

SMOKING HABITS AMONG ROMANIAN STUDENTS ONE YEAR AFTER THE RESTRICTION POLICIES FROM 2016

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Abstract: Since 2016 in Romania smoking was banned completely in all enclosed public places, enclosed workplaces, and children's playgrounds. New labeling conditions of tobacco products and packages have been released in order to indicate the harmful effects, in addition to other prevention campaigns. Our research focuses on the effects of law measured one year after restrictions have entered into force among smoker and non-smoker students. The study mainly uses the quantitative methods of questionnaires, the sample includes 315 university students.

The results show that the declared objectives of the restrictive measures against smoking have generally failed. Smoking still has a very high frequency among the research subjects. Students who smoke neither have reduced the amount of consumed cigarettes nor have quit smoking and the consumption per capita remained the same. The subject's smoking status can be partially explained by their friend's smoking status and by the student's attitudes on smoking in enclosed places like buildings. In order to reduce the phenomenon of smoking further steps and measures are required.

Keywords: tobacco use, attitudes, smoking bans, law policies, quantitative research

1. Introduction

The control of the tobacco consumption must rest on three pillars: reducing the accessibility to smoking products, informing the smokers regarding the risks to which are exposed by adopting this habit, protecting the health of non-smokers” (Chelaru & Duminičă, 2017, 18). From another perspective antismoking strategies can be classified into two groups: tax-based policies and non-price measures. The non-price policies include very different control for example: geographic restrictions, tobacco advertising bans, sales limitations, packaging mandates, and health warnings about tobacco consumption (Loubeau, 2013).

The World Health Organization's Framework Convention on Tobacco Control main objective is to protect present and future generations from the devastating health, social, environmental and economic consequences of tobacco consumption and exposure to tobacco smoke by providing a framework for tobacco control measures to be implemented by the Parties at the national, regional and international levels in order to reduce continually and substantially the prevalence of tobacco use and exposure to tobacco smoke (World Health Organization, 2005). To achieve the objectives the Convention demands: protection from exposure to tobacco smoke, regulation of the contents of tobacco products, regulation of tobacco product disclosures, packaging and labeling of tobacco products, education, communication, training and public awareness, tobacco advertising, promotion and sponsorship, reduction measures concerning tobacco dependence and cessation (World Health Organization, 2005).

Romania signed the Convention on Tobacco Control on 24 June, 2004, and ratified the treaty eighteen months later, on 27 January, 2006. Romania's tobacco control policies have strengthened since its accession to the European Union, as it came into compliance with

the EU's various tobacco-related directives, and recent developments suggest that this trend will continue in coming years (Szabó *et. al.*, 2016).

In the context in which tobacco is considered to be the main cause of avoidable morbidity and mortality in the world (Peto *et al*, 1994), one of the first public health actions at the level The EU was, by adopting the 'Europe Against Cancer' program in 1987, the development of a tobacco control policies at European level. In 1989-2003 important directives were developed in the field of tobacco control, even though in the mid-1990's it was found stagnation of progress in this area due to the growing influence of the tobacco companies (Center for Health Policies and Services/Centrul pentru Politici și Servicii de Sănătate, 2004).

One of the most significant legal documents regarding tobacco control is the Directive 2001/37/EC of the European Parliament and of the Council of 5th June 2001 on the approximation of the laws, regulations and administrative provisions of the member states concerning the manufacture, presentation and sale of tobacco products. The Directive requires manufacturers to put health warnings on tobacco products - bans the use of terms such as 'light', 'mild' or 'low tar' - forces producers to provide full information on all ingredients utilized in their products - sets maximum limits for tar, nicotine and carbon monoxide in cigarettes (European Comission, 2009).

In 2014 was adopted another legal measure, the Directive 2014/40/EU of the European Parliament and of the Council of 3 April 2014 on the approximation of the laws, regulations and administrative provisions of the Member States concerning the manufacture, presentation and sale of tobacco and related products and repealing Directive 2001/37/EC” (Chelaru & Duminiță, 2017, 18).

