

Breaking the Vicious Cycle: Smoking, Low Education, and Poverty in Tangerang Regency

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ABSTRACT

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This study investigates the interconnection between smoking behavior, educational attainment, and poverty in Tangerang Regency, Indonesia. Utilizing secondary data from the Central Statistics Agency (BPS) and the Ministry of Health (2023), the analysis reveals that smoking prevalence is highest among individuals with lower educational levels, particularly within economically productive age groups. Despite living close to the poverty line, many households allocate more of their income to tobacco than to essential food items, highlighting a pattern of non-productive spending. The findings indicate a vicious cycle where limited education leads to harmful health behaviors, which in turn reinforce economic hardship. To address this, the study proposes integrated public policies aimed at improving educational access and implementing stricter tobacco control measures. These efforts are crucial to breaking the poverty trap and promoting long-term social welfare.

1. Introduction

1.1 Background

Smoking remains a significant public health concern in Indonesia, particularly among low-income and low-education populations. In Tangerang Regency, the prevalence of smoking among individuals aged 15 to 24 years reached 16.59% in 2023, with even higher rates among older, economically productive age groups. Smoking habits among the poor not only pose health risks but also place a substantial financial burden on households.

These expenditures divert resources from essential needs such as nutrition, education, and healthcare. This phenomenon highlights a complex and persistent cycle in which low education levels contribute to high smoking prevalence, which in turn exacerbates poverty and reduces the potential for social mobility in affected communities.

1.2 Problem Statement

Despite numerous public health campaigns and tobacco control efforts, smoking remains deeply embedded in the social and economic fabric of poor communities. In Tangerang

Regency, the average monthly per capita expenditure is only slightly above the poverty line, yet spending on tobacco surpasses that for essential food items like vegetables and fish.

This indicates a misallocation of household resources that undermines long-term welfare. Moreover, educational attainment remains low, particularly beyond secondary education, limiting individuals' capacity to make informed health and financial decisions. There is a critical need to investigate the interrelationship between smoking, education, and poverty in this region to inform targeted policy interventions.

1.2 Objectives and Scope

This study aims to explore the relationship between smoking habits, educational attainment, and poverty in Tangerang Regency. Specifically, it seeks to: (1) assess the extent to which education influences smoking behavior; (2) examine how smoking impacts household economic conditions; and (3) propose policy strategies to break the cycle of poverty associated with tobacco consumption.

The scope is limited to the analysis of secondary data from 2023, focusing on household expenditures, smoking prevalence, and education indicators. By narrowing the scope, this study provides an in-depth examination of relevant variables and offers context-specific recommendations.

2. Literature Review

2.1 Related Work

Previous research consistently confirms a strong correlation between low educational attainment and high smoking prevalence (Sutanto, 2019; WHO, 2018). The World Bank (2021) and WHO (2023) have both emphasized that tobacco use disproportionately affects low-income populations, leading to long-term health inequalities and economic stagnation. In Southeast Asia, studies by Nguyen et al. (2020) and Rahman et al. (2022) reveal similar patterns in Vietnam and Bangladesh, where low literacy levels significantly predict tobacco consumption among working-age adults.

Filmer and Pritchett (2020) argued that education acts as a social determinant of health, influencing an individual's decision-making capacity in health-related behaviors. Studies by Hu et al. (2021) and Tran & Vo (2023) also highlight how individuals with higher education levels are better equipped to access, interpret, and act on public health information, thereby lowering the risk of adopting harmful behaviors like smoking.

Furthermore, a study by Greaves et al. (2019) points out that the social acceptability of smoking in low-income and low-education communities further exacerbates the challenge. This aligns with empirical evidence from Banerjee & Duflo (2011), who argue that poor populations are often trapped in cycles of behavior driven by limited information and immediate survival needs.

Studies by Nur Berlian (2023) and Banerjee & Duflo (2011) emphasize that low education not only reduces health literacy but also perpetuates intergenerational poverty by limiting access to better employment and health outcomes. These findings underscore the need for integrated policy approaches that address education, health behavior, and poverty simultaneously.

2.2 Research Gap

Although numerous international studies have examined the relationship between education and smoking, very few have explored this dynamic within specific urban-peripheral zones in Indonesia like Tangerang Regency. Given its mix of industrialization, rural-urban migration,

and economic inequality, Tangerang presents a distinct case where localized factors may influence smoking prevalence and household expenditure patterns.

Additionally, existing literature has paid limited attention to the microeconomic behaviors of poor households related to tobacco spending. There is a need to understand how these expenditures interact with food security, children's education, and access to health services. This study addresses this gap by integrating localized secondary data with theoretical models of poverty traps and health behavior economics.

Moreover, there is limited research on how household resource allocation for tobacco consumption directly undermines food security and educational investment. This study seeks to fill this gap by providing empirical evidence from Tangerang and proposing actionable policy recommendations tailored to the local context.

3. Methodology

3.1 Data Collection

research utilizes secondary data obtained from the Central Statistics Agency (BPS) and the Ministry of Health of Indonesia for the year 2023. Data sets include statistics on school participation rates, average per capita household expenditures, and smoking prevalence across different age groups and education levels in Tangerang Regency.

