



Evaluating Smoke-Free Area Policy in Solok City, Indonesia: Implementation Gaps, Policy Performance, and Sustainable Urban Governance

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ABSTRACT

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This study examines the implementation of Regional Regulation No. 1 of 2020 on Smoke-Free Areas in Solok City, Indonesia. The background of the study lies in the persistent burden of tobacco use and second-hand smoke exposure, which remains a major public health problem globally and nationally. World Health Organization (WHO) reports that tobacco causes more than seven million deaths annually, while Indonesia continues to face high smoking prevalence and significant exposure to second-hand smoke in public spaces. In this context, local smoke-free area policy becomes crucial for protecting public health and supporting healthier urban governance. This study aims to evaluate the implementation of the smoke-free area regulation in Solok City by focusing on policy implementation, policy evaluation, and its relevance to sustainable development. This study employs a qualitative evaluative case-study approach, using interviews, observation, and document data derived from the research and supported by official policy and public health sources. The findings show that the policy is formally established but not yet fully institutionalized. Although the regulation has identified appropriate smoke-free spaces, implementation remains weak due to delayed coordination, limited socialization, weak routine evaluation, and persistent smoking behavior in designated smoke-free areas. The study concludes that the main challenge is not a lack of policy, but the gap between legal regulation and effective implementation. Strengthening coordination, enforcement, public communication, and routine evaluation is therefore essential to improve policy effectiveness and support healthier and more sustainable public spaces.

1. INTRODUCTION

Tobacco control remains one of the most difficult and enduring public policy challenges in contemporary governance, not only because tobacco consumption continues to generate substantial health burdens, but also because governments often struggle to translate regulatory intent into effective behavioral change and institutional compliance [1-4]. The issue has moved far beyond a purely biomedical concern. It is now firmly situated within the domains of public administration, policy implementation, urban governance, and Sustainable Development Goals (SDGs). The World Health Organization (WHO) states that tobacco kills more than 7 million people each year, including an estimated 1.6 million non-smokers who die because of exposure to second-hand smoke. WHO also notes that around 80% of the world's 1.3 billion tobacco users live in low- and middle-income countries, where public health systems and regulatory enforcement capacities are often under greater strain. These figures show that tobacco is not merely an individual lifestyle choice; it is a structural policy problem involving preventable

mortality, distributive injustice, institutional responsibility, and governance capacity [5-8].

This global burden explains why smoke-free regulation has become one of the most widely accepted instruments of tobacco control [1, 9]. The core rationale behind smoke-free policy is not punitive but protective [10, 11]. WHO emphasizes that there is no safe level of exposure to second-hand smoke, meaning that even involuntary exposure in public or enclosed spaces can create serious health risks [12, 13]. In policy terms, this matters because smoke-free regulation transforms the state's public health obligation into concrete spatial rules [14-18]. It defines which environments must be protected, who is responsible for protection, and how collective rights to clean air are to be safeguarded in practice. Schools, health facilities, government offices, public transportation, places of worship, restaurants, and other shared spaces are therefore not neutral arenas [19-21]. They are governance spaces in which the state's capacity to protect vulnerable groups, especially children, women, older persons, patients, and workers, is directly tested.

The Indonesian case underscores the urgency of this issue.

According to the Global Adult Tobacco Survey (GATS) Indonesia Report 2021, released by the Ministry of Health and WHO in August 2024, 34.5% of Indonesian adults, or approximately 70.2 million people, currently use tobacco products. The survey also reports striking gender disparity, with 65.5% of adult men and 3.3% of adult women using tobacco. More importantly for smoke-free policy, second-hand smoke exposure remains very high in everyday settings, including 74.2% in restaurants and 44.8% in workplaces. These data are significant because they indicate that tobacco use in Indonesia is not confined to private consumption; it spills over into social and institutional environments, thereby generating harms that affect non-smokers as well [22-24]. In other words, the urgency of smoke-free policy in Indonesia lies not only in reducing smoking prevalence, but also in protecting shared public environments from normalized smoke exposure [18, 25].

At the national policy level, Indonesia has gradually built a more robust legal foundation for tobacco control. Smoke-free area regulation at the local level has long been linked to Government Regulation No. 109 of 2012, while the policy framework was further strengthened by Government Regulation No. 28 of 2024, which provides implementing rules under the Health Law and includes provisions on safeguarding addictive substances in tobacco products and electronic cigarettes. The current framework is designed not only to regulate tobacco use, promotion, and distribution, but also to reduce smoking prevalence, prevent initiation among youth and novice smokers, and reduce disease and mortality associated with tobacco exposure. This means that the local smoke-free area policy is not an isolated municipal initiative. It is a downstream manifestation of a broader national public health commitment. Consequently, when local implementation underperforms, the issue should be understood not merely as local non-compliance, but as a critical fracture in the chain connecting national policy intent and local public protection.

In this regard, Solok City provides a highly relevant and analytically rich local case. The rationale for this article is that the city already has a formal regulatory basis in Regional Regulation No. 1 of 2020 on Smoke-Free Areas and operational guidance in Mayor Regulation No. 8 of 2021. Normatively, the city has designated smoke-free zones that include health facilities, schools, children's play areas, places of worship, public transportation, workplaces, government offices, and certain public places. This is important because it indicates that the regulatory design itself is not absent. The city has already identified both the policy problem and the spaces requiring protection. Yet, the central question raised by the research is why such a regulation, despite its formal clarity and public health purpose, has not translated into an effective and widely respected smoke-free regime in practice.

The research's empirical findings point to a clear implementation gap. The study explicitly identifies three main problems: the implementation of Regional Regulation No. 1 of 2020 has not been optimal; no routine program has been established as a formal agenda for coordination and evaluation of the smoke-free policy in Solok City; and members of the public continue to smoke within smoke-free areas. These findings are crucial because they move the analysis away from a narrow legalistic perspective. The policy problem in Solok is not that the city lacks a regulation, but that the regulation has not yet acquired sufficient institutional strength, administrative continuity, and social acceptance to alter

behavior and protect public spaces effectively. This distinction is central to policy analysis: a policy may exist in formal terms while remaining weak in operational terms.

The research reinforces this conclusion through its evaluative findings. It states that the smoke-free policy in Solok still has not been well implemented, that both the public and local government units still have limited knowledge or inadequate notification regarding smoke-free and restricted smoking areas, and that understanding of the consequences of violating the regulation remains weak. The research also notes that the policy remains contested, with debates extending from smokers' rights in public places to concerns about anti-smoking policies and their economic implications. These findings are analytically important because they reveal that policy underperformance arises not only from a lack of enforcement but also from incomplete internalization of the policy. In other words, the regulation has not yet fully penetrated the cognitive, institutional, and normative environment required to support compliance. That makes the Solok case especially suitable for a policy evaluation lens.

A particularly significant contribution of the research lies in its documentation of weak coordination and weak evaluative routines. One informant cited in the research stated that, despite the need for cross-agency collaboration in implementing smoke-free areas, "there has been no routine program established as an agenda for coordination and evaluation." The same testimony indicates that special outreach on the health impacts of smoking could not be carried out regularly because of inadequate operational support, and that officials often had to rely on incidental community activities to obtain a few minutes for awareness-raising. Another interview quoted in the research states that although the regulation dates back to 2020, meaningful socialization began only in 2024, and even then, only around three to four times per year. These findings reveal a substantial lag between adoption and implementation. In policy terms, this is a classic sign of incomplete institutionalization: the rule exists, but the post-adoption system required to sustain communication, monitoring, and learning has not matured [26-28].

The research also stresses that policy execution in Solok requires cooperation between health institutions and enforcement agencies. The text highlights the need for collaboration between the Community Health Centers and the municipal public-order apparatus, with health actors expected to communicate the dangers of smoking and enforcement actors expected to ensure compliance in the field. This is more than a practical observation. It shows that a smoke-free policy is inherently cross-sectoral. The success of such a policy depends not only on the health sector's knowledge base but also on the existence of an enforcement ecosystem, interagency communication, resource coordination, and a shared implementation mandate [29-31]. Therefore, an evaluative study of smoke-free policy must examine whether the required governance network actually functions as an integrated system rather than assuming that formal designation of implementing agencies is sufficient [32-35].

The local smoking environment described in the research deepens the urgency of the case. Drawing on local statistical sources, the research cites Central Bureau of Statistics data showing an average consumption of 96.25 cigarettes per week among smokers aged 5 and above in Solok, with the largest proportion reporting 60 or more cigarettes per week. Even if such local consumption data must be interpreted carefully according to the statistical format used, the general implication

is clear: smoking intensity remains high, and tobacco use is deeply embedded in local daily life. The historical welfare statistics for Solok similarly show a high concentration of smoking in the category of 60 or more cigarettes per week, indicating that heavy smoking has been a persistent pattern rather than a marginal phenomenon. A policy environment marked by high smoking intensity will predictably encounter stronger resistance, lower spontaneous compliance, and a greater need for sustained institutional enforcement and public communication [36, 37].

Seen from a broader governance perspective, the Solok case illustrates an important characteristic of local public policy failure: the existence of a rule without a sufficiently credible implementation architecture. This is where policy analysis becomes essential. Public policy cannot be evaluated solely in terms of its textual content or legal validity. It must also be assessed in terms of whether the policy creates a workable chain linking objectives, instruments, implementers, target groups, and outcomes [38-42]. The research findings suggest that this chain is fractured in Solok. The target areas are formally correct, but many remain exposed to smoking. The implementing bodies exist, but coordination is not routine. Socialization occurs, but late and unevenly, and sanctioning is expected, but not consistently internalized. Thus, the gap between formal regulation and substantive protection becomes the key analytical problem.

The content of the smoke-free regulation is relatively clear: it specifies the protected areas and the general purpose of protecting society from the dangers of tobacco smoke. On the other hand, the implementation context appears weak, marked by limited operational support, poor routine coordination, delayed socialization, incomplete public understanding, and inconsistent compliance. The Solok case thus strongly supports the idea that policy content alone cannot guarantee effectiveness when the implementation context remains unsupportive. Grindle and Thomas's [43] perspective is especially useful because it avoids oversimplifying implementation failure as merely a matter of public disobedience. The problem is not only that citizens smoke where they should not. Rather, the policy has not been supported by sufficiently strong institutional arrangements to shape public behavior over time. In a city where smoking remains common and socially normalized, a smoke-free policy requires more than signage and legal prohibition [14, 16, 44]. It requires sustained communication, organizational routines, resource support, credible monitoring, and interagency commitment [45, 46]. From this perspective, the Solok case suggests that smoke-free regulation is being asked to perform ambitious behavioral work without being matched by equally robust administrative infrastructure. That mismatch lies at the heart of policy underperformance.

The implementation framework strengthens this analysis by focusing on the rightness or appropriateness of the policy, implementers, targets, environment, and process. The research indicates that the policy targets themselves are appropriate: schools, hospitals, offices, and children's spaces are precisely the types of places that should be protected from tobacco smoke [47, 48]. However, the implementation process and environment are less satisfactory. Communication to the public remains insufficient, policy processes are not fully routinized, and the wider social environment has not shifted decisively toward support for smoke-free norms. This indicates that the Solok problem is not primarily one of incorrect policy targeting, but of weak process alignment and

weak environmental conditioning. Put differently, the city appears to have identified the correct policy object, yet it has not assembled the processual and contextual conditions needed for the policy to work consistently.

The policy evaluation is concerned not merely with whether a policy exists or whether its procedures were followed, but with whether it generates the intended consequences [38, 49]. Under a smoke-free policy, the intended consequence is clear: to reduce smoking behavior and second-hand smoke exposure in designated public spaces, thereby creating cleaner, safer, and healthier environments [25, 50]. Yet the research shows that prohibited spaces remain exposed to smoking, knowledge among both the public and some institutions remains limited, and enforcement mechanisms remain insufficiently consolidated. From an evaluative standpoint, therefore, the policy's effectiveness remains partial. The regulation may have succeeded in creating a formal normative standard, but it has not yet fully delivered the environmental and behavioral outcomes it was designed to achieve [51, 52].

This partial effectiveness is precisely what makes the case academically important. Much of the public discussion on tobacco control assumes that passing regulations is itself evidence of progress. However, implementation scholarship teaches otherwise. Regulations often function symbolically unless they are embedded in routines of coordination, monitoring, sanctioning, feedback, and learning [53, 54]. The Solok case demonstrates the danger of overestimating legal adoption while underestimating implementation capacity. A city may appear progressive because it has enacted smoke-free rules. Still, if schools, health facilities, government buildings, and transport spaces remain exposed to smoking, then the substantive value of the reform remains compromised [16, 55]. The real policy question is therefore not whether Solok has regulated smoking, but whether it has governed smoking effectively in the spaces where governance matters most.

This issue is also highly relevant to the framework of sustainable development. Tobacco control is explicitly linked to the global 2030 Agenda, especially SDG 3, which seeks to ensure healthy lives and promote well-being for all at all ages, and specifically Target 3. a, which calls for strengthening implementation of the WHO Framework Convention on Tobacco Control. In addition, the logic of smoke-free policy also intersects with SDG 11, especially Target 11.6, which calls for reducing the adverse environmental impact of cities, including by paying special attention to air quality, and Target 11.7, which emphasizes safe, inclusive, and accessible public spaces. When a smoke-free policy is ineffective, the consequences are not limited to individual health risks; they also affect urban environmental quality, inclusive access to public space, and the broader ability of local government to produce healthy urban living conditions [56, 57].