Romania in order to align to European standards, with most European countries already having some form of ban on smoking (Stupariu, 2016) tobacco smoking was restricted by law in Romania on 17th March 2016.¹ The new provisions have amended the previous law from 2002 on the prevention and suppression of smoking. Essentially, smoking was banned completely in all enclosed public places, enclosed workplaces, and children's playgrounds. New labeling conditions of tobacco products and packages have been released in order to indicate the harmful effects, in addition to other prevention campaigns.

On this occasion, after the launch of the restrictions adopted by the Parliament, the executive issued several informing guides, according to which "The main purpose of the interdiction on smoking in enclosed workplaces and enclosed public places is to protect the health of employees and citizens, by avoiding exposure to toxic smoke from tobacco products. In addition the law shall be beneficial for smokers because it facilitates smoking cessation as well as for minors and young people because it helps to prevent smoking by reducing the social occasions in which smoking and tobacco consumption usually starts" (Government of Romania, 2016).

In case of violating the restrictions, individuals may be subject to a pecuniary fine from 100 RON up to 500 RON (equivalent to 22-110 EUR). Legal entities who are operators of public places are punishable with a fine from 5000 RON up to 15000 RON (equivalent to 1100-3300 EUR) and can be subject of revoking their operating permit.

The amount of the penalty has a deterrent effect in comparison to the average net salary of Romania in 2016 (approx. 2200 RON equivalent to 482 EUR).

Our research focuses on the effects of law measured one year after restrictions have entered into force among smoker and non-smoker students.

¹ Anti-smoking Law nr. 15.2016, published in the Official Monitor nr. 72 of February 1, 2016.

2. Objectives and methodology

We have examined the effects of the smoking restrictions one year after legal provisions entered into force. Our main objective was to find out if the intent of legislator to protect the health of young people was achieved by prohibiting smoking in public places. We have selected university students as research subjects who are typically active in social life and often visit cafés and various locals according to our observations.

Our study is mainly quantitative, based on questionnaires supplemented by the observation method, document analysis, and comparison of our own results with other researches. Data collection was conducted in March 2017 using anonymous online questionnaires

For the sampling, the total population was determined by the students of the Partium Christian University. We have selected 315 individuals who attended the Faculty of Economics and Social Sciences and Faculty of Humanities and Arts using non-probabilistic judgment samples asking them to complete an anonymous online questionnaire distributed on social networks. In addition to this method we were able to observe the social life of the students outside the university campus. Despite the fact that our sampling method has certain limits to generalize, according to our observations the daily routines and social behavior of students are very similar at the universities in Romania.

Our research questions were referring to the subject's knowledge on prohibitions, their attitudes on restrictions and specific smoking habits before and after the introduction of the legal provisions. The hypothesis was set up according to the intention of the legislator: the same subjects are smoking less tobacco products after the restrictions than before. Our data was processed and analyzed using SPSS statistical program.

3. Demographical background

The surveyed students (n=315) are aged between 18 and 55 with an average of 24.35 years. The majority of them, 46.7% (n=147) are aged between 20 and 23 years. 27.3% (n=86) of the respondents were men, 72.7% (n=229) women. Regarding to their residency 80.6% (n=254) lives in urban areas, while 19.4% (n=61) lives in rural areas. Most of the students already have some work experience: 50.8% (n=160) have a part-time or full time job, 7.3% (n=23) are working on occasion, 2.9% (n=9) are volunteering, and 39% (n=123) does not have any job. The students have declared themselves religious in proportion of 47.9% (n=151), not religious in proportion of 40.3% (n=127) and unsure about faith in proportion of 11.7% (n=37). About their civil status we have found that 48.3% (n=152) lives in partnership, 38.4% (n=121) are single, 12.4% (n=39) are married, and 1% (n=3) divorced.

About the smoking status of the subjects has resulted that 43.8% (n=138) are smokers, 19% (n=60) just smokes occasionally, and 37.1% (n = 117) are non-smokers. Among the non-smokers 31.1% (n = 98) have never been a smoker and 19% (n=19) have already quit smoking.

