



Dynastic Politics and Environmental Governance in Asia: A Bibliometric Synthesis of Research Trends and Policy Implications (2015–2025)

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Abstract: The intersection of political dynasties and environmental policymaking in Asia between 2015 and 2025 has been examined through a comprehensive bibliometric synthesis. Drawing upon 2,395 publications indexed in the Scopus database, the analysis was conducted using Biblioshiny, an interactive platform based on the Bibliometrix R package. A combination of thematic mapping, co-occurrence network analysis, and multiple correspondence analysis (MCA) was employed to identify prevailing research patterns, thematic structures, and collaborative networks across national and institutional contexts. Emphasis was placed on six Asian countries—India, Indonesia, Japan, Pakistan, the Philippines, and Thailand—where dynastic political continuity is notably entrenched and environmental policy challenges are particularly acute. Findings reveal that political dynasties have exerted both facilitative and obstructive influences on environmental governance, contingent upon national political structures, institutional robustness, and civil society engagement. Although a marked increase in transnational scientific output and institutional collaboration was observed—reflecting the growing global salience of environmental concerns—evidence suggests that entrenched dynastic interests frequently inhibit the translation of scientific knowledge into effective policy implementation. In particular, short-term political incentives and elite preservation strategies have been found to undermine regulatory continuity and transparency. Despite expanding scholarly engagement, gaps remain in policy accountability, especially in regions where dynastic influence dominates legislative and executive processes. It is therefore recommended that policy frameworks be restructured to enhance procedural transparency, institutional independence, and public participation in environmental decision-making. Strengthened international oversight mechanisms and cross-border cooperation are also proposed as means to mitigate the regressive effects of dynastic politics on environmental sustainability. By situating political dynasties within the broader discourse on environmental governance, this study contributes to a nuanced understanding of how elite continuity shapes policy efficacy and sustainable development trajectories in Asia.

Keywords: Political dynasties; Environmental governance; Bibliometric analysis; Research collaboration; Policy implementation; Sustainable development

1. Introduction

Political dynasties have become a paradox in democratic systems, in a system that should emphasize broad political selection and participation, elected political power is precisely within the scope of a particular family or elite group (Kenawas, 2023). The sustainability of power in political dynasties often brings stability in government administration, but it can also pose various challenges, especially in the public policy sector, including environmental policy. Some leaders from the ruling political family may have business or economic interests (Mendoza et al., 2022), which are contrary to sustainability principles that can ultimately undermine efforts to protect the environment and sustainable natural resource management.

Political dynasties in democratic countries in Asia play a complex role in environmental policy, with some leaders pushing sustainability initiatives while others engage in policies that increase the exploitation of natural resources. In the Philippines, the Duterte government is using climate adaptation to legitimize violence, the suppression of the rights of indigenous peoples and environmental activists (Smith, 2022). While in India, the Nehru-Gandhi family has a history of supporting climate action through the National Action Plan for Climate Change (NAPCC) (Chandel et al., 2016). In Indonesia, the Jokowi administration has been criticized for the Omnibus Law or Job Creation Law (JCL), which is considered to weaken environmental protection by exempting many projects from Environmental Impact Analysis (EIA) obligations, thus potentially accelerating environmental degradation due to weak spatial planning (Hadi et al., 2023). There are concerns that this policy will be continued during the current Prabowo-Gibran administration, with Vice President Gibran being Jokowi's first son.

In general, political dynasties can create continuity in policy. But it also risks prioritizing the economic interests of powerful families (Dulay & Go, 2022). Some countries implement progressive environmental regulations, but their implementation and effectiveness often depend on political pressure, civil society participation, and government transparency. Therefore, further study is needed to understand how political dynasties can contribute to more sustainable environmental policies in Asia.

This study aims to analyze the influence of political dynasties on environmental policies using a bibliometric approach. This analysis will identify research trends, patterns of academic collaboration, and uncover gaps in the literature that address the relationship between political dynasties and environmental policies in different countries in Asia. With this approach, research can reveal how this issue has been studied by academics, which topics are still rarely explored, and how local and global political dynamics affect studies on this topic.

By understanding the patterns of relationships between political dynasties and environmental policy, this research is expected to make an important contribution to the development of more effective and sustainable environmental policy strategies. The results of this study can also serve as a reference for policymakers in designing regulations that can reduce the negative impact of centralized political power, while encouraging transparency, accountability, and public participation in environmental policy formulation.

