



Analyzing Government Policies Causing Smog: An Evaluation

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Introduction/Importance of Study: This study aims to explore the relationship between government policies and the worsening of smog through a comprehensive analysis. Understanding this relationship is essential for designing policies that effectively reduce air pollution, particularly smog.

Novelty Statement: This research introduces a novel approach by proposing a practical solution to address the worsening smog issue, highlighting the gap between government policies and their on-ground implementation.

Material and Method: We conducted an extensive review of relevant laws, policies, regulations, and jurisprudence related to environmental protection. Environmental protection measures were identified through provincial and national environmental protection department websites. Actions required for environmental protection, as outlined in these legal documents, were assessed to develop a viable solution.

Result and Discussion: This study aims to make a significant contribution toward achieving a 'Good' Air Quality Index (AQI) and guiding the creation of effective government policies. The goal is to ensure that policies are balanced—not too lenient or too strict—so they can address real-time issues effectively.

Concluding Remarks: Achieving an optimal solution requires collaboration among legislators, researchers, technocrats, academicians, and the executive branch. Furthermore, any deficiencies in policy implementation should be addressed by the High Courts or the Supreme Court to ensure accountability and effectiveness.

Keywords: Air Quality Index (AQI), Smog, Greenhouse Gases Effects, Smog Health Emergency Action Plan, Emission Standards, Biodiversity, Environmental Impact Assessment, Effluent, Ecosystem.



Introduction:

Despite numerous immediate and pressing issues, environmental concerns remain a top priority. The health of the environment is crucial for the well-being of humans and all other life forms. Although many conferences have addressed environmental protection and numerous laws and policies have been created, their real-time execution often remains questionable. In many countries, implementation is alarmingly inadequate, but there is still hope for averting further environmental degradation and safeguarding future generations. As the saying goes, "We need the Earth; the Earth does not need us." Over the past four decades, pollution of all types has increased significantly and continues to rise. Addressing this issue is crucial before it is too late [1].

In Punjab, smog has become a major problem over the past decade, driven by the surge in motor vehicle use, deforestation for housing developments, unchecked industrial waste, and other factors [2]. Figure 1 below illustrates the rising pollution levels in the three main cities of Punjab over the past three years.

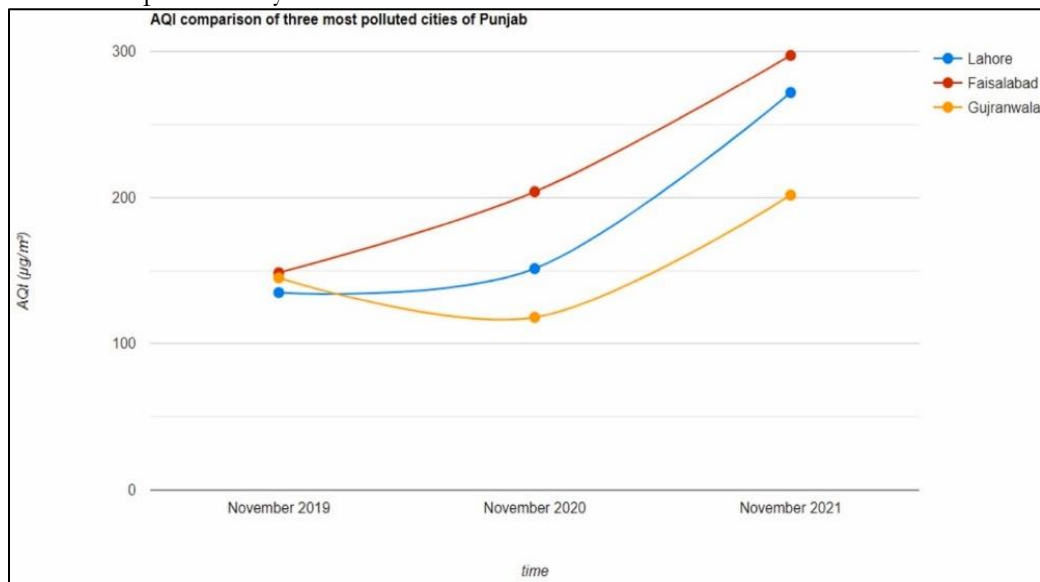


Figure 1: Level of pollution in three main cities of Punjab.