4. Socio-cultural background

We used an alpha level of significance $p < .05$ for all statistical tests. In the first step, we have examined whether smoking status has any relationship with demographic variables. According to our results, apart from religiousness, there is no significant difference between these variables and smoking habits, which can be explained by the relatively homogeneous structure of the population (young university students). However, it has been found that among religious people are less smokers (43%) than among non-religious students (57%), (likelihood chi-square $\chi^2(2)=7.05$, $p=0.03$).

Socio-cultural variables do influence the smoking habits of respondents, as described in the followings. Smokers are more likely to be friends with other smokers, while non-smokers tend to have very few friends who are smokers ($\chi^2(2)=58.483$, $p<.001$), as represented in *Table no. 1*.

Table no. 1 – Crosstab

| | | Do your friends smoke? | | | Total |
|------------------|-------------|------------------------|--------|-----------------|--------|
| | | Yes, most of them | Partly | No, or very few | |
| Do you smoke? No | Count | 18 | 64 | 35 | 117 |
| | % | 19.8% | 34.6% | 89.7% | 37.1% |
| | Std. Resid. | -2.7 | -.6 | 5.4 | |
| Yes | Count | 73 | 121 | 4 | 198 |
| | % | 80.2% | 65.4% | 10.3% | 62.9% |
| | Std. Resid. | 2.1 | .4 | -4.1 | |
| Total | Count | 91 | 185 | 39 | 315 |
| | % | 100.0% | 100.0% | 100.0% | 100.0% |

The smoking habits of young students are influenced significantly by the smoking habits of their family members. Young people are more likely to smoke if in their family parents, brothers and sisters are smokers. Students originated from non-smoker families tend to stay away from smoking ($\chi^2(3)=30.683$, $p<.001$), as shown in *Table no. 2*.

Table no. 2 – Crosstab

| | | What about smoking in your family? | | | | Total |
|------------------|---------------|------------------------------------|----------------------------|---------------------------|---------------|--------|
| | | Everybody smokes | One of my parents/ of them | My both brothers/ sisters | Nobody smokes | |
| Do you smoke? No | Count | 2 | 32 | 12 | 71 | 117 |
| | % | 14.3% | 25.4% | 26.1% | 55.0% | 37.1% |
| | Std. Residual | -1.4 | -2.2 | -1.2 | 3.3 | |
| Yes | Count | 12 | 94 | 34 | 58 | 198 |
| | % | 85.7% | 74.6% | 73.9% | 45.0% | 62.9% |
| | Std. Residual | 1.1 | 1.7 | .9 | -2.6 | |
| Total | Count | 14 | 126 | 46 | 129 | 315 |
| | % | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

5. Attitudes related to smoking

The respondents believe that the society labels smokers either indifferently or negatively. Statistically significant differences between the answers of smokers and non-smoker individuals' could not be found (likelihood ratio chi-square $\chi^2(6)=8.74$, $p=0.19$). We have examined the extent to which smokers and non-smokers agree with prohibiting smoking in enclosed spaces, as presented on *Table no. 3*. The majority of the subjects,

smokers and non-smokers agrees with the ban 61.3%, n=193, but there have been found significant differences within the two groups. Non-smokers are less divided in their responses, they agree or mostly agree, while smokers are less enthusiastic in their responses (likelihood chi-square $\chi^2(3)=59.067, p<.001$). The answers of the two groups also positively correlates on a moderate level (Spearman correlation $r=.471, n=315, p<.001$)

Table no. 3 – Crosstab

| | | What do you think about the law prohibiting smoking in enclosed places (buildings)? | | | | |
|---------------|-----|---|---------|----------------|-------------------|------------|
| | | | I agree | I mostly agree | I mostly disagree | I disagree |
| Do you smoke? | No | Count | 107 | 8 | 2 | 0 |
| | | % | 91.5% | 6.8% | 1.7% | 0.0% |
| Yes or No | Yes | Count | 86 | 74 | 31 | 7 |
| | | % | 43.4% | 37.4% | 15.7% | 3.5% |
| Total | | Count | 193 | 82 | 33 | 7 |
| | | % | 61.3% | 26.0% | 10.5% | 2.2% |

19.6% (n=62) of the respondents experienced situations where the new prohibitions on smoking were not respected, 21.3% (n=67) has heard about similar cases, while 41.9% (n=132) has no knowledge about violations of the law. 17.2% (n=54) could not answer to this question because they did not pay attention to this aspect or could not remember. According to our results, non-smoking students were less interested if the restrictions were infringed than smokers, as well as smokers had experienced cases of violation in greater proportions than non-smokers ($\chi^2(3)=17.477, p<.001$).