2. Methodology

Using a bibliometric approach, this study aims to analyze the relationship between political dynasties in a country and the environmental policies implemented. This method allows the identification of research patterns, the level of collaboration between authors, and publication trends related to environmental regulation in countries with political dynasty realities. Bibliometric analysis enables the mapping of how a particular issue evolves within academic literature, including the impact of political factors on regulatory frameworks across different countries. Through data visualizations such as thematic maps, collaboration networks, and trend graphs, a comprehensive overview of the research landscape and its development trajectory can be obtained. The main data source in this study was obtained from the Scopus database, which was chosen for its broad academic scope and consistency in providing standardized metadata. By indexing a wide range of scientific publications, Scopus provides a diverse array of academic references that support this bibliometric analysis comprehensively (Aryawati et al., 2024).

This research focuses on the period 2015 to 2025 to analyze the impact of political dynasties on environmental policies in the Philippines, Indonesia, Japan, Pakistan, Thailand, and India. The year 2015 was a turning point in global environmental policy with the adoption of the Paris Agreement, which binds countries to limit global warming and advance the Sustainable Development Goals (SDGs), which emphasize environmental sustainability (Moreno et al., 2023). With these measures, 2015 marks a new era in global efforts to address climate change and environmental degradation.

Meanwhile, the focus on the five countries above is related to the presence of political dynasties and their potential influence on public policy, particularly in the environmental sector. These countries represent a diverse range of democratic systems in Asia, where familial political succession remains prominent. In the Philippines, families such as the Aquinos and Marcoses continue to dominate electoral politics (Mendoza et al., 2023); India has witnessed the long-standing dominance of the Nehru-Gandhi family, while Pakistan has been shaped by dynastic figures such as the Bhuttos (Amundsen, 2013); In Japan, elite families like those of Shinzo Abe and Seiko Noda exemplify hereditary leadership within a modern parliamentary democracy (Miwa et al., 2023). Indonesia presents a complex case, with enduring influence from the Sukarno and Suharto legacies, and the recent rise of the Jokowi family within regional and national politics. Though Thailand does not exhibit dynastic politics in a traditional sense, the concentration of political power among elite networks and military-linked families serves a comparable function in shaping policy outcomes. These countries were selected to capture both the common patterns and the contextual diversity of how dynastic politics intersect with environmental governance in Asia.

In this study, 2,395 scientific articles related to the political reality of dynasties and environmental policies were analyzed using a bibliometric approach. The data collection process was carried out using a combination of keywords that included political and environmental regulatory aspects in various countries in Asia as the focus of the study, as shown in Table 1 and Figure 1. With a systematic search strategy, this study aims to get a broader

picture of the relationship between the political conditions of a country's dynasties and its environmental policies, and to examine how debates on this issue develop in those countries.

Table 1. Search string

Keywords	Rationale
"Political dynasty" OR "Hereditary politics" OR "Family politics" OR Dynastic politics"	To identify the topic of political dynasties
"Philippines" OR "Indonesia" OR "Japan" OR "Pakistan" OR "Thailand" OR "India"	To focus research on a country with a dynastic political reality
"Environmental policy" OR "environmental regulation"	To identify the topic of environmental policy and regulation