These data sources are selected for their credibility and coverage, ensuring a robust foundation for analysis. By leveraging official datasets, the study maintains a high standard of reliability while highlighting key indicators relevant to the problem.

3.2 Analysis Techniques

The study employs a descriptive-quantitative approach to analyze patterns and correlations among variables. Comparative analysis is conducted to assess differences in smoking prevalence across education levels and age groups.

In addition, expenditure patterns are examined to determine the proportion of household income allocated to tobacco relative to essential needs such as food and education. Charts and tables are used to support the interpretation of findings, which will inform the policy recommendations presented in later sections.

3.3 Validation

To ensure the reliability of the findings, data triangulation was applied by cross-referencing multiple official sources including BPS and Ministry of Health publications. The consistency of smoking prevalence trends, expenditure distributions, and education participation rates was examined to verify coherence.

Moreover, graphical representations and ratio comparisons were used to validate expenditure anomalies, particularly those indicating higher spending on tobacco than on food essentials. These validation efforts enhance the credibility of the analytical outcomes and support the formulation of evidence-based policy recommendations.

4. Results and Discussion

4.1 Key Findings

The analysis reveals three central findings. First, smoking prevalence remains highest among individuals aged 25 to 44 years, the most economically productive age group. This suggests

that those within their peak earning years are disproportionately affected by smoking habits, which can significantly reduce household income through both direct costs and lost productivity. The data points to a concentration of smokers within the demographic that should be contributing most actively to economic growth.

Second, educational attainment is inversely related to smoking behavior; individuals with lower levels of education are significantly more likely to smoke. This correlation suggests that limited education restricts awareness and understanding of health risks associated with tobacco use. It also implies that those with limited formal education may be more susceptible to marketing influences and social pressures that normalize smoking behavior, particularly in lower-income and rural areas.

Third, expenditure data show that the average household in Tangerang allocates more funds to tobacco products than to essential food items such as vegetables and fish. Specifically, average monthly spending on cigarettes reaches over IDR 113,000, surpassing combined expenditures on essential nutrients. This pattern highlights a problematic prioritization in household budgets that can have long-term health and educational consequences, particularly for children in the household.

Lastly, the findings suggest a pattern of consumption that can reinforce long-term poverty. The diversion of income away from investment in human capital—such as nutrition, education, and health—indicates a structural barrier to social mobility. Smoking thus becomes not only a health issue but also a significant economic one that limits developmental progress at both household and community levels.

4.2 Interpretation of Results

The results of this study highlight a cyclical and mutually reinforcing relationship between education, smoking, and poverty. Individuals with lower levels of education often lack the health literacy needed to make informed decisions about tobacco use. This lack of knowledge, compounded by peer influence and cultural normalization of smoking, increases the likelihood of adopting harmful consumption habits.

Furthermore, households that allocate significant portions of their income to tobacco products often struggle to meet other essential needs. The consequences are multifaceted: poor nutrition, limited healthcare access, and an inability to invest in education. These outcomes further entrench households in poverty, limiting the opportunities available to the next generation.

This interrelationship creates a self-perpetuating cycle: lower education leads to higher smoking prevalence, which drains economic resources and contributes to continued poverty. The findings support a broader theoretical understanding of poverty traps, where interlinked social and economic behaviors reinforce disadvantage across generations.

Given this interpretation, it is clear that addressing tobacco consumption in Tangerang Regency requires more than just public health messaging. Structural interventions—such as educational subsidies, economic incentives for smoking cessation, and regulatory reform—must be designed to target the root causes of the behavior. Only then can policy efforts hope

to disrupt the entrenched cycles of poverty driven by tobacco use.

5. Discussion

5.1 *Comparison with Prior Research*

The findings of this study corroborate prior work by Sutanto (2019) and WHO (2023), which identify education level as a significant predictor of smoking behavior. These results also mirror those in regional studies like Nguyen et al. (2020) in Vietnam and Rahman et al. (2022) in Bangladesh, suggesting that educational deprivation universally increases vulnerability to tobacco addiction.

Compared to national-level data, the local context of Tangerang Regency provides more granular insights into how urban poverty and low education interact to reinforce smoking habits. This aligns with findings by Filmer & Pritchett (2020), who argue that health-related behaviors are mediated by educational exposure and socio-economic context.

Moreover, this paper adds to the growing body of literature that adopts a systems-thinking approach by linking health behavior with long-term economic outcomes. Unlike earlier studies that view smoking solely as a public health issue, this study underscores its impact on economic mobility, echoing the integrated frameworks suggested by Hu et al. (2021) and the WHO Framework Convention on Tobacco Control (2021).

This study further emphasizes the role of localized socio-economic dynamics, which are less frequently explored in broader national research. By doing so, it contributes nuanced insights into region-specific policy needs. Compared to prior studies that primarily focus on urban-rural disparities at the national level, this study's regional lens offers valuable data for more geographically targeted interventions.

