

# Assessing the Policy of Non-Smoking Areas in Schools in Indonesia: A Mixed Methods Study

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## Abstract

**Background:** Regulations in the form of Regional Regulations on Non-Smoking Areas are efforts to prevent smoking in schools. We will show qualitatively and quantitatively whether the policy can control smoke-free schools since 2015 in Muaro Jambi Regency. However, the implementation is still not optimal, even almost not implemented following the mandate of government regulation Number 109 of 2012 and regional regulation Number 5 of 2018. This study aims to evaluate the implementation of the smoke-free area policy in schools in Muaro Jambi Regency. **Method:** Research using mixed method study employing quantitative through distribution survey of smoke-free zones and qualitative by interviewing 31 schools of informants and observing 499 points of educational institutions. Selection of informants by considering the criteria of adequacy and suitability of data analysis with content analysis. **Results:** The cause of the non-implementation of the smoke-free area policy is the lack of socialization of local regulations. The regulation of non-smoking area bylaws has not been made, implementing rules with the decree of the law. Schools do not run areas without cigarettes because they do not fully understand the rules, namely that they are not allowed to smoke in all school environments and health facilities. Oversight of the no-smoking area policy has not been carried out due to the lack of policy support from policymakers and sources of funds for monitoring the no-smoking area. **Conclusion:** No smoking area policy is meaningless if there is neglect in its implementation so that it does not impact the compliance of smoking behavior following the No Smoking Area policy. The need for the commitment of school leaders in implementing and operational rules from the regional regulations in the implementation of smoke-free areas.

**Keywords:** Policy- non-smoking area- cigarettes- evaluation

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## Introduction

Cigarettes are a global issue that continues to draw attention. Various efforts have been made to reduce the number of smokers by implementing smoking bans. Smoking is a significant health problem that must be addressed worldwide (Dai et al., 2022). According to the World Health Organization (WHO) report, there are around 1.1 billion smokers worldwide (World Health Organization, 2021). Basic Health Research in 2018 showed increased smoking prevalence among 10-year-olds from 28.8% to 29.3% (Kemenkes, 2018). Data from Muaro Jambi Regency, a small regency in Jambi province, Indonesia, shows that daily smokers are approximately 21.44% of the population (Riskesmas, 2018).

The problem of non-implementation of cigarette control policies in Indonesia is mainly caused by; political structures and policy hierarchies, complex bureaucracy, unclear roles and responsibilities, and high levels of corruption (Astuti et al., 2020). Mexico was the first Latin

American country to ratify the Framework Convention on Tobacco Control Policy (FCTC) in 2004; daily smoking decreased by about 50% between 2002 and 2016 (13.5% to 7.0%) (Zavala-Arciniega et al., 2020). Policies for tobacco control by setting up smoke-free areas or raising taxes on tobacco products have effectively reduced smoking prevalence (Feliu et al., 2021). The role of the policy enforcement team in Non-smoking areas is crucial to optimize the socialization of smoke-free area regulations (Sulistiadi et al., 2020). The determining factors for adolescent tobacco use in Indonesia are pocket ownership for school children, having products with cigarette logos, and close access to buy cigarettes for school children (Lucia et al., 2022). The unsuccessful policy of smoke-free areas in the Netherlands believes smoking is not an urgent problem for schools to address; This difference suggests that school staff members in the Netherlands still consider juvenile smoking a relatively acceptable behavior (Schreuders et al., 2019). The experience of two cities in Indonesia and Palembang In implementing

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policy compliance in Smoke-free areas, there is a need for more support from government and legal officials, such as government officials who promote policies and demonstrate compliance (Kaufman et al., 2015). From the results of observations, there are still violations of the policies that have been promulgated. It is a question of why the existing policy has not been able to regulate smoking behavior in schools in Muaro Jambi regency. This study aims to evaluate the implementation of smoke-free policies in teaching and learning facilities in Muaro Jambi Regency.