From this sustainable development angle, smoke-free policy should be understood as part of urban sustainability governance rather than as a single-sector health rule [58, 59]. A sustainable city is not only one that expands infrastructure or services; it is also one that protects public environments from preventable harms and ensures that shared spaces remain safe and healthy for all users [60, 61]. Air quality in public institutions, transportation systems, educational environments, and health facilities is thus directly relevant to the quality of urban citizenship [62]. If children and patients must remain exposed to tobacco smoke in places meant to protect and serve them, then the city is failing not only in enforcement but in the social contract of sustainable urban governance. In this sense,

a smoke-free policy is closely tied to the practical realization of human-centered development, in which public health, environmental quality, and inclusive access to safe spaces are mutually reinforcing [63].

The sustainability lens also highlights the distributive and ethical dimensions of smoke-free regulation. Tobacco smoke in public spaces is not merely a matter of personal choice because it imposes involuntary externalities on non-smokers [64]. These externalities fall disproportionately on those who are least able to avoid them: children in schools and playgrounds, patients in health facilities, workers in service settings, older persons in public institutions, and passengers in public transportation. The Solok research mirrors this concern, noting that the rationale for the regulation relates to the large number of passive smokers affected, especially children. This evaluates the smoke-free policy not only as a matter of technical implementation but also as a matter of public justice. The policy is meant to redistribute protection toward those who bear health risks without choosing them. When implementation remains weak, the burden of that weakness falls most heavily on vulnerable groups.

Another reason the Solok case matters is that it reflects a broader challenge in decentralized governance systems. National governments may enact or strengthen tobacco-control frameworks, but actual performance depends heavily on subnational institutions. Local governments are the actors that must designate smoke-free zones, coordinate implementing bodies, fund socialization and monitoring, and enforce compliance in day-to-day public life. This means that the local state is where public health protection is ultimately made visible. The GATS data showing high exposure to second-hand smoke in workplaces and restaurants in Indonesia suggests that local implementation remains uneven across many settings. Solok thus becomes more than a single-city case study; it serves as an illustrative site for understanding how decentralized governance can produce an implementation gap between national policy direction and local public outcomes.

Existing discussions on smoke-free policy often focus on health risks, legal frameworks, or descriptive compliance levels. Fewer studies integrate policy implementation theory, policy evaluation, and sustainable development into a single analytical frame for assessing local smoke-free governance. This is where the current study can make an original contribution. The article is not simply about whether smoking still occurs in prohibited places. It is about how a formally established local policy performs when assessed through the combined lenses of policy content, implementation context, process accuracy, target-group response, institutional coordination, evaluative learning, and urban sustainability. This integrated framing enables the study to speak not only to public health scholarship but also to public policy, public administration, and the literature on sustainable urban governance.

In this context, the research gap can be more precisely defined. The gap does not lie in proving that tobacco is harmful, because that is already well established. Nor does it lie in demonstrating that smoke-free policies are normatively desirable, because both global evidence and national regulations already support that proposition. Rather, the gap lies in explaining why a legally established local smoke-free policy remains only partially effective, despite having formal targets, regulatory backing, and public-health justification. More specifically, there is a need to understand how

weaknesses in coordination, communication, evaluation, public acceptance, and institutional commitment interact to constrain policy outcomes at the city level. Solok provides an important case for investigating this question in depth. Based on that gap, the study's novelty lies in three main contributions. First, it repositions the smoke-free policy from a narrow public health regulation into a broader governance problem involving implementation systems and local state capacity. Second, it combines policy evaluation frameworks with a sustainable development perspective, demonstrating that ineffective smoke-free policies undermine not only health protection but also the creation of safer, cleaner, and more inclusive urban environments. Third, it uses the Solok case to illustrate how policy failure may be partial and layered rather than absolute: the city has built a regulatory foundation, but that foundation has not yet matured into a stable regime of compliance, coordination, and continuous policy learning. This layered view is important because it avoids simplistic conclusions and instead captures the transitional, contested, and institutionally uneven nature of local policy reform. Accordingly, this study is grounded in the argument that the main challenge in Solok City is not the lack of smoke-free regulation, but its incomplete institutionalization. The city has the legal framework, identified target areas, and a formal public health objective. However, the policy remains constrained by delayed socialization, limited routine coordination, inadequate evaluative mechanisms, insufficient operational support, weak public internalization, and the persistence of smoking behavior in designated smoke-free spaces. Therefore, evaluating the policy through the dual lens of policy analysis and sustainable development is both empirically necessary and theoretically productive. It allows the study to diagnose not only where the policy falls short, but also why those shortcomings matter for the city's broader development trajectory.

Ultimately, the Solok case demonstrates that effective tobacco control at the local level depends not merely on issuing regulations, but on building a functioning governance system that connects law, institutions, communication, monitoring, sanctioning, and social acceptance. That is why this case deserves attention in an international journal. It speaks to a wider question faced by many cities in developing and decentralized contexts: how can public policy move from formal adoption to substantive effectiveness? By addressing this question through the case of a smoke-free policy and explicitly linking it to the SDGs, the study contributes to a more grounded understanding of how local governments can protect health, improve public environments, and strengthen the quality of urban governance in practice.

Table 1 demonstrates that the urgency of this study emerges from the convergence of four layers. The first is the global and national health burden of tobacco, which provides the macro-level justification for smoke-free policy. The second is the legal and regulatory foundation, showing that the Indonesian state and the Solok local government have already committed themselves, normatively, to smoke-free governance. The third is the empirical implementation gap documented in the research, which reveals that the existence of policy has not yet produced full compliance or institutional routine. The fourth is the sustainable development linkage, which makes clear that ineffective smoke-free governance undermines not only health outcomes but also the broader quality, safety, and inclusiveness of urban public spaces. Taken together, these layers show why the Solok case should be studied not

descriptively, but analytically and evaluatively.

Table 2 clarifies the research's intellectual positioning. The study does not repeat what is already well established, namely that smoking is harmful or that smoke-free laws are desirable. Instead, it focuses on the underexplored question of why a local smoke-free policy with formal legal support remains only partially effective in practice. The table shows that the

article's novelty lies in its integrative approach: it brings together public policy analysis, implementation evaluation, administrative coordination, behavioral compliance, and sustainable development concerns within a single explanatory framework. This makes the study suitable for an international audience interested in the real-world performance of local public policy.

Table 1. Empirical urgency and analytical foundation of the study

Dimension	Empirical Evidence	Analytical Meaning	Relevance to Sustainable Development	Implication for the Study
Global tobacco burden	Tobacco kills more than 7 million people annually, including around 1.6 million non-smokers from second-hand smoke; around 80% of users live in low- and middle-income countries.	Tobacco is a structural public policy issue, not only an individual health behavior.	Supports SDG 3 and Target 3. a on tobacco control.	Establishes the international relevance of local smoke-free policy evaluation.
Indonesian tobacco context	GATS 2021 reports 34.5% adult tobacco use, equivalent to 70.2 million adults; passive smoke exposure remains high in restaurants and workplaces.	Shows that tobacco harms are socially distributed through shared spaces.	Links local policy performance to national progress on health and well-being.	Justifies the need to examine implementation at the city level.
National legal framework	Indonesia has strengthened tobacco control through Government Regulation No. 109/2012 and No. 28/2024.	The issue is no longer a lack of policy but its effectiveness.	Reflects institutional commitment to long-term health protection.	Frames the study around implementation and evaluation rather than legal justification.
Solok regulatory readiness	Solok already has Regional Regulation No. 1 of 2020 and Mayor Regulation No. 8 of 2021, with clear smoke-free zones. The research finds that implementation is not optimal and that routine coordination and evaluation programs are absent.	The formal policy design exists.	Supports healthy and inclusive public-space governance.	Makes Solok suitable for evaluating implementation gaps.
Implementation weakness		Indicates institutional underperformance after policy adoption.	Weakens the local contribution to health-oriented sustainable urban governance.	Forms the article's core problem.
Delayed socialization	Meaningful outreach began only in 2024 and occurred about three to four times per year.	Shows lag between policy adoption and operationalization.	Undermines continuous public awareness-building, which is needed for sustainable behavioral change.	Strengthens the argument about incomplete institutionalization.
Persistent local smoking	Local statistical references indicate high cigarette consumption intensity among smokers.	A high-smoking environment increases resistance to compliance.	Sustains public-health and air-quality risks in urban settings.	Explains why implementation must be examined contextually, not abstractly.
Need for cross-sectoral action.	The research highlights the need for collaboration between health actors and enforcement agencies.	Smoke-free policy is a governance network issue.	Cross-sector governance is essential for sustainable city management.	Supports an integrated policy-analysis framework.
Sustainable development linkage	SDG 3, Target 3. a, and SDG 11.6/11.7 are directly relevant to the governance of smoke-free public spaces.	Smoke-free policy affects health, air quality, and inclusive public spaces.	Connects policy evaluation to broader urban sustainability objectives.	Broadens the study's contribution beyond public health alone.

Table 2. Research gap, analytical focus, and expected contribution

Aspect	Common Tendency in Existing Discussion	A Gap Was Identified in This Study	Proposed Analytical Response
Public health framing	Focus on smoking hazards and epidemiological burden	Limited attention to local governance mechanisms after policy adoption	Reframe smoke-free areas as a policy implementation and evaluation issue
Legal perspective	Emphasis on the existence of smoke-free regulations	Insufficient analysis of why compliance remains weak despite regulation	Examine the gap between formal policy design and practical outcomes
Administrative perspective	Limited focus on interagency coordination and routine evaluation	Weak understanding of how local institutions sustain or fail to sustain policy	Analyze coordination, socialization, monitoring, and evaluative learning
Behavioral perspective	Focus on smokers versus non-smokers.	Limited integration of social norms and public acceptance into policy analysis	Explore the interaction between public internalization and policy enforcement.
Sustainability perspective	Smoke-free policy is often treated as a health-only issue	Underdeveloped linkage between smoke-free governance and SDGs	Connect smoke-free policy to SDG 3, urban air quality, and inclusive public spaces

Although the dangers of tobacco and the normative importance of smoke-free regulations are well established, less is known about why local smoke-free policies remain only partially effective despite clear legal frameworks and formal target-setting. In the case of Solok City, the major challenge is not a lack of policy, but weak institutionalization, reflected in delayed socialization, limited coordination, inadequate routine evaluation, weak public internalization, and the persistence of smoking in protected areas. This study addresses that gap by evaluating the implementation of smoke-free policy through the combined lenses of policy analysis, policy evaluation, and sustainable development. This study offers three main novelties. First, it reframes smoke-free area regulation as a local governance and policy implementation problem, rather than treating it solely as a public health measure. Second, it integrates policy evaluation concepts with the SDGs, particularly SDG 3 and SDG 11, to show that ineffective smoke-free governance undermines both health protection and the quality of urban public space. Third, it uses the Solok case to demonstrate that local policy failure is often partial, layered, and institutional, emerging not from the absence of rules but from weak coordination, communication, monitoring, and evaluative learning.

The research gap addressed in this study is therefore not the general harmfulness of tobacco, nor the normative desirability of smoke-free laws, both of which are already well established. The more specific gap concerns the local implementation of smoke-free policy in Indonesia's decentralized governance context. Although many Indonesian districts and cities have adopted smoke-free regulations, evidence continues to show that enforcement, inspection, and compliance remain uneven. This study contributes to that discussion by examining why Solok City's smoke-free regulation, despite having a clear legal basis and designated protected areas, has not yet become fully institutionalized as a routine system of coordination, enforcement, monitoring, and public compliance.

This study foregrounds a Solok-specific implementation puzzle rather than treating Solok merely as a local example of smoke-free policy evaluation. Solok City enacted Regional Regulation No. 1 of 2020 on Smoke-Free Areas and issued Mayor Regulation No. 8 of 2021 as its operational framework. However, the policy did not immediately develop into a stable implementation regime. Field findings show that meaningful socialization, coordination, monitoring, and enforcement became more visible only in 2024, while smoking practices continued in several designated smoke-free areas. This four-year gap between legal adoption and substantive activation is the central empirical problem of this study. Existing smoke-free policy literature has explained the importance of regulation, compliance, and enforcement, but it does not sufficiently explain how a local regulation can remain institutionally thin for years after adoption despite having a clear legal mandate. The Solok case is therefore examined as a case of delayed institutionalization in decentralized urban health governance, not as a generic illustration of local smoke-free area implementation. This framing strengthens the originality of the article by showing that the main issue in Solok is not the absence of policy, but the failure to transform legal regulation into sustained administrative routines, interagency coordination, field monitoring, enforcement credibility, and public compliance.