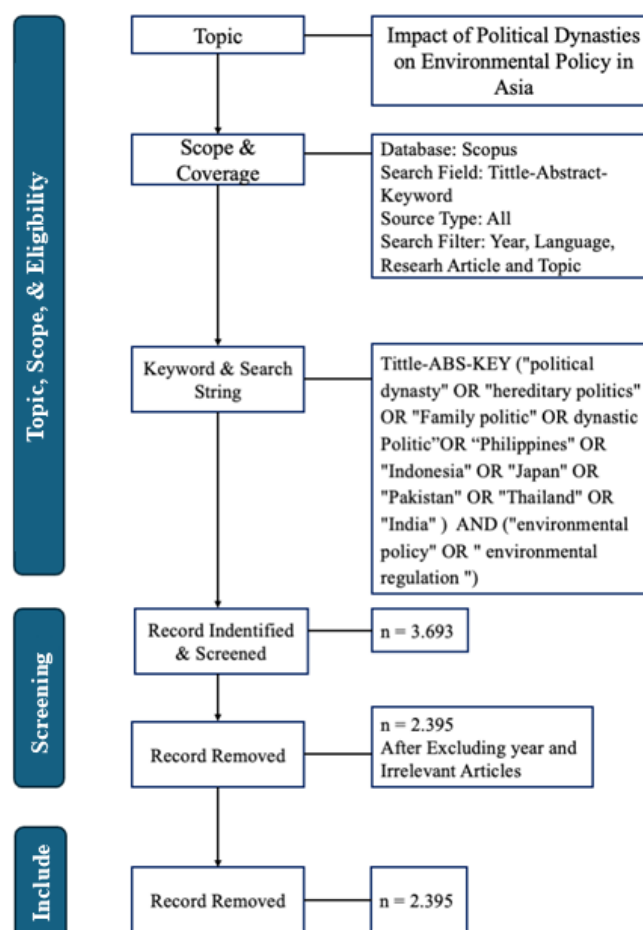


Figure 1. Flow diagram of PRISMA methodology and bibliometric analysis

The data analysis stage is carried out by selecting relevant articles based on the language and the suitability of the available topics, keywords, and abstracts, as outlined in Table 2. Articles that met the criteria were then analyzed using the Biblioshiny software (RStudio), which supports bibliometric analysis to map research trends, collaborative networks between authors, as well as the geographical distribution of scientific publications (Donthu et al., 2021). With this approach, the research can identify the patterns and directions of the development of studies related to political dynasties and environmental policy, as well as provide insight into the factors that contribute to changes in environmental regulations in various countries.

Table 2. The criteria of inclusion and exclusion

Criteria	Inclusion	Exclusion
Year	2015–2025	-
Language	English	Non-English
Topic	Relevant Topic Political Dynasty in Democratic System	Irrelevant Topic Political Dynasty in Democratic System

3. Results

To understand the evolving dynamics regarding the influence of dynastic political realities on environmental policy, this study analyzes publication trends during the period 2015–2025. Using a bibliometric approach, the study identified a shift in academic focus that reflects the relationship between dynastic political power and environmental regulation. These findings not only show the rise of environmental policy research but also highlight how the continuity of power in political dynasties can affect policy certainty and the implementation of environmental regulations. The dataset comprises 2,395 documents from 1,152 sources, with an average of 16.25 citations per document and an international co-authorship rate of 29.19%, as shown in Table 3.

Table 3. Main information about data

Description	Results
Main Information about Data	
Timespan	2015:2025
Sources (Journals, Books, etc.)	1152
Documents	2395
Annual Growth Rate %	1,49
Document Average Age	4,01
Average citations per doc	16,25
References	129879
Document Contents	
Keywords Plus (EN)	13258
Author's Keywords (DE)	7997
Authors	
Authors	8836
Authors of single-authored docs	213
Authors Collaboration	
Single-authored docs	221
Co-Authors per Doc	4,32
International co-authorships %	29,19
Document Types	
Article	2395

3.1 Publication Trends

Figure 2 illustrates the publication trends of scientific articles related to environmental policies in five Asian countries (Diaz-Barrera et al., 2025).

