resources/nycenter-syn-<br/>3 tobproductdisplaybans-2013.pdf)

4 Brown, J. L., Rosen, D., Carmona, M. G., Parra, N., Hurley, M., & Cohen, J. E. (2023).  
5 Spinning a global web: Tactics used by Big Tobacco to attract children at tobacco  
6 points-of-sale. *Tobacco Control*, 32(5), 645–651.  
7 <https://doi.org/10.1136/tobaccocontrol-2021-057095>

8 Chaname, E., Limache-García, A., Moodie, C., Trasher, J., Best, C., Zavaleta, A., & REMAP  
9 team. (2024). *Visibility and availability of single cigarettes around schools in four  
10 Latin American countries* | *Tobacco Control*. <https://doi.org/10.1136/tc-2024-058852>

11 Cohen, J. E., Planinac, L. C., Griffin, K., Robinson, D. J., O'Connor, S. C., Lavack, A.,  
12 Thompson, F. E., & Di Nardo, J. (2008). Tobacco promotions at point-of-sale: The  
13 last hurrah. *Canadian Journal of Public Health = Revue Canadienne De Sante  
14 Publique*, 99(3), 166–171. <https://doi.org/10.1007/BF03405466>

15 Coxe, N., Webber, W., Burkhart, J., Broderick, B., Yeager, K., Jones, L., & Fenstersheib, M.  
16 (2014). Use of tobacco retail permitting to reduce youth access and exposure to  
17 tobacco in Santa Clara County, California. *Preventive Medicine*, 67 Suppl 1, S46-50.  
18 <https://doi.org/10.1016/j.ypmed.2014.01.023>

19 Donovan, R., Jancey, J., & Jones, S. (2002). Tobacco point of sale advertising increases  
20 positive brand user imagery. *Tobacco Control*, 11(3), 191–194.  
21 <https://doi.org/10.1136/tc.11.3.191>

22 FIC Argentina. (2022a). *Marketing de productos de tabaco en puntos de venta de cinco  
23 provincias argentinas*. [www.ficargentina.org/wp-  
24 content/uploads/2022/04/2204\\_PPP\\_PDV.pdf](http://www.ficargentina.org/wp-content/uploads/2022/04/2204_PPP_PDV.pdf)

25 FIC Argentina. (2022b). *Situación de la provincia de Córdoba en materia de políticas de  
26 control de tabaco*. [www.ficargentina.org/investigaciones/situacion-de-la-provincia-](http://www.ficargentina.org/investigaciones/situacion-de-la-provincia-)

1 de-cordoba-en-materia-de-politicas-de-control-de-tabaco/  
2 FIC Argentina. (2022c). *Situación de la provincia de Jujuy en materia de políticas de control*  
3 *de tabaco*. [www.ficargentina.org/investigaciones/situacion-de-jujuy-en-materia-de-](http://www.ficargentina.org/investigaciones/situacion-de-jujuy-en-materia-de-politicas-de-control-de-tabaco/)  
4 [politicas-de-control-de-tabaco/](http://www.ficargentina.org/investigaciones/situacion-de-jujuy-en-materia-de-politicas-de-control-de-tabaco/)  
5 FIC Argentina. (2023). *Situación de la provincia de Buenos Aires en materia de políticas de*  
6 *control de tabaco*. [www.ficargentina.org/investigaciones/situacion-de-la-provincia-](http://www.ficargentina.org/investigaciones/situacion-de-la-provincia-de-buenos-aires-en-materia-de-politicas-de-control-de-tabaco/)  
7 [de-buenos-aires-en-materia-de-politicas-de-control-de-tabaco/](http://www.ficargentina.org/investigaciones/situacion-de-la-provincia-de-buenos-aires-en-materia-de-politicas-de-control-de-tabaco/)  
8 FIC Argentina. (2024). *Marketing de productos de tabaco en los puntos de venta de diez*  
9 *provincias argentinas*.  
10 FIC Argentina, & Aliança de Controle do Tabagismo. (2015). *Children Targeted by Big*  
11 *Tobacco* (3rd. Edition). [www.ficargentina.org/wp-](http://www.ficargentina.org/wp-content/uploads/2017/11/reporte_ninos_en_la_mira_ingles.pdf)  
12 [content/uploads/2017/11/reporte\\_ninos\\_en\\_la\\_mira\\_ingles.pdf](http://www.ficargentina.org/wp-content/uploads/2017/11/reporte_ninos_en_la_mira_ingles.pdf)  
13 Freeman, B., Watts, C., & Astuti, P. A. S. (2022). Global tobacco advertising, promotion and  
14 sponsorship regulation: What's old, what's new and where to next? *Tobacco Control*,  
15 *31*(2), 216–221. <https://doi.org/10.1136/tobaccocontrol-2021-056551>  
16 Fry, R., Burton, S., Williams, K., Walsberger, S., Tang, A., Chapman, K., & Egger, S.  
17 (2017). Retailer licensing and tobacco display compliance: Are some retailers more  
18 likely to flout regulations? *Tobacco Control*, *26*(2), 181–187.  
19 <https://doi.org/10.1136/tobaccocontrol-2015-052767>  
20 Halvorson-Fried, S. M., Kong, A. Y., D'Angelo, H., Delamater, P. L., & Ribisl, K. M.  
21 (2024). Spatial Clustering of Tobacco Retailers Near US Public Schools. *Nicotine and*  
22 *Tobacco Research*, *26*(2), 185–193. <https://doi.org/10.1093/ntr/ntad161>  
23 Henriksen, L., Feighery, E. C., Schleicher, N. C., Cowling, D. W., Kline, R. S., & Fortmann,  
24 S. P. (2008). Is adolescent smoking related to the density and proximity of tobacco  
25 outlets and retail cigarette advertising near schools? *Preventive Medicine*, *47*(2), 210–  
26 214. <https://doi.org/10.1016/j.ypmed.2008.04.008>