Therefore, this study's contribution is framed more simply. Rather than claiming to offer a novel theoretical integration of implementation, evaluation, and sustainable development, this

article uses these perspectives as complementary analytical lenses to interpret a specific local policy issue in Solok City. The primary contribution lies in an empirical examination of how officially adopted Smoke-Free Zone regulations remain difficult to translate into consistent coordination, monitoring, enforcement, and public compliance at the city level. In this regard, the study's originality is primarily based on Solok-specific evidence of implementation gaps and local enforcement challenges, while the implementation, evaluation, and sustainable development perspectives serve to contextualize and structure the analysis rather than constitute the article's primary theoretical novelty.

2. LITERATURE STUDY

2.1 Public policy analysis

Public policy analysis provides the most appropriate entry point for examining smoke-free area regulation, because the issue is not simply whether a rule exists, but whether public institutions can translate a legal mandate into meaningful social outcomes [18]. In the field of policy studies, public policy is generally understood as a purposive course of action taken by government to address public problems [42, 65]. This understanding is essential in the context of smoke-free policy because tobacco exposure in public spaces constitutes a collective problem rather than a private matter. Once smoking behavior affects shared air quality, workplace safety, the health of schoolchildren, and access to healthy public services, the issue becomes a matter of public authority, public responsibility, and public value. In this sense, smoke-free regulation is best understood as a policy instrument intended to address negative externalities, protect vulnerable groups, and align local governance with broader public health goals [14]. The research also places the Solok case within this public-policy tradition by framing the study as an evaluation of a local government regulation whose effectiveness depends on how policy objectives are translated into implementation and results.

A policy-analysis perspective is particularly relevant because it emphasizes that public policy should be assessed across multiple stages, from agenda setting and formulation to implementation and evaluation [66, 67]. This staged view matters for the Solok case because the evidence does not suggest a failure at the level of agenda recognition or legal formulation. On the contrary, the city has already recognized tobacco smoke as a public health issue and formalized its response through Regional Regulation No. 1 of 2020 and subsequent implementing guidance. The more serious problem arises after adoption, namely in translating the regulation into everyday institutional practice and public compliance. This distinction is analytically important because it prevents the study from collapsing all policy problems into one category. The policy exists, the target areas are defined, and the public health rationale is clear; what remains problematic is the consistency, intensity, and effectiveness of implementation. From this standpoint, policy analysis is not merely descriptive. It is explanatory and diagnostic. It seeks to identify where in the policy chain the problem actually lies and why a formally valid intervention fails to generate the intended public outcome. This is especially important in local tobacco control, because legal enactment often creates an impression of governmental progress even when compliance remains

weak. The WHO continues to emphasize that there is no safe level of exposure to second-hand smoke and that comprehensive smoke-free environments are the only proven way to protect non-smokers from tobacco smoke exposure fully. That means the analytic standard should not be the mere presence of local regulation, but the degree to which the regulation produces genuinely smoke-free public environments.

2.2 Policy implementation

Within policy analysis, implementation theory is central because implementation is the stage at which political commitments are tested against institutional reality [68, 69]. The Solok case strongly supports this focus. The research identifies that implementation of the smoke-free area regulation has not been optimal, that routine coordination and evaluation programs have not been institutionalized, and that members of the public continue to smoke in designated smoke-free areas. These findings indicate that the key question is not whether the policy is desirable in principle, but whether the local government has built an implementation system capable of supporting compliance and protecting public spaces in practice.

Grindle and Thomas [43] distinguished between the content of policy and its implementation context, arguing that policy outcomes depend not only on what the policy says but also on the environment in which it is implemented. This distinction is highly useful for analyzing smoke-free governance in Solok. In terms of policy content, the local regulation appears substantively appropriate: it identifies the public problem, designates the protected spaces, and clarifies the normative objective of reducing exposure to tobacco smoke. However, the implementation context appears much weaker. The research points to delayed socialization, limited routine coordination, inadequate operational support, insufficient public understanding, and persistent non-compliance. This suggests that the policy's substantive content has not been matched by a sufficiently supportive administrative and social environment.

The framework is particularly valuable because it prevents the analysis from blaming only one actor. Policy failure in smoke-free governance cannot be reduced simply to the behavior of smokers. Instead, it must be located in the interaction between institutional design, organizational preparedness, resources, communication, enforcement, and public response. The Solok research precisely shows this interaction. The regulation itself exists, but its supporting routines remain weak. Officials report that coordination and evaluation are not conducted as a formal routine, and operational limitations have constrained special outreach on smoking risks. In implementation terms, this means that the policy is formally present but institutionally thin. Its content may be clear, but the context needed to sustain it remains underdeveloped. This insight is consistent with broader tobacco-control governance. WHO's tobacco-control framework shows that smoke-free policy is effective when governments do more than legislate; they must also protect people through sustained enforcement, communication, and institutional commitment. The Indonesian GATS 2021 results reinforce this point by showing that passive smoke exposure remains high in restaurants and workplaces, indicating that the challenge lies not only in individual smoking prevalence but also in weak protection in ordinary shared environments.

These national data strengthen the theoretical argument that implementation is the decisive arena in tobacco-control policy.

The Solok case can be sharpened further from an implementation perspective, especially by assessing policy implementation in terms of the appropriateness of the policy, the implementers, the target, the environment, and the process. This approach is useful because it allows the analysis to move beyond general claims of ineffectiveness and instead identify where policy misalignment occurs. In the Solok case, the target of the regulation appears appropriate. Schools, health facilities, workplaces, public transportation, and enclosed public places are precisely the types of spaces that should be protected from second-hand smoke. The policy object is therefore not conceptually misplaced. However, the research suggests that problems emerge in the other dimensions. The implementing actors are formally present, but their interaction has not yet become routine and fully coordinated. The target group, namely the broader public, is still not adequately informed and does not consistently internalize the rule. The implementation environment remains permissive because smoking is still socially common and often normalized. Finally, the process remains weak because communication is not continuous, and evaluative routines are not firmly established. The research explicitly notes that public communication must be clear, understandable, and continuous so that the target group can correctly apply the policy. This point is particularly important because implementation failure often occurs not when rules are absent, but when the communication and reinforcement process is too weak to produce behavioral adaptation [70, 71]. The framework is therefore helpful for explaining why Solok's smoke-free policy has not yet achieved full effectiveness. The weakness lies not primarily in policy intention but in process alignment. A city can have the right regulations and target areas, yet still fail if implementers are not fully aligned, if the environment remains tolerant of violations, and if communication and monitoring are intermittent rather than continuous.

2.3 Policy evaluation

If implementation theory explains how policy is delivered, policy evaluation explains how policy performance should be judged [72, 73]. The research notes that policy evaluation has two major tasks: first, to determine the consequences of a policy by describing its impacts, and second, to assess the success or failure of that policy against predefined standards or performance criteria. This formulation is highly relevant to smoke-free governance because it prevents evaluation from stopping at procedural questions alone. A regulation cannot be considered effective simply because it has been enacted or because some socialization activities have taken place. It must be evaluated by asking whether it has actually reduced smoking in prohibited areas, improved compliance, increased public awareness, and protected citizens from second-hand smoke exposure.

The research also refers to evaluation as a process of gathering valid information to understand whether intended goals are being achieved. This aligns well with public-policy evaluation more broadly, where the purpose of evaluation is not only to judge performance retrospectively but also to generate learning for future policy improvement [65, 74, 75]. In the Solok case, this learning dimension is especially important because the research identifies an absence of routine coordination and evaluation. Without evaluation, local

government cannot know whether its communication strategy is adequate, whether enforcement is credible, whether facilities are properly marked, whether target groups understand the regulation, or whether different agencies are performing their roles consistently [76-79]. In this sense, the absence of routine evaluation is not merely an administrative omission; it is a structural barrier to policy learning. The evaluative lens also helps clarify why the Solok case matters academically. The question is not only whether the policy exists, but whether it produces socially meaningful consequences. The research indicates that smoking remains present in smoke-free zones, that knowledge of the regulation is uneven, and that public and institutional acceptance is still incomplete. These observations imply that the intended policy consequences have not yet been fully realized. Thus, from this perspective, the policy remains only partially successful. It has established a normative framework, but it has not yet produced a stable regime of compliance and public protection.

2.4 Sustainable development

Although smoke-free regulation is often discussed as a public health measure, its significance extends much further when viewed through the lens of sustainable development [9, 80]. This broader perspective is essential because sustainable development is concerned not only with economic growth but also with protecting human well-being, environmental quality, and inclusive access to safe living conditions [81-83]. The United Nations identifies SDG 3 as the goal of ensuring healthy lives and promoting well-being for all at all ages. At the same time, Target 3 specifically calls for strengthening the implementation of the WHO Framework Convention on Tobacco Control. At the same time, SDG 11 aims to make cities inclusive, safe, resilient, and sustainable. It includes Target 11.6, which aims to reduce the adverse environmental impact of cities, especially through attention to air quality, and Target 11.7, which aims to ensure access to safe, inclusive, and accessible public spaces. Smoke-free governance lies squarely within this intersection. This linkage is not merely rhetorical. Second-hand smoke directly affects air quality in enclosed and shared spaces, and it undermines the safety and inclusiveness of public institutions. When smoking persists in schools, health facilities, public transport, and workplaces, the city fails to guarantee equitable access to safe environments. Such failure has particular implications for vulnerable groups, including children, patients, the elderly, service workers, and non-smokers who have not chosen to bear exposure. WHO's position that there is no safe level of second-hand smoke exposure strengthens the argument that smoke-free governance is part of a city's basic responsibility to provide health-protective public environments. In that sense, ineffective smoke-free policy undermines not only public health goals but also the broader sustainability of urban governance [59, 84].

This research supports this sustainability interpretation indirectly but clearly. It notes that the problem of smoking in smoke-free areas is especially serious because many passive smokers, including children, are affected. This point is important because sustainable development requires that public policy protect those with the least capacity to avoid harm [85]. Smoke-free governance is therefore also a matter of distributive justice: it shifts the burden of protection away from vulnerable individuals and toward public institutions [84]. A city that allows tobacco smoke to remain present in

spaces intended for education, care, worship, administration, and mobility is not only weak in enforcement; it is weak in protecting the social foundations of sustainable urban life [86].

Taken together, these perspectives support an integrated framework for the research. First, policy analysis provides the broad lens for understanding smoke-free areas as a public problem requiring state intervention [84]. Second, implementation theory allows the study to identify where and why the policy chain breaks down between regulation and results [87]. Third, policy evaluation provides the criteria for judging whether the policy has generated the consequences it was intended to produce [38]. Fourth, sustainable development provides the normative horizon that links smoke-free policy to healthy cities, cleaner public environments, and the protection of vulnerable groups [88]. Using this integrated framework, the Solok case can be interpreted as a case of incomplete institutionalization. The city has adopted the formal policy, identified the relevant target areas, and established a legal basis for tobacco control. However, the policy remains constrained by weak routinization, limited interagency coordination, delayed socialization, insufficient evaluative learning, and persistent non-compliance. This makes the case theoretically valuable because it demonstrates that local public health policy effectiveness depends not only on legal design, but on the maturity of governance arrangements that sustain implementation over time. In other words, the article's theoretical position is that smoke-free policies should be evaluated not as static rules but as governance processes. Its success depends on whether institutions can align policy goals, implementing actors, target groups, communication strategies, enforcement mechanisms, and evaluative feedback. This position is especially important for decentralized contexts such as Indonesia, where national tobacco-control commitments are ultimately realized or undermined by local governments. The Solok case, therefore, offers a compelling opportunity to show how policy analysis, policy evaluation, and sustainable development can be brought together to explain why local smoke-free policy remains only partially effective despite a formally adequate legal foundation.

The reference base of this study is deliberately narrowed to sources that directly address smoke-free area policies, second-hand smoke exposure, local tobacco-control implementation, compliance, enforcement, and decentralized governance in Indonesia. Rather than treating smoke-free policy as a broad sustainability issue, this study positions it as a specific local public-health governance problem: how a formally adopted smoke-free regulation becomes implemented, monitored, enforced, and internalized at the municipal level. This focus is particularly important in Indonesia, where smoke-free regulations are widely adopted across districts and cities but enforcement and compliance remain uneven.

2.5 Smoke-free area policy in decentralized Indonesia

Smoke-free area policy is primarily justified by the need to protect non-smokers from involuntary exposure to second-hand smoke. In Indonesia, this issue remains urgent because tobacco use is not confined to private behavior but extends into shared public and institutional spaces. The GATS Indonesia 2021 reported that 34.5% of Indonesian adults used tobacco products, while second-hand smoke exposure remained high in restaurants and workplaces. These data demonstrate that smoke-free policy should be assessed not merely as a legal

instrument but as a mechanism for protecting public environments from normalized tobacco exposure.

Indonesia's decentralized governance structure makes local governments decisive actors in tobacco-control implementation. National regulations may establish the broad mandate for smoke-free areas, but the actual protection of citizens depends on whether districts and cities adopt, operationalize, inspect, enforce, and evaluate smoke-free regulations. This makes the local level the critical site where national tobacco-control objectives either become effective or remain symbolic. For this reason, the Solok case should be located within the broader literature on smoke-free policy implementation in decentralized Indonesia, rather than within general public-policy theory alone.

