

The Impoverishing Effect of Tobacco Use in Montenegro

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Abstract

Background

Montenegro faces significant poverty challenges, with a high proportion (20.1 percent) of the population living near or below the poverty line. The country also experiences a high prevalence of tobacco use, with around 38 percent of adults smoking, particularly affecting low-income groups. Tobacco consumption represents an important financial burden for households that use tobacco, as a significant portion of their income is spent on cigarettes, leaving less for basic necessities like food, health care, and education. This study aims to explore the impoverishing effect of tobacco use in Montenegro, focusing on how tobacco expenditures and related health care costs contribute to the financial strain of low-income populations and exacerbate existing poverty.

Methodology

This study utilizes data from the 2021 Household Budget Survey (HBS) to assess how tobacco expenditures and related health care costs affect poverty in Montenegro. By using poverty measurement tools such as the headcount ratio (HCR) and poverty gap index (PGI), we quantify the impact of tobacco spending on poverty levels of different groups by income quintiles and region.

Results

Our findings show that tobacco consumption significantly increases both the incidence and depth of poverty. Tobacco expenditures alone push 1.01 percent of the population below the poverty line, and this proportion rises to 1.62 percent when health care costs are included. The northern region experiences the most severe impact, with the largest increase in poverty. Notably, children are disproportionately affected, as about one in every five individuals who is pushed into poverty because of tobacco-related expenses or impacts is a child.

Conclusions

Tobacco use contributes to secondary poverty in Montenegro, particularly in the low-income population and those living in the northern region. The findings underscore the importance of raising tobacco excise taxes as a strategy to reduce smoking prevalence and alleviate the financial burden on the poorest population groups. Those with lower incomes are the most sensitive to price changes, making excise tax policy arguably the most effective strategy to drive down or stop consumption. Comprehensive tobacco control policies that include public awareness campaigns and expanded smoking cessation programs are also essential to mitigate the impoverishing effects of tobacco use.

JEL Codes: I14, I18, I32, H22

Keywords: impoverishing effect, tobacco expenditure, secondary poverty, Montenegro

Introduction

In Montenegro, poverty remains a significant challenge. The Survey on Income and Living Conditions (EU-SILC) (Monstat, 2023), indicates that 20.1 percent of the population experienced an equalized disposable income that was below the at-risk-of-poverty threshold, which translates to one out of every five persons being exposed to increased risk of economic insecurity. This represents a slight decrease from 2021, when the figure stood at 21.1 percent. The at-risk-of-poverty threshold—60 percent of the national equivalized median disposable income—has followed an increasing trend throughout the years, mirroring developments in median income levels. The official poverty line for a single-person household was €2,278 per year in 2021 and increased to €3,367 in 2023—equivalent to a roughly 25-percent real increase. Although the increase reflects economic development, considerable differences exist in various regions, ages, and employment statuses.

Economic insecurity affects some population subgroups disproportionately. According to the EU-SILC survey (Monstat, 2023), those living in single-parent households face the highest risk, with 44.7 percent living below the poverty threshold in 2023. Rural residents also experience greater economic strain, as 27.5 percent fall below the poverty line compared to 15.9 percent in urban areas. Regional differences further highlight these inequalities—the poverty rate in the North is 34.2 percent, more than double that of the South (11.6 percent) and significantly higher than in the Central region (15.6 percent). Meanwhile, age is another determining factor—children under 18 remain the most economically disadvantaged group, with 27.3 percent of them living in poverty, followed closely by young adults aged 18–24, at 24.4 percent. These disparities reflect structural economic challenges and highlight the urgent need for targeted policies that address regional inequalities and assist economically vulnerable households.

These challenges are aggravated by tobacco use, which magnifies economic burdens by fueling secondary poverty. While primary poverty arises from insufficient income, secondary poverty occurs when households with adequate earnings allocate substantial resources to tobacco products, thereby limiting funds for essential needs like food, health care, and education (John et al., 2023). Tobacco use is widespread in Montenegro, with prevalence rates of 40.7 percent in 2019 (Mugoša et al., 2020) and 38 percent in 2022 (Tobacconomics, 2023), making it a significant public health issue as well as a substantial economic burden. Furthermore, prevalence of tobacco use is notably high in rural regions, mostly located in the northern part of Montenegro, when compared to urban areas. According to Mugoša et al. (2020), 43.2 percent of adults in rural areas smoke daily, compared to 36.3 percent in urban ones. This inequality proves the additional economic pressures faced in rural regions, where limited economic opportunities make it even more challenging for households to manage the financial burdens related to tobacco use.