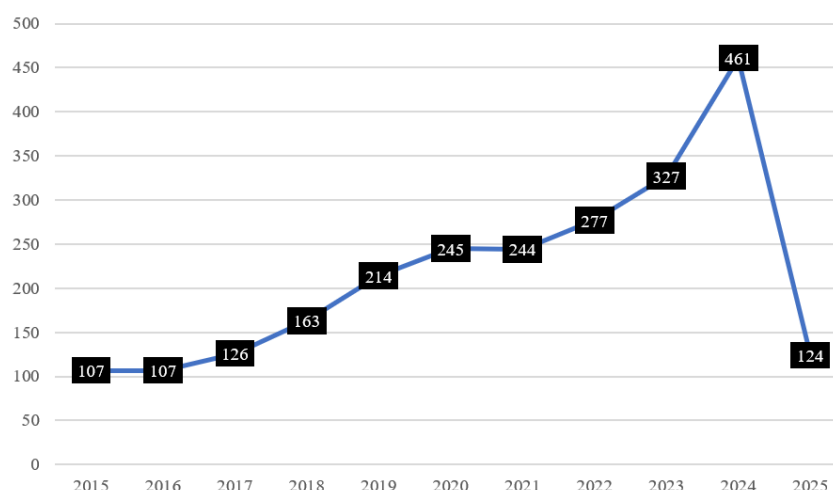
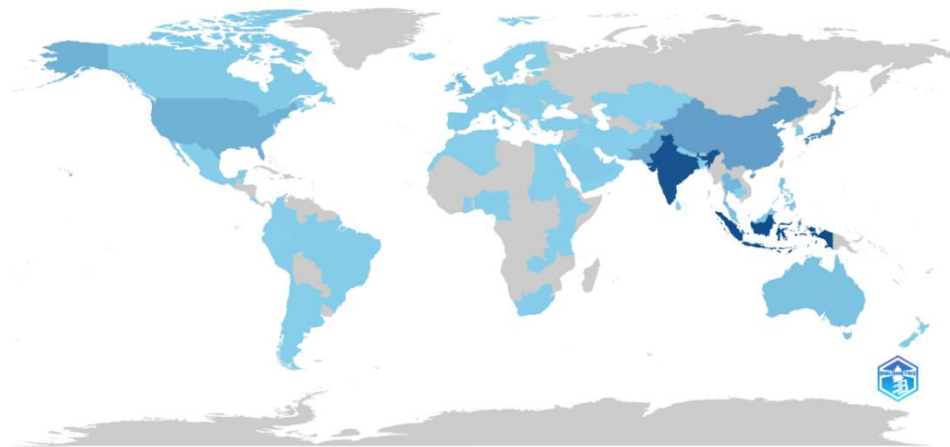


Figure 2. Annual scientific production

Between 2015 and 2025, there has been a notable increase in scientific output from approximately 107 articles in 2015 to over 461 articles in 2024. While the overall trend is upward, a period of stagnation is observed around 2020–2021. This stagnation likely reflects the global disruption caused by the COVID-19 pandemic, which slowed research activities, delayed fieldwork, and disrupted academic publishing cycles (Heo et al., 2022). However, this

was followed by a dramatic surge in 2023 and a peak in 2024, which can be attributed to renewed global attention toward environmental governance, stricter international regulations, and increased participation of developing countries in climate-related initiatives. Key international events such as the Conference of the Parties (COP) (Mutawalli et al., 2023) and policy shifts within BRICS nations (Shan et al., 2024) further accelerated research activities, particularly in areas such as energy transition, climate change mitigation, deforestation, and sustainable development policies.



3.2 Main Topics and Research Themes



conceptual relationship in research on environmental policy and political dynasties in Asia. This analysis groups various environmental issues into several main clusters that reflect the linkages between environmental governance, resource exploitation, and political influence on sustainability policies.

