

# Battling the smoking epidemic: how Indonesia can boost its economy and health with proven global strategies

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**Abstract.** The research aims to assess the impact of implementing the Framework Convention on Tobacco Control (FCTC) in Indonesia, which has one of the highest smoking rates worldwide. Utilizing a systematic literature review, the study analyzes global case studies and local tobacco control policies. The results suggest that the adoption of FCTC strategies, including raising tobacco taxes, enforcing comprehensive advertising bans, and establishing smoke-free environments, could significantly benefit public health and the economy. These benefits are evidenced by decreased healthcare expenses, reduced smoking rates, and enhanced economic productivity. Although there might be short-term economic challenges, the research supports that the long-term advantages of implementing the FCTC in Indonesia surpass these initial costs, making a strong argument for the adoption of these regulations.

## 1 Introduction

Smoking kills 7 million people annually, threatening health and growth (World Health Organisation, 2017). Tobacco use is an epidemic and strongly linked to NCDs [1]. The third SDG aims to keep people healthy and happy at all ages. It directly impacts people, their well-being, relationships, and homes. This makes it suitable for all four SDG 3 subpoints. The 2003 WHO Framework Convention on Tobacco Control (FCTC) took effect in 2005. As of March 2017, 180 parties (179 countries plus the EU) must take a wide range of initiatives to reduce tobacco supply and demand under the WHO FCTC [2]. The WHO developed MPOWER, six evidence-based tobacco control techniques, to assist FCTC Programs. These techniques aim to reduce tobacco demand in countries through successful policies and programs [3]. These methods aim to significantly reduce tobacco usage and its health effects. This will assist the FCTC protect present and future generations from the horrific health, social, environmental, and economic repercussions of smoking and tobacco use.

Studies on the ratification of the Framework Convention on Tobacco Control (FCTC) have demonstrated its substantial influence on worldwide initiatives to regulate tobacco. The FCTC has expedited the implementation of laws that prohibit smoking in some areas,

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especially in the years immediately after it was ratified [4]. However, implementation of demand reduction measures varies, with many parties still lacking in areas such as increasing taxes and ending tobacco advertising [5]. The FCTC has been most effective in promoting smoke-free laws, health warnings, and education campaigns, while measures to counter industry interference and regulate product contents have seen lower implementation.

Indonesia is in the top 5 of the top 20 nations for cigarette smoking in 2010, however it has not joined the FCTC [1]. Indonesia had over 60 million smokers in 2018 with 264 million people and the second-highest male smoking rate. The Framework Convention on Tobacco Control must yet be approved by the government. Fast-growing tobacco imports hurt the nation's finances and public health [6]. According to Fitri Almaidah surveys [7], teens start smoking about 15. Smoking influence comes from friends' whims or experiments. Region significantly affected smoking health hazard awareness, Andrew, et al [8] observed that smoking health risks awareness differed greatly by region. In the US and Western Europe, over 80% of men in Poland and women in Iceland knew that smoking causes heart disease. Eastern and Southern Europe had moderate awareness of smoking's health risks.

Indonesia did not ratify the WHO FCTC under Joko Widodo 2014–2019. He said Indonesia should join the FCTC for national interests, not trends. The government said ratifying the FCTC must include citizens' social, economic, and health impacts and tobacco growers' livelihoods [9]. The tobacco industry is vital to Indonesia's economy, according to 2018 Ministry of Industry data. It has 5.9 million workers, 1.7 million on crops and 4.28 million in manufacturing and distribution. In 2018, tobacco excise taxes rose to Rp 153 trillion, accounting for 75–90% of the country's total [10]. Due to a paucity of scholarly research, negative speculation and political discourse against the FCTC procedure exist [11].

A thorough literature evaluation will achieve study goals. This approach assures a thorough and impartial examination of tobacco control policy literature from European Union, the Americas, South Africa, Thailand, Malaysia, and Singapore. This study compares Indonesian tobacco control to neighbours. The study suggests Indonesia may adopt efficient foreign laws. Indonesia's main goal is to reduce smoking to enhance health, avoid early deaths, and reduce epidemiological impacts. Also examined will be tobacco control initiatives in other nations with growing economies.

## 2 Literature Review

### 2.1 Tobacco epidemiology

Tobacco consumption is a prominent worldwide contributor to the risk of disability and premature death. The health burden of this issue has significant economic ramifications, such as decreased productivity, expenses related to medical treatment and legal matters, harm inflicted on others, and various direct and indirect costs [12]. Epidemiology studies have repeatedly shown that the use of tobacco products, both in general and in particular, smoking products, is the primary preventable risk factor for the development and advancement of periodontal diseases, cardiovascular disease, respiratory diseases, and different forms of cancer [13–15]. Comprehensive tobacco control policies and effective treatments for tobacco prevention and cessation are crucial in reducing the burden of tobacco-related oral diseases.