The total economic burden of tobacco use in Montenegro is substantial, amounting to approximately €307 million in 2020, which is equivalent to 7.3 percent of the country's GDP (UNDP & Secretariat of the WHO Framework Convention on Tobacco Control, 2024). These economic costs entail direct medical costs, loss of productivity, and the economic assessment of tobacco-attributable premature mortality. Smoking-attributable health care expenses alone reached €48 million in 2020, with the government covering €29 million, citizens spending €18.4 million in out-of-pocket medical costs, and private insurers paying €200,000. In addition to those expenses, tobacco use causes workplace productivity losses, totaling €33 million annually due to absenteeism (€8.9 million) and reduced work performance (€24 million). Alarming, tobacco-attributable mortality contributes to €227 million in economic costs annually, with more than 2,000 Montenegrins losing their lives to smoking-related illnesses every year—50 percent of them before reaching the age of 70 (UNDP & Secretariat of the WHO Framework Convention on Tobacco Control, 2024).

Tobacco consumption worsens economic insecurity in households, particularly among those in low-income groups. According to the Montenegro Household Budget Survey (HBS), low-income households with smokers allocate about 5.6 percent¹ of their budget to tobacco products. Research from ISEA (Mugosa et al., 2024) indicates that spending on tobacco “crowds out” essential expenditures including clothing, housing, education, and recreation. Conversely, expenditure on tobacco is associated with higher budget shares for other non-essential consumption, such as coffee, sugary drinks, and alcoholic beverages. This is of specific concern to poor households with lower financial resources, because it enhances the long-run risk of such households getting into a chronic poverty trap.

The main objective of this study is to evaluate the impact of tobacco consumption on rising poverty levels in Montenegro. Research will quantify the number of individuals pushed into poverty due to tobacco expenditures and measure the increasing poverty gap: the growing disparity between the poorest groups’ income and the national poverty line. The results will provide crucial evidence that can inform policy and contribute to the wider debates on poverty alleviation and tobacco control, offering policy makers valuable insights to tackle the high economic burden of tobacco consumption.

Literature review

The impoverishing effect of tobacco use has received less attention in literature compared to other studies exploring the relationship between tobacco consumption and poverty. Nevertheless, numerous studies have documented the significant economic burden that tobacco expenditures impose on households, which often leads to secondary poverty, particularly in low- and middle-income

¹ This percentage presents low-income households with smokers’ average budget spent on tobacco according to HBS data for 2005–2015, 2017, and 2021.

countries. In these regions, the impoverishing effect is combined with factors such as limited access to affordable health care, thus worsening the financial burden on already disadvantaged groups (John et al., 2023).

A study in India (John et al., 2011) reveals how tobacco-related health spending contributes to increasing poverty. The analysis showed that spending on tobacco, combined with the cost of treating tobacco-related diseases, led to an increase in rural and urban poverty. Specifically, the study found that tobacco spending pushed approximately 15 million people below the poverty line. Moreover, the poverty headcount ratio (HCR) increased by 1.6 percentage points in rural areas and 0.8 percentage points in urban areas. An important finding from their analysis was the fact that households falling into secondary poverty as a result of tobacco use are not eligible for social welfare services, thereby adding to their economic burden.

In Albania, a similar trend was observed by Merkaj et al. (2023) who analyzed household expenditure data and found that tobacco-related expenses pushed nearly 13,000 households—comprising of 60,000 individuals, including 10,000 children—below the poverty line. This led to an increase in the headcount poverty ratio from 27 percent to 29 percent, clearly illustrating the link between tobacco use and a rise in poverty levels.

Also, a study conducted in Vietnam (Nguyen et al., 2022) found that tobacco-related expenditures pushed an additional 305,090 people into poverty, which represents 0.31 percent of the country's population. The impoverishing effect was particularly evident among children, who represented 38.6 percent of the total impoverished population once those newly pushed into poverty by tobacco use were included. These findings emphasize the disproportionate impact of tobacco spending, particularly in rural and lower-income households, where tobacco use undermines the ability to meet essential needs. In addition to direct tobacco expenditures, health care costs related to smoking were also found to be a significant driver of poverty, emphasizing the dual economic burden of tobacco

use. Similarly, a study conducted in Mexico (Macías Sánchez & García Gómez, 2024), highlighted the severe financial impact of tobacco spending. Nearly one million people were pushed below the extreme poverty line due to both tobacco-related expenditures and health care costs.

