

The Impoverishing Effect of Tobacco Use in Albania

Tobacconomics Working Paper Series

Elvina Merkaj,¹ Drini Imami,² Edvin Zhllima²

¹ Polytechnic University of Marche, Italy, and DSA, Albania

² DSA and Agricultural University of Tirana, Albania

Paper No. 23/2/1

February 2023

Correspondence to: Drini Imami, Development Solutions Associates, dimami@ubt.edu.al

Suggested citation: Merkaj, E., Imami, D., & Zhllima, E. (2023). *The impoverishing effect of tobacco use in Albania*. (Tobacconomics Working Paper No. 23/2/1). DSA. <https://tobacconomics.org/research/the-impoverishing-effect-of-tobacco-use-in-albania-working-paper-series/>

Acknowledgments: Development Solutions Associates (DSA) is funded by the University of Illinois Chicago's (UIC) Institute for Health Research and Policy to conduct economic research on tobacco taxation in Albania. UIC is a partner of the Bloomberg Philanthropies' Initiative to Reduce Tobacco Use. The views expressed in this document cannot be attributed to, nor can they be considered to represent, the views of UIC, the Institute for Health Research and Policy, or Bloomberg Philanthropies. The authors are thankful for the support provided by Jeff Drope and Erika Siu.

Abstract

Background

Albania has a high prevalence of smoking. Around 25 percent of Albanian adults smoke tobacco products, and the prevalence is particularly high among adult males (43 percent). Tobacco consumption is a major risk factor for several diseases and the largest preventable cause of premature death in Albania. Consequently, tobacco use raises health care costs and, together with the cost of tobacco purchasing, reduces the share of income available to meet households' other needs, especially for those with lower income. This is particularly relevant because Albania is among the poorest countries in Europe. In this context, tobacco consumption may cause households to face a higher risk of poverty. However there have not been any previous rigorous assessments of the impoverishing impacts of tobacco use on households in Albania. This study aims to fill that gap.

Methodology

We estimate the impoverishing effects of tobacco use in Albania by analyzing the effect of tobacco expenditures on two main variables: (1) the head count ratio (HRC) and (2) the poverty gap. Through the head count ratio, we aim to estimate the number of households that experience poverty due to tobacco-related expenditures. The poverty gap—defined as the relative difference between the average living standard of the poor and the national poverty line (NPL)—provides a deeper understanding of the impoverishing effects of tobacco use, since it also takes into consideration the degree of poverty. The difference between the poverty gap before and after deducting tobacco-related expenditures reflects the depth of the impoverishing effect of tobacco.

Results

The study findings indicate that almost 13,000 households, that include 60,000 members—of whom 10,000 are children—are pushed below the poverty line due to tobacco-consumption-related costs. Furthermore, households that are already below the poverty line experience worsening of their economic situation: the head count ratio increases from 27 to 29 percent.

Conclusions

The findings of this study reveal to policy makers and the wider public the dire effects of tobacco use on poverty in Albania. From a policy perspective, the results reinforce the importance and implications of tobacco control policies that drive down consumption. Among these, taxation policies are widely seen as the most effective and the most cost-effective: higher taxes lead to lower smoking prevalence among poorer households and would therefore reduce poverty and promote equality.

JEL Codes: I14; I15, I18

Keywords: smoking costs, poverty, government policy, Albania

Introduction

Research background

Albania has a high prevalence of smoking. A recent study shows that around 25 percent of Albanian adults smoke tobacco products. Smoking prevalence is especially high among males: almost 43 percent of adult males and seven percent of adult women consume tobacco products (Gjika et al., 2020).

Tobacco consumption is a main risk factor for several diseases and a direct cause of many premature deaths. Around one quarter of premature deaths among males and 9.1 percent among females in Albania are caused by smoking; in total, more than 4,000 deaths in Albania each year are caused by a disease caused by smoking. According to Burazeri (2020), smoking is one of three main risk factors responsible for the disease burden in the Albanian population (together with arterial hypertension and nutrition-related risks), and the proportional mortality attributable to smoking is about 16 percent. Moreover, the World Health Organization (WHO, 2016) estimates that 50 percent of premature deaths among smokers are projected to be attributable to smoking in low income countries (for example, 399,000 of the 798,000 current smokers in Albania). In the absence of stronger tobacco control policies, this estimate may be realized.