- 1 Henriksen, L. (2012). Comprehensive tobacco marketing restrictions: Promotion, packaging,  
2 price and place. *Tobacco Control*, 21(2), 147–153.  
3 <https://doi.org/10.1136/tobaccocontrol-2011-050416>
- 4 Instituto Nacional de Estadística y Censos. (2012). *Censo nacional de población, hogares y*  
5 *viviendas 2010: Censo del Bicentenario: Resultados definitivos* (1a. ed, Vol. 1).  
6 [https://www.indec.gob.ar/ftp/cuadros/poblacion/censo2010\\_tomo1.pdf](https://www.indec.gob.ar/ftp/cuadros/poblacion/censo2010_tomo1.pdf)
- 7 Kirchner, T. R., Villanti, A. C., Cantrell, J., Anesetti-Rothermel, A., Ganz, O., Conway, K.  
8 P., Vallone, D. M., & Abrams, D. B. (2015). Tobacco retail outlet advertising  
9 practices and proximity to schools, parks and public housing affect Synar underage  
10 sales violations in Washington, DC. *Tobacco Control*, 24(e1), e52-58.  
11 <https://doi.org/10.1136/tobaccocontrol-2013-051239>
- 12 Konfino, J., Ferrante, D., Mejia, R., Coxson, P., Moran, A., Goldman, L., & Pérez-Stable, E.  
13 J. (2014). Impact on cardiovascular disease events of the implementation of  
14 Argentina's national tobacco control law. *Tobacco Control*, 23(2), e6–e6.  
15 <https://doi.org/10.1136/tobaccocontrol-2012-050599>
- 16 Kuipers, M. A. G., Nuyts, P. A. W., Willemsen, M. C., & Kunst, A. E. (2022). Tobacco retail  
17 licencing systems in Europe. *Tobacco Control*, 31(6), 784–788.  
18 <https://doi.org/10.1136/tobaccocontrol-2020-055910>
- 19 Lavack, A. M., & Toth, G. (2006). Tobacco point-of-purchase promotion: Examining tobacco  
20 industry documents. *Tobacco Control*, 15(5), 377–384.  
21 <https://doi.org/10.1136/tc.2005.014639>
- 22 Lawman, H. G., Henry, K. A., Scheeres, A., Hillengas, A., Coffman, R., & Strasser, A. A.  
23 (2020). Tobacco Retail Licensing and Density 3 Years After License Regulations in  
24 Philadelphia, Pennsylvania (2012-2019). *American Journal of Public Health*, 110(4),  
25 547–553. <https://doi.org/10.2105/AJPH.2019.305512>
- 26 Lee, J. G. L., Henriksen, L., Rose, S. W., Moreland-Russell, S., & Ribisl, K. M. (2015). A