While studies in low- and middle-income countries have been more prevalent, the impoverishing effect of tobacco is by no means limited to these regions. Research conducted in high-income countries has also highlighted considerable economic difficulties associated with tobacco consumption. While the fiscal impact might not be as stark as in low-income nations, the economic implications are still considerable, particularly for households that are already having difficulty accessing necessities. In the United Kingdom, for example, Reed (2015) found that 500,000 households, including nearly 400,000 children and 850,000 adults, were classified as poor after deducting tobacco expenditure from their income.

The table below summarizes the studies related to the impoverishing effect of tobacco, highlighting the main results of each study.

Table 1. Literature review – studies on the impoverishing effect of tobacco

Author(s) & year	Country	Main results
(Liu et al., 2006)	China	Tobacco-related expenses pushed 30.5 million urban residents and 23.7 million rural residents below the poverty line.
(John et al., 2011)	India	Tobacco use increased rural and urban poverty by 1.5% and 0.72%, respectively, impoverishing 15 million people.
(Reed, 2015)	United Kingdom	Tobacco expenditure led to 500,000 households, including 400,000 children and 850,000 adults, being classified as poor.
(Nguyen et al., 2022)	Vietnam	Tobacco spending increased the poverty rate by 0.31 percentage points, with a significant impact

		on children and marginalized groups.
(Merkaj et al., 2023)	Albania	Tobacco pushed 13,000 households below the poverty line, increasing the headcount ratio from 27% to 29%.
(Macías Sánchez & García Gómez, 2024)	Mexico	Tobacco consumption pushed nearly one million people below the poverty line due to tobacco expenditure and health costs.
(Swarnata et al., 2024)	Indonesia	Tobacco spending pushed an additional 8.75 million Indonesians below the poverty line, with a more significant impact in rural areas.

3. Methodology

3.1 Data

The analysis is based on individual micro-level data from the 2021 Household Budget Survey (HBS), the most recent wave conducted in Montenegro. The survey, administered by the Statistical Office of Montenegro (Monstat), covers 21 municipalities across three regions and includes a representative sample of 1,333 households. HBS provides detailed information on total household expenditure, spending on cigarettes (both legal and illegal), health care costs, and various socio-demographic characteristics.

These data allow for the estimation of two types of income forgone due to tobacco use: (1) income lost to tobacco purchases and (2) income lost due to smoking-attributable health care expenses. Given the heterogeneity of tobacco consumption across regions and income groups, the analysis will account for these variations to ensure a more accurate assessment of the impoverishing effects.

Table 2 presents key descriptive statistics for households with at least one smoker, disaggregated by geographic region (Center, South, and North) and for the full sample. Overall, 32.43 percent of surveyed households contain at least one smoker. On average, smoking households allocate 5.98 percent of their total budget to tobacco, and health care costs account for 3.51 percent of total household expenditures.

Regional disparities are evident in both smoking prevalence and expenditure patterns. Smoking prevalence is highest in the North (38.82 percent) and lowest in the Center (28.71 percent). Households in the North also dedicate a larger share of their budget to tobacco (6.51 percent) compared to the other two regions. In contrast, the proportion of household expenditure allocated to health care remains relatively stable across regions, ranging from 3.45 percent in the North to 3.56 percent in the Center.

Table 2. Descriptive statistics – households with smokers

	Prevalence (%)	Budget share spent on tobacco (%)	Budget share spent on health care costs (%)	No. of household members
Whole sample	32.43 (32.31; 32.56)	5.98 (5.57; 6.40)	3.51 (3.13; 3.90)	3.01 (2.84; 3.17)
Center	28.71 (28.54; 28.89)	6.00 (5.42; 6.58)	3.56 (3.05; 4.07)	3.25 (3.01; 3.50)
South	34.37 (34.24; 34.70)	5.67 (5.10; 6.25)	3.53 (3.17; 4.90)	2.63 (2.33; 2.93)
North	38.82 (38.52; 39.12)	6.51 (5.26; 7.16)	3.45 (3.03; 3.87)	3.00 (2.66; 3.31)

Source: Authors' calculations based on HBS data for 2021.