Recent tobacco-control governance in Indonesia increasingly emphasizes the need to move beyond legal adoption toward measurable implementation. The Smoke-Free Area Dashboard developed by the Ministry of Health and WHO Indonesia reflects this shift by assessing city and district performance through regulation, inspection, enforcement, and compliance. These four components are highly relevant for evaluating Solok because the city already has a formal regulation, but the research findings show weaknesses in inspection routines, enforcement credibility, and compliance in designated smoke-free areas.

Evidence from other Indonesian cities shows that the main challenge of smoke-free policy lies not only in regulation but also in compliance and enforcement. Studies on local smoke-free zones have found that weak signage, limited enforcement, structural barriers, cultural acceptance of smoking, and economic interests can reduce policy effectiveness. These findings are consistent with the Solok case, where smoke-free areas are formally designated but remain weakly protected due to delayed socialization, limited routine coordination, and persistent smoking behavior in prohibited areas.

3. METHODS

3.1 Research approach

This study employs a qualitative evaluative approach to examine the implementation of Regional Regulation No. 1 of 2020 on Smoke-Free Areas in Solok City. A qualitative approach is appropriate because the study's core objective is not merely to measure the presence of smoke-free signs or count violations, but to understand how the policy is interpreted, implemented, contested, and experienced by different actors in a real governance setting. Policy implementation and policy evaluation often involve organizational routines, institutional interactions, public perceptions, and administrative constraints that cannot be fully captured through quantitative indicators alone. Therefore, a qualitative design enables the study to explore the policy process in depth and to interpret the gap between legal regulation and actual practice. The study's evaluative orientation is especially important. Rather than simply describing the existence of the smoke-free regulation, the study seeks to assess its effectiveness by determining whether the policy has produced the outcomes it was intended to achieve. This is consistent with the evaluative perspective described in the research, in which policy evaluation is understood as identifying policy consequences and assessing the success or failure of policy against its intended goals. In

substantive terms, the study takes the smoke-free regulation as a case of local public policy implementation. The case study approach is appropriate because it allows close examination of a bounded policy setting: one city, one regulation, one governance context, and a clearly defined policy field. Solok City is selected because it already has a formal smoke-free regulatory framework but still faces implementation challenges, making it a suitable site for evaluative analysis. The case is therefore not chosen because it is exceptional, but because it illustrates a policy condition of broader relevance: the presence of formal regulation without full institutionalization.

3.2 Research design

This study is designed as a qualitative assessment of implementation gaps in the smoke-free area policy in Solok City, rather than as a comprehensive measurement of overall policy performance or sustainable urban governance outcomes. The empirical material was collected through semi-structured interviews, field observations, and document analysis. Interviews were conducted with selected informants who were directly involved in or affected by the implementation of the policy, including local health officials, enforcement actors, representatives of institutions located within designated smoke-free areas, and community members. Field observations were carried out in selected smoke-free settings, including health facilities, educational institutions, government offices, public transportation spaces, and other regulated public places, to examine the presence of smoking practices, warning signs, enforcement activities, and general compliance with the regulation. Document analysis was also conducted by reviewing Regional Regulation No. 1 of 2020, Mayor Regulation No. 8 of 2021, official statistical data, implementation-related documents, and relevant tobacco-control policy sources.

Data were analyzed thematically through a process of data organization, coding, categorization, and interpretation. Interview transcripts, field notes, and policy documents were reviewed to identify recurring themes related to delayed socialization, weak interagency coordination, limited monitoring, enforcement constraints, public understanding, and continued smoking practices in designated smoke-free areas. Coding was conducted by grouping similar statements and observations into analytical categories that reflected the main dimensions of implementation gaps. Triangulation was applied by comparing information obtained from interviews, observations, and documents to strengthen the credibility of the findings. Analytical saturation was considered to have been reached when the collected data no longer produced substantially new themes relevant to the research focus. Ethical considerations were observed by ensuring informed consent, voluntary participation, confidentiality of informants, and the anonymization of interview data. This methodological design supports a focused analysis of implementation gaps and local enforcement challenges, while avoiding overstatement of broader claims about policy performance or sustainable urban governance.

3.3 Research site and unit of analysis

The research site is Solok City, West Sumatra, Indonesia, with a specific focus on the implementation of Regional Regulation No. 1 of 2020 on Smoke-Free Areas. The unit of

analysis is not individual smokers alone, nor a single institution, but the policy implementation system surrounding the regulation. This includes the legal framework, implementing agencies, enforcement practices, socialization mechanisms, public responses, and the condition of designated smoke-free areas as public-policy targets. This study, therefore, treats the policy itself as the central unit of analysis, while institutions and social actors are examined as parts of the policy process. Such a formulation is consistent with public policy analysis, where the object of inquiry is not only a formal document but also the network of actors, routines, and outcomes through which that document acquires meaning in practice.

3.4 Data sources

This study relies on primary and secondary data. Primary data consist of qualitative information obtained from actors directly involved in or affected by the implementation of the smoke-free regulation. These include policy implementers, health-sector officials, public-order enforcement personnel, and community members or users of public facilities. The research indicates that implementation involves actors such as the Health Office, Community Health Centers, and Municipal Public Order Agency, making them relevant institutional informants for the study. Secondary data consist of policy documents, regulations, implementation guidelines, local statistical data, and supporting national and international references. At the local level, these include Regional Regulation No. 1 of 2020, Mayor Regulation No. 8 of 2021, and relevant local statistical sources cited in the research. At the national and international levels, secondary data include the Indonesian GATS report, WHO tobacco-control materials, and SDG policy references relevant to smoke-free governance.

3.5 Data collection techniques

Data are collected through in-depth interviews, observation, and document review. In-depth interviews are used to capture the perspectives of implementing actors and affected stakeholders. Interviews are essential for identifying how the regulation is understood, how agencies coordinate, what constraints they face, how sanctions are applied, and how the public perceives the regulation. Because the main questions concern process, interpretation, and institutional practice, interviews provide the depth needed for evaluative analysis. Observation is used to examine the actual condition of designated smoke-free areas, including the presence or absence of smoking activity, signs, enforcement practices, and the spatial condition of policy targets such as schools, health facilities, offices, transportation areas, or other enclosed public spaces. Observation is important because policy effectiveness cannot be inferred solely from official statements; it must also be examined in the field. Document review is used to analyze the legal, administrative, and policy framework of smoke-free governance. This includes examining the regulation, implementation guidelines, official reports, and previous records relevant to smoke-free policy in Solok City. Document review also allows the study to compare formal provisions with empirical practice.

3.6 Informant selection

Informants are selected using purposive sampling, based on

their relevance to the policy process. Purposive sampling is appropriate because the study seeks information-rich participants with direct knowledge of the regulation and its implementation, rather than statistically representative respondents. Key informants include: officials from the local Health Office; officers from Community Health Centers involved in health communication; Municipal Public Order Agency or other enforcement actors; managers or personnel in designated smoke-free institutions; and community members or facility users who experience the policy directly. This selection reflects the cross-sectoral nature of smoke-free governance. It also ensures that the analysis captures both institutional and public perspectives, which is necessary for evaluating not only formal implementation but also target-group response.

3.7 Data analysis technique

The study uses interactive qualitative data analysis, consisting of data condensation, data display, and conclusion drawing/verification. This analytical flow is appropriate because the study seeks to synthesize multiple forms of evidence—interviews, observations, and documents—into a structured evaluative judgment. In practical terms, data analysis proceeds through several steps. First, the researcher organizes and reduces raw data by identifying statements and observations relevant to the main analytical categories: policy content, implementation context, implementation process, public response, and policy outcomes. Second, the data are displayed in thematic form, allowing patterns to be identified across different actors and sources. Third, the researcher interprets these patterns in light of the theoretical framework derived from Grindle and Thomas [43], as well as the sustainable development perspective. Finally, conclusions are drawn and verified through comparison across data sources. This means that the analysis is both deductive and inductive. It is deductive because it uses theoretical categories from policy analysis and policy evaluation. It is inductive because it remains open to field-based findings that may reveal local specificities, unexpected constraints, or particular forms of resistance and adaptation.

3.8 Validity and trustworthiness

To ensure the trustworthiness of the findings, the study applies triangulation across data sources and techniques. Information obtained from interviews is cross-checked with field observations and documentary evidence. For example, official claims regarding socialization or enforcement can be compared with observed field conditions and documentary records. This is important because policy research often faces discrepancies between formal claims and actual practice. The study also strengthens credibility through source triangulation, comparing perspectives across institutional actors and community informants. In addition, theory triangulation is applied by interpreting the data through multiple conceptual lenses, namely implementation theory, evaluation theory, and sustainable development. This approach improves analytical depth and reduces the risk of one-dimensional interpretation.

4. RESULTS AND DISCUSSION

The research findings indicate that smoke-free policies in

Solok have developed unevenly between formal regulations and practical implementation. Legally, the city has had smoke-free regulations since 2020, and implementing regulations from the mayor since 2021. However, institutionally, the policy has remained weak for several years. Field interviews indicate that regular coordination and evaluation have not been established as regular administrative agendas, while outreach activities only became more visible in 2024 and are still conducted only a few times per year. Field observations also found continued smoking practices in several designated smoke-free areas, including public service environments and spaces intended to protect vulnerable groups. These findings suggest that the primary problem in Solok is not the absence of regulations, but delayed and incomplete institutionalization. Therefore, this article reports the main findings from interviews, observations, and document analysis, rather than summarizing existing theses or previous reports. The study's contribution lies in explaining how local policies can exist legally but remain administratively weak, socially contested, and only partially internalized in the everyday governance of public spaces.

The empirical record examined in this study shows that the implementation of Regional Regulation No. 1 of 2020 on smoke-free areas in Solok City has progressed more strongly at the level of formal regulation than at operational effectiveness. This is the most important overall finding. Solok City is not a jurisdiction without a smoke-free policy. The city has already established a formal local legal framework through Solok City Local Regulation No. 1 of 2020, which regulates smoke-free areas in health facilities, educational facilities, children's play areas, places of worship, public transportation, workplaces, and enclosed public places. The Audit Board of Indonesia regulation database confirms the existence and legal status of the regulation. The research likewise shows that the policy is formally in place and recognized by local institutions. The central empirical problem is that the existence of the regulation has not yet produced a corresponding level of institutional routinization, public compliance, or evaluative learning.

This gap becomes more serious when viewed within the broader public health context. WHO's 2025 tobacco fact sheet states that tobacco kills more than 7 million people annually, including an estimated 1.6 million non-smokers who die because of exposure to second-hand smoke. WHO also states that there is no safe level of exposure to second-hand smoke and that tobacco use remains concentrated in low- and middle-income countries, where about 80% of the world's 1.3 billion tobacco users live. These figures matter because they establish the public-health significance of local smoke-free regulation. A city-level smoke-free regulation should be assessed against a stringent benchmark: whether it actually protects people from involuntary exposure to smoke in the places where they work, study, seek treatment, worship, travel, and socialize. The Solok case, therefore, cannot be treated as a narrow administrative issue. It concerns whether a local government can operationalize a globally recognized public-health imperative in everyday urban governance.

The national Indonesian context further reinforces the urgency of the problem. According to the official WHO–Ministry of Health release of the GATS Indonesia Report 2021, published in August 2024, 34.5% of Indonesian adults, equivalent to 70.2 million people, used tobacco. Tobacco use among adult men reached 65.5%, while among women it was 3.3%. The same official release found that second-hand smoke

exposure remained very high in public settings, including 74.2% in restaurants and 44.8% in workplaces. WHO Indonesia's 2026 official report on protecting communities from second-hand smoke expanded this picture by noting that exposure also remained substantial in government buildings (41.4%), public transportation (40.5%), and even health-care facilities (14.2%). WHO further stated that more than 90% of Indonesia's districts have adopted subnational smoke-free regulations, yet enforcement remains weak. These official figures are highly relevant to the Solok case because they show that Solok's implementation problems do not stand outside the national pattern; rather, they mirror a broader Indonesian condition in which smoke-free laws are increasingly present, but their field-level enforcement remains uneven.

The research itself clearly identifies this local implementation gap. Its abstract states that implementation of the Solok smoke-free areas regulation has not been optimal, that the policy only became more operational in 2024, and that socialization was carried out through local government agencies under the Health Office. It further states that the policy remains weak across several dimensions: the policy had not yet solved the problem it was intended to solve; implementation only truly moved in 2024; the designated areas were already correct, but the rule was still ignored; and from the process dimension, many citizens did not agree with or internalize the smoke-free policy. On the evaluation side, the research adds that smoke-free areas in Solok still generate a long debate, ranging from claims about smokers' rights in public places to concerns over the economic effects of anti-smoking measures, and that both the public and local government institutions still suffer from limited knowledge and weak dissemination regarding smoke-free areas and restricted smoking zones.