The results show that the friends of non-smokers and smokers have a different perception on these legal prohibitions. We have used a five-stage scale on which agreement and positive attitudes were associated to 1, while disagreement and negative attitudes were associates to 5. In case of non-smoker's friends it has resulted an average of 2.32, while in case of smokers' friends the average was 2.80. This result indicates that friends of non-smokers like the restrictions, while smokers' friends rather disagree or have a negative attitude. There was a statistically significant difference between the groups (smokers and non smokers) as determined by one-way ANOVA ($F(1,313) = 13.871, p = .001$). The attitudes of the family members of smokers and non-smokers also show similarly significant differences, but the average values for both groups are rather positive: non-smokers' family members scored 1.73, while smokers family members scored 2.28 on the same 5 level scale used before. The previous statement is here also valid with a statistically significant difference between groups (smokers and non smokers) as determined by one-way ANOVA ($F(1,313) = 18.460, p = .001$).

These partial results on the attitudes are logically consistent with our findings of socio-cultural nature: students whose close relatives are smoking tend to be smokers, and smokers are more likely to be friends with other smokers. Our subjects were asked whether the restrictions had contributed to the suppression of smoking. There is no significant difference in opinion among the group of smokers and non-smokers

($\chi^2(3)=2.300, p=.513$).

Nearly half of our respondents (49.2%, n=154) thinks that there was almost no change in smoking habits, while 17.8% (n=56) thinks that nothing has been changed at all by the effects of the new law. Only 13.7% (n=43) of the subjects states that the rate of smoking has moderately decreased, while 19% (n=60) believes that the rate of smoking has largely reduced. Trust in the effectiveness of the law is therefore on a low level and the majority is skeptical.

We have found the most popular tobacco products tried by the subjects (including non-smokers): most of them tried cigarettes (90.2%, n=284) and narghile (71.4%, n=225). Many of the students have tried homemade cigarettes (58.4%, n=184), electric cigarettes (54.6%, n=172) and cigars or mini-cigars (40%, n=126). Other tobacco types had a proportion of 22.2%, (n=70). It will be revealed in the following section that despite the wide range of tobacco products tried by the students, they use regularly only a few products.

6. Knowledge about smoking restrictions

We have tested the respondent's knowledge about smoking restrictions in order to measure the effectiveness of government and media campaigns. Our questions referred to both prohibited and non-prohibited places for smokers so that the survey does not influence the respondents. According to the result, the subjects have had wrong information about smoking in parks and near playgrounds – where smoking is allowed and on train platforms and schoolyards – where smoking is prohibited. In this cases the number of correct answers were under 50%. We have received correct answers in proportion of over 90% for public spaces, open and closed terraces, and for office and school buildings. The answers are presented in *Table no. 4*.

Table no. 4 - Correct answers for forbidden places

| Questions | Value of truth | Correct answers | |
|---|----------------|-----------------|-------|
| | | N | % |
| Smoking is forbidden everywhere in public places. | FALSE | 299 | 94.9% |
| Smoking is forbidden in parks. | FALSE | 86 | 27.3% |
| Smoking is forbidden on playgrounds. | TRUE | 241 | 76.5% |
| Smoking is forbidden near playgrounds. | FALSE | 76 | 24.1% |
| Smoking is forbidden in bus stops. | TRUE | 179 | 56.8% |
| Smoking is forbidden on train platforms. | TRUE | 116 | 36.8% |
| Smoking is forbidden in closed terraces. | TRUE | 285 | 90.5% |
| Smoking is forbidden in open terraces. | FALSE | 308 | 97.8% |
| Smoking is forbidden in office buildings. | TRUE | 299 | 94.9% |
| Smoking is forbidden in building stairs. | TRUE | 283 | 89.8% |
| Smoking is forbidden in school buildings. | TRUE | 308 | 97.8% |
| Smoking is forbidden in schoolyards. | TRUE | 134 | 42.5% |

The subjects are therefore just partially informed, which can be explained by an unbalanced media campaign focusing only on certain aspects of the law. The average of the correct answers given by the population (n=315) on a scale ranging from 0 to 10 is $M=6.9$, $SD=1.55$ to a scale.