Note: Values in parentheses indicate 95% confidence intervals.

The distribution of tobacco expenditures across income quintiles reveals an inverse relationship between income level and the share of household budgets allocated to tobacco: households in the lowest income quintile dedicate the

largest proportion of their budget to tobacco (7.10 percent), while those in the highest quintile allocate the smallest (5.51 percent) (Table 3). This pattern suggests that lower-income households experience a disproportionately higher financial burden from tobacco consumption, with potentially adverse effects on their overall financial well-being.

Table 3. Budget share spent on tobacco by income quintiles

Income quintiles - households with smokers	Budget share spent on tobacco (%)
1st	7.10 (5.75; 8.48)
2nd	6.09 (4.95; 6.99)
3rd	5.50 (4.72; 6.29)
4th	5.52 (4.77; 6.33)
5th	5.51 (4.77; 6.25)

Source: Authors' calculations based on HBS data for 2021

Note: Values in parentheses indicate 95% confidence intervals.

Data on the national poverty line are obtained from the Survey on Income and Living Conditions (EU-SILC), an annual survey conducted by Monstat. Since its introduction in 2013, the EU-SILC survey has been a key source for measuring poverty and social exclusion in Montenegro. The at-risk-of-poverty threshold, which will serve as the national poverty line, is set at 60 percent of the median equalized disposable income. In 2021, this threshold was €2,278 per year for a single-person household.

The HBS provides data on overall health care expenditures but does not distinguish the portion specifically attributable to tobacco use. As described in John et al. (2023), to accurately evaluate the financial burden of smoking, the smoking-attributable fraction (SAF) should be estimated separately whenever data are available; however, if direct estimation is not feasible, SAF values from

relevant research should be used and applied to total health expenditures. In this study, we will use a SAF of 10.9 percent,² representing the proportion of health care spending linked to smoking-related diseases. This estimate is based on the methodology outlined by Goodchild et al. (2018) and was calculated in the *Investment Case for Tobacco Control in Montenegro* (UNDP & Secretariat of the WHO Framework Convention on Tobacco Control, 2024).

3.2 Empirical approach

This study applies poverty measurement techniques to evaluate the impoverishing effect of tobacco consumption in Montenegro. This approach involves using headcount ratio (HCR) analysis to quantify poverty before and after accounting for tobacco-related expenditures, along with the poverty gap index (PGI) to measure the depth of poverty. By considering both tobacco purchases and smoking-related health care costs, we will assess their cumulative impact on the economic well-being of low-income individuals.

The HCR is a widely recognized method for assessing the proportion of individuals whose income or consumption levels fall below the national poverty line (NPL). As the simplest and most intuitive measure of poverty, the HCR serves as a fundamental indicator of poverty prevalence, offering insights into the share of the population that lacks sufficient resources to meet basic living standards (World Bank Institute, 2005). By providing a straightforward estimate of poverty incidence, the headcount ratio is frequently used to track poverty trends over time and across different demographic groups.

² Other research (Mugoša et al., 2022) employing a disease-specific approach has estimated that 4.0 percent to 6.2 percent of Montenegro's total health care expenditures are allocated to treating illnesses caused by smoking. However, since this method typically accounts for only a limited range of tobacco-related diseases, the resulting percentage likely represents a conservative lower-bound estimate of the true financial burden. The economic impact of tobacco use is likely to be significantly greater, as numerous other smoking-attributable diseases—such as various cancers, respiratory conditions, and cardiovascular disorders—may not be fully captured in these calculations due to data unavailability.

The baseline poverty estimate, HCR_0 , will be computed as:

$$HCR_0 = \frac{1}{N} \sum_{i=1}^n I(\text{exp}_i \leq NPL) \quad (1)$$

where N represents the total population, and exp_i stands for per capita household expenditure, which serves as a proxy for disposable income per capita. The calculation is based on an indicator function that assigns a value of 1 if an individual's per capita expenditure falls below the NPL and 0 otherwise. By summing these values across all individuals and dividing by the total population, the headcount ratio will provide a direct measure of poverty incidence, capturing the proportion of individuals unable to meet the minimum required expenditure for basic living standards in the country.