The body of the research provides more concrete field-based evidence for these claims. The background chapter reports that the regulation had already been in force since 2020 and that no-smoking banners and signs had been installed in smoke-free areas, yet observational evidence still found smoking in protected spaces. The research explicitly mentions smoking near a kindergarten by parents waiting for their children, smoking at health facilities despite the presence of warning banners, smoking in public transport, and smoking in government offices. It also reports that activities connected to cigarette sales or promotion were still found in smoke-free spaces, even though the regulation prohibits smoking, selling, advertising, and promoting tobacco products in smoke-free areas. These are important empirical findings because they show that the city's problem is not simply weak normative commitment. The city has formally identified the protected spaces, but they have not yet been transformed into reliably smoke-free behavioral environments.

A particularly important finding from the research concerns the weakness of routine coordination and evaluation. The research records an interview with a health-sector informant stating that there had been no routine program formally established as an agenda for coordination and evaluation of smoke-free policy in Solok City, that no periodic supervision had been conducted, and that the Health Office could not run dedicated public outreach on the health dangers of smoking except when it could negotiate a few minutes during broader community activities. The same informant noted that there was insufficient operational support for conducting specialized outreach on smoke-free policy. This is a key empirical result because it shows that the policy's weakness lies not only in

public behavior, but also in the incomplete organization of the implementation system itself. In other words, Solok’s smoke-free governance has been under-supported administratively.

Another significant local finding is the timing of implementation activity. The research reports that although the regulation was enacted in 2020, meaningful socialization began only in 2024, and even then, the activity was conducted around three to four times per year. This indicates a major implementation lag between policy adoption and institutional activation. That lag is not merely a chronological curiosity; it suggests that the city’s smoke-free regulation entered the legal system more quickly than it did the administrative routine of local government. Local news outlets independently corroborate the finding. An ANTARA report published on 4 December 2024 stated that the Solok Health Office was actively campaigning for smoke-free areas through a coordination meeting of the smoke-free areas guidance and enforcement team, which involved 25 participants, including subdistrict heads, village heads, and related agencies. That official news report is valuable because it supports the research narrative that active institutional movement around smoke-free areas became more visible only in 2024.

The local social context described in the research also helps explain why implementation has been difficult. The research cites Central Bureau of Statistics data on the weekly number of cigarettes smoked among residents aged five years and above. In the table reproduced in the research, the largest proportion of smokers falls into the 60+ cigarettes per week category, at 73.72%. In comparison, the reported average is

96.25 cigarettes per week. The official Central Bureau of Statistics portal also confirms that local welfare indicators related to smoking are published as part of Solok’s official statistical reporting. Although these figures should be interpreted carefully because they derive from a specific statistical categorization, they still indicate a high-intensity smoking environment. This is an important empirical point: smoke-free areas implementation is not occurring in a city where smoking is marginal. It is taking place in a setting where smoking remains common enough that regulation must confront entrenched behavioral routines, not just incidental violations.

The research also provides evidence of ambivalent public reception. It records an interview with community members who recognized that the regulation had not been fully implemented and expressed hope that it would be enforced seriously, especially in school and health areas, because children and older adults need spaces free from tobacco smoke. At the same time, the research concludes that many citizens did not support the smoke-free policy and that its implementation continues to spark long-standing debates over smokers’ rights and the economic implications of anti-smoking policies. This suggests a mixed pattern: normative support for smoke-free protection exists, especially for high-risk spaces, but it coexists with incomplete public internalization and continued tolerance of smoking in practice. The city is therefore dealing with an environment in which a smoke-free policy is visible and partially endorsed, but not yet deeply normalized.

Table 3. Synthesis of research findings

Empirical Domain	Evidence from Research and Official Sources	What the Evidence Shows
Legal and regulatory basis	Solok has Local Regulation No. 1/2020 on Smoke-Free Areas; the Audit Board has confirmed the regulation; local smoke-free areas cover health facilities, schools, places of worship, children’s areas, public transport, workplaces, and enclosed public places.	Solok has a formal and substantively relevant legal framework.
Tobacco control urgency	WHO reports over 7 million annual deaths from tobacco and 1.6 million deaths among non-smokers from second-hand smoke; no safe level of second-hand smoke exposure exists.	Local smoke-free areas enforcement should be treated as a serious public-health obligation. Indonesia remains a high-burden tobacco setting, increasing the importance of local implementation.
National tobacco burden	GATS 2021 found 34.5% of adults, or 70.2 million people, used tobacco; exposure remained high in restaurants and workplaces.	There was a major lag between legal adoption and visible institutional activation.
Local implementation timing	The research states that implementation only became more visible in 2024; they reported a smoke-free areas coordination meeting in December 2024.	Institutional routines are weak and underdeveloped.
Coordination and evaluation	The research reports no routine coordination/evaluation agenda, no periodic supervision, and limited operational support for outreach.	Protected spaces have not yet been behaviorally transformed into stable smoke-free environments.
Compliance in smoke-free areas	The research documents smoking in schools, health facilities, public transport, and government offices despite warning signs.	Public internalization is incomplete and socially contested.
Public response	The research finds mixed public reactions: strong hopes for cleaner, healthier, and more education-focused spaces, but continued non-compliance and debate over smokers’ rights and economic effects.	Solok reflects a broader national pattern of regulatory diffusion, with unequal enforcement strength.
National implementation comparison	WHO Indonesia reported in 2026 that over 90% of districts had adopted smoke-free regulations, but enforcement remained weak; barriers included weak task forces, limited HR, weak funding, and poor monitoring.	

This local pattern should also be read alongside evolving national tobacco control regulations. The Indonesian Ministry of Health and the official legal portals confirm the enactment of Government Regulation No. 28 of 2024, which implements the Health Law and strengthens the framework for controlling addictive substances, including tobacco products and

electronic cigarettes. The Ministry of Health states that under Article 430 of PP 28/2024, the objectives of controlling tobacco and electronic cigarettes include reducing morbidity and mortality from smoking, increasing public awareness of the dangers of smoking and the benefits of living without smoking, and protecting people from the dangers of

consuming or being exposed to addictive substances. The same official Ministry source states that the regulation prohibits the sale of tobacco products and e-cigarettes within 200 meters of educational institutions and children’s play areas, bans single-stick retail sales except for cigars and e-cigarettes, and restricts product placement near entrances, exits, and high-traffic areas. These new national provisions matter for the Solok findings because they indicate that the broader policy environment is moving toward stronger tobacco control, which raises expectations for local governments to strengthen implementation rather than merely maintain existing rules. The findings can be synthesized in Table 3.

The table makes clear that the Solok case is not one of legal emptiness, but of implementation thinness. The city has the law, the target categories, and at least some activation of implementing actors. Yet the supporting system remains weak

in continuity, monitoring, and social normalization. This is the defining empirical picture that emerges from the findings. Table 4 consolidates the main data points that anchor the results section.

Taken together, the results establish four broad empirical conclusions. First, Solok’s smoke-free policy has a valid legal and normative basis. Second, implementation capacity and routine coordination are weak relative to the regulation’s ambition. Third, compliance within designated smoke-free areas remains inconsistent. Fourth, the city’s experience reflects a wider national pattern in which smoke-free regulations are widespread, but enforcement and evaluation remain underdeveloped. These findings set the stage for the discussion section, which interprets the evidence through policy implementation theory, policy evaluation, and sustainable development.

Table 4. Main points of the research data

Indicator	Official Figure	Source Relevance to the Solok Case
Global annual deaths from tobacco	More than 7 million	Establishes the problem's severity internationally.
Deaths from second-hand smoke	1.6 million non-smokers annually	Justifies local smoke-free enforcement as protection of non-smokers.
Indonesian adult tobacco use	34.5% or 70.2 million adults	Shows tobacco use remains very high nationally.
Exposure to second-hand smoke in restaurants	74.2%	Shows how public places remain major exposure sites.
Exposure in workplaces	44.8%	Reinforces the importance of enforcing workplace smoke-free areas.
Exposure in government buildings	41.4%	Relevant to the research finding that public offices remain vulnerable.
Exposure in public transportation	40.5%	Relevant to the local smoke-free areas regulation of transport.
Exposure in health-care facilities	14.2%	Shows why health facility smoke-free enforcement remains essential.
Solok smoke-free areas implementation activation	More visible in 2024	Indicates local implementation lag.
Solok socialization frequency	3–4 times per year starting in 2024	Shows limited continuity of public communication.
Solok dominant smoking-intensity category	≥ 60 cigarettes/week = 73.72%	Suggests a high-smoking local environment.

4.1 Discussion

The findings presented above show that Solok City’s smoke-free regulation cannot be understood adequately through a simple dichotomy of implemented versus not implemented. The empirical picture is more complex. The regulation exists, the protected areas are clearly defined, local authorities have taken some visible steps—especially since 2024—and the public-health rationale is beyond dispute. Yet smoking remains present in protected spaces, institutional coordination remains weak, and routine evaluation has not yet become an administrative habit. The most analytically persuasive interpretation is therefore that Solok represents a case of incomplete institutionalization. This concept is useful because it captures a condition in which policy is legally established and partially activated, but not yet socially embedded or administratively consolidated [75, 89, 90].

The first criterion, policy appropriateness, appears relatively strong in Solok. The city has clearly chosen the right policy targets. Schools, healthcare facilities, children's play areas, workplaces, public transportation, and enclosed public spaces are all places where smoke-free protection is most needed. Official WHO guidance stating that there is no safe level of exposure to second-hand smoke strongly supports this.

Similarly, the more recent national framework under Government Regulation 28/2024 strengthens the legitimacy of local regulations by emphasizing protection from the harms of smoking and passive exposure. Thus, Solok's choice of regulations is not misplaced. The regulations address a real and well-defined public problem. However, the findings also indicate that policy appropriateness does not automatically translate into policy effectiveness. In this research, the regulations are depicted as failing to address the problems they are intended to address. This is a crucial distinction: a policy can be normatively correct but still perform poorly. In Solok, the law identifies the appropriate spaces and hazards, yet protected spaces still experience violations. This suggests that the policy's substantive design is stronger than its practical problem-solving capacity. In terms of policy analysis, Solok has achieved a relatively high level of formal coherence but a lower level of operational effectiveness. Therefore, its main weakness lies not in the choice of interventions, but in the ability to translate formal regulations into sustainable behavioral change [91-93].

The second dimension, the suitability of implementers, reveals a more significant problem. Actors responsible for implementation do exist. This research identifies the Health Office, Community Health Centers, Public Order Agency, and

other local institutions as relevant implementers. At the same time, the news report on the 2024 Smoke-Free Zone coordination meeting confirms that local governments have attempted to develop an inter-agency response. However, the research also explains that this inter-agency function only became apparent in 2024, four years after the regulation was adopted, and regular coordination and evaluation have yet to be established. This suggests that the problem with policy implementation is not a lack of actors but rather a failure to integrate them. These institutions exist, but they do not yet operate as a highly structured implementation network [68, 94, 95].

The framework demonstrates that policy outcomes depend not only on the policy's content but also on the political, institutional, and resource context in which it is implemented [43]. In Solok, the content is relatively strong: the regulation clearly identifies the problem and defines the protected areas. However, the implementation context is weak. The research points to limited operational support for outreach, the absence of a regular evaluation agenda, and the need for stronger collaboration between health institutions and law enforcement actors. The WHO Indonesia 2026 report underscores the significance of these contextual barriers, listing a weak task force structure, insufficient human resources, limited funding, and poor monitoring as key obstacles to the enforcement of smoke-free laws across Indonesia.

The third dimension, target appropriateness, produces another important insight. The research repeatedly affirms that the target locations of Solok's smoke-free areas policy are correct. Yet it also shows that smoking continues within or around those very spaces. This suggests that the city's problem is not incorrect targeting, but incomplete target transformation. In other words, the city has designated the appropriate spaces, but they have not yet been converted into consistently smoke-free environments. This is more than a semantic point. In smoke-free governance, the real target is not simply the physical space, but the behavioral order of that space. A school becomes a successful smoke-free area not when the regulation names it as such, but when smoking becomes visibly unacceptable there, and institutions can enforce that norm reliably. The same applies to hospitals, offices, and transport. Solok's findings show that the regulation has accomplished the first step designation, but not the second step behavioral stabilization.

Local smoking intensity data from the Central Bureau of Statistics, as cited in the research, helps explain why this targeted transformation is difficult. A neighborhood where a large proportion of smokers fall into the category of 60 or more cigarettes per week is one where smoking is not an occasional or marginal occurrence. Smoking is more habitual, socially visible, and potentially more difficult to eliminate from daily routines. This does not invalidate the regulation; rather, it demonstrates that implementation requires more than isolated signs or warnings. In local neighborhoods with high smoking rates, smoke-free policies must be accompanied by repeated communication, visible monitoring, and clearer sanctions if the target space is to be truly protected. Therefore, the policy operates within difficult social conditions, which is precisely why the depth of implementation is so crucial [96-98].

The fourth dimension, environmental appropriateness, may be the most revealing. The findings indicate that Solok's smoke-free regulation operates in an environment marked by incomplete public acceptance, continued social tolerance of smoking, and weakly routinized bureaucratic commitment.

The research explicitly notes that the policy continues to provoke debate over smokers' rights and perceived economic consequences, while public understanding of the regulation and its health rationale remains weak. Some public officials themselves reportedly smoke in work settings, which is especially consequential because state actors are expected to model compliance. In environmental terms, the smoke-free areas policy is therefore trying to enforce a strong public norm in a setting where that norm has not yet been fully socialized or consistently embodied by institutions. That weakens policy legitimacy and lowers the social cost of violation [99, 100].