Secondhand smoke also contributes to a variety of health issues. Smoke primarily affects adult females, newborns, and children, potentially impacting their neurological, immunological, respiratory, and circulatory systems [16]. Researchers have linked the use of smokeless tobacco, primarily chewing tobacco and snuffing, to harmful health outcomes like periodontal disease, precancerous oral lesions, and malignancies of the digestive tract, kidney, pancreas, and mouth. The 2007 National Basic Health Research states that 34.2%

more Indonesian 15-year-olds chewed tobacco and smoked. According to the 2010 National Basic Health Research, in the same demographic these practices increased by 34.7% [17,18]. Quitting smoking can result in decreased risk of oral diseases, with the risks of oral cancer and periodontal disease declining as time from cessation increases.

## 2.2 Framework Convention on Tobacco Control (FCTC)

The Framework Convention on Tobacco Control is one of the fastest ratified international treaties in the history of the United Nations. This agreement is an international treaty that aims to protect current and future generations from the harmful effects of tobacco smoking on health, society, environment, and economy, while also limiting its use in any way globally. This agreement has legal authority in governing all elements of tobacco production, sale, distribution, advertising, and taxation [19].

## 2.3 MPOWER

In 2008, the WHO introduced the MPOWER policy package to comply with the FCTC. The MPOWER policy bundle offers smoking cessation promotion strategies [20]. The plan includes six demand-cutting measures: Monitoring tobacco prevention and use policies. Prevent smoking, The 2022 law banned smoking in all outdoor and indoor settings and within 10 meters of building openings, expanding the 2008 prohibition on public places and transit. Outdoor eating and drinking are included. To go smoke-free, Mauritius is enlarging "public place." Help Mauritius smokers quit In 2010, one primary care centre offered smoking cessation. The effort now includes two community hospitals, all regional hospitals, and the Diabetes & Vascular Health Centre. Warning regarding tobacco's risks The new rules prevent minors from buying tobacco and require prominent warnings at all sales points. The regulations penalise missing this obligation. E—Ban tobacco advertising, promotion, and sponsorship. Marketing tobacco products at retail, especially through price lists, is illegal. Consistent tobacco pricing is needed. Mauritius hiked tobacco taxes by 10% in 2022–2023 and 2023–2024. This contributes to their 2030 goal of 30% tobacco reduction in 15-year-olds [21].

## 3 Methodology

This study uses a systematic literature review (SLR) methodology to evaluate the potential impact of the FCTC implementation in Indonesia, following the PRISMA guidelines to ensure a comprehensive and unbiased examination of the literature. The literature search was conducted across multiple databases, including Scopus, PubMed, and Web of Science, focusing on articles published between 2014 and 2024 to capture recent developments in tobacco control policies. Search terms such as "Framework Convention on Tobacco Control (FCTC)," "tobacco control," "smoking prevalence," "tobacco taxation," "advertising bans," "smoke-free policies," and "Indonesia" were used. Filters were applied to limit the search to studies within the fields of Medicine, Social Sciences, Environmental Science, and other relevant disciplines, and only English-language publications were included to ensure consistency in data interpretation. Data can be downloaded via this link: <https://bit.ly/4gBrure>.

The study included articles, reviews, and conference papers that focus on tobacco control policies, particularly those aligned with the FCTC, and that provide empirical data or substantial analysis related to smoking prevalence, public health, economic impacts, and policy effectiveness. Studies comparing Indonesia's tobacco control efforts with those of

other countries, especially within the Asia-Pacific region, were also included. Excluded were publications not directly related to tobacco control policies, those that did not provide sufficient data on the impact of FCTC-related measures, and non-English articles. Data were extracted from the selected studies based on scope, specific FCTC measures examined, reported impacts on smoking prevalence, public health outcomes, and economic indicators, and a comparative analysis was performed to evaluate the effectiveness of FCTC measures in different countries, with a particular focus on their applicability to Indonesia. The quality of the included studies was assessed using criteria adapted from the Cochrane Handbook, focusing on study design robustness, clarity of research questions, appropriateness of methodologies, and validity of findings. Studies with low-quality assessments were either excluded or discussed with caution.

