

Illicit tobacco trade within the European Union: A secondary data analysis of Eurobarometer data from 28 EU Member States

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ABSTRACT

INTRODUCTION Illicit tobacco trade poses a serious economic and public health threat, as it can lead to reduced state revenue from tobacco taxes, and increased tobacco consumption, usually among younger and lower income populations. The aim of this study was to investigate the underlying reasons for the consumption of illicit tobacco among individuals who have ever smoked and to assess the extent of the illicit tobacco market in the EU.

METHODS We carried out a secondary data analysis with data from the 'Special Eurobarometer 482 on public perception of illicit tobacco trade' cross-sectional survey, which was carried out in December 2018 within the 28 EU MS (at that time the UK was still in the EU). A multistage, random probability sampling design was used in this survey, with primary sampling points being drawn proportional to population size and proportional density. A total of 27643

individuals aged ≥ 15 years were interviewed.

RESULTS The vast majority of Europeans who have ever smoked (82.5%; 95% CI: 81.3–83.6) consider lower prices as the main reason for smoking black-market tobacco cigarettes. Smaller, but nonetheless, important proportions also consider better taste (2.1%; 95% CI: 1.7–2.5) and availability (10.0%; 95% CI: 9.2–10.8) as main reasons for smoking such products.

CONCLUSIONS Illicit tobacco trade remains a significant issue within the EU, particularly affecting younger and less financially secure individuals, with lower prices of black-market products being considered as the main driver of this market. These findings highlight the need for targeted public health, fiscal and enforcement policies in order to address both the supply and demand for illicit tobacco products.

INTRODUCTION

Illicit tobacco trade poses a serious economic and public health threat, as it can lead to reduced state revenue from tobacco taxes, and increased tobacco consumption, usually among younger and lower income populations^{1,2}. It is difficult to measure the full extent of illicit tobacco trade, as its activities take place in illegal black-market settings³. Thus, governments often have limited data in their disposal in their attempt to tackle this phenomenon^{3,4}. The Tobacco Industry takes advantage of this situation, systematically overestimating the illicit trade of tobacco products in an attempt to curb tobacco control policies, or

through lobbying⁵⁻⁸. For this reason, reliable, transparent and independent illicit tobacco trade methodologies are necessary in order to provide both policy makers and the public with accurate information³.

In its 2020 Review of Excise Duties on Tobacco, the Council of the EU highlights that illicit tobacco trade within the EU remains substantial⁹. Furthermore, according to the European Anti-Fraud Office (OLAF), the illicit trade of tobacco products causes an estimated loss of €10 billion every year for EU and national budgets¹. In order to address this issue, the EU has signed the World Health Organization (WHO) Framework Convention on Tobacco Control and

the Protocol to Eliminate Illicit Trade in Tobacco Products, which lay down a set of measures that aim to eliminate all forms of illicit trade^{10,11}. Nonetheless, the European Council also emphasizes the need for additional initiatives, such as readjusting tobacco taxation and strengthening law enforcement policies, to effectively limit the trade of illicit tobacco at the EU level^{9,12}.

In the above context, the aim of this study was to investigate the underlying reasons for the consumption of illicit tobacco among individuals who have ever smoked and to assess the extent of the illicit tobacco market in the EU. Our primary objective was to identify the key factors that are associated with smoking illicit cigarettes, while we also determined the extent to which individuals who have ever smoked have been offered black-market cigarettes as our secondary objective.

METHODS

Data source and design

We carried out a secondary data analysis with data from the 'Special Eurobarometer 482 on public perception of illicit tobacco trade' cross-sectional survey, which was carried out in December 2018 within the 28 EU MS (at that time the UK was still in the EU). A multi-stage, random probability sampling design was used in this survey, with primary sampling points being drawn proportional to population size and proportional density¹. A total of 27643 individuals aged ≥ 15 years were interviewed.

In this analysis we included only individuals who have ever smoked. All individuals were asked: 'Which of the following statements about smoking traditional or roll-your-own cigarettes apply to you?' (Please note in this survey smoking cigarettes does not include the use of electronic or heated cigarettes). Those who chose 'You currently smoke' or 'You used to smoke but you have stopped' were labelled as ever smokers and were included in this study. Those who selected 'You have never smoked' were excluded. Thus, a total of 12908 ever smoker respondents were eventually included in this study.