To estimate the impoverishing effect of tobacco use, the next step is to calculate HCR_1 , which estimates the increase in poverty caused by the loss of income due to tobacco spending, as shown below:

$$HCR_1 = \frac{1}{N} \sum_{i=1}^n I(\text{exp}_i - \text{tobexp}_i \leq NPL) \quad (2)$$

Here, tobexp_i represents household tobacco expenditure per capita, while $(\text{exp}_i - \text{tobexp}_i)$ represents total household expenditure per capita after deducting spending on tobacco products. This adjusted expenditure provides a basis for recalculating the HCR, enabling an evaluation of the extent to which tobacco consumption contributes to poverty. The difference $(HCR_1 - HCR_0) \times N$ indicates the number of individuals who fall into poverty specifically due to tobacco-related spending.

Further, the analysis will be expanded to include health care costs associated with tobacco use. This is captured through the calculation of HCR_2 , defined as:

$$HCR_2 = \frac{1}{N} \sum_{i=1}^n I(\text{exp}_i - \text{tobexp}_i - \text{healthexp}_i \leq NPL) \quad (3)$$

where healthexp_i represents tobacco-attributable health care costs. This cost will be estimated using the SAF approach, which assigns a proportion of total health care expenditures to medical costs associated with tobacco-related diseases

(John et al., 2023). The overall impoverishment effect of tobacco on smokers' budgets is measured by $(exp_i - tobexp_i - healthexp_i)$, reflecting the reduction in available resources after accounting for both tobacco expenditures and related medical costs. The difference $(HCR_2 - HCR_0) \times N$ measures the number of individuals pushed into poverty as a direct result of these combined financial burdens.

This stepwise approach will enable a comprehensive assessment of tobacco-related impoverishment, capturing both direct financial burdens (purchases) and indirect costs (health care expenses) of tobacco use.

While the HCR effectively captures the incidence of poverty, it has notable limitations. Specifically, the HCR provides only a general measure of poverty at a specific point in time but does not reflect the depth of poverty experienced by those classified as poor. It does not measure how far below the poverty line individuals fall, making it an incomplete measure for assessing the true impact of poverty.

To address this limitation, the PGI will be used to quantify the difference between the average per capita expenditure of the poor and the NPL, providing a more refined measure of poverty severity. This approach, based on the Foster-Greer-Thorbecke (FGT) poverty measures, extends the analysis by incorporating both the prevalence and intensity of poverty, allowing for a more comprehensive evaluation of economic deprivation (Kyzyma, 2024).

Mathematically, the poverty gap G_i for an individual will be defined as:

$$G_i = (NPL - exp_i)I(exp_i \leq NPL) \quad (4)$$

The PGI will be then calculated as given by Deaton (1997):

$$PGI = \frac{1}{N} \sum_{i=1}^n (1 - \frac{exp_i}{NPL})I(exp_i \leq NPL) \quad (5)$$

The total financial shortfall required to lift all poor individuals above the poverty line is given by $PGI \times N \times NPL$.

By recalculating the poverty gap after deducting tobacco-related expenditures, the research will estimate the additional economic burden imposed on low-income households due to tobacco consumption. Integrating these measures allows for a more precise estimation of how tobacco consumption increases poverty not only by raising the number of individuals below the poverty line but also by deepening their financial vulnerability (Nguyen et al., 2022).

Furthermore, the study will explore how the impoverishing effects of tobacco use vary across different regions and consumption quintiles, providing a broader understanding of the distributional impact of tobacco expenditures on poverty levels. This allows for a more detailed analysis of how tobacco consumption affects poverty differently in various demographic groups, regions, and income brackets, offering insights into targeted policy interventions to address these disparities.

Results

The analysis reveals that tobacco consumption has a substantial impoverishing effect on households in Montenegro. Tobacco expenditure alone pushes 1.01 percent of the population below the poverty line, and this effect increases to 1.62 percent when health care costs related to smoking are considered. Consequently, the total number of people below the poverty line rises by 10,011, with a corresponding increase in the poverty gap from 5.54 percent to 5.89 percent. This demonstrates that tobacco spending not only pushes more people into poverty, but also intensifies the financial challenges faced by those already struggling.

The impact of tobacco consumption is not uniform across regions. The Northern region, which already has the highest poverty rate, experiences the largest increase in poverty, with the HCR rising by 2.66 percentage points. In comparison, the Central and Southern regions see more modest increases of 1.56

percent and 0.66 percent, respectively. Similarly, the poverty gap in the North deepens the most, rising from 11.95 percent to 12.76 percent, indicating that tobacco use disproportionately affects the North, exacerbating already existing regional inequalities.