1           Systematic Review of Neighborhood Disparities in Point-of-Sale Tobacco Marketing.  
2           *American Journal of Public Health, 105*(9), e8–e18.  
3           <https://doi.org/10.2105/AJPH.2015.302777>

4   Levinson, A. H., Ma, M., Jason, L. A., Lee, J. G. L., Landrine, H., Glueck, D. H., &  
5           DiFranza, J. R. (2018). Assessment of the US Federal Retailer Violation Rate as an  
6           Estimate of the Proportion of Retailers That Illegally Sell Tobacco to Adolescents.  
7           *JAMA Pediatrics, 172*(10), 966–972.  
8           <https://doi.org/10.1001/jamapediatrics.2018.2038>

9   Ley Provincial N° 10661 - Modificación de La Ley N° 9113, N°10661, Legislatura de la  
10           Provincia de Córdoba (2019). [https://boletinoficial.cba.gov.ar/wp-](https://boletinoficial.cba.gov.ar/wp-content/4p96humuzp/2019/10/1_Secc_301019.pdf)  
11           [content/4p96humuzp/2019/10/1\\_Secc\\_301019.pdf](https://boletinoficial.cba.gov.ar/wp-content/4p96humuzp/2019/10/1_Secc_301019.pdf)

12   Ley Provincial N°3392 - Modificación de la Ley N°2563, N°3392, Cámara de Diputados de  
13           la Provincia de La Pampa (2021). [www.argentina.gob.ar/normativa/provincial/ley-](http://www.argentina.gob.ar/normativa/provincial/ley-3392-123456789-0abc-defg-293-3000lvorpyel)  
14           [3392-123456789-0abc-defg-293-3000lvorpyel](http://www.argentina.gob.ar/normativa/provincial/ley-3392-123456789-0abc-defg-293-3000lvorpyel)

15   Ley Nacional N° 26687 - Regulación de la publicidad, promoción y consumo de los  
16           productos elaborados con tabaco, Congreso de La Nación Argentina (2011). [https://e-](https://e-legis-ar.msal.gov.ar/htdocs/legisalud/migration/pdf/17971.pdf)  
17           [legis-ar.msal.gov.ar/htdocs/legisalud/migration/pdf/17971.pdf](https://e-legis-ar.msal.gov.ar/htdocs/legisalud/migration/pdf/17971.pdf)

18   Medina, L., & Schneider, F. (2018). Shadow Economies Around the World: What Did We  
19           Learn Over the Last 20 Years? *IMF Working Papers, 18*, 1.  
20           <https://doi.org/10.5089/9781484338636.001>

21   Minter, D. J., Mejia, R., Salas, I., Thrasher, J., & Pérez-Stable, E. J. (2017). Tobacco point-  
22           of-sale advertising in downtown Buenos Aires, Argentina and compliance with the  
23           new tobacco advertising restrictions. *Tobacco Control, 26*(2), 239–240.  
24           <https://doi.org/10.1136/tobaccocontrol-2015-052870>

25   Mistry, R., Pednekar, M., Pimple, S., Gupta, P. C., McCarthy, W. J., Raute, L. J., Patel, M.,  
26           & Shastri, S. S. (2015). Banning tobacco sales and advertisements near educational

1 institutions may reduce students' tobacco use risk: Evidence from Mumbai, India.  
2 *Tobacco Control*, 24(e1), e100–e107. <https://doi.org/10.1136/tobaccocontrol-2012->  
3 050819

4 Obinwa, U., Pasch, K. E., Jetelina, K. K., Ranjit, N., Perez, A., Perry, C., & Harrell, M.  
5 (2022). A Simulation of the potential impact of restricting tobacco retail outlets  
6 around middle and high schools on tobacco advertisements. *Tobacco Control*, 31(1),  
7 81–87. <https://doi.org/10.1136/tobaccocontrol-2020-055724>

8 Organización Panamericana de la Salud. (2019). *Estrategia y plan de acción para fortalecer*  
9 *el control del tabaco en la Región de las Américas 2018-2022* (Technical reports  
10 CD60/6). OPS. <https://iris.paho.org/handle/10665.2/51575>

11 Organización Panamericana de la Salud. (2023). *Informe sobre el control del tabaco en la*  
12 *Región de las Américas 2022*. OPS. <https://doi.org/10.37774/9789275325896>