Measures

Primary and secondary objective

In order to evaluate our study's primary objective, we used the question: 'From your point of view, what are the main reasons for smoking black-market cigarettes?'. Participants could choose a maximum of two responses among 'They are cheaper', 'They taste better', 'They are easily available', 'Would never buy black-market cigarettes', 'Other', 'None' and 'Don't know'.

For the purposes of our secondary objective, we assessed the question: 'Have you ever been offered black-market cigarette to buy or smoke?'. Individuals who replied 'Yes, but rarely, that is to say less than once a month', 'Yes, occasionally, that is to say once to three times per month', 'Yes, regularly, that is to say once per week or more frequently' were

grouped as 'Have been offered black-market cigarettes'. Individuals who replied 'No' were labelled as 'Have not been offered black-market cigarettes'.

Sociodemographic characteristics

Individual sociodemographic data were collected from all respondents, including age (15–24, 25–44, 45–64, ≥ 65 years), age at completion of education (≤ 15 , 16–19, ≥ 20 years), gender (male, female), difficulty paying bills (most of time/from time to time, almost never/never) and type of community (rural area or village, small-/middle-sized town, large town).

Statistical analysis

We calculated the weighted proportions of individuals' responses for both outcomes at the national level, utilizing the Stata survey-specific `svy` command and the official Eurobarometer weights¹³. Additionally, we conducted two-level logistic regression models adjusted for sociodemographic characteristics, in order to examine factors associated with viewing lower prices, better taste or availability as main reasons for buying black-market cigarettes (primary objectives) and having been offered black-market cigarettes (secondary objective). Results are presented as weighted percentages and adjusted odds ratios (AORs) with 95% confidence intervals (95% CIs). Participants with missing values were excluded from our analyses. Statistical significance was defined as $p < 0.05$. All analyses were carried out using Stata version 13.

RESULTS

The vast majority of Europeans who have ever smoked (82.5%; 95% CI: 81.3–83.6) consider lower prices as the main reason for smoking black market tobacco cigarettes (Supplementary file Table 1) Smaller, but nonetheless, important proportions also consider better taste (2.1%; 95% CI: 1.7–2.5) and availability (10.0%; 95% CI: 9.2–10.8) as main reasons for smoking such products.

With regard to the factors associated with smoking black-market cigarettes, those aged 45–64 (AOR=0.74; 95% CI: 0.65–0.84), 25–44 (AOR=0.71; 95% CI: 0.62–0.82) and 15–24 (AOR=0.79; 95% CI: 0.63–0.98) were found to be less likely to consider lower prices as the main reason to smoke illicit tobacco compared to individuals aged ≥ 65 years. Moreover, individuals aged 15–24 years who have ever smoked appeared to be more likely to consider availability as a main reason for smoking illicit tobacco products (AOR=1.71; 95% CI: 1.36–2.17) compared to ever smokers aged ≥ 65 years. Women who have ever smoked were also more likely to view lower prices (AOR=1.12; 95% CI: 1.02–1.24) as a main reason to smoke illicit cigarettes compared to men. Finally, residents of large towns who are ever smokers were less likely to consider lower prices as a main reason to smoke illicit tobacco products (AOR= 0.82; 95% CI: 0.73–0.93) compared to residents of rural areas and

Table 1. Factors associated with the main reasons for smoking black-market cigarettes among European ever smokers, Special Eurobarometer 482, December 2018 (N=12908)