7. Smoking habits

Among our respondent smoker-students the tobacco consumption shows the following distribution, according to our multiple choice responses: in proportion of 91.1% (n=164) the subjects are smoking cigarettes alternatively with homemade cigarettes (17.8%, n=32) and occasionally narghile 6.1% (n=11). Electric cigarettes are not popular at all, just 2.2% (n=4) uses them. Cigars and mini-cigars are used rarely (1.7%, n=3), such as pipes (0.6%, n=1).

We have investigated smokers whether the consumed quantity has changed as an effect of the prohibitions. Paired samples T-test was used but we were unable to find any significant difference in the scores for the quantity smoked after the restriction ($M = 2.47$, $SD = 1.299$) and the quantity smoked before the restriction ($M = 2.37$, $SD = 1.032$); $t(4) = 1.667$, $p = 0.097$. We found out that legal restrictions did not contribute significantly to reduction of smoking, so the legislator's intention was not fulfilled.

It should be noted that the majority of respondents consumes a quantity of 10-20 cigarettes/day (approx. 60%), 25% smokes occasionally and about 15% consumes daily more than a package. Between April 2016 and April 2017 the price of tobacco products was not changed in Romania.

Overall, the respondents declared that the restrictions did not had a major impact on their smoking habits: only 7.1% (n=13) were sure that their smoking habits have substantially changed, 11.5% (n=21) reported a significant change, a proportion of 48.6% = 89 felt less affected, while 32.8% (n=60) judges that their habits have not changed at all. A control question was also applied where we asked the smokers about the quantity consumed: since the new regulations 5% (n=9) of the respondents are consuming more cigarettes, 18.2% (n=33) are consuming less tobacco products, 14.9% (27) considered quitting, while 61.9% (n=112) perceived no change in their smoking habits.

On the basis of questions referring to the quantity of consumed tobacco, our hypothesis according to which the same subjects smoke less after the restrictions than before should be rejected.

We have investigated if smokers are considering seriously the prohibitions: 59.7% (n=108) are respecting the legal provisions, 13.8% (n=25) are usually smoking despite the interdictions, while 26.5% (n=48) does not pay attention if they are allowed to smoke on a given location.

We wanted to know more social aspects about the effects of prohibitions. Therefore we asked smokers and non-smokers about how they proceed when some friends of them want to go out to an open space to smoke: we asked the smoker students if during social events when they want to lit a cigarette do their non-smoking friends escort them to the entrances of enclosed locations. Respondents declared that on a regular basis in proportion of 17.1% (n = 31) are accompanied, 54.7% (n=99), are usually accompanied, 26% (n=47) are rarely and 2.2% (n=4) are never accompanied by their non-smoker friends. We asked non-smokers the same question whether they do leave their sittings and tables during social events to keep with their friends who will smoking. 9.7% (n=14) of non-smokers usually follow their non-smoker friends, a proportion of 32.4% (n=47) usually keeps with their smoker friends, 37.2% (n=54) just rarely leaves their places and 20.7% (n=30) never accompanies smoking friends. We have confirmed that the responses of the two groups, smokers and non-smokers to the above question are coherent. We used paired samples T-test and have not found any significant difference between the two groups under this aspects: $t(13) = 1.00$, $p = 0.336$.

From a social point of view, 23.2% (n=42) of smokers feel lonely when they get out in open spaces to smoke, while 76.8% (n=139) has no problem with leaving their friends

alone. In the same situation 48.6% (n=70) of non-smokers feel alone during they are left at the table by smoker friends, while 51.4% do not perceive the situation problematic. Significant differences between the two groups' responses were also found by using paired samples T test: $t(11)=2.345$, $p=0.039$. As it seems non-smoker students feel more uncomfortable during they are left alone by their smoker friends in public places, than in case of the latter category. This statement is also supported by our findings described in the socio-cultural background section according to which smokers tend to have smoker friend, while non-smokers are more enjoying the company of non-smokers.