Furthermore, a notable observation is that one in every five people affected by tobacco-induced poverty is a child. The long-term impact of tobacco impoverishment on children raises significant concerns, particularly as these early exposures to poverty could perpetuate cycles of disadvantage and limit future opportunities (Belvin et al., 2015).

Table 3. Tobacco use effect on HCR by regions

	All population	Center	South	North
Number of people	619,211	305,381	155,022	158,808
HCR – share of population BPL* (%)	21.69	16.55	9.70	43.28
Total number of people BPL	134,307	50,541	15,029	68,737
Number of children BPL	29,857	14,470	2,885	12,502
Poverty gap (%)	5.54	3.57	0.81	11.95
Tobacco expenditure				
HCR – share of population BPL* (%)	22.70	17.57	9.99	44.98
Total number of people BPL	140,561	53,652	15,483	71,425
Poverty gap (%)	5.89	3.79	0.89	12.67
Impoverishing effect (%)	1.01	1.02	0.29	1.69
Impoverishing effect – number of people	6,254	3,112	454	2,689
Number of children in the impoverished population	1,356	806	87	463
Changes in the poverty gap (%)	0.34	0.22	0.09	0.72
The combined effect of tobacco expenditure and medical costs attributable to tobacco				
HCR – share of population BPL* (%)	23.31	18.11	10.36	45.94
Total number of people BPL	144,318	55,301	16,060	72,956
Poverty gap (%)	5.98	3.85	0.92	12.76
Impoverishing effect (%)	1.62	1.56	0.66	2.66
Impoverishing effect – number of people	10,011	4,761	1,031	4,220
Number of children in the impoverished population	2,151	1,227	198	726
Changes in the poverty gap (%)	0.43	0.29	0.12	0.81

Source: Authors' calculations based on HBS data for 2021

Note: * BPL stands for the population below the poverty line.

The analysis of the impoverishing effect of tobacco use by income groups (quintiles) reveals three distinct dynamics: already poor households fall deeper into poverty, near-poor households are pushed below the poverty line, and those living just above it are brought very near to poverty.

Results show that in the lowest quintile tobacco spending worsens the severity of poverty, increasing the poverty gap by 1.53 percent (rather than pushing more people into poverty as they are already below the poverty line).

The second income quintile, which includes those with incomes ranging from 20 percent to 40 percent of the overall population income distribution, experiences the greatest impoverishing effect of tobacco use. Tobacco expenditures push a significant portion of this near-poor group below the poverty threshold. In this group, the HCR rises from 7.15 percent to 12.76 percent due to tobacco spending and further to 16.13 percent when health care costs are included, reflecting a 5.61-percentage-point increase from tobacco purchases alone and an 8.98-percentage-point increase when health care expenses are considered (Table 4). The poverty gap also widens, from 0.07 percent to 0.43 percent, deepening the financial strain on those already struggling to make ends meet.

Higher-income quintiles are generally less affected, as their incomes can more easily absorb the cost of smoking. Still, households that are relatively closer to the poverty threshold, such as those at the lower end of the third quintile, may face considerable financial vulnerability, even if they are not formally pushed below the poverty line.

Regional differences in the second quintile reflect the national trend, with individuals in the North experiencing the greatest impact. Their poverty rate increases by 11.24 percentage points when tobacco expenditures and health care costs are considered (Table 4). While the increases in the Central and Southern regions are also significant, they remain lower than the North's increase (9.80 percent in the Center and 4.07 percent in the South). The poverty

gap in the North also worsens the most, growing from 0.06 percent to 0.56 percent.

Table 4. Tobacco use effect on HCR in the second income quintile

	All	Center	South	North
HCR - population BPL* (%)	7.15	6.56	11.07	6.69
Poverty gap (%)	0.07	0.07	0.05	0.06
Tobacco expenditure				
HCR - population BPL	12.76	12.97	12.86	13.77
Poverty gap (%)	0.36	0.35	0.06	0.50
Impoverishing effect (%)	5.61	6.41	1.79	7.16
Changes in the poverty gap (%)	0.29	0.28	0.01	0.44
The combined effect of tobacco expenditure and medical costs attributable to tobacco				
HCR - population BPL (%)	16.13	16.36	15.14	17.93
Poverty gap (%)	0.43	0.44	0.08	0.56
Impoverishing effect (%)	8.98	9.80	4.07	11.24
Changes in the poverty gap (%)	0.36	0.37	0.03	0.50

Source: Authors' calculations based on HBS data for 2021

Note: * BPL stands for the population below the poverty line.