13 Paynter, J., & Edwards, R. (2009). The impact of tobacco promotion at the point of sale: A  
14 systematic review. *Nicotine & Tobacco Research: Official Journal of the Society for*  
15 *Research on Nicotine and Tobacco*, 11(1), 25–35. <https://doi.org/10.1093/ntr/ntn002>

16 Public Health Law Center. (2022, November). *Retail Compliance Checks Best Practices*.  
17 [www.publichealthlawcenter.org/sites/default/files/resources/Retail-Compliance-](http://www.publichealthlawcenter.org/sites/default/files/resources/Retail-Compliance-)  
18 [Checks-Best-Practices.pdf](http://www.publichealthlawcenter.org/sites/default/files/resources/Retail-Compliance-)

19 Quedley, M., Ng, B., Sapre, N., Blakiston, M., Crawford, A., Devadas, R., McLaren, H.,  
20 Anand, S., Tipu, M., Dayal, V., Chandrasiri, S., Thomson, G., & Edwards, R. (2008).  
21 In sight, in mind: Retailer compliance with legislation on limiting retail tobacco  
22 displays. *Nicotine & Tobacco Research: Official Journal of the Society for Research*  
23 *on Nicotine and Tobacco*, 10(8), 1347–1354.  
24 <https://doi.org/10.1080/14622200802238860>

25 R Core Team. (2022). *R: A Language and Environment for Statistical Computing* [Computer  
26 software]. R Foundation for Statistical Computing. <https://www.R-project.org/>

- 1 Reynales-Shigematsu, L. M., Wipfli, H., Samet, J., Regalado-Pineda, J., & Hernández-Ávila,  
2 M. (2019). Tobacco control in Mexico: A decade of progress and challenges. *Salud*  
3 *Pública de México*, 61(3, may-jun), Article 3, may-jun. <https://doi.org/10.21149/9360>
- 4 Robertson, L., Cameron, C., McGee, R., Marsh, L., & Hoek, J. (2016). Point-of-sale tobacco  
5 promotion and youth smoking: A meta-analysis. *Tobacco Control*, 25(e2), e83–e89.  
6 <https://doi.org/10.1136/tobaccocontrol-2015-052586>
- 7 Robertson, L., McGee, R., Marsh, L., & Hoek, J. (2015). A systematic review on the impact  
8 of point-of-sale tobacco promotion on smoking. *Nicotine & Tobacco Research*, 17(1),  
9 2–17. <https://doi.org/10.1093/ntr/ntu168>
- 10 Sedani, A. E., Chen, S., Beetch, J. E., Martinez, S. A., Dao, H. D. N., & Campbell, J. E.  
11 (2022). Inequalities in tobacco retailer compliance violations across the state of  
12 Oklahoma, 2015–2019. *Journal of Community Health*, 47(4), 658–665.  
13 <https://doi.org/10.1007/s10900-022-01091-7>
- 14 Siahpush, M., Shaikh, R. A., Cummings, K. M., Hyland, A., Dodd, M., Carlson, L., Kessler,  
15 A. S., Meza, J., Wan, N., & Wakefield, M. (2016). The association of point-of-sale  
16 cigarette marketing with cravings to smoke: Results from a cross-sectional  
17 population-based study. *Tobacco Control*, 25(4), 402–405.  
18 <https://doi.org/10.1136/tobaccocontrol-2015-052253>
- 19 Siahpush, M., Shaikh, R. A., Smith, D., Hyland, A., Cummings, K. M., Kessler, A. S., Dodd,  
20 M. D., Carlson, L., Meza, J., & Wakefield, M. (2016). The association of exposure to  
21 point-of-sale tobacco marketing with quit attempt and quit success: results from a  
22 prospective study of smokers in the United States. *International Journal of*  
23 *Environmental Research and Public Health*, 13(2), Article 2.  
24 <https://doi.org/10.3390/ijerph13020203>
- 25 Slater, S. J., Chaloupka, F. J., Wakefield, M., Johnston, L. D., & O'Malley, P. M. (2007). The  
26 impact of retail cigarette marketing practices on youth smoking uptake. *Archives of*

1           *Pediatrics & Adolescent Medicine*, 161(5), 440–445.  
2           <https://doi.org/10.1001/archpedi.161.5.440>