Smoking also represents a heavy economic burden—for society as a whole, and particularly for poorer segments of the population. According to previous assessments, the economic costs due to direct health expenditures and productivity loss related to smoking amounts to USD 315 million per year (Tobacco Atlas, 2015). Smoking increases the probability of several types of serious illness, which in turn, raise health care costs and, consequently, reduce the share of income available to meet other needs, especially in the case of low-income households. Low-income households in Albania have the highest share of spending on cigarettes (7.6 percent), in comparison to middle- and high-income households, with 6.7 percent and 5.4 percent, respectively (Gjika et al, 2019). This is a major concern because Albania is among the poorest countries in Europe.

In 2020, the rate of Albanians at risk of poverty (percentage of individuals with incomes below 60 percent of the median equalized income), was 21.8 percent. Severe material deprivation (the percentage of the population with an enforced lack of at least four out of nine material deprivation items) was estimated at 34.7 percent (INSTAT, 2021). Recent shocks to the global economy, including the COVID-19 pandemic and market price uncertainties emerging from the war in Ukraine, have created new challenges that threaten economic prospects in 2023 and beyond (World Bank, 2022). With increasing costs and reduced purchasing power in the short run, the weight of tobacco spending can be devastating for middle-income Albanian households, and even more so for poorer ones.

Financial protection in Albania is weak compared to many other European countries. In Albania, overall public expenditures on health are 6.6 percent of total expenditures, and these increase at a lower rate compared to overall expenditures (FDV, 2021). Health spending represents a heavy burden among the poorest households and is often driven by out-of-pocket payments for outpatient medicines. For example, in the case of a serious health problem there are only two options: either (i) use of medication, which frequently results in household debt, or (ii) simply avoid taking medications, resulting in more critical health situations. Furthermore, there are also high levels of unmet needs for health care. The weak coverage policy, informal payments, and low levels of public spending on health all contribute to increasing people's exposure to out-of-pocket payments (Tomini & Tomini, 2020).

In this context, tobacco consumption likely causes households to face a higher risk of poverty. Despite the importance of this dynamic, there has not been any previous assessment of the impact of tobacco use on household impoverishment in Albania to the best of our knowledge.

The overall objective of the study is to explore the effects of tobacco use on household impoverishment in Albania. The study explores the effects of tobacco-related medical expenditures on the overall household budget and assesses the number of smokers that are pushed below the poverty line due to expenditures related to their tobacco use.

Literature review

Tobacco consumption directly reduces a household's available resources to meet basic needs. Within a given household budget, spending on tobacco may shift the focus (or resources) away from spending for essential items such as food, education, and health care, which are crucial for the well-being of the households, particularly for youth and children.

Previous research on other countries has measured how or to what extent daily tobacco use results in lower household expenditures on education and health care (Do & Bautista, 2015). Tobacco use is positively associated with health care spending: health care expenditures can be higher among households with tobacco users due to the direct health-related costs of tobacco-related diseases, which when then combined with the direct cost of purchasing tobacco, can result in higher real poverty (John et al., 2011; Efrogmson et al., 2011).

Smoking represents a significant cost, with a heavier relative weight in the case of low- and middle-income households compared to high-income households, thus resulting in a

greater wealth gap or disparity (Bobak et al., 2000; Siahpush et al., 2003; DEPOCEN, 2021).

In the case of India, tobacco consumption and tobacco-related health care expenditures have contributed to impoverishing approximately 15 million people in India (John et al., 2011). Liu et al. (2006) found that around 30 million urban residents and 24 million rural residents in China fell below the poverty line when taking into consideration tobacco consumption expenditures. A more recent study on Vietnam found that tobacco-related expenditures increased the number of poor people by 310,000 (DEPOCEN, 2021).

Smoking is found to contribute to impoverishing also in richer / more developed countries. For example, a study on the United Kingdom, found that 500,000 households, comprising about 400,000 children and 850,000 adults, were deemed as poor after accounting for their tobacco expenditure (Reed, 2015).

Methodology

Data analysis

We estimate the impoverishing effects of tobacco use in Albania by analyzing the effect of tobacco expenditures on two main variables:

- (1) the head count ratio (HRC) and
- (2) the poverty gap.