Conclusions

This study provides clear evidence that tobacco consumption in Montenegro significantly increases both the incidence and depth of poverty, which aligns with research from other countries (Liu et al., 2006; John et al., 2011; Reed, 2015). Research results indicate that when per capita expenditure on tobacco is taken into account, the national poverty measures worsen markedly. We find that tobacco purchases alone push an additional 1.01 percent of the population into poverty, and when including smoking-related health care costs, the share of people living below the poverty line rises by about 1.62 percent in total. In practical terms, this means more than 10,000 Montenegrins—many from households that are already struggling financially—are pushed into poverty due to tobacco use. Moreover, those who were poor to begin with are made even

poorer: the poverty gap widens from 5.54 percent to 5.89 percent when tobacco expenses are subtracted from individuals' resources.

Our findings highlight that the impoverishing impact is concentrated in the poorest regions and among financially disadvantaged populations. The northern region—which has the highest baseline poverty rate—experienced the largest increase in poverty due to tobacco expenditures, worsening regional inequalities. Equally alarming, results show that roughly one in every five people pushed into poverty by tobacco use is a child, reflecting how smoking-related financial stress in households can transmit burdens to dependents. Tobacco consumption in Montenegro acts as a regressive force: it imposes the greatest relative cost on those with the least means, deepening poverty and widening economic inequality. The availability of cheap illicit cigarettes has also contributed to the problem by keeping them accessible to financially vulnerable populations. However, the government has addressed this problem with strong commitment, implementing decisive measures that reduced the share of illicit tobacco by approximately 50 percent between 2020 and 2022 (Tobacconomics, 2023), thereby reducing its harmful consequences.

A closer look at the impoverishing effect by income quintiles reveals that the lowest-income groups are most affected. In the first income quintile, where all individuals are already below the poverty line, tobacco spending worsens the depth of poverty, increasing the poverty gap by 1.53 percent. The second income quintile in Montenegro sees the most significant increase in poverty due to tobacco consumption. The HCR rises from 7.15 percent to 16.13 percent when the combined effect of tobacco spending and tobacco use-related health care costs are included. These increases reflect the struggles of individuals just above the poverty line, many of whom are already finding it difficult to make ends meet.

These results carry important policy implications, underscoring the importance of tobacco tax policy as a tool for poverty reduction. Price-based interventions, especially higher excise taxes, are proven to reduce smoking prevalence

(Chaloupka et al., 2012; Sharbaugh et al., 2018; Le & Jaffri, 2022). Research indicates that low-income smokers in Montenegro are highly responsive to price changes, so raising tobacco taxes would likely reduce smoking in this group, cutting tobacco expenditures and alleviating financial strain (Cizmovic et al., 2022). Over time, this policy could reduce the number of households pushed into poverty by the overall costs of tobacco use.

Montenegro can take additional steps to further strengthen its tobacco tax policy. Despite previous tax increases, cigarette prices remain low compared to the European Union (EU), contributing to the country's persistently high smoking rate (38 percent of adults in 2022). The gap between current price levels in Montenegro and in the EU (WHO, 2023) signals an opportunity: further tax increases could both reduce consumption and bring Montenegro's tobacco control efforts in line with international best practices. In addition to taxation, a comprehensive approach is needed. Strengthening overall tobacco control policies, increasing public awareness about the short- and long-term financial and health risks of tobacco use, and providing better support for smokers who want to quit are essential steps to mitigate the impoverishing effects of tobacco and promote greater economic stability. Special attention should also be directed to the northern region, which has the highest poverty rate and the greatest increase in poverty due to tobacco spending. Targeted interventions in this region, such as tailored public information campaigns and expanded access to cessation services, would help address these disparities and ensure that national policy measures reach economically disadvantaged groups.

In conclusion, our findings emphasize that reducing tobacco consumption, particularly through fiscal policy measures, should be a key priority for reducing poverty in Montenegro. By addressing the financial burdens of tobacco, such policies would not only improve public health but also reduce poverty and foster greater social equity.

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