3 Smyth, C., Freeman, B., & Maag, A. (2015). Tobacco retail regulation: The next frontier in  
4 tobacco control? *Public Health Research & Practice*, 25(3).  
5           <https://doi.org/10.17061/phrp2531529>

6 TPackSS. (2023). *Homepage | TPackSS: Tobacco Pack Surveillance System*.  
7           <https://tpackss.globaltobaccocontrol.org/>

8 Usidame, B., Miller, E. A., & Cohen, J. E. (2019). Assessing the Relationship between Retail  
9 Store Tobacco Advertising and Local Tobacco Control Policies: A Massachusetts  
10 Case Study. *Journal of Environmental and Public Health*, 2019, 1823636.  
11           <https://doi.org/10.1155/2019/1823636>

12 Wakefield, M., Germain, D., Durkin, S., & Henriksen, L. (2006). An experimental study of  
13 effects on schoolchildren of exposure to point-of-sale cigarette advertising and pack  
14 displays. *Health Education Research*, 21(3), 338–347.  
15           <https://doi.org/10.1093/her/cyl005>

16 Wheeler, D. C., Do, E. K., Hayes, R. B., Hughes, C., & Fuemmeler, B. F. (2021). Evaluation  
17 of neighborhood deprivation and store characteristics in relation to tobacco retail  
18 outlet sales violations. *PLoS ONE*, 16(7), e0254443.  
19           <https://doi.org/10.1371/journal.pone.0254443>

20 World Health Organization. (2018). *2018 Global Progress Report on Implementation of the*  
21 *WHO Framework Convention on Tobacco Control*.  
22           <https://fctc.who.int/publications/m/item/2018-global-progress-report>

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**Table 1:** Types of point-of-sale according to socioeconomic status and level of regulation

<b>TYPES OF POINTS OF SALE ACCORDING TO SES AND REGULATION</b>				
	<b>Socioeconomic Status</b>			
	<b>Low</b>	<b>Middle</b>	<b>High</b>	<b>TOTAL</b>
<b>Cities with restrictive regulation</b>				<b>234</b>
Kiosk	22	14	14	50
Neighborhood Store	39	70	63	172
Convenience Store	5	5	2	12
<b>Cities with permissive regulation</b>				<b>278</b>
Kiosk	60	38	18	116
Neighborhood Store	44	53	52	149
Convenience Store	0	4	9	13
<b>Total POS</b>	<b>170 (33.2%)</b>	<b>184 (35.9%)</b>	<b>158 (30.9%)</b>	<b>512</b>

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**Table 2:** Non-compliance with the law according to the type of POS

<b>National law in four cities</b>				
	<b>Kiosk n=166 (%)</b>	<b>Neighborhood Store n=321 (%)</b>	<b>Convenience Store n=25 (%)</b>	<b>Total n=512 (%)</b>
Lack of “No sale to minors” sign	164 (98.8%)	316 (98.4%)	19 (76.0%)	499 (97.5%)
Display of single cigarettes	23 (13.9%)	59 (18.4%)	0 (0.0%)	82(16.0%)
Sale of single cigarettes	137 (82.5%)	239 (74.5%)	9 (36.0%)	385 (75.2%)
<b>Local law in Cities with PERMISSIVE Regulations</b>				
	<b>Kiosk n=116</b>	<b>Neighborhood Store n= 149</b>	<b>Convenience Store n=13</b>	<b>Total permissive cities n=278</b>
Number of POS with advertising	12 (10.3%)	42 (28.2%)	11 (84.6%)	65 (23.4%)
Advertising that can be seen from the outside	12 (100%)	32 (76.2%)	10 (90.9%)	54 (83.1%)
More than two advertising per producer	7 (58.3%)	22 (52.4%)	7 (63.6%)	36 (55.4%)
Advertising with special features	8 (66.7%)	23 (54.8%)	10 (90.9%)	41 (63.1%)
<i>3d</i>	6 (50.0%)	23 (54.8%)	9 (81.8%)	38 (58.5%)
<i>Light</i>	2 (16.7%)	13 (31.0%)	8 (72.7%)	23 (35.4%)
<i>Movement</i>	0 (0.0%)	1 (2.4%)	0 (0.0%)	1 (1.5%)
<b>Local law in Cities with RESTRICTIVE Regulations</b>				
	<b>Kiosk n=50 (%)</b>	<b>Neighborhood Store n=172 (%)</b>	<b>Convenience Store n=12 (%)</b>	<b>Total restrictive cities n=234 (%)</b>
Tobacco display	31 (62.0%)	147 (85.5%)	7 (58.3%)	185 (79.1%)
RYO tobacco	4 (8.0%)	64 (37.2%)	3 (25.0%)	71 (30.3%)