## 4 Result and Discussion

### 4.1 Tobacco Control Policy Outcomes Worldwide

Indonesia's efforts to reduce tobacco use would be aided and brought into compliance with international best practices if it were to ratify the FCTC. The health and financial consequences of smoking have decreased in nations that have implemented these measures [22]. Similar to the global success, the Framework Convention on Tobacco Control (FCTC) has demonstrated that it is an effective means of lowering tobacco use and the associated health risks.

Some Indonesian municipal governments have smoke-free ordinances and partially prohibited marketing, although their impact is limited. No all-encompassing national plan exists [23], but the FCTC, the first global public health treaty, offers a solid platform for tobacco control. In treaty-ratified nations, tobacco usage and its health impacts have dropped [23,24]. Based on positive experiences in Asia, Thailand, Malaysia, and Singapore have implemented comprehensive FCTC-aligned policies that have reduced smoking and its health and economic benefits [23]. The US experience shows that FCTC-aligned policies work. Due to evidence-based tobacco control initiatives, US smoking rates dropped considerably in the 1960s [25]. The American Stop Smoking Intervention Study (ASSIST) found that legislative measures and state-level tobacco control investments reduce smoking rates [26]. According to Farrelly et al. [27], Public education campaigns, smoke-free air regulations, and higher cigarette taxes have helped reduce adult smoking prevalence in the US by 60% in the past 50 years.

African tobacco prevention strategies have had mixed results. Some study found negative connections between policies and smoking prevalence, especially among men, whereas others found WHO MPOWER efforts had little influence on sub-Saharan African smoking rates [28]. Tobacco taxing and pricing have significantly reduced smoking prevalence in Africa, with a 1% increase in tobacco price dropping prevalence by 0.11–0.14% and a 1% increase in tobacco tax lowering prevalence by 0.25–0.36% [29].

Tax increases, smoke-free legislation, advertising restrictions, and cessation programs in the UK from 1998 reduced smoking rates by 23% by 2009 [45]. By increasing the tobacco duty escalator to 5% over inflation, adult smoking prevalence might drop to 6% by 2035, averting 75,200 new smoking-related ailments [30]. Global tobacco control might have reduced 2017 smoking by 100 million [31]. Better tobacco control methods benefit the poorest, reducing health inequities [32]. Overall, improving tobacco control will reduce economic expenses and improve public health.

African tobacco prevention strategies have had mixed results. Some research found negative connections between policies and smoking prevalence, especially among men,

whereas others found WHO MPOWER efforts had little influence on sub-Saharan African smoking rates [28]. Tobacco control efforts in African countries vary due to opportunities for monitoring, secondhand smoke protection, and taxes [33]. Tobacco taxing and pricing have significantly reduced smoking prevalence in Africa, with a 1% increase in tobacco price dropping prevalence by 0.11–0.14% and a 1% increase in tobacco tax lowering prevalence by 0.25–0.36% [29]. By hiking tobacco taxation and price, African governments may meet WHO Framework Convention on Tobacco Control targets and reduce smoking-related mortality.

## 4.2 Overview of Indonesia's Tobacco Control Policies

The tobacco epidemic is being hampered by Indonesia's disjointed and inadequate tobacco control plan [34]. Raising tobacco charges and outlawing smoking in some areas and towns are examples of local tobacco control measures. The national government has not always supported these initiatives, and the powerful tobacco industry has fought them [23,24].

The tobacco industry in Indonesia is also a powerful political and economic force that aggressively opposes stricter tobacco control laws [23,24]. Policy execution has been hampered by the government's reliance on tobacco income and the industry's estimates of economic losses. Indonesia has a startling adult smoking prevalence of 33.6% and a juvenile smoking rate of 19.4% [24]. The high rate of tobacco use in Indonesia is bad for the economy and public health. Even though it chose not to sign the WHO Framework Convention, Indonesia has created a number of tobacco control initiatives. Public smoking is prohibited in Indonesia under Presidential Decree No. 109/2012 and Health Act No. 36/2009. The 2012 order included implementation details for the policy [23,24].

The tobacco industry's undercutting and influence have meant that these measures to curb Indonesia's smoking pandemic have mostly failed [24]. Government law has been undermined by corporate pressure, and enforcement has decreased due to widespread noncompliance in smoke-free areas.

Indonesia's tobacco control laws have also been harmed by the government's sponsorship of a "Roadmap of Tobacco Products Industry Revitalisation" to grow the industry [35]. This road map demonstrates how difficult it is to strike a balance between economic interests and public health, as it runs against to the country's public health goals and ideals.

The implementation and enforcement of a smoke-free policy have proven challenging, with varying degrees of compliance in various locations. Advocates for tobacco control in Indonesia claim that the tobacco business, which has historically influenced national policy, presents them with a number of obstacles [22].