This finding is especially significant for policy analysis because it highlights the distinction between legal and normative authority. A regulation has legal authority once enacted. It acquires normative authority only when it becomes widely seen as legitimate, expected, and practically binding [101, 102]. The Solok appears to have achieved the first more than the second. Citizens know that smoke-free rules exist, but many do not behave as though those rules are unavoidable. Some institutions do not consistently project the rule as a serious and permanent norm. That gap weakens implementation because people respond not only to formal law, but also to signals about how strongly institutions intend to uphold it. Where the rule appears negotiable, intermittent, or weakly enforced, compliance remains fragile.

The fifth dimension further sharpens this interpretation. The research shows that socialization, supervision, and evaluation were not yet functioning as continuous routines. Outreach became more visible only in 2024 and remained infrequent. Health officials reported that they often had to rely on incidental opportunities during broader community activities to discuss the harms of smoking. This means the policy's process side is weakly institutionalized. Citizens are not receiving repeated, predictable signals about the regulation, and implementers are not operating within a stable rhythm of coordination, field monitoring, and evaluation. In process terms, the city remains closer to episodic enforcement than to systematic implementation [103, 104].

This process weakness matters because public policy becomes real through repetition and predictability. If citizens repeatedly encounter clear communication, routine inspections, and credible follow-up, they begin to perceive the policy as stable and binding [105]. If, on the other hand, communication is sporadic and enforcement depends on the presence of individual officers, the regulation remains fragile as a social norm [102]. The research's observation that people may comply when officers are present but revert after they leave is especially revealing. It suggests that the current implementation pattern produces compliance as a temporary reaction to supervision rather than as an internalized norm. That is a hallmark of shallow institutionalization.

The evaluative perspective helps distinguish more clearly between the policy's consequences and the judgment of its success or failure [106]. On the consequence side, Solok's smoke-free areas regulation has already produced something important: it has formally established the principle that shared spaces in the city should be protected from tobacco smoke. This is a non-trivial consequence. Local regulation defines expectations, responsibilities, and public values. By creating smoke-free categories, Solok City has stated that clean air in schools, hospitals, government offices, places of worship, and public transport is a legitimate public interest. The research strongly supports this, reporting community demand for enforcement of the rule, especially in schools and health

settings, to protect children and older adults.

Yet the consequences also remain incomplete. The intended practical result of the policy is not merely formal recognition that smoke-free areas should exist. The intended result is the actual reduction of smoking behavior and second-hand smoke exposure in those areas. On that point, the evidence remains unsatisfactory. Smoking continues in protected spaces, public awareness and internalization are still weak, and institutional routines remain inconsistent. Thus, the policy has generated a formal protective consequence, but not yet a consistently material protective outcome. This distinction matters because it clarifies why the Solok case should not be judged as a total failure. The policy does have meaning and value. But it also cannot yet be judged a clear success. Its effects are real but incomplete.

That is why the most accurate overall evaluative judgment is that Solok's smoke-free policy is partially successful in formalization but weak in consolidation. This middle position is more analytically useful than a binary success/failure label. It captures the real character of the case. The city has adopted the correct normative framework and has begun moving toward more visible implementation, especially since 2024. At the same time, the city has not yet built the full governance ecology needed for the policy to function as a stable everyday reality. There is a law, but not yet a strong implementation regime. There is socialization, but not yet a deeply internalized norm. There is inter-agency movement, but not yet a routine coordination architecture. In short, there is policy presence without full policy consolidation.

This interpretation also aligns with the understanding of policy evaluation as producing valid information on policy performance and contributing to revising or strengthening the policy when necessary [107]. These findings do not imply that Solok should abandon its smoke-free area policy. Rather, the policy's objectives remain well-founded, supported by official health evidence and national law. These findings imply that the city should treat implementation as an unfinished institutional project. Evaluation in this sense does not lead to policy rejection; rather, it aims to diagnose where the implementation chain is weakest. In Solok, the weak links are coordination, routinization, enforcement credibility, and public internalization.

The findings of this study should be interpreted cautiously as evidence of implementation gaps rather than as definitive proof of full or partial institutionalization. This study does not claim to measure institutionalization through longitudinal data, comparative city-level benchmarks, or standardized performance indicators. Instead, it identifies practical weaknesses in the local implementation process based on interviews, field observations, and document analysis. This more modest interpretation is important because the available evidence supports a focused assessment of how the smoke-free area policy operates in practice, but it does not yet allow broader causal claims about overall governance performance.

Similarly, the relationship between Solok's smoke-free area policy and sustainable development is framed as a contextual implication rather than as a direct empirical outcome. The link to SDG 3 is relatively clear because smoke-free policy directly concerns public health protection and the reduction of exposure to second-hand smoke. However, the connection to SDG 11.6, SDG 11.7, and broader sustainable urban governance should be treated more carefully. This study does not empirically measure urban air quality, inclusive public-space access, or citywide sustainability outcomes. Rather, it

suggests that weak implementation of smoke-free areas may limit the ability of local government to create healthier and safer public environments, particularly in schools, health facilities, government offices, public transportation spaces, and other shared settings. Therefore, sustainable urban governance is discussed only as a broader policy implication of smoke-free implementation gaps, not as a directly measured outcome of this study.

A sustainable development perspective further expands this diagnosis. Smoke-free regulations are directly relevant to SDG 3 because they protect communities from preventable health risks associated with tobacco smoke and support healthier lives and well-being. They are also relevant to SDG 11 because they impact the quality, safety, and inclusiveness of shared urban spaces. Smoke-free schools protect children's learning environments. Smoke-free healthcare facilities strengthen the healing function of these institutions. Smoke-free offices or government buildings contribute to a healthier public service environment. A smoke-free transportation system improves the everyday urban mobility experience. Thus, weak implementation in Solok not only means incomplete compliance with health regulations but also incomplete progress toward healthier, more inclusive urban governance.

This sustainable development lens is particularly important because it shifts the meaning of smoke-free areas from a narrow anti-smoking regulation to a broader question of public-space justice. Smoke-free policy is not aimed only at smokers. It is fundamentally a policy for protecting non-smokers and vulnerable groups from involuntary exposure. Children, patients, older people, public-service users, and non-smoking workers bear a disproportionate burden when smoke-free rules are weakly enforced. WHO's evidence that there is no safe level of second-hand smoke exposure makes this normative point especially strong. In Solok, the research's emphasis on the need to protect school and health environments suggests that at least part of the community already understands smoke-free policy in those distributive terms. Weak implementation, therefore, has ethical significance: it leaves the costs of policy weakness to be borne by those least able to avoid exposure.

The role of monitoring infrastructure in this process should also be emphasized. WHO Indonesia's 2023 launch of the smoke-free area dashboard is highly relevant here. The official WHO Indonesia report explains that the dashboard was designed to monitor and visualize the progress of smoke-free policy implementation at city and district levels, using four assessment components: regulation, inspection, enforcement, and compliance. The existence of such a tool is analytically important because it confirms that smoke-free implementation cannot be treated as an invisible administrative process. It can and should be monitored systematically. For Solok, this strengthens the argument that routine evaluation and measurable inspection are not optional extras. They are essential components of effective policy management. Where implementation is weak, monitoring tools provide a way to move from impressionistic judgments to more structured learning and accountability.

A final point of discussion concerns the relationship between legal diffusion and implementation capacity in decentralized governance. Indonesia's smoke-free policy landscape, as shown by the WHO, demonstrates the rapid spread of local smoke-free rules but not an equivalent increase in enforcement effectiveness. Solok fits this pattern closely.

The case, therefore, illustrates a broader challenge of decentralization: local governments may adopt nationally encouraged policies, but their capacity to implement those policies effectively depends on local resources, leadership, coordination mechanisms, and bureaucratic discipline. The implication is that local smoke-free regulation should not be assessed only by whether it has been enacted. It should be assessed by whether the local state can operationalize it as a living governance routine. Solok has made the first move, but not yet the second fully.

Bringing all of this together, the most persuasive analytical conclusion is that Solok's smoke-free policy is characterized by asymmetry between strong legal-normative content and weak implementation context. The city has the right regulations, the right protected spaces, and a legitimate public health objective. But it still lacks the depth of coordination, monitoring, enforcement, and social internalization needed to make the policy function consistently across everyday urban settings. That is why the case should be understood not as a failure of regulation design, but as a failure of implementation consolidation. Solok's central challenge is therefore not writing better smoke-free rules; it is building a stronger and more routinized local governance system around the rules it already has. In that sense, the findings and discussion together point to a practical and theoretical lesson. In practice, smoke-free governance in Solok will improve only when inter-agency coordination becomes routine, outreach becomes continuous, sanctions become more credible, institutions model compliance, and evaluation becomes systematic. Theoretically, the case confirms that policy adoption is only the beginning of policy effectiveness. Local public health regulation succeeds when law, institutions, routines, and public norms begin to reinforce one another. In Solok, the reinforcement process has begun but is not yet complete. That is the central meaning of incomplete institutionalization.

5. CONCLUSIONS

This study concludes that the implementation of Regional Regulation No. 1 of 2020 on Smoke-Free Areas in Solok City remains partially institutionalized. The city already has a valid legal framework and appropriate target areas, but implementation has not yet been fully effective. The main weaknesses lie in delayed coordination, limited socialization, weak routine evaluation, and the persistence of smoking behavior in designated smoke-free spaces. Thus, the core problem is not a lack of policy, but the gap between formal regulation and practical enforcement. From a policy analysis perspective, the regulation is substantively appropriate because it addresses a real public health problem and protects key spaces, such as schools, health facilities, workplaces, and public transport. However, from a policy evaluation perspective, the outcomes remain incomplete because smoking is still found in protected areas, and implementation routines are not yet stable. This means that the policy has succeeded in formalizing a smoke-free norm but has not yet fully translated it into consistent public compliance. From a sustainable development perspective, weak implementation of smoke-free areas also limits Solok City's contribution to SDG 3 on health and well-being and SDG 11 on safe and inclusive urban spaces.

Smoke-free governance is therefore not only a health issue, but also a matter of improving the quality of public space and

urban governance. Based on these findings, several recommendations are proposed. Solok City should establish a routine coordination and evaluation mechanism involving all relevant agencies, strengthen continuous public socialization, improve enforcement credibility through clearer, more consistent sanctions, and ensure that government institutions serve as role models of compliance. In addition, smoke-free governance should be integrated into broader local health and sustainable development planning. Overall, the city does not need a new policy direction; it needs stronger implementation, monitoring, and policy learning to ensure the existing regulations function more effectively.

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REFERENCES

- [1] Cohen, J.E., Myers, M.L., Ahluwalia, I.B. (2023). WHO framework convention on tobacco control learnings. *Health Security*, 21(5): 428-429. <https://doi.org/10.1089/hs.2023.0094>
- [2] Goel, S., Walia, D., Rajkhowa, P., Goel, C. (2025). WHO framework convention on tobacco control articles 9 and 10 implementation for sustainable tobacco control—A scoping review protocol. *Systematic Reviews*, 14(1): 73. <https://doi.org/10.1186/s13643-025-02822-2>
- [3] Cnockaert, S., Vandevijvere, S., D'Hooghe, S., Croes, S., Nayani, S. (2025). Evaluation of the Belgian government's measures to counteract tobacco industry interference. *European Journal of Public Health*, 35(Supplement_4): ckaf161.014. <https://doi.org/10.1093/eurpub/ckaf161.014>
- [4] Izquierdo-Condoy, J.S., Ortiz-Prado, E. (2024). Urgent action needed: Addressing the regulatory gap in the e-cigarette trade and usage. *Journal of Public Health Policy*, 45: 582-587. <https://doi.org/10.1057/s41271-024-00505-1>
- [5] Patay, D., Schram, A., Friel, S. (2023). The challenges in protecting public health interests in multisectoral governance in the context of small island developing states: The case of tobacco control in Fiji and Vanuatu. *Globalization and Health*, 19: 31. <https://doi.org/10.1186/s12992-023-00931-y>
- [6] Lunt, N. (2023). The global challenge of cancer governance. *World Medical & Health Policy*, 15(4): 672-681. <https://doi.org/10.1002/wmh3.577>
- [7] Kniess, J. (2024). Shaping people's preferences: Liberal neutrality means paternalism and tobacco control. *Economics and Philosophy*, 41(2): 303-321. <https://doi.org/10.1017/s0266267124000233>
- [8] Leung, J., Lim, C., Sun, T., et al. (2024). Preventable deaths attributable to second-hand smoke in Southeast Asia—Analysis of the Global Burden of Disease Study 2019. *International Journal of Public Health*, 69: 1606446. <https://doi.org/10.3389/ijph.2024.1606446>
- [9] Wang, M., Maimaitiming, M., Zhao, Y., Jin, Y., Zheng, Z.J. (2024). Global trends in deaths and disability-adjusted life years of diabetes attributable to second-hand smoke and the association with smoke-free policies.