Moreover, the integration of education, health behavior, and economic dimensions adds a holistic perspective to the tobacco-poverty discourse. It supports interdisciplinary approaches to public policy that link education reform with public health outcomes. Prior literature has often treated these dimensions in isolation, limiting the effectiveness of policy responses.

The findings also align with global research from the World Bank and WHO that emphasize tobacco's economic toll on low-income populations. This cross-validation underscores the broader applicability of the conclusions drawn and strengthens the case for international cooperation and funding in tobacco control strategies targeting low-education, high-poverty areas.

5.2 *Limitations*

This study relies exclusively on secondary data, which may limit the depth of behavioral insights. Furthermore, the cross-sectional nature of the data prevents causal inference between variables such as education and smoking.

Future research incorporating longitudinal or primary survey data would enhance the understanding of these relationships. Such efforts could provide a richer understanding of decision-making processes within low-income households.

5.3 *Future Research*

Future studies could explore qualitative dimensions of smoking behavior within households, including motivations, family dynamics, and cultural influences. Understanding these social

factors could inform more targeted and culturally sensitive interventions.

Additionally, intervention-based research evaluating the effectiveness of community education programs and tobacco taxation on behavior change would provide practical insights for policymakers. These studies could serve as pilots for national-scale policy applications.

6. Conclusion

This study highlights the entrenched cycle linking smoking, low educational attainment, and poverty in Tangerang Regency. The analysis demonstrates that individuals with limited education are more likely to smoke and allocate a significant portion of their income to tobacco products, to the detriment of food security and educational advancement.

Addressing this cycle requires integrated public policies that enhance access to education while simultaneously implementing stronger tobacco control measures. Only through a dual approach can long-term improvements in household welfare be achieved.

7. Recommendation

Based on the findings, this paper recommends: (1) expanding scholarship programs to reduce school dropout rates, especially at the secondary and tertiary levels; (2) incorporating anti-smoking education into school curricula and community outreach programs.

Additionally, (3) increasing tobacco taxes and redirecting revenues to fund health and education services; and (4) establishing localized cessation support services through community health centers. These combined strategies can help reduce tobacco use, improve household welfare, and ultimately break the cycle of poverty in Tangerang Regency.

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REFERENCES

- [1] Badan Pusat Statistik Kabupaten Tangerang 2023 *Angka Partisipasi Sekolah di Kabupaten Tangerang Tahun 2023* (Tangerang: BPS)
- [2] Badan Pusat Statistik Provinsi Banten 2023 *Persentase Penduduk Usia 15 Tahun ke Atas yang Merokok dalam Sebulan Terakhir Menurut Kabupaten/Kota di Provinsi Banten Tahun 2022-2023* (Serang: BPS Banten)
- [3] Badan Pusat Statistik Kabupaten Tangerang 2023 *Rata-Rata Pengeluaran Perkapita Sebulan Menurut Kelompok Komoditas Makanan Tahun 2022-2023* (Tangerang: BPS)
- [4] Kementerian Kesehatan Republik Indonesia 2021 *Laporan Nasional: Bahaya Merokok di*

Kalangan Remaja (Jakarta: Kemenkes RI)

- [5] Nur Berlian V A 2023 Faktor-faktor yang terkait dengan rendahnya pencapaian belajar pendidikan dasar 9 tahun *J. Pendidikan dan Kebudayaan* 17 1
- [6] Sutanto H 2019 Pengaruh tingkat pendidikan terhadap kebiasaan merokok di Indonesia *J. Kesehatan Masyarakat* 15 2
- [7] World Health Organization 2018 *Global Tobacco Epidemic Report* (Geneva: WHO)
- [8] Banerjee A and Duflo E 2011 *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty* (New York: PublicAffairs)
- [9] World Health Organization 2023 WHO Report on the Global Tobacco Epidemic 2023 (Geneva: WHO)
- [10] World Bank 2021 Tobacco Taxation: At the Crossroads of Health and Development (Washington, DC: World Bank)
- [11] Nguyen H T, Le T M, Tran Q V 2020 Education and smoking behavior in Vietnam: Evidence from a national survey *J. Public Health Res.* 9(3): 182–189
- [12] Rahman M M, Khan M H R 2022 Socioeconomic Inequality and Smoking Prevalence in Bangladesh *BMC Public Health* 22(1): 1–10
- [13] Hu T W, Lee A H 2021 The Economics of Tobacco and Tobacco Control in East Asia *Asian Econ. Policy Rev.* 16(2): 235–249
- [14] Tran M P, Vo N H 2023 Educational Attainment and Health Behavior among Youth in Southeast Asia *Int. J. Educ. Dev.* 99: 102763
- [15] Greaves L, Jategaonkar N, Sanchez S 2019 Tobacco Use, Gender, and Health Equity: A Literature Review WHO Equity Reports
- [16] Islam M R, Sim A 2021 Education and Dietary Quality: Evidence from Indonesia *SSRN Electron. J.* <https://doi.org/10.2139/ssrn.3920195>
- [17] Banerjee A, Duflo E 2011 *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty* (New York: PublicAffairs)
- [18] World Health Organization 2025 The Tobacco Epidemic: Global Compact Against One of the Deadliest Threats (Geneva: WHO)