## Materials and Methods

### Research Designs

The research design for this study is a Mixed Method Study, employing both Quantitative and Qualitative research methods. The Quantitative method utilizes the cross-sectional survey technique to conduct a spatial distribution survey of smoke-free zones (Gay et al., 2012), using nine criteria for Smoke-Free Zones: 1) presence of anti-smoking media; 2) absence of tobacco vendors; 3) absence of individuals smoking; 4) absence of cigarette advertisements; 5) absence of cigarette smoke odor; 6) absence of cigarette ashtrays; 7) absence of designated smoking areas; 8) absence of electronic cigarette vendors; and 9) absence of electronic cigarette users (Kemenkes, 2011).

The research design for this qualitative study involves interviews with all the research participants (informants) through one-on-one interview (Creswell and Creswell, 2018). The informants were interviewed regarding the condition of smoke-free zones within the school environment and implementing the policy regulated by the government and regional laws. During the interviews, discussions covered topics related to the compliance of schools with the smoke-free policy, the presence of designated smoke-free areas, the enforcement of regulations, the availability of anti-smoking media, the absence of tobacco vendors and advertisements, and the overall level of awareness and adherence to the smoke-free policy in educational institutions. The interviews aimed to gain insights into how effectively the smoke-free zone policy has been implemented and the challenges faced in achieving a smoke-free environment within the schools

### Participants

The research location focused on surveying smoke-free zone distribution in educational institutions in Muara Jambi Regency, totaling 499 institutions selected through purposive sampling (Creswell and Creswell, 2018). These educational institutions are spread across 22 Primary Health Care Centers (Puskesmas) working areas in Muaro Jambi Regency (Risksdas, 2018). This approach aims to ensure a representative sample across all regions, consisting of Kindergartens (TK), Elementary Schools or equivalent (SD/MI), Junior High Schools or equivalent (SMP/MTs), Senior High Schools or equivalent (SMA/SMK/MA), and Higher Education Institutions. The study seeks to provide an overview of the compliance of schools with the smoke-free zone policy in the area.

For the qualitative approach, the study involves 31 informants, selected through purposive sampling to ensure representation from schools and policymakers. Qualitative data will be gathered through in-depth interviews facilitated by trained enumerators. The informants for the qualitative research consist of various key stakeholders, as seen in Table 1.

### Data Analysis

The data collection process involved the assistance of 22 enumerators, with each enumerator responsible for collecting data in one working area of a Primary Health Care Center (Puskesmas). Before collecting data, the enumerators received training to ensure they were well-prepared for the task. Data collection for school coordinates and the smoke-free zone checklist was facilitated using an open-source Android-based application called KoboToolbox (<https://www.kobotoolbox.org/>). Once the data was collected, the research team conducted a re-check to ensure that the educational institutions' locations matched the designated Puskesmas working areas and that the sample representation adhered to the proportion of the number of educational institutions.

The summarized results of the observations were processed using the assistance of SPSS 16.0, a statistical software commonly used for data analysis (Pallant, 2010). Additionally, the distribution mapping of smoke-free zone educational institutions was done using the open-source Quantum Geographic Information System (QGIS) 3.30.2, a tool for geographic information analysis and visualization (Team, 2016).

Interview results are analyzed through content analysis aimed at making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use (Krippendorff, 2022). Several procedures carried out in conducting content analysis are: 1) following the established procedures, 2) conducting studies systematically, 3) the study process is directed to generalization, 4) studies must be based on the contents of manifested documents, and 5) studies are carried out quantitatively or qualitatively (Bengtsson, 2016; Erlingsson & Brysiewicz, 2017).