Ramsha et al. (2018) [3] noted that rapid urbanization and industrialization have significantly deteriorated air quality in the city. Smog, which poses serious health risks, is causing a rise in various health issues and raising concerns about its long-term effects on public health. The situation is expected to worsen due to the lack of a proactive action plan from the government and the failure of authorities to address the urgency of the issue [4][5]. While Pakistan may not be the primary driver of climate change, it is crucial to acknowledge and address its impacts, particularly to mitigate the high risks associated with climate change.

This study provides a scientific evaluation of the policies contributing to intensified smog, supported by logical and empirical evidence. I have compiled this research to be accessible to laypersons by using available data and information. This theoretical paper aims to generate new ideas by analyzing existing laws, theories, and explanations. We have gathered data from reliable and scientifically measured sources to meet our objectives, focusing on the application of law and order impartially, regardless of location, rank, or governmental changes [6]. Recent jurisprudential developments have seen increased public interest litigation, with courts using the Constitution to address environmental claims. Notably, in 1994, the Supreme Court of Pakistan recognized the "right to a clean environment" as a fundamental right, encompassed within the right to life [7]. We have collected primary data from credible sources to investigate why Lahore remains one of the most polluted cities globally. Understanding the reasons behind failed

policies is also a key objective of this research [8]. By analyzing data from the Environment Protection Department, Punjab Health Commission, Lahore High Court's Green Bench Orders on environmental protection, and mobile vans measuring the Air Quality Index (AQI), we identified several factors contributing to smog intensification in Lahore, including:

- Incomplete or ineffective environmental policies
- Lack of regulation on industrial emissions
- Inadequate transportation policies
- Crop burning
- Poor waste management

Existing literature shows a continued decline in the AQI due to persistent conditions from a decade ago. Despite the Smog Policy formulated in 2017 under the Lahore High Court's direction, smog still affects major cities in Punjab. This study explores innovative approaches to controlling smog through policies, laws, and regulations, which are essential for effective environmental management [9][10].

Research Problem:

This study examines policies that have been either unexecuted or partially executed, contributing to the worsening of smog. I will illustrate that when policies and laws are implemented thoroughly and faithfully, they can produce positive outcomes. Addressing this issue is a crucial and challenging aspect of the research [11]. Our focus is on the creation of smog due to failed policies, and immediate improvement is necessary. All obstacles to effective policy implementation must be removed.

Research Questions:

- What government-approved policies are contributing to the intensification of smog?
- What are the shortcomings of current policies that lead to the ongoing emission of smog each year?
- What measures can be implemented to reduce the worsening of smog?

Research Hypothesis:

Six main pollutants contribute to smog. While a lockdown is not a viable solution, policies aimed at reducing anthropogenic activities can significantly mitigate smog. Controlling the emission of primary pollutants can be achieved if policies are grounded in scientific research and methods. Effective collaboration and coordination among the environmental protection department and other relevant departments—including health, education, transport, and oil and gas—are essential [12].

Research Objectives:

This article aims to evaluate the causal relationships among variables contributing to the intensification of smog. It explores the reasons behind policy failures and proposes improvements for future policy development.

Study Area:

Lahore, the capital of Punjab and the second-largest city in Pakistan by population, is a major hub for prominent colleges, world-class universities, advanced hospitals, and numerous job opportunities. This makes it a magnet for both natives and migrants from smaller cities. The availability of reliable data from sources such as meteorological stations, weather observatories, and AQI mobile vans makes Lahore an ideal focus for study. Our research targets Lahore, recognized as one of the most polluted cities globally [13]. The data used is sourced from reputable institutions. With an annual growth rate of 4%, Lahore is considered the most polluted city in Pakistan and, like many Asian urban areas, frequently suffers from severe smog. As observed in previous years, Lahore is once again experiencing intense smog [14].