## 4.3 Comparative Analysis of Tobacco Control Policies

### 4.3.1 Tobacco Control Strategies: Indonesia in Global Comparison

Comparing Indonesia's tobacco control policy to that of the neighbouring Asian-Pacific countries, it is essentially slow and worthless. The only country in the Asia-Pacific area that has not yet ratified the FCTC and adopted its recommended policies is Indonesia. For example, Thailand has been widely recognised as a global pioneer in tobacco control since it joined the Framework Convention on Tobacco Control (FCTC) in 2004 and implemented a comprehensive set of tobacco control laws, such as smoke-free public areas, graphic health warnings, and higher tobacco taxes [22]. The percentage of smokers in Thailand has drastically decreased, from 32.0% in 2001 to 19.1% in 2019. Similar to this, Singapore has been strict about enforcing smoke-free public places, graphic health warnings, and tobacco

control laws that forbid tobacco sponsorship, promotion, or advertising. With the support of these programs, Singapore's smoking prevalence has steadily decreased from 14.3% in 2010 to 10.1% in 2019. In contrast, Indonesia has persistently high smoking rates, particularly among men and young people, as a result of its piecemeal approach to tobacco control, which lacks comprehensive national policies and insufficient enforcement [23,24].

The ratification and implementation of the Framework Convention on Tobacco Control (FCTC) in conjunction with a comprehensive, multisectoral approach to tobacco control appear to be an effective approach to addressing the public health and economic issues brought about by the tobacco pandemic, based on the experiences of neighbouring countries. Indonesia's progress in addressing its persistent tobacco use has been impeded by its incapacity to put these tried-and-true measures into practice.

Thailand and Singapore have achieved significant progress in tobacco control in south-east Asia by ratifying the Framework Convention on Tobacco Control (FCTC) and implementing comprehensive regulations such as smoke-free public areas, graphic health warnings, and higher tobacco charges. As a result, smoking has become less common in these countries.

#### *4.3.2 Factors Affecting Policy Differences and Similarities*

With considerable cultural and social acceptance of tobacco smoking, Indonesia has struggled to pass effective tobacco control regulations. The complex combination of consumer behaviour, healthcare infrastructure, awareness and health promotion, economic pressures, and political influence has affected tobacco control nationwide. Technology to monitor tobacco sales to minors has worked in numerous countries using technology to keep an eye on sales of tobacco to people underage has become a successful method. For instance, Australia and the UK have put in place complex digital systems that check people's ages at cigarette vending machines and shops. People under the age of 18 can't buy cigarettes through these systems because buyers have to scan their ID cards or use face recognition technology. Also, tools for tracking and tracing, as described in the report "The EU's Track Trace Smokescreen" [36], describes how tracking and tracing systems let governments monitor cigarette trafficking from manufacturers to retailers. These systems can detect suspicious sales patterns, illegal sales, and vendors that violate regulations. The Indonesian tobacco market is unique since 90% of smokers smoke indigenous kretek and 10% smoke "white" cigarettes. Fifth Kretek, locally called spices (bumbu), are clove cigarettes made with ground cloves, tobacco, and hundreds of flavouring ingredients [37].

Furthermore, Laws have been passed since 1999, but stakeholders—including the tobacco industry—have impacted their implementation [38]. Smoking awareness and health promotion have contributed to tobacco control legislation. How much people know about smoking's health effects has affected government goals and strategies [39].

The tobacco industry's economic impact on Indonesia has also altered anti-smoking laws. The government resists stringent tobacco control because tobacco taxes and excise fees provide cash and jobs. Tobacco workers say regulating tobacco will hurt the economy by reducing farmer and worker revenue and jobs. Established tobacco firm networks are constrained by business benefits. The tobacco industry funds these networks. Tobacco, leaf, clove, and community groups are part of these networks [24]. After oil, wood and gas, tobacco firms are Indonesia's primary government revenue source. Since they're a distributed sector, their influence in all levels of government helps them promote smoking [37].

The Indonesian political atmosphere has also shaped tobacco control. The government's public health priority has overwhelmed tobacco industry lobbying and influence on legislators. An interview study of 13 Indonesian health policy workers found that insufficient political interest in public health, health promotion, and disease prevention, disconnected

policies, and lack of institutional arrangements and resources to work under a multisectoral arrangement hinder NCD control [40]. Tobacco control measures in Indonesia are influenced by consumer behaviour, healthcare infrastructure, awareness and health promotion, economic reasons, and political pressures.