## Results

### The Implementation of Regional Regulation (Perda)

Implementing Perda number 5 of 2018, which designates smoke-free zones in educational settings, has not been optimal. The implementation of the regulation by the regional government has not been carried out according to the provisions set by the regent, resulting in a lack of compliance with the smoke-free zone in educational institutions. The decisions made by local authorities are essential operational regulations that should enforce the smoke-free policy as stated in the regional regulation. Additionally, there has been a lack of continuous socialization of the regional regulation, leading to schools' limited understanding of the regulations. The informant conveyed this feedback:

*... the local regulation is implemented through the Regent's Regulation. Until now, there hasn't been any*

Table 1. Research Informants

Institution	Status	Age	Sex	Code
Kindergarten (PAUD)	Teacher	50	Female	SL.06
	Student's Parent	29	Female	SL.27
Elementary School (SD)	Staff	35	Male	SL.02
	Headmaster	37	Male	SL.13
	Headmaster	59	Male	SL.14
	Headmaster	45	Male	SL.15
	Teacher	37	Male	SL.16
Islamic Elementary School (MI)	Teacher	51	Female	SL.18
Junior High School (SMP)	Teacher	37	Male	SL.04
	Visitor	19	Male	SL.24
	Teacher	36	Male	SL.25
	Teacher	41	Male	SL.26
Islamic Junior High School (MTs)	Teacher	28	Female	SL.03
	Teacher	34	Female	SL.09
	Teacher	40	Male	SL.10
	Headmaster	46	Male	SL.11
Senior High School (SMA)	Headmaster	40	Female	SL.20
	Visitor	17	Female	SL.21
	Teacher	40	Male	SL.22
Vocational High School (SMK)	Teacher	35	Male	SL.23
Islamic Senior High School (MA)	Student	15	Female	SL.05
	Teacher	55	Female	SL.07
	Staff	35	Male	SL.23
Higher Education (University)	Lecturer	40	Male	SL.30
	Visitor	35	Male	SL.17
Education Department (Dinas Pendidikan)	Chief	48	Male	SH.03
Regional Police Force (Satpol PP)	Chief	50	Male	SH.06
Regional Legislative Council (DPRD)	Vice of Chief	51	Male	SH.08
Ministry of Religious Affairs in Muaro Jambi Regency	Chief	51	Male	SH.07
Indonesian Ulama Council in Muaro Jambi Regency (MUI)	Chief	59	Male	SH.02
Health Department (Dinas Kesehatan)	Chief	49	Male	SH.09

*Regent's Regulation yet (SH.08)*

*If the special socialization of local regulations has never been (SL.20)*

The implementation of smoke-free zones in educational

facilities has largely not been following the Regional Regulation No. 5 of 2018, which designates smoke-free areas. The Department of Education and Culture and the Ministry of Religion in Muaro Jambi Regency have

Table 2. Obstacles and Challenges of Implementing Non-Smoking Areas in Schools Areas in Muaro Jambi Regency in 2022

	Perceptions of Policy Maker	School perception
Obstacles	1. No budget for socialization	1. Not accepting socialization
	2. Difficult to implement bylaws	2. Challenging due to smoking in the school environment
	3. There must be policy support from regional heads	3. Not knowing the rules of no smoking in the school environment
	4. The need for support from many related sectors	4. No violating sanctions
Challenge	1. Many policymakers also behave by smoking	1. School visitors who do not know the smoking ban
	2. It does not cause turmoil for the community if it is not implemented	2. Nearby access to cigarette sellers in schools

Table 3. Data Collection Results for No Smoking Area in Education Institutions in Muaro Jambi Regency

No	Variable	Frequency (N)	Percentage (%)
1.	No Smoking Area		
	Compliant	63	12.6
	Non-compliant	436	87.4
2.	Types of Educational Institutions		
	Elementary School (SD)	176	35.3
	Junior High School (SMP)	65	13
	Senior High School (SMA)	32	6.4
	Higher Education (University)	3	0.6
	Islamic Elementary School (MI)	32	6.4
	Islamic Junior High School (MTs)	35	7
	Islamic Senior High School (MA)	15	3
	Kindergarten (TK)	94	18.8
	Early Childhood Education (PAUD)	47	9.4
3	District		
	Bahar Selatan	26	5.2
	Bahar Utara	15	3
	Jambi Luar Kota	81	16.2
	Kumpeh	61	12.2
	Kumpeh Ulu	25	5
	Maro Sebo	29	5.8
	Mestong	44	8.8
	Sekarnan	49	9.8
	Sungai Bahar	45	9
	Sungai Gelam	107	21.4
	Taman Rajo	17	3.4
4	Criteria for Smoke-Free Zones		
	There is Media Prohibition of Smoking		
	Yes	347	69.5
	Not	152	30.5
	There is a Cigarette Seller		
	Yes	76	15.2
	Not	423	84.8
	There Are People Smoking		
	Yes	111	22.2
	Not	388	77.8
	There are Cigarette Ads		
	Yes	40	8
	Not	459	92
	There is a Smell of Smoke		
	Yes	112	22.4
	Not	387	77.6
	There is an ashtray.		
	Yes	168	33.7
	Not	331	66.3
	There is a smoking area.		
	Yes	40	8
	Not	459	92