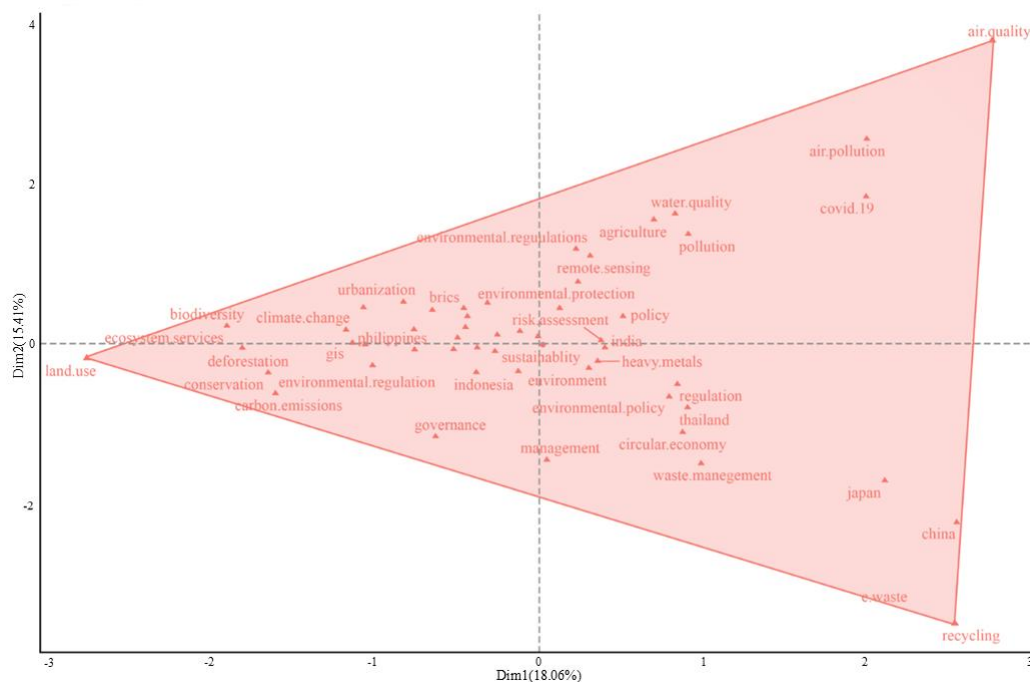


Figure 6. MCA

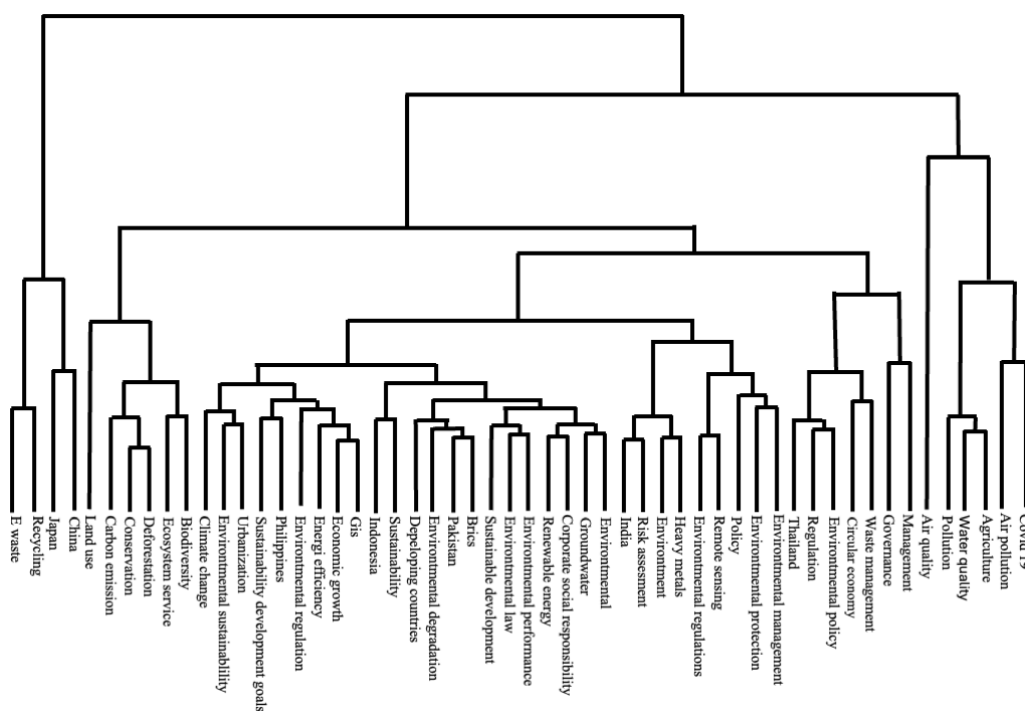


Figure 7. Dendrogram

The MCA plot offers a visual representation of the conceptual associations among key terms in research related to environmental policy and political dynasties in Asia. For example, Thailand appears clustered with terms like “regulation,” “environmental policy,” and “circular economy,” suggesting a strong thematic link between environmental governance and circular economic models within the Thai context. This grouping aligns with

findings that highlight inconsistencies in environmental policymaking, often influenced by the presence of entrenched political dynasties. In total, there are 3 clusters formed. The first cluster has concepts related to land use, ecosystem services, conservation, deforestation, and carbon emissions, which shows a focus on environmental degradation due to the exploitation of natural resources. At the top right, there are concepts related to air quality, air pollution, water quality, and the COVID-19 pandemic, indicating a debate around environmental pollution and public health. Meanwhile, the third cluster is quite far apart, with themes focusing on the circular economy, waste management, and recycling, with countries such as China and Japan emerging as the center of study in this context.

China's appearance in this bibliometric factorial analysis, although not included in the keywords, is due to comparative studies in environmental policy research. This factor causes China to appear in the analysis even though it is not explicitly searched for in the initial keywords. For example, a study by Rao & Gaur (2025) conducted a comparative assessment of green growth indicators for China and India. The study by Sajid et al. (2024) examined the interaction of institutional quality, economic complexity, and carbon dioxide emissions in China and Pakistan. Also, a study by Chin et al. (2024) conducted a study analyzing the relationship of environmental performance and corporate finance: a comparison of companies in China and Japan.