#### **4.4 Policy Recommendations for Tobacco Control in Indonesia**

Empirical evidence indicates that enacting and enforcing the Framework Convention on Tobacco Control (FCTC) would significantly reduce smoking prevalence in Indonesia. According to a study by Ahsan et al. [11] nations that ratified the FCTC had an average 3.6% gain in GDP per capita and a 1.7 percentage point drop in the prevalence of smoking. These results are very encouraging for Indonesia since they show that implementing the FCTC framework may result in both possible economic benefits and major improvements to public health.

In addition, the FCTC offers a thorough strategy for tobacco control that takes into account every facet of the problem. This includes actions to control customer demand (demand-side), manage the supply chain (supply-side), and address cross-cutting issues like illegal trading. Given that tobacco use and production have a long history in Indonesia, a comprehensive strategy is extremely important. The experiences of other countries in Southeast Asia also support the potential advantages of implementing the FCTC in Indonesia. After ratifying the FCTC and putting its main provisions into effect, smoking prevalence and related health issues have significantly decreased in Thailand, Malaysia, and Singapore [22].

##### *4.4.1 Economic Impact of Tobacco Control Policies and Revenue Generation through Tobacco Taxation*

Like the FCTC, Indonesian tobacco regulation doesn't always hurt the economy. It can help considerably. A study found that long-term tobacco regulation is beneficial for health and the economy. FCTC policy promotes greater tobacco taxes. By raising tobacco pricing, government may spend more on education and health. Governments that have accepted the FCTC have more tobacco tax income to provide public services.

The WHO Framework Convention on Tobacco Control, whose key provisions—including greater tobacco taxes—have been implemented by many states, has led global tobacco reduction efforts. Taxing tobacco effectively reduces tobacco usage and its financial and health implications. Research shows that a 10% tobacco price increase can reduce tobacco consumption by 4% [41].

Indonesia's comparatively low tobacco taxes offer a chance for development in this regard. In contrast to other nations in the area, Indonesia has comparatively low tobacco excise taxes, making up just roughly 57% of the retail cost of cigarettes [24]. In comparison, far higher tobacco taxes have been enacted in Thailand, Malaysia, and Singapore, where the tax component accounts for 70–80% of the retail price. The prevalence of smoking has significantly decreased in these nations as a result of these higher tax rates [42–44].

The FCTC recommends raising Indonesia's tobacco excise taxes to reduce smoking and its effects. Higher tobacco taxes reduce smoking and fund public health. Indonesia could benefit from an FCTC-compliant tobacco control policy like other nations. Ratifying and implementing the Framework Convention on Tobacco Control, including raising tobacco prices, can help Indonesia fight its tobacco pandemic and improve public health and economic well-being. Smoke-free rules in Indonesia aren't always followed, and they can be improved. Comparing these strategies to others can improve them. Thai legislation prohibits smoking in public, workplaces, and transit. Those who break rules are penalised severely. Singapore bans smoking in public buildings, beaches, and parks. Singapore law enforcement

is strict. Smoke-free rules in Indonesia aren't always followed, and they can be improved. Comparing these strategies to others can improve them. Thai legislation prohibits smoking in public, workplaces, and transit. Those who break rules are penalised severely. Singapore bans smoking in public buildings, beaches, and parks. Singapore law enforcement is strict.

#### 4.4.2 Smoke-Free Public Space Regulations

Indonesia has some smoke-free policies, but enforcement is patchy and needs improvement. Indonesia has implemented smoke-free policies (SFP) in various cities, but compliance and enforcement remain challenging. Studies in Bengkulu and Medan found overall compliance rates of 38% and 44% respectively, with health facilities showing the highest compliance [45,46]. Comparisons with other regions' policies can reveal better methods. Thailand has smoke-free rules in all indoor public areas, workplaces and public transportation. The penalty for noncompliance are severe. Singapore bans smoking in all indoor public venues and some outdoor locations including parks and beaches. Singapore has strict enforcement. To improve SFP implementation, Indonesia could benefit from ratifying the Framework Convention on Tobacco Control, strengthening tobacco control organizations, and enhancing government support and enforcement [47].

## 5 Conclusion

The adoption and implementation of the Framework Convention on Tobacco Control (FCTC) in Indonesia could significantly improve public health and economic conditions. Evidence from other countries suggests that effective tobacco control measures can reduce smoking prevalence, lower healthcare costs, and enhance economic productivity. While concerns about the economic impact of reduced tobacco consumption exist, the benefits of lower smoking rates—such as improved public health and reduced economic burdens from tobacco-related diseases—are substantial. Thus, Indonesia stands to gain considerably from aligning its tobacco control policies with the FCTC framework, making it a critical step toward a healthier and more prosperous future.

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