The head count ratio

Through the head count ratio we aim to estimate the number of households that experience poverty due to tobacco-related expenditures. First, we defined a head count ratio assuming that the level of per capita expenditures in a certain household should be equal or higher to the estimates of the at-risk-of-poverty threshold (expressed in Albanian lek, or ALL, according to the Survey on Income and Living Conditions, SILC).

The official estimate of poverty using the head count ratio is derived from the following equation:

$$(1) \quad HRC_0 = \frac{1}{N} \sum_{i=1}^n I(e_i \leq NPL)$$

Where N is the total population, e_i is the per capita expenditure of households taken as a proxy of their disposable income, and NPL is the national poverty line, or the amount of resources needed to achieve a minimum acceptable welfare level. HRC_0 multiplied by N gives the total number of people in poverty in Albania using the survey's weights.

Then we estimate HRC_1 as the excess poverty from the forgone income due to tobacco purchases, as shown below:

$$(2) \quad HRC_1 = \frac{1}{N} \sum_{i=1}^n I(e_i - t_i \leq NPL)$$

where $(e_i - t_i)$ is the per capita disposable income after deducting the expenditure on tobacco products. The result of the difference between equations 1 and 2, namely $(HCR_1 - HCR_0) \times N$, is the number of people who are impoverished due to tobacco spending.

$$(3) \quad HRC_2 = \frac{1}{N} \sum_{i=1}^n I(e_i - t_i - h_i \leq NPL)$$

Similarly, in equation 3 the HCR_2 multiplied by N is the total number of people in Albania in poverty due to tobacco spending and potential health care expenditures to alleviate tobacco-related diseases. The impoverishment effect is captured by $(e_i - t_i - h_i)$, which is the per capita disposable income after deducting the expenditure on tobacco products (t_i) and the attributable health care expenditure due to tobacco consumption (h_i). The latter is estimated by multiplying the smoking-attributable fraction (SAF) coefficient by the mean per capita health care expenditure:

$$h_i = \text{healthcare exp} * SAF$$

Another indicator is the number of people who are impoverished due to tobacco-related expenditures, including both tobacco spending and associated health costs, which is $(HCR_2 - HCR_0) \times N$.

Using the values of the HRC from the three equations above, we can have a measure of the impoverishing effect of tobacco usage that considers not only the impact of expenditures on tobacco products but also the impact of the additional health expenditures that tobacco consumers bear. Thus, we are able to assess the number of households that fall below the at-risk-of-poverty threshold because of tobacco-related expenditures.

The poverty gap

The poverty gap, defined as the relative difference between the average living standard of the poor (in our study, the average expenditures of the observed household as reported by Household Budget Survey (HBS)) and the NPL (the at-risk-of-poverty threshold defined by SILC), provides a deeper understanding of the impoverishing effects of tobacco usage, since it also takes into consideration the degree of poverty.

The formula of the poverty gap is (Deaton, 1997):

$$PG = \frac{1}{N} \sum_{i=1}^n \left(1 - \frac{e_i}{NPL}\right) I(e_i \leq NPL)$$

in which PG is considered as a per capita measure of the total resource shortage below the NPL. The formula $(PG \times N \times NPL)$ gives the total amount by which the poor fall below the NPL. The difference between the poverty gap before and after deducting tobacco-related expenditures should be considered as the magnitude of the impoverishing effect of tobacco. Thus, following John et al. (2019), the deduction of spending on tobacco and tobacco-related health care spending (as estimated) indicates the level of additional household disposable income (expenditures in this study) available for spending on essential needs.

Results

The HBS data show a prevalence rate of 39 percent, meaning that 39 percent of the families surveyed have at least one smoker. The average tobacco expenditures per capita (pc) amount to almost ALL 13,000, which corresponds to almost 5.5 percent of households' per capita total expenditures. Households with smokers have on average more members, 7 percent more income per capita than non-smokers, but they face almost 14-percent higher health expenditures.