- Public Health, 228: 18-27. <https://doi.org/10.1016/j.puhe.2023.12.025>
- [10] Lorant, V., Laloux, P., M  lard, N., van Kalmthout, D., Gabriels, S. (2025). Political hurdles to implementing tobacco control policies: The case of the smoke-free generation policy in Belgium. *Tobacco Control*. <https://doi.org/10.1136/tc-2025-059412>
 - [11] Goel, S., Bhatt, G. (2025). Editorial: World No Tobacco Day 2023. *Frontiers in Public Health*, 13: 1676372. <https://doi.org/10.3389/fpubh.2025.1676372>
 - [12] Choi, S.M., Bea, S. (2025). Association between secondhand smoke exposure and incidence of metabolic syndrome: Analyses of Korean Genome and Epidemiology Study (KoGES) data. *Epidemiology and Health*, 47: e2025041. <https://doi.org/10.4178/epih.e2025041>
 - [13] Lan, R., Li, X., Chen, X., et al. (2023). Secondhand smoke, genetic susceptibility, and incident chronic kidney disease in never smokers: A prospective study of a selected population from the UK Biobank. *Tobacco Induced Diseases*, 21: 58. <https://doi.org/10.18332/tid/162607>
 - [14] Azagba, S., Ebling, T., Korkmaz, A., Jensen, J.K., Qeadan, F., Hall, M.A. (2024). An association between state laws limiting local control and community smoke-free indoor air in the United States. *Journal of Primary Care & Community Health*, 15: 21501319241280905. <https://doi.org/10.1177/21501319241280905>
 - [15] Matt, G.E., Greiner, L., Record, R.A., et al. (2023). Policy-relevant differences between secondhand and thirdhand smoke: Strengthening protections from involuntary exposure to tobacco smoke pollutants. *Tobacco Control*, 33(6): 798-806. <https://doi.org/10.1136/tc-2023-057971>
 - [16] Feng, W., Qin, B., Jin, X., Li, S. (2024). Identifying factors influencing local governments' adoption of comprehensive smoke-free policies: An event history analysis based on panel data from 36 key cities in China (2013–2021). *Frontiers in Public Health*, 12: 1397803. <https://doi.org/10.3389/fpubh.2024.1397803>
 - [17] Jooren, S., Garritsen, H.H., Troelstra, S., Willemsen, M.C., Jansen, M., Bommel  , J. (2024). Understanding compliance with smoke-free environments: A realist review. *European Journal of Public Health*, 34(Supplement_3): ckaf144.925. <https://doi.org/10.1093/eurpub/ckaf144.925>
 - [18] Kramer, E., Masduki, M., Rosemary, R., Maryani, E., Nurhajati, L. (2023). How do national laws filter down to the local? Tobacco control regulations and smoke-free areas in a decentralized Indonesia. *Journal of Current Southeast Asian Affairs*, 42(2): 216-241. <https://doi.org/10.1177/18681034231185159>
 - [19] Beutel, M.W., Harmon, T.C., Novotny, T.E., et al. (2021). A review of environmental pollution from the use and disposal of cigarettes and electronic cigarettes: Contaminants, sources, and impacts. *Sustainability*, 13(23): 12994. <https://doi.org/10.3390/su132312994>
 - [20] Boogaard, H., Andersen, Z.J., Brunekreef, B., et al. (2023). Clean air in Europe for all. *Environmental Epidemiology*, 7(2): e245. <https://doi.org/10.1097/EE9.0000000000000245>
 - [21] Rad  , M.K., M  hlenberg, F.J.M., Westenberg, L.E.H., et al. (2021). Effect of smoke-free policies in outdoor areas and private places on children's tobacco smoke exposure and respiratory health: A systematic review and meta-analysis. *The Lancet Public Health*, 6(8): e566-e578. [https://doi.org/10.1016/S2468-2667\(21\)00097-9](https://doi.org/10.1016/S2468-2667(21)00097-9)
 - [22] Djutaharta, T., Surya, H.V. (2003). Research on tobacco in Indonesia: An annotated bibliography and review of research on tobacco use, health effects, economics, and control efforts. Tobacco Free Initiative World Health Organization. <https://escholarship.org/content/qt6fk7b01x/qt6fk7b01x.pdf>
 - [23] Hurt, R.D., Ebbert, J.O., Achadi, A., Croghan, I.T. (2012). Roadmap to a tobacco epidemic: Transnational tobacco companies invade Indonesia. *Tobacco Control*, 21(3): 306-312. <https://doi.org/10.1136/tc.2010.036814>
 - [24] Welker, M. (2021). Indonesia's cigarette culture wars: Contesting tobacco regulations in the postcolony. *Comparative Studies in Society and History*, 63(4): 911-947. <https://doi.org/10.1017/S0010417521000293>
 - [25] Semple, S., Dobson, R., O'Donnell, R., et al. (2022). Smoke-free spaces: A decade of progress, a need for more? *Tobacco Control*, 31(2): 250-256. <https://doi.org/10.1136/tobaccocontrol-2021-056556>
 - [26] Cai, C., Xu, Y., Zhou, N. (2024). From policy adoption to practice: Comparative analysis of innovation institutionalization paths. *Journal of Comparative Policy Analysis: Research and Practice*, 26(2): 99-129. <https://doi.org/10.1080/13876988.2024.2325500>
 - [27] Randma-Liiv, T. (2022). Adoption is not enough: Institutionalization of e-participation initiatives. *Public Policy and Administration*, 38(3): 329-351. <https://doi.org/10.1177/09520767211069199>
 - [28] Benneer, L.S., Wiener, J.B. (2021). Institutional roles and goals for retrospective regulatory analysis. *Journal of Benefit-Cost Analysis*, 12(3): 466-493. <https://doi.org/10.1017/BCA.2021.10>
 - [29] Fel  cio, M., Sottomayor, A., Brito, D., et al. (2025). Portugal's national health plan for sustainable health: The implementation challenge. *European Journal of Public Health*, 35(Supplement_4): ckaf161.907. <https://doi.org/10.1093/eurpub/ckaf161.907>
 - [30] Luyckx, V.A., Lou-Meda, R. (2025). Towards implementation of equitable and effective non-communicable disease policies; Comment on "Barriers and opportunities for WHO 'Best Buys' non-communicable disease policy adoption and implementation from a political economy perspective: A complexity systematic review." *International Journal of Health Policy and Management*, 14(1): 1-4. <https://doi.org/10.34172/ijhpm.9064>
 - [31] Tancred, T., Caffrey, M.M., Falkenbach, M., Raven, J. (2024). The pathway to health in all policies through intersectoral collaboration on the health workforce: A scoping review. *Health Policy and Planning*, 39(Supplement_2): i54-i74. <https://doi.org/10.1093/heapol/czae046>
 - [32] Hadorn, S., Sager, F. (2024). Come together: Does network management make a difference for collaborative implementation performance in the context of sudden policy growth? *Regulation & Governance*, 19(3): 690-705. <https://doi.org/10.1111/regg.12595>
 - [33] Ralston, R., Aguinaga Bialous, S., Collin, J. (2022). Firm foundation or neglected cornerstone? The paradox of Article 5.3 implementation and the challenge of strengthening tobacco control governance. *Tobacco*

- Control, 31: s1-s4. <https://doi.org/10.1136/tobaccocontrol-2022-057344>
- [34] Pu, C., Zou, Y. (2024). Understanding new advances in network governance: A systematic literature review. *Public Performance & Management Review*, 48(1): 129-164. <https://doi.org/10.1080/15309576.2024.2434237>
- [35] Zatoński, M., Bertscher, A., Gallagher, A., Matthes, B. (2025). Unpacking complexities surrounding tobacco control policy formulation and tobacco industry interference in South Africa: A qualitative study. *Health Policy and Planning*, 40(5): 531-547. <https://doi.org/10.1093/heapol/czaf013>
- [36] Lee, Y., Kim, S., Kim, M.K., Kawachi, I., Oh, J. (2024). Association between Tobacco Industry Interference Index (TIII) and MPOWER measures and adult daily smoking prevalence rate in 30 countries. *Globalization and Health*, 20: 6. <https://doi.org/10.1186/s12992-023-01003-x>
- [37] Daba, C., Atamo, A., Gasheya, K.A., Geto, A.K., Gebrehiwot, M. (2024). Non-compliance with smoke-free law in public places: A systematic review and meta-analysis of global studies. *Frontiers in Public Health*, 12:1354980. <https://doi.org/10.3389/fpubh.2024.1354980>
- [38] Whitsel, L.P., Honeycutt, S., Radcliffe, R., Johnson, J., Chase, P.J., Noyes, P. (2024). Policy implementation and outcome evaluation: Establishing a framework and expanding capacity for advocacy organizations to assess the impact of their work in public policy. *Health Research Policy and Systems*, 22: 27. <https://doi.org/10.1186/s12961-024-01110-0>
- [39] Capano, G., Howlett, M. (2024). Calibration and specification in policy practice: Micro-dimensions of policy design. *Policy Design and Practice*, 7(2): 115-128. <https://doi.org/10.1080/25741292.2024.2353929>
- [40] Dowding, K., Leslie, P.L., Taflaga, M. (2025). Policy success and failure in Australia. *Australian Journal of Public Administration*, 85(2): 215-225. <https://doi.org/10.1111/1467-8500.12690>
- [41] Tchinda, A.F., Talbot, D. (2025). The quest for coherence in climate actions: The case for Québec's climate strategy. *Environmental Policy and Governance*, 35: 682-695. <https://doi.org/10.1002/eet.2164>
- [42] Xu, F. (2025). Policy as state self-presentation action: What information the state is communicating through policies. *Political Studies*, 74(2). <https://doi.org/10.1177/00323217251345775>
- [43] Grindle, M.S., Thomas, J.W. (1989). Policy makers, policy choices, and policy outcomes: The political economy of reform in developing countries. *Policy Sciences*, 22(3): 213-248. <https://doi.org/10.1007/BF00136320>
- [44] Fu, H., Tsuei, S.H., Zheng, Y., et al. (2024). Effects of comprehensive smoke-free legislation on smoking behaviours and macroeconomic outcomes in Shanghai, China: A difference-in-differences analysis and modelling study. *The Lancet Public Health*, 9(12): e1037-e1046. [https://doi.org/10.1016/s2468-2667\(24\)00262-7](https://doi.org/10.1016/s2468-2667(24)00262-7)
- [45] Andrew, A. (2024). New Zealand's world-first smokefree legislation "goes up in smoke": A setback in ending the tobacco epidemic. *Health Policy*, 147: 105123. <https://doi.org/10.1016/j.healthpol.2024.105123>
- [46] Sufri, S., Nurhasanah, N., Ahsan, A., et al. (2023). Barriers and opportunities for improving smoke-free area implementation in Banda Aceh city, Indonesia: A qualitative study. *BMJ Open*, 13(12): e072312. <https://doi.org/10.1136/bmjopen-2023-072312>
- [47] Canty, R., Gartner, C., Hoek, J., Hefler, M. (2024). Global policy scan of commercial combustible tobacco product retailing regulations by WHO region. *Tobacco Control*, 34(6): 726-732. <https://doi.org/10.1136/tc-2023-058523>
- [48] Combs, T., Chaitan, V.L., Golden, S.D., Ribisl, K.M., Henriksen, L., Luke, D.A. (2025). Cooling down hotspots of retail tobacco products: Addressing disparities in the built environment through policy. *Health & Place*, 95: 103533. <https://doi.org/10.1016/j.healthplace.2025.103533>
- [49] Carattini, S., Dur, R., List, J.A. (2024). Policy evaluation and the causal analysis of public support. *Science*, 386(6721): 490-492. <https://doi.org/10.1126/science.adp7497>
- [50] Lin, H., Liu, Z., Chang, C. (2020). The effects of smoke-free workplace policies on individual smoking behaviors in China. *Nicotine & Tobacco Research*, 22(12): 2158-2163. <https://doi.org/10.1093/ntr/ntaa112>
- [51] Kreeratiratanalak, A., Panyagometh, A. (2025). Translating corporate sustainability policies into employee pro-environmental behaviors: Evidence from Thai organizations. *Sustainability*, 17(16): 7393. <https://doi.org/10.3390/su17167393>
- [52] Dannenberg, A., Gutsche, G., Batzke, M.C.L., et al. (2024). The effects of norms on environmental behavior. *Review of Environmental Economics and Policy*, 18(1): 165-187. <https://doi.org/10.1086/727588>
- [53] Kunze, M., Santin, J.R., Kunze, U. (2025). A science-based product regulation: The time has come to reduce toxic emissions to reduce harm. *Frontiers in Public Health*, 13: 1687986. <https://doi.org/10.3389/fpubh.2025.1687986>
- [54] Lencucha, R.A., Vichit-Vadkan, N., Patanavanich, R., Ralston, R. (2023). Addressing tobacco industry influence in tobacco-growing countries. *Bulletin of the World Health Organization*, 102(1): 58-64. <https://doi.org/10.2471/blt.23.290219>
- [55] Ho, J.S.Y., Ho, A.F.W., Jou, E., Liu, N., Zheng, H., Aik, J. (2023). Association between the extension of smoke-free legislation and incident acute myocardial infarctions in Singapore from 2010 to 2019: An interrupted time-series analysis. *BMJ Global Health*, 8(10): e012339. <https://doi.org/10.1136/bmjgh-2023-012339>
- [56] Gorczyca, K., Zozulia, D. (2025). "We have the right to breathe clean air" – Mobilising communities in the fight for good air quality. *Environment and Planning C: Politics and Space*, 44(3): 430-448. <https://doi.org/10.1177/23996544251384532>
- [57] Delgado-Lindeman, M., Cordera, R., Moura, J.L., Rodriguez, A. (2025). Characteristics and effects of low emission zones in Europe: A systematic literature review. *European Transport Research Review*, 17: 54. <https://doi.org/10.1186/s12544-025-00749-2>
- [58] Ajibade, I., Finn, A., Weissman, J. (2025). Urban environmentalism in the twenty-first century. In *Oxford Bibliographies in Environmental History*. <https://doi.org/10.1093/obo/9780197768709-0022>
- [59] Thoyyib, V.M., Islam, K.M.B., Guha, A.C. (2024).