Table 3. Continued

No	Variable	Frequency (N)	Percentage (%)
4	Criteria for Smoke-Free Zones		
	There are E-Cigarette Sellers		
	Yes	4	0.8
	Not	495	99.2
	There are E-cigarette Smokers		
	Yes	4	0.8
	Not	495	99.2

Source, Data Analysis (2022)

issued circulars prohibiting smoking in schools. However, these circulars are not based on the Regional Regulation No. 5 of 2018 issued by the local government of Muaro Jambi Regency. The lack of socialization of the Regional Regulation on smoke-free zones in educational facilities is the reason behind this discrepancy. Despite school administrators' efforts to enforce smoke-free zones on school premises, some still continue to smoke within the school environment, including inside school buildings. The informant provided this statement:

... There are still those who smoke indoors, in the school environment, because it is a difficult habit to prohibit it like that. (SL .1)

The Ministry of Education and Culture issued Ministerial Regulation No. 64 of 2015 regarding smoke-free zones in school environments. Our Department of Education and Culture in Muaro Jambi Regency has reinforced this regulation by issuing a circular. This circular serves to strengthen and emphasize the implementation of smoke-free zones in our schools (SH.03)

A circular letter from the secretary-general of the Ministry of Religious Affairs of the Republic of Indonesia

Table 4. Cross-Table of Types of Educational Institutions with the Category of Non-Smoking Areas in Muaro Jambi Regency in 2022

Types of Educational Institutions	Implementation of Non-Smoking Areas				Total	
	No		Yes		N	%
	N	%	N	%		
Early Childhood Education (PAUD)	43	91.5	4	8.5	47	100
Kindergarten (TK)	90	95.7	4	4.3	94	100
Elementary School (SD)	153	86.9	23	13.1	176	100
Junior High School	55	84.6	10	15.4	65	100
Senior High School (SMA)	29	90.6	3	9.4	32	100
Higher Education (University)	3	100	0	0	3	100
Islamic Elementary School (MI)	24	75	8	25	32	100
Islamic Junior High School (MTs)	27	77.1	8	22.9	35	100
Islamic Senior High School (MA)	12	80	3	20	15	100
Total	436	87.4	63	12.6	499	100

Source, Data Analysis (2022)