Research Methodology:

Data Collection Method and Analysis:

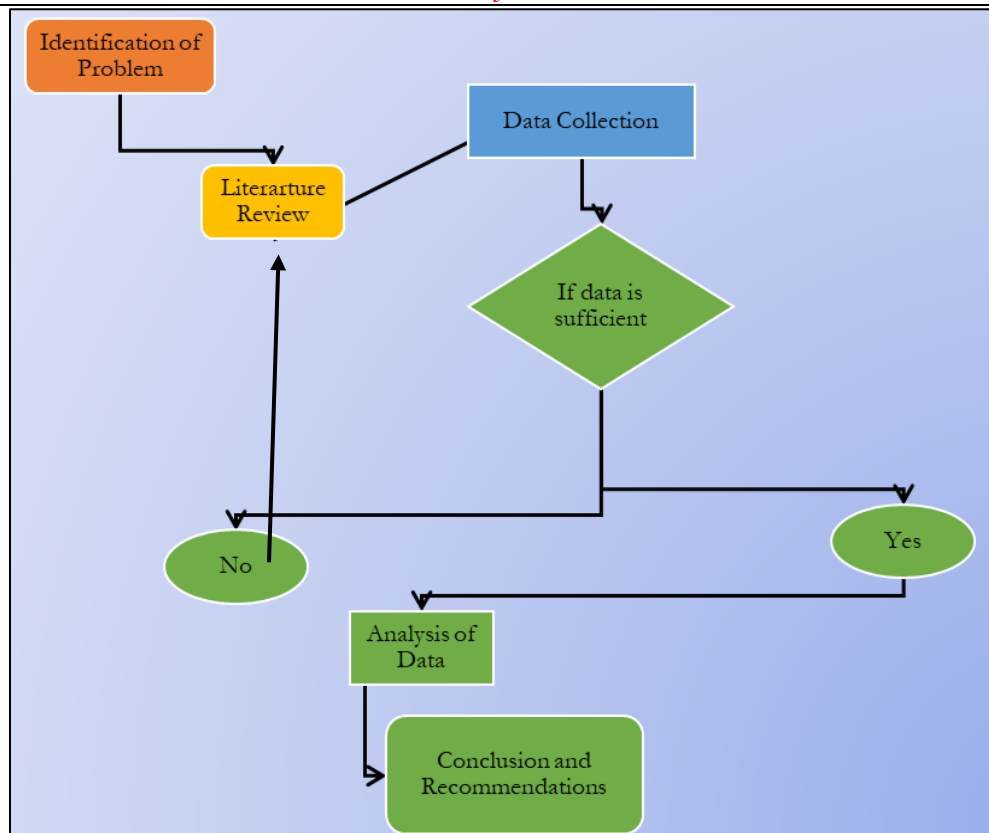


Figure 2: Flowchart of methodology

Why the Research was Performed:

The research was conducted to investigate the increasing levels of smog each year and the earlier onset of smog compared to previous years. It also seeks to determine who is accountable for this issue—whether public officials, lawmakers, the general public, or other entities.

How the Research was Performed:

This study involved a thorough review of environmental protection legislation, including policies, laws, and regulations. It also examined their practical implications through the lens of superior court judgments in Pakistan. A descriptive approach was used to analyze these aspects.

Rationale for Selecting the Particular Research Method:

The descriptive research method was chosen because the relevant laws, policies, and regulations are already established. The goal was to understand why these policies are not being effectively implemented as intended.

Data Collection Methods:

- **Literature Review:** This exploratory research is based on a thorough review of various articles and related materials to address the research questions. A detailed list of sources is provided in the References section.
- **Understanding of Policymaking:** In Pakistan's political system, the legislature, executive, and judiciary each play distinct roles. The legislature, including the Senate and Parliament, is responsible for enacting laws. The executive, comprising entities such as the police and district administration, implements these laws. The judiciary oversees their execution. Effective policymaking requires a clear understanding of how these three branches interact.
- **Reviewing Current Online Databases:** The online databases reviewed for this research are listed in the article's References section.

Data Analysis:

Data analysis is a crucial component of this research. After reviewing the relevant literature, data was systematically analyzed to extract meaningful insights. This process involved verifying data accuracy, removing irrelevant information, and conducting logical analysis to derive the desired conclusions and recommendations [15].

Introduction of Government Policies that Have Intensified Smog:

It is important to recognize that environmental protection policies are crafted with careful consideration. The government aims to uphold the right to a clean environment as part of the broader right to life. However, some policies have inadvertently contributed to the intensification of smog, while others have failed due to poor implementation. Despite the existence of numerous laws in Pakistan, environmental issues persist, primarily due to inadequate enforcement [16].