Factors	Lower prices		Better taste		Availability	
	AOR (95% CI)	p	AOR (95% CI)	p	AOR (95% CI)	p
Age (years)						
≥65 ®	1		1		1	
45–64	0.74 (0.65–0.84)	<0.001	0.91 (0.64–1.31)	0.627	1.13 (0.96–1.33)	0.141
25–44	0.71 (0.62–0.82)	<0.001	1.08 (0.74–1.57)	0.686	1.14 (0.96–1.36)	0.130
15–24	0.79 (0.63–0.98)	0.029	1.20 (0.71–2.04)	0.501	1.71 (1.36–2.17)	<0.001
Age at completion of education (years)						
≤15 ®	1		1		1	
16–19	0.95 (0.82–1.11)	0.517	0.70 (0.48–1.02)	0.062	1.16 (0.96–1.41)	0.122
≥20	0.99 (0.84–1.17)	0.905	0.83 (0.55–1.24)	0.362	1.23 (1.00–1.51)	0.047
Gender						
Male ®	1		1		1	
Female	1.12 (1.02–1.24)	0.023	0.72 (0.56–0.94)	0.016	0.94 (0.83–1.05)	0.254
Difficulty in paying bills						
Most of the time/from time to time ®	1		1		1	
Almost never/never	0.91 (0.81–1.01)	0.084	0.52 (0.39–0.68)	<0.001	0.78 (0.69–0.88)	<0.001
Type of community						
Rural area or village ®	1		1		1	
Small-/middle-sized town	0.85 (0.75–0.95)	0.005	1.39 (1.02–1.89)	0.038	0.93 (0.80–1.07)	0.293
Large town	0.82 (0.73–0.93)	0.002	0.94 (0.66–1.32)	0.706	1.03 (0.89–1.19)	0.702

AOR: adjusted odds ratio from two level regression model. ® Reference categories. Statistical significance at $p < 0.05$.

villages (Table 1).

Supplementary file Table 2 shows that a significant proportion of the European population that has ever smoked has been offered black-market cigarettes (29.7%; 95% CI: 28.4–31.1), while Supplementary file Table 3 shows that the factors associated with the likelihood of being offered black-market cigarettes were: respondents aged 45–64 years (AOR=2.12; 95% CI: 1.89–2.37), 25–44 years (AOR=2.34; 95% CI: 2.08–2.65) and 15–24 years (AOR=2.24; 95% CI: 1.87–2.68) and citizens of small-/middle-sized towns (AOR=1.26; 95% CI: 1.15–1.40) and large towns (AOR=1.42; 95% CI: 1.28–1.57) compared to older individuals aged ≥65 years and residents of rural areas or villages. On the other hand, women (AOR=0.58; 95% CI: 0.53–0.63) and individuals who almost never or never face financial difficulties (AOR=0.61; 95% CI: 0.56–0.66) were less likely to have been offered black-market cigarettes compared to men and individuals who face financial difficulties most of the time or from time to time.

DISCUSSION

The results of our secondary data analysis indicate that a significant proportion of European ever smokers considers lower prices and availability important reasons for smoking illicit tobacco cigarettes, with a substantial proportion of them having been offered illicit tobacco products. Younger individuals, men, respondents who face financial difficulties and residents of larger urban centers were all more likely to have been offered illicit cigarettes.

It is well established that illicit tobacco products disproportionately affect young people and individuals of lower socioeconomic status¹. These products are untaxed and unregulated, making them significantly cheaper, especially for the abovementioned sociodemographic groups¹⁴. As a result, smokers who are unwilling or unable to afford the high cost of legal tobacco often turn to the black market¹⁵. Moreover, the availability of cheap illicit cigarettes makes experimenting with smoking significantly easier for adolescents and young adults¹⁴. These facts undermine

the possible public health and economic beneficial results of effective cigarette taxation, which include reducing the prevalence of smoking and its detrimental implications on health, as well as increasing state revenue^{1,16}. Our findings are consistent with the above situation, highlighting that illicit tobacco products are more frequently offered to ever smokers that are younger and of lower socioeconomic status, an association which may be further enhanced by the role sociodemographic inequalities, while product appeal may also play a role in product uptake^{17,18}.

Limitations

With regard to our study's strengths, Eurobarometer surveys utilize consistent data collection techniques across all EU MS, offering highly reliable data. Moreover, as the sample interviewed is representative sample of the EU population older than 15 years old, results can be generalized. However, these results are subject to recall bias and as participants were only asked if they have been offered black-market cigarettes and not if they have ever bought them, it can be assumed that other factors, such as the places where people spend their time may influence the probability of being offered illicit cigarettes¹⁹.

CONCLUSIONS

Illicit tobacco trade remains a significant issue within the EU, particularly affecting younger and less financially secure individuals, with lower prices of black-market products being considered as the main driver of this market. These findings highlight the need for targeted public health, fiscal and enforcement policies in order to address both the supply and demand for illicit tobacco products.

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CONFLICTS OF INTEREST

The authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest and none was reported.

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ETHICAL APPROVAL AND INFORMED CONSENT

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PROVENANCE AND PEER REVIEW

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