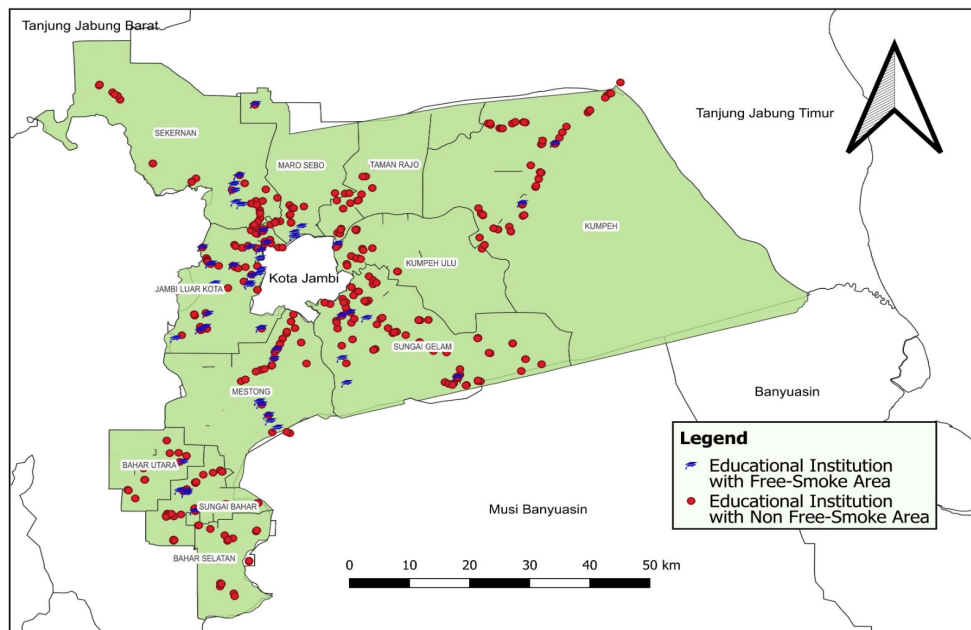


Figure 1. Educational Institutions that Complied and Not Complied with the Smoke-Free Zone Policy (Smoke-Free Zone) Muaro Jambi Regency in 2022

also prohibits smoking in the workplace, starting from the environment of the Ministry of Religion, KUA plus madrasah (SH.07)

Based on the interview with the staff and teachers, it was found that smoking activities take place in a particular room within the school environment. The individuals smoking do so to avoid being seen by students and other teachers. Smoking inside the school premises is reportedly allowed with the approval of the school leadership. However, it is strictly prohibited to smoke in front of the classrooms. Below are the findings from the interview with the informant.

... In our area, some still smoke, but they do it in specific spots to avoid being seen in public or recognized as students... (SL 11)

... people usually smoke, but it's not visible to the public, or in certain areas, so students and other visitors don't see smoking activities. (SL 07)

From the results of in-depth interviews, the supervision referred to in the bylaws of the KTR monitoring team does not yet exist. Supervision carried out by school leaders has been carried out orally. Smoking behavior is also carried out by staff in schools. Smokers have not been given a reprimand when found smoking. The policies of the leadership or policies of local governments have not supported the sanctions issued. It was conveyed by the informant as follows:

For the smoke-free area monitoring team, there is no ... so far, I have never heard the sanctions for violations do not exist, only as ordinary reprimands (SL 03).  
Obstacles and challenges of implementing Non-Smoking Areas in schools

The results of an in-depth interview with the informant indicate the presence of obstacles and challenges in implementing smoke-free zones in educational facilities in Muaro Jambi Regency. The main obstacle is the lack of extensive socialization of the regional regulation on smoke-free zones. Below, Table 2 presents the perceptions of policymakers and schools regarding implementing the regional regulation on smoke-free zones in schools.

A qualitative study was also conducted through observations in various educational institutions, including kindergartens, elementary schools, junior high schools, senior high schools, and universities in Muaro Jambi. Observation results can be seen in Table 3.

The results of the observations found that 30.5% of educational facilities did not have a smoking ban media, 15.2 there were cigarette sellers around the school, 22.2% found that there were people who were smoking when the observation was made, found 8% of cigarette advertisements, 22.4% of cigarette odors, 33.7% there were cigarette ashtrays, 8% there were smoking places, but only 0.8% there were e-cigarette sellers.

Table 4. shows that the lowest number of educational facilities implementing smoke-free areas are Higher Education (Universities), which is nothing, while Islamic Elementary Schools (MI) are 25%. Figure 1 shows a mapping of the location of the points of educational facilities that Complied and Not Comply with the smoke-free zone policy (Smoke-Free Zone).

## Discussion

The implementation of smoke-free zones in educational institutions in Muaro Jambi Regency lacks proper socialization and preparedness of schools to enforce the regional policy. In Denmark, vocational schools have successfully implemented smoke-free zone policies by conducting workshops for staff and managers, equipping

them for law enforcement, which has led to improved implementation (Hjort et al., 2022). In six European cities, well-implemented smoke-free zone policies in schools have helped reduce teenage smoking within the school premises. Schools need support to adopt comprehensive policies that extend beyond their premises (Mélard et al., 2020). Conversely, European research indicated that schools play a minor role in promoting and supporting smoking cessation efforts (Mertens et al., 2021). Some staff in their sample were unaware of school policies and programs, suggesting a lack of understanding of regulations and school services (Mertens et al., 2021).