Effective policy implementation requires collaboration among academicians, researchers, environmentalists, government officials, healthcare workers, and other stakeholders. Challenges such as impracticality, lack of public awareness, resistance, and corruption hinder law enforcement. Superior Courts have addressed these issues through suo motu actions and public interest litigations [17]. Below is a list of legislations that have either intensified smog due to their content or their lack of execution, based on court citations and my own research:

National Climate Change Policy of 2012:**Climate Change Policy (2014-2030)**

An agriculturist filed a writ petition with the Lahore High Court (LHC) urging the Government of Pakistan to enhance climate mitigation or adaptation efforts, highlighting failures to meet adaptation targets. The court acknowledged challenges in identifying cross-border polluters (PLD 2018 Lahore 364).

National Disaster Management Plan, 2012:

The Supreme Court of Pakistan (SCP) criticized this plan for lacking substantial measures for climate adaptation (2023 SCMR 459).

National Disaster Risk Reduction Policy, 2013:

The SCP noted the absence of a practical strategy or public domain plan for addressing adaptation measures (2023 SCMR 459).

Pakistan Climate Change Act, 2017:**Pakistan Environmental Protection Act, 1997:**

The SCP emphasized that legislation alone is insufficient without effective implementation, calling for genuine efforts by authorities to protect the climate and reduce environmental impacts (2023 SCMR 503).

The Punjab Plantation and Maintenance of Trees Act, 1974:

The Lahore High Court (LHC) instructed the government to present a timeline for implementation and to initiate proceedings against officers who failed to perform their duties (PLD 2019 Lahore 664). Effective environmental protection requires sincere efforts from concerned authorities and comprehensive collaboration among stakeholders to mitigate the adverse impacts of human activity.

Approved Policies and their Implications:**Government of the Punjab and Environment Protection Department's Failure to Implement Smog Policy 2017:**

Experts have expressed concerns over the lack of action on the Punjab Relief Commissioner's recommendations from October 2020. These recommendations included banning stubble burning, regulating vehicle emissions, closing industries without emission controls, and shutting down old brick kilns by year-end [18]. While authorities ordered the conversion of brick kilns to zigzag technology and imposed fines on polluting vehicles, they

largely ignored the remaining recommendations. The Environment Protection Department also failed to follow the Smog Commission's 2018 recommendations to procure the necessary air quality monitors. This negligence has significantly undermined the effectiveness of the Smog Policy 2017.

Closure of Old-Fashioned Brick Kilns:

A meeting at Alhamra with Industries Minister Aslam Iqbal and the All-Pakistan Brick Kilns Association, led by Shoaib Niazi, decided to close old-fashioned brick kilns from November 1, 2019, to mitigate smog. However, insiders suggest that the closure was politically motivated, with leadership succumbing to pressure from kiln owners [19]. Although it was announced that no brick kiln would operate without zigzag technology after December 31, 2020, the promise to avoid job losses indicated a lack of decisive action, undermining the policy's effectiveness.

Approved Policies and Their Implications:

Sealing of Steel Furnaces on Orders of the Supreme Court:

The Director General of Pak-EPA informed the Supreme Court that environmental tribunals had overturned decisions to close industrial units. Consequently, the Supreme Court ordered that previously closed units could only reopen on further court orders.

Imposition of Smog Policy on the Order of the Lahore High Court (LHC):

In response to the Lahore High Court's directive, the Punjab caretaker government declared a 'smog emergency' to address hazardous air quality. Justice Shahid Karim of the LHC mandated this action due to dangerously high air quality indices in Lahore. Dissatisfied with the Lahore commissioner's efforts, Justice Karim emphasized the severe public health impact of smog.

Punjab's Environment Protection Department's Failure to Follow the Smog Commission's Recommendations:

The Punjab Government and Environmental Protection Department (EPD) have failed to implement the Punjab Smog Policy 2017 due to poor strategy, sluggishness, and departmental politics. This failure has resulted in persistent smog and increased air pollution-related diseases.