Table 1. Weighted descriptive statistics of study sample, by smoking status, HBS 2017 (monthly data in ALL)

	Household without smokers	Household with at least one smoker
Prevalence	61%	39%
Nr of household members	3.6	4.1
Income pc/tot exp pc	21,331 (20,544; 221,184)	22,919 (22,060; 23,776)
Tobacco expenditure pc	0	1,296 (1,232; 1,361)
Health expenditure pc	755 (690; 821)	779 (709; 838)

Source: Authors' calculations

Notes: Confidence interval of 95% in parentheses. The amounts are in lek of Albanian lek - 1 EUR equals approximately 120 Albanian lek (ALL).

The head count ratio

More than 200,000 families live with less income than ALL12,008/person/month, which is considered by INSTAT to be the at-risk-of-poverty level for year 2017. They represent almost 27 percent of all households in Albania. Almost one million household members, of which almost 217,000 are children, live below the poverty line. The head count of our sample is similar to the official head count estimated by INSTAT (23 percent).

Table 2. Head count ratio, HBS 2017

Category	No.	Percentage of total
No. of families below the poverty line	206,179	27%
No. of individuals	999,941	34%
of which children	216,962	22%

Source: Authors' calculations

Almost 11,500 families with 52,000 members, of which 9,000 are children, are pushed below the poverty line because of tobacco expenditures.

Table 3. Poverty due to tobacco expenditures

Category	Number	Increase in number
No. of families below the poverty line	217,705	11,526
No. of individuals	1,052,428	52,487
of which children	225,978	9,016

Source: Authors' calculations

If we consider both the effect of tobacco purchasing expenditures and estimated health related costs,¹ almost 13,000 families with 60,000 members, including more than 10,000 children, are pushed below the poverty line because of smoking behavior (Table 4). In this case, the head count ratio increases from 27 to 29 percent.

¹ Indicative health costs are based on various estimates, which include similar estimates from other countries and preliminary estimates for Albania (Huang et al., 2021; Xu et al., 2015; Barnett et al., 2014). Future research is needed to carry out in-depth assessment of tobacco-consumption-related health costs for Albania, as well as its implications.

Table 4. Overall effect of tobacco use on head count ratio

Category	No.	Increase in no.	Increase in percentage of total population
No. of families below the poverty line	219,100	12,921	2%
No. of individuals	1,059,505	59,564	2%
of which children	227,636	10,675	

Source: Authors' calculations

The poverty gap

Tobacco use not only pushes more families and individuals below the poverty line but also deepens the existing poverty of those who are already poor. In fact, due to tobacco smoking and health care costs related to tobacco, poor smoking families' incomes are reduced by two percent per capita (Table 5).

Table 5. Key poverty indicators

NPL	12,008
Mean pc total expenditures of poor smoker households:	
without considering smoking expenditures	8,966
considering smoking expenditures	8,748
Poverty gap	218
Poverty gap (%)	2%

Source: Authors' calculations

Conclusions

Albania is characterized by a high smoking prevalence, particularly in the case of adult males. Tobacco consumption is a main risk factor for several major diseases and a direct cause of a high proportion of premature deaths. Lastly, tobacco consumption results in significant costs for the affected households as well as the entire society; the costs of tobacco purchasing and related health costs reduce the share of income available to meet other needs, especially in the case of low-income households. This is a particular concern because Albania is among the poorest countries in Europe.

This study is the first rigorous assessment of the impact of tobacco consumption on poverty. The study findings indicate that almost 13,000 households with 60,000 members, including more than 10,000 children, are pushed below the poverty line because of smoking. Furthermore, smoking tends to make those who are already poor (below the poverty line) poorer: the head count ratio increases from 27 to 29 percent when taking into account tobacco smoking costs.

The study findings demonstrate clearly to policy makers and the wider public the importance of policies that drive down tobacco consumption. Of these policies, increasing tobacco excise taxes is proven consistently to reduce smoking consumption and prevalence; this effect is disproportionately greater among poorer households, who are more price-sensitive and therefore more likely to quit smoking because of higher taxes and prices. Less tobacco consumption among lower-income households implies less poverty. Thus, this research reinforces that those most likely to experience the greatest benefits from reduced tobacco consumption are those with lower incomes (Gjika et al, 2020).