Factory made cigarettes (packages or loose)	30 (60%)	132 (76.7%)	4 (30.0%)	166 (71.9%)
Number of POS with advertising	3 (6.0%)	23 (13.4%)	1 (8.0%)	27 (11.5%)

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3 **Table 3:** Likelihood of the sale of single cigarettes and the display of factory-made cigarettes  
4 and RYO tobacco by POS.

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1) SALE OF SINGLE CIGARETTES IN THE FOUR CITIES				
Predictors	Crude OR	CI (95%)	Adjusted OR*	CI (95%)
<i>Type of POS</i>				
Kiosk	1		1	
Neighborhood Store	<b>0.62</b>	<b>0.38 - 0.98</b>	<b>0.41</b>	<b>0.21 - 0.75</b>
Convenience Store	<b>0.12</b>	<b>0.05 - 0.29</b>	<b>0.09</b>	<b>0.03- 0.25</b>
<i>Socioeconomic Status (SES)</i>				
High	1		1	
Middle	0.85	0.53 - 1.37	0.78	0.47 - 1.28
Low	<b>1.90</b>	<b>1.12 - 3.27</b>	1.55	0.88 - 2.78
<i>City</i>				
Cordoba	1		1	
Quilmes	<b>0.34</b>	<b>0.18 - 0.61</b>	<b>0.23</b>	<b>0.11 - 0.44</b>
San Salvador de Jujuy	0.74	0.38 - 1.42	0.80	0.40 - 1.58
Santa Rosa	<b>0.36</b>	<b>0.19 - 0.67</b>	<b>0.45</b>	<b>0.23 - 0.87</b>

\*Sale of single cigarettes ~ Type of POS + SES + City

2) TOBACCO DISPLAY IN CITIES WITH RESTRICTIVE REGULATIONS				
Predictors	Crude OR	CI (95%)	Adjusted OR**	CI (95%)
<i>Type of POS</i>				
Kiosk	1		1	
Neighborhood Store	<b>2.20</b>	<b>1.12 - 4.28</b>	<b>2.15</b>	<b>1.01 - 4.63</b>
Convenience Store	0.33	0.08 - 1.21	0.26	0.06 - 0.99
<i>Socioeconomic Status (SES)</i>				
High	1		1	
Middle	1.33	0.70 - 2.56	1.41	0.72 - 2.81
Low	2.04	0.98 - 4.40	<b>3</b>	<b>1.36 - 6.98</b>
<i>City</i>				
Cordoba	1		1	
Santa Rosa	<b>1.91</b>	<b>1.07 - 3.48</b>	1.67	0.86 - 3.26

\*\*Tobacco display ~ Type of POS + SES + City

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**Supplementary Material - Table 1**

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**DEFINITION OF EACH TYPE OF POS**

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<b>Kiosk</b>	Informal small store where customers cannot enter, and sales take place from the outside, operating through a window or counter. It generally sells a limited number of snacks, candy, cigarettes and other small items.
<b>Neighborhood Store</b>	Informal store where customers can enter, offering a wider range of everyday products, including basic groceries.
<b>Convenience Store</b>	Formal establishment, often part of a chain of franchise, some with extended hours. It has a wider range of snacks, candy and beverages, often featuring multiple brands for each product category.
<b>Supermarket</b>	Independent informal grocery store that is larger than a neighborhood store, but not part of a major retail chain.
<b>Petrol Station</b>	Shop located within a gas station, usually having a resting area and selling food, beverages, and other essentials.

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[Supplementary Figure 1 near here; figure caption → Supplementary Figure 1:  
Kiosk]  
[Supplementary Figure 2 near here; figure caption → Supplementary Figure 2:  
Neighborhood Store]  
[Supplementary Figure 3 near here; figure caption → Supplementary Figure 3:  
Convenience Store]  
[Supplementary Figure 4 near here; figure caption → Supplementary Figure 4:  
Supermarket]

- 1 [Supplementary Figure 5 near here; figure caption → Supplementary Figure 5: Petrol
- 2 Station]