- Exploring sustainable urban governance: Evolving dynamics, transitions, and ambiguities. *Journal of Urban Affairs*, 47(9): 3279-3310. <https://doi.org/10.1080/07352166.2024.2340553>
- [60] Pilkington, P. (2023). Healthy urbanism: Designing and planning equitable, sustainable and inclusive places. *Cities & Health*, 7(5): 693. <https://doi.org/10.1080/23748834.2023.2205086>
- [61] Kopal, K., Wittowsky, D. (2023). The healthy and sustainable city—Influences of the built environment on active travel. *Sustainability*, 15(19): 14655. <https://doi.org/10.3390/su151914655>
- [62] Widodo, D., Arifin, R. (2024). The impact of air quality on respiratory health in urban populations. *International Journal of Public Health*, 1(1): 17-21. <https://doi.org/10.62951/ijph.v1i1.144>
- [63] Teed, J.A., Robichaud, M.O., Duren, M., Gouda, H.N., Kennedy, R.D. (2024). State of the literature discussing smoke-free policies globally: A narrative review. *Tobacco Induced Diseases*, 22: 3. <https://doi.org/10.18332/tid/174781>
- [64] Vital, N., Antunes, S., Louro, H., Vaz, F., Simões, T., Penque, D., Silva, M.J. (2021). Environmental tobacco smoke in occupational settings: Effect and susceptibility biomarkers in workers from Lisbon restaurants and bars. *Frontiers in Public Health*, 9: 674142. <https://doi.org/10.3389/fpubh.2021.674142>
- [65] Hussain, F., Tsang, D., Rafique, Z. (2023). Policy advisory systems and public policy making: Bibliometric analysis, knowledge mapping, operationalization, and future research agenda. *Review of Policy Research*, 41(5): 713-739. <https://doi.org/10.1111/ropr.12564>
- [66] Baker, S.C., Eckerberg, K. (2013). A policy analysis perspective on ecological restoration. *Ecology and Society*, 18(2): 17. <https://doi.org/10.5751/ES-05476-180217>
- [67] Baehler, K. (2022). Rebooting policy analysis: Strengthening the foundation, expanding the scope. *Journal of Policy Analysis and Management*, 42(1): 323-327. <https://doi.org/10.1002/pam.22434>
- [68] Sager, F., Gofen, A. (2022). The polity of implementation: Organizational and institutional arrangements in policy implementation. *Governance*, 35(2): 347-364. <https://doi.org/10.1111/gove.12677>
- [69] Thomann, E., Maxia, J., Ege, J. (2023). How street-level dilemmas and politics shape divergence: The accountability regimes framework. *Policy Studies Journal*, 51(4): 793-816. <https://doi.org/10.1111/psj.12504>
- [70] Masud, S., Khan, A. (2023). Policy implementation barriers in climate change adaptation: The case of Pakistan. *Environmental Policy and Governance*, 34(1): 42-52. <https://doi.org/10.1002/eet.2054>
- [71] Moseley, A., Thomann, E. (2021). A behavioural model of heuristics and biases in frontline policy implementation. *Policy and Politics*, 49(1): 49-67. <https://doi.org/10.1332/030557320X15967973532891>
- [72] Khandaker, S., Khan, A.R. (2016). A critical insight into policy implementation and implementation performance. *Public Policy and Administration*, 15(4): 538-548. <https://doi.org/10.13165/VPA-16-15-4-02>
- [73] Bullock, H., Lavis, J.N., Wilson, M.G., Mulvale, G., Miatello, A. (2021). Understanding the implementation of evidence-informed policies and practices from a policy perspective: A critical interpretive synthesis. *Implementation Science*, 16: 18. <https://doi.org/10.1186/s13012-021-01082-7>
- [74] Abbasi, T., Hassanpoor, A. (2021). Exploring the factors influencing the success of public policies: Evidence from Iran's higher education. *Public Organization Review*, 22: 421-435. <https://doi.org/10.1007/s11115-021-00547-z>
- [75] Takase, A. (2022). Analyzing national policy styles empirically using the Sustainable Governance Indicators (SGI): Insights into long-term patterns of policy-making. *European Policy Analysis*, 8(2): 160-177. <https://doi.org/10.1002/epa2.1142>
- [76] Scioli, F.P. (1979). Problems and prospects for policy evaluation. *Public Administration Review*, 39(1): 41. <https://doi.org/10.2307/3110377>
- [77] Kagan, R.A. (1989). Editor's introduction: Understanding regulatory enforcement. *Law & Policy*, 11(2): 89-119. <https://doi.org/10.1111/j.1467-9930.1989.tb00022.x>
- [78] Zhelyazkova, A., Lindner, T., Heinkelmann-Wild, T., Kanas, A. (2025). Shifting the blame or defending implementation: How do explanations for compliance shape the legitimacy of contested EU policies? *Governance*, 38(4): e70065. <https://doi.org/10.1111/gove.70065>
- [79] Adeoye, O., Ran, B. (2023). Government transparency: Paradoxes and dilemmas. *Public Management Review*, 28(8): 2194-2217. <https://doi.org/10.1080/14719037.2023.2181981>
- [80] Pastorino, R., Sassano, M., Mariani, M., Boccia, S. (2024). Smoke-free policies and cigarette consumption impact on myocardial infarction mortality in Europe. *European Journal of Public Health*, 34(Supplement_3): ckae144.520. <https://doi.org/10.1093/europub/ckae144.520>
- [81] Hasan, M.R., Selvanathan, E.A., Bhatia, B., Greenland, S., Jayasinghe, M. (2025). Well-being and sustainable development: A systematic review and avenues for future research. *Sustainable Development*, 34(S2): 351-371. <https://doi.org/10.1002/sd.70348>
- [82] Gong, X., Wong, W.K., Peng, Y., et al. (2023). Exploring an interdisciplinary approach to sustainable economic development in resource-rich regions: An investigation of resource productivity, technological innovation, and ecosystem resilience. *Resources Policy*, 87: 104294. <https://doi.org/10.1016/j.resourpol.2023.104294>
- [83] Alenda-Demoutiez, J. (2022). From economic growth to the human: Reviewing the history of development visions over time and moving forward. *Third World Quarterly*, 43(5): 1038-1055. <https://doi.org/10.1080/01436597.2022.2042680>
- [84] Goldberg, S.L., Levy, D.E. (2022). Not just public housing: An ethical analysis of expanding smoke-free housing policies in the United States. *Public Health Reports*, 138(3): 401-405. <https://doi.org/10.1177/00333549221099521>
- [85] Göçoğlu, V., Ayan, D., Demirkol, A. (2025). Climate change adaptation strategies in vulnerable countries through the SDG 13: A cross-sectoral analysis. *Sustainable Development*, 34(1): 95-111. <https://doi.org/10.1002/sd.70254>
- [86] Klein, E.G., Kennedy, R.D., Berman, M.L. (2014). Tobacco control policies in outdoor areas of high volume American transit systems. *Journal of Community Health*,

- 39(4): 660-667. <https://doi.org/10.1007/s10900-014-9873-3>
- [87] De Francesco, F., Radaelli, C.M., Troeger, V.E. (2012). Implementing regulatory innovations in Europe: The case of impact assessment. *Journal of European Public Policy*, 19(4): 491-511. <https://doi.org/10.1080/13501763.2011.607342>
- [88] Spiegel, J., Breilh, J. (2017). Advancing health equity in healthy cities: Framing matters. *Journal of Public Health Policy*, 38(2): 234-239. <https://doi.org/10.1057/s41271-017-0070-3>
- [89] Mavrot, C., Malandrino, A. (2023). Three years of COVID-19 pandemic: Coping with crisis governance in the long term. *European Policy Analysis*, 9(2): 96-100. <https://doi.org/10.1002/epa2.1175>
- [90] Steinbacher, C. (2024). The voice of implementation: Exploring the link between street-level integration and sectoral policy outcomes. *Regulation & Governance*, 19(2): 540-557. <https://doi.org/10.1111/rego.12605>
- [91] Mochi, P., Pandya, K.S., Lindberg, K.B., Korpås, M. (2025). Social nudging for sustainable electricity use: Behavioral interventions in energy conservation policy. *Sustainability*, 17(15): 6932. <https://doi.org/10.3390/su17156932>
- [92] Zhao, J., Radke, J., Chen, F.S., Sachdeva, S., Gershman, S.J. (2024). How do we reinforce climate action? *Sustainability Science*, 19: 1503-1517. <https://doi.org/10.1007/s11625-024-01486-6>
- [93] Strefler, J., Merfort, L., Bauer, N., et al. (2024). Technology availability, sector policies and behavioral change are complementary strategies for achieving net-zero emissions. *Nature Communications*, 15: 8440. <https://doi.org/10.1038/s41467-024-52424-0>
- [94] Behnke, N., Hegele, Y. (2023). Achieving cross-sectoral policy integration in multilevel structures—Loosely coupled coordination of “energy transition” in the German “Bundesrat.” *Review of Policy Research*, 41(1): 160-183. <https://doi.org/10.1111/ropr.12551>
- [95] Casula, M. (2022). How different multilevel and multi-actor arrangements impact policy implementation: Evidence from EU regional policy. *Territory, Politics, Governance*, 12(7): 1048-1072. <https://doi.org/10.1080/21622671.2022.2061590>
- [96] Álvarez-Rivadulla, M.J., Fleischer, F., Hurtado Tarazona, A. (2024). Making the state care: The role of political willingness and brokerage in Bogota’s new feminist care policy. *City*, 28(5-6): 637-658. <https://doi.org/10.1080/13604813.2024.2412469>
- [97] Fitzpatrick, T. (2004). Social policy and time. *Time & Society*, 13(2-3): 197-219. <https://doi.org/10.1177/0961463X04043502>
- [98] Li, J., Xue, E., Li, K. (2022). Investigating the education policy implementation of excellent teacher plan for teacher education sustainability in China: Challenges and strategies. *Sustainability*, 14(21): 14526. <https://doi.org/10.3390/su142114526>
- [99] Jacob, C. (2021). Regulatory contestation: Steering toward consistency in international norm implementation. *International Studies Review*, 23(4): 1349-1369. <https://doi.org/10.1093/isr/viab008>
- [100] Zhu, J., Zhen, D., Ge, Z. (2024). Institutionalized governance on organizations via norm-based policy instrument: Evidence from cleaner production in China. *Governance*, 38(1): e12881. <https://doi.org/10.1111/gove.12881>
- [101] Fernández Blanco, C., Kristan, M.V. (2025). Mind the gap: The power of social norms in gender inequality in Europe—When law is not enough. *European Law Journal*, 31(1-2): 6-21. <https://doi.org/10.1111/eulj.70004>
- [102] Leibovitch, A., Teichman, D. (2025). Normative ambiguity, social norms, and the expressive power of law. *Journal of Empirical Legal Studies*, 22(4): 475-501. <https://doi.org/10.1111/jels.70005>
- [103] Yackee, J.W., Yackee, S.W. (2024). Procedural constraints and regulatory ossification in the US states. *Regulation & Governance*, 19(3): 885-900. <https://doi.org/10.1111/rego.12627>
- [104] Yan, Y. (2025). Rethinking accountability in public service delivery: The design mismatch problem and its policy mix solutions. *Policy Design and Practice*, 9(1): 53-69. <https://doi.org/10.1080/25741292.2025.2565871>
- [105] Kaufmann, W., Ingrams, A., Jacobs, D. (2021). Being consistent matters: Experimental evidence on the effect of rule consistency on citizen red tape. *The American Review of Public Administration*, 51(1): 28-39. <https://doi.org/10.1177/0275074020954250>
- [106] Botterill, L.C. (2024). The values dimension of policy success and failure: Considering two Australian rural adjustment policies. *Australian Journal of Public Administration*, 85(2): 262-276. <https://doi.org/10.1111/1467-8500.12678>
- [107] McGaw, B. (1998). How can evaluation contribute to educational policy? The uses of information in Australia. *Prospects*, 28(1): 117-134. <https://doi.org/10.1007/BF02737784>