Research Findings:

The Role of LHC and SCP:

The Lahore High Court (LHC) and Supreme Court of Pakistan (SCP) play crucial roles as oversight bodies, holding authorities accountable. The LHC has imposed smog emergencies, demonstrating its commitment to public welfare. Although controlling smog is not its primary goal, the judiciary's actions reflect its dedication to addressing environmental issues for public benefit.

Responsibility for Making and Executing Policies:

In Pakistan, the legislature is responsible for creating laws, while departmental heads formulate rules. The main issue is the non-execution of laws due to various constraints, including poor coordination among state departments. Effective policy execution requires alignment among all stakeholders to ensure coordinated and efficient implementation.

Drawbacks in Prevailing Policies Contributing to Continuous Emission of Smog:

The most critical issue is the lack of coordination among related departments. Certain "exceptions" act as obstacles, hindering effective implementation. Removing these exceptions is essential for achieving a clean environment. Policies must be enforced uniformly to build public trust in authorities.

Possible Ways to Lessen the Intensification of Smog:

Smog intensity can be reduced if existing laws are implemented effectively. The Smog Policy outlines parameters contributing to smog and provides recommendations for its mitigation. The Environment Protection Department (EPD) is the lead agency for executing these laws, while a follow-up agency monitors the EPD's actions.

Smog Policy Formulated After the Green Bench Order of the LHC and Its Prevalence:

The Smog Commission Report, formulated on May 28, 2018, provides comprehensive recommendations for reducing pollutant emissions. Effective long-term implementation of any policy requires political stability, public confidence, and the support of pressure groups.

Results:

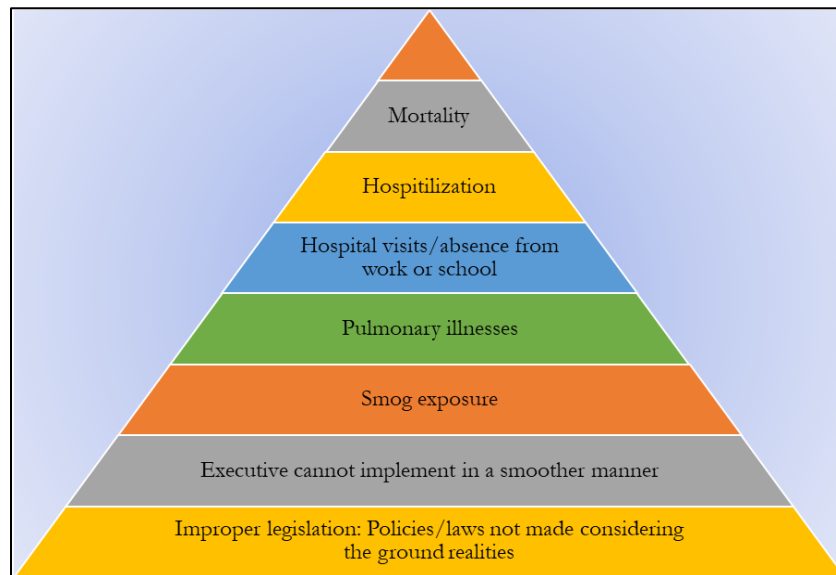


Figure 3: Where laws are not made correctly or haphazardly

Undoubtedly, Pakistan's superior courts have played a crucial role in safeguarding the fundamental rights outlined in the Constitution. Both the High Courts and the Supreme Court of Pakistan act as custodians of constitutional supremacy. The Smog Policy of 2018, for instance, was developed in response to the Green Bench Order of the Lahore High Court (LHC). Furthermore, these courts possess the authority to hold responsible authorities accountable for any failures or breaches in existing laws. The outcomes of these judicial interventions are illustrated in the graph below:

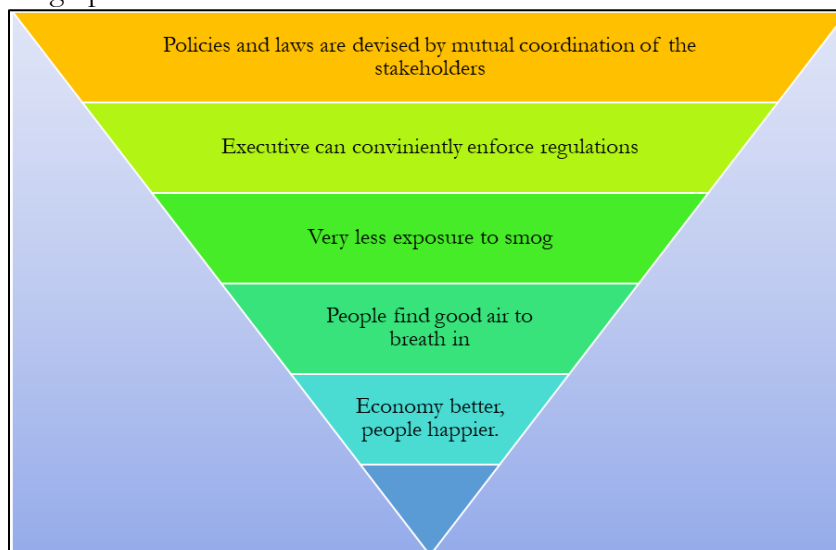


Figure 4: Where laws are made with a considerate view

Discussion:

The findings of other researchers align with our work primarily in terms of recommendations. Previous studies have generally suggested improvements without specifically addressing why government policies to reduce smog have failed in Punjab. For example, Raza

et al. (2021) highlighted the need for corrections in policy and governance dimensions but did not thoroughly investigate why existing programs or policies have been ineffective. While Raza's work on environmental degradation is noteworthy, it only briefly addresses government policies.

In contrast, this article offers an in-depth analysis of why the situation has worsened over the years due to ineffective policies. We have thoroughly evaluated these policies, with a focus on those related to environmental pollution and smog. While recent literature suggests that government policies must address smog, our study uniquely explores why past and current policies have not succeeded. Our arguments are supported by logical reasoning and robust evidence, including superior court judgments, public opinion, surveys from reputable institutes, and prior research. With the insights provided in this paper, Pakistan is well-positioned to develop effective policies.

Conclusion:

Our research indicates that the Government of Punjab and the Environment Protection Department possess the necessary tools to address smog effectively. The legislation is comprehensive, and the regulations are current. However, smog onset is occurring increasingly earlier each year. It is crucial to enforce these laws with rigor. The law must be applied uniformly, ensuring that everyone, regardless of status, is treated equally under it. Upholding the rule of law requires that all citizens comply with legal requirements.

Historical evidence demonstrates that unequal enforcement of the law leads to disorder. When laws apply only to certain groups, it demotivates the general public. In developed countries, the consistent application of the rule of law contributes to a stable law-and-order environment, enabling citizens to adhere to regulations and fostering public tranquility.

To effectively combat smog, we must establish realistic goals and deadlines. For example, brick kilns required to adopt zigzag technology should comply without exception. Although additional time may be allowed to prevent job losses, this period must be strictly limited. After the extended deadline, non-compliant kilns should be shut down. As the legal maxim states, "A communi observantia non est recedendum": when the law prescribes a method, it should be followed strictly.

Addressing the smog issue in Lahore necessitates a comprehensive and coordinated approach. This includes stricter enforcement of existing environmental regulations, adoption of cleaner technologies, promotion of renewable energy sources, enhancement of public transportation infrastructure, and the implementation of sustainable agricultural practices.

Key Points:

- The legislature, judiciary, and executive must work in unison, complementing each other's roles.
- Implication: This unity will foster a sense of accountability among the general public, deterring disobedience to the law.
- Policies must be crafted considering various factors, such as the standard of living, the current law and order situation, and potential environmental impacts.
- Implication: Such comprehensive laws will function more effectively and smoothly.
- The Supreme Court of Pakistan and the High Courts, in their Constitutional jurisdiction, are competent authorities to protect the fundamental rights of the people.
- Implication: As the unique organ of the State, the judiciary will effectively ensure the 'right to life' for all citizens.

Recommendations:

- Coordination among departments
- Laws must be obeyed and executed in full spirit
- Anthropogenic activities must be under strict control
- Adopting Euro-II Standards for vehicular emission
- Introduction of Low-Sulphur fuels
- Controlling the burning of municipal waste and crop residue
- Building capacity to monitor and forecast episodes of high air pollution
- Tree Plantations in and around major cities
- Planned urban and industrial development

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