Table no. 5 shows the effects as perceived by students of the Romanian smoking restrictions from 2016. We have provided 9 predefined responses that have been created in a team with students during the preparation of this study. The first three questions concern possible alternative locations for smoking, at home, in companies of students, at the entrances of different locations visited by students and on open terraces. Responses (n=187) are cumulatively indicating these locations in proportion of 61.7%, which suggests that the interdictions did not reduce the phenomenon of smoking, just banned smokers from restaurants, bars and similar places of entertainment. Smoking in prohibited areas is not characteristic for the investigated population, only 3.3% (n=10) does not comply with the law. Also under the effects of the law some students tried to quit (7.9%, n=24), but only one person succeeded. Some of the subjects (3.6%, n=11) felt anger about the restrictions. However positive impacts have also come out, because 38.3% (n=116) of the respondents enjoys tobacco smoke-free public places and likes to go out more often. The restrictive measure can be perceived positively from the point of view of social cohabitation. 13.2% of respondents (n=54) have declared that none of the above listed options characterizes them.

Table no. 5 - Effects of restrictions

| Effects of legal restrictions | Responses | | Percent of Cases |
|--|-----------|---------|------------------|
| | N | Percent | |
| I am smoking more at home | 40 | 9.8% | 13.2% |
| With my smoker friends we rather stay at home, to be allowed to smoke | 38 | 9.3% | 12.5% |
| I am smoking the same quantity but at the entrance or terraces of places | 109 | 26.7% | 36% |
| I have to smoke at forbidden places | 10 | 2.4% | 3.3% |
| It seemed a good occasion to quit, but I failed | 24 | 5.9% | 7.9% |
| I have quit smoking as a result of the restrictions | 1 | 0.2% | 0.3% |
| I was enraged by the restrictions and did not even consider to quit | 11 | 2.7% | 3.6% |
| I prefer to go out more often, because of no smoke | 116 | 28.4% | 38.3% |
| Neither of the above mentioned | 54 | 13.2% | 17.8% |

8. Multiple regression analysis

We have used standard multiple regression analysis in order to explore the variances explained in smoking status by the relative contribution of the independent variables. We are trying to determine the predictors of smoking status. Preliminary analysis was conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity. The total variance in smoking status explained by the regression model as

a whole was 35.1% (R square), $F(13, 295)=12.283$, $p<0.01$. Predictors included in the model were sex, age, residency, occupation, religiosity, family status, smoking habits in the family and among the friends of the subjects, attitudes of family and friends on smoking restrictions, subject's attitudes on prohibiting smoking in enclosed places and knowledge about legal restrictions. We have found that only two independent variables have a significant unique contribution to smoking status:

- the subjects attitudes on smoking in enclosed places like buildings had the highest beta value (beta=-0.343, $p<0.01$) explaining 7.9% of the total variance in smoking status and
- if the subject's friend are smokers had the second highest beta value (beta=0.255, $p<0.01$) explaining 5.3% of the total variance in smoking status.

As we can see, the legal prohibitions and the knowledge about them are not significantly influencing the smoking habits of students.

9. Conclusions

We can conclude, that the declared objectives of the restrictive measures against smoking have generally failed. Smoking still has a very high frequency among the examined population. Students who smoke neither have reduced the amount of consumed cigarettes nor have quitted smoking. The consumption per capital has remained the same one year after introducing new prohibitions. Habits of smoking have changed indeed, forcing smokers form closed public places to other locations.

The population has a deficient knowledge about prohibitions which indicates that public campaigns conducted by the government and the media were focusing only on certain aspects of the restrictions.

Non-smokers appreciate the smoke-free public environments, so the changes made by the law were positively evaluated by the subjects. However non-smokers often experienced loneliness in bars and pubs during their smoker-friends have left their tables to get out near the entrances of such places to smoke. Loneliness was observed less often by smokers in this context.

The subject's smoking status can be partially explained by their friend's smoking status and by the student's attitudes on smoking in enclosed places like buildings. In order to reduce the phenomenon of smoking further steps and measures are required, prohibition alone was not effective.

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