References

- Barnett, P. G., Hamlett-Berry, K., Sung, H. Y., & Max, W. (2014). Health care expenditures attributable to smoking in military veterans. *Nicotine & Tobacco Research*, 17(5), 586-591.
- Bobak, M., Jha, P., Nguyen, S., & Jarvis, M. (2000). Poverty and smoking. *Tobacco Control in Developing Countries*, 1, 41-62.
- Burazeri, G. (2020). Burden of non-communicable diseases and behavioral risk factors in Albania. *European Journal of Public Health*, 30, Issue Supplement 5, September 2020.
- Deaton, A. (1997). *The analysis of household surveys: A microeconomic approach to development policy*. The World Bank.
- DEPOCEN (2021) The impoverishing effect of tobacco use in Vietnam. Research report.
- Do, Y. K., & Bautista, M. A. (2015). Tobacco use and household expenditures on food, education, and healthcare in low- and middle-income countries: A multilevel analysis. *BMC Public Health*, 15(1), 1-11.
- Efroymsen, D., Pham, H. A., Jones, L., FitzGerald, S., Thu, L. T., & Thu Hien, L. T. (2011). Tobacco and poverty: Evidence from Vietnam. *Tobacco Control*, 20(4), 296–301.
- Gjika, A., Gjika, I., Zhllima, E., & Imami, D. (2020). *Smoking uptake, prevalence, and cessation in Albania*. Tirana, Albania: Development Solutions Associates.
- Huang, S., Wei, H., Yao, T., Mao, Z., Sun, Q., & Yang, L. (2021). The impact of smoking on annual healthcare cost: An econometric model analysis in China, 2015. *BMC Health Services Research*, 21(1), 1-9.
- INSTAT. (2021). *Income and living conditions in Albania 2020*. <http://www.instat.gov.al/en/themes/social-condition/income-and-living-conditions-in-albania/publication/2021/income-and-living-conditions-in-albania-2020/>
- John, R., Chelwa, G., Vulovic, V., & Chaloupka F. (2019). *Using household expenditure surveys for research in the economics of tobacco control. A Tobacconomics toolkit*. Chicago, IL: Tobacconomics, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago. www.tobacconomics.org
- John, R. M., Sung, H. Y., Max, W. B., & Ross, H. (2011). Counting 15 million more poor in India, thanks to tobacco. *Tobacco Control*, 20(5), 349-352.
- Landman Economics. Available at: <https://committees.parliament.uk/writtenevidence/117/pdf/>
- Liu, Y., Rao, K., Hu, T. W., Sun, Q., & Mao, Z. (2006). Cigarette smoking and poverty in China. *Social Science & Medicine*, 63(11), 2784-2790.
- Reed, H. (2015). *Estimates of poverty in the UK adjusted for expenditure on tobacco*.
- Siahpush, M., Borland, R., & Scollo, M. (2003). Smoking and financial stress. *Tobacco Control*, 12(1), 60-66.
- Tobacco Atlas. (2015). *Tobacco factsheet: Albania, 2015*. <https://files.tobaccoatlas.org/wp-content/uploads/pdf/albania-country-facts-en.pdf>

- Tomini, T., & Tomini, S. M. (2020). *Can people afford to pay for health care?: New evidence on financial protection in Albania.*
- USAID. (2022). *Demographic health surveys, microdata for Albania.* https://dhsprogram.com/data/dataset/Albania_Standard-DHS_2017.cfm?flag=0
- Westminster Foundation for Democracy Limited (WFD). (2022). *Report monitoring the state health budget of Albania.* https://www.wfd.org/sites/default/files/2022-01/1%20ENG_Monitoring%20Report%20of%20the%20Health%20State%20Budget%20FINAL%20edited.pdf
- WHO (2016). Tobacco Control Fact sheet Albania - Health impact of tobacco control policies in line with the WHO Framework Convention on Tobacco Control (WHO FCTC). World Health Organization 2016. Available online at https://www.euro.who.int/__data/assets/pdf_file/0014/313016/Tobacco-control-fact-sheet-SEE-Countries.pdf
- World Bank. (2022). *Albania faces new economic challenges despite strong post-pandemic recovery.* <https://www.worldbank.org/en/news/press-release/2022/05/04/albania-faces-new-economic-challenges-despite-strong-post-pandemic-recovery>
- Xu, X., Bishop, E. E., Kennedy, S. M., Simpson, S. A., & Pechacek, T. F. (2015). Annual healthcare spending attributable to cigarette smoking: An update. *American Journal of Preventive Medicine*, 48(3), 326-333.
-