Implementing smoke-free zone policies is not in line with regional regulations in Muaro Jambi. In Canada, successful smoke-free zone policies in schools resulted in a 12% decrease in exposure to secondhand smoke among males and a 17% decrease among females (Azagba et al., 2016). The first-year experience implementing a national school-based smoking prevention program in Korea showed positive impacts in reducing smoking habits; the program was experiential learning-oriented (Kim et al., 2021). In Indonesia, three primary factors determining current tobacco use are pocket money, tobacco-branded products used by the community, and easy access to cigarettes near schools (Lucia et al., 2022; Nurhayati et al., 2022). The challenges in implementing tobacco control policies in Indonesia are mainly due to political structure, policy hierarchy, complex bureaucracy, unclear roles and responsibilities, and high levels of corruption (Astuti et al., 2020; Yunarman et al., 2021).

Implementing smoke-free zones in the university environment in Muaro Jambi requires support from university leaders. In Malaysia, all campuses have been designated as smoke-free zones, with the need for differentiated approaches between males and females to ensure equal impact of the smoke-free zone policy (Mohmad et al., 2022). Strategies to enhance the effectiveness of the smoke-free campus policy include stricter enforcement by university authorities, intensified promotion to raise awareness about the policy, and providing counseling or smoking cessation clinics to assist with quitting (Mohmad and Ismail, 2021). In Europe, the effectiveness of smoke-free zone policies can be improved if schools collaborate with students to develop positive collective beliefs and understanding about the policy (Hewer et al., 2022). The failure of smoke-free zone policies in the Netherlands is attributed to the belief that adolescent smoking is not an urgent issue to be addressed by schools; this difference suggests that school staff in the Netherlands still perceive teenage smoking as a relatively acceptable behavior (Schreuders et al., 2019). There is insufficient evidence that government policies on smoke-free zones can stop smoking within school environments.

Indeed, many research studies have highlighted the importance of socialization efforts and supervision in ensuring the effective implementation of policies, including smoke-free zone policies. Key stakeholders may not fully understand the policies without proper socialization, leading to non-compliance and ineffective enforcement.

The school leadership plays a crucial role in initiating

and promoting the implementation of smoke-free zones (Azagba et al., 2016; Hewer et al., 2022). When school leaders actively support and advocate for the policy, it sets a positive example for the entire school community, including staff, students, and visitors. This leadership commitment fosters a culture of compliance and respect for the smoke-free zone policy.

In addition to leadership support, ongoing supervision and monitoring are essential to reinforce the policy's implementation. Regular checks and evaluations help identify potential challenges and areas of improvement, allowing for timely adjustments and corrective actions. Supervision also helps maintain consistency in enforcing the policy, ensuring that all areas of the school remain smoke-free.

Raising awareness about the importance of smoke-free zones is a fundamental step in gaining support from all stakeholders (Feliu et al., 2021; Kaufman et al., 2015). By providing clear and comprehensive information about the health benefits and rationale behind the policy, the school community becomes more receptive to its implementation. Awareness campaigns, workshops, and educational initiatives can help disseminate information about the smoke-free zone policy and its impact on creating a healthier and safer environment.

Ultimately, the success of implementing smoke-free zones in educational institutions lies in a collaborative effort involving school leaders, staff, students, parents, and relevant authorities. By fostering a shared commitment to the policy and its goals, educational institutions can effectively create and maintain smoke-free environments for the well-being of everyone within the school community.

## Author Contribution Statement

All authors contributed equally to this research.

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### *Ethical issue*

The study protocol was approved by the Health Polytechnic Ministry of Health Jambi (Poltekkes Kemenkes Jambi) (Ethical Permit: LB.02.06/2/645/2022).

### *Conflict of interest*

There is no conflict of interest.

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