A dendrogram is a visual tool designed to display large volumes of information in a format that is easy to interpret and analyze (Wilke et al., 2013). Figure 7 illustrates clusters of thematically related terms that frequently co-occur in the literature on political dynasties and environmental policy in Asia (2015–2025). Concepts such as “sustainability,” “economic growth,” and “energy efficiency” are grouped around countries like Indonesia and the Philippines, suggesting a scholarly emphasis on sustainable development within politically dynastic systems in emerging economies. India and Thailand also appear prominently, associated with clusters involving “risk assessment,” “environmental protection,” and “policy,” indicating a policy-oriented discourse likely shaped by complex political legacies, including Thailand’s experience under Thaksin’s dynastic influence.

This analysis shows that Indonesia, Philippines, and Thailand are in the middle position on the conceptual map, indicating their involvement in various aspects of environmental policy, from regulation to the exploitation of natural resources. Thus, this study highlights how environmental policies in Asia are influenced by dynastic political dynamics and the interaction between resource governance, sustainability regulations, and pollution challenges. Overall, these bibliometric results indicate that political dynasties in Asia can play a role in shaping environmental policy, both in the form of regulations that support sustainability and in policies that risk damaging the environment.

3.4 Researcher Collaboration and Institutional Network

The inter-institutional collaboration network in Figure 8 shows the existence of several key connectivity centers that connect various universities and research institutions. Universities in Indonesia, such as Gadjah Mada University, the University of Indonesia, and IPB University, seem to have close ties in research collaboration, especially with international institutions such as Wageningen University and King Saud University.

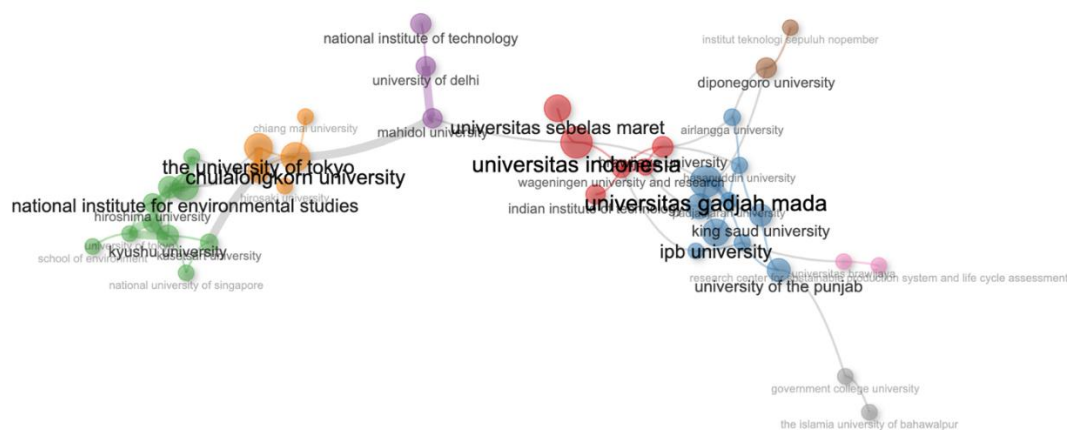


Figure 8. Inter-institutional collaboration network

In addition, the University of Tokyo and Chulalongkorn University are also significant centers of collaboration, especially in connecting research focused on environmental policy with other institutions in Southeast Asia and Japan. The existence of different color clusters shows that this academic collaboration forms several main groups based on geographical proximity or specific fields of study.

The connections between universities in India, Thailand, and Japan with universities in Indonesia reflect the

cross-institutional involvement of various countries in Asia, examining how environmental policies are implemented in the region. Such as research on national decarbonization (Svensson et al., 2024) and research on embodied energy and carbon assessment (Agustiningtyas et al., 2024), written by a collaboration of institutions from France, India, Brazil, Japan, and Indonesia.

Figure 9 shows that India and Indonesia are two major centers in the production of academic publications on this topic. India (marked in red) has strong ties with various countries in Europe, the United States, Japan, and other countries, indicating that the research conducted by Indian researchers has a global scope of collaboration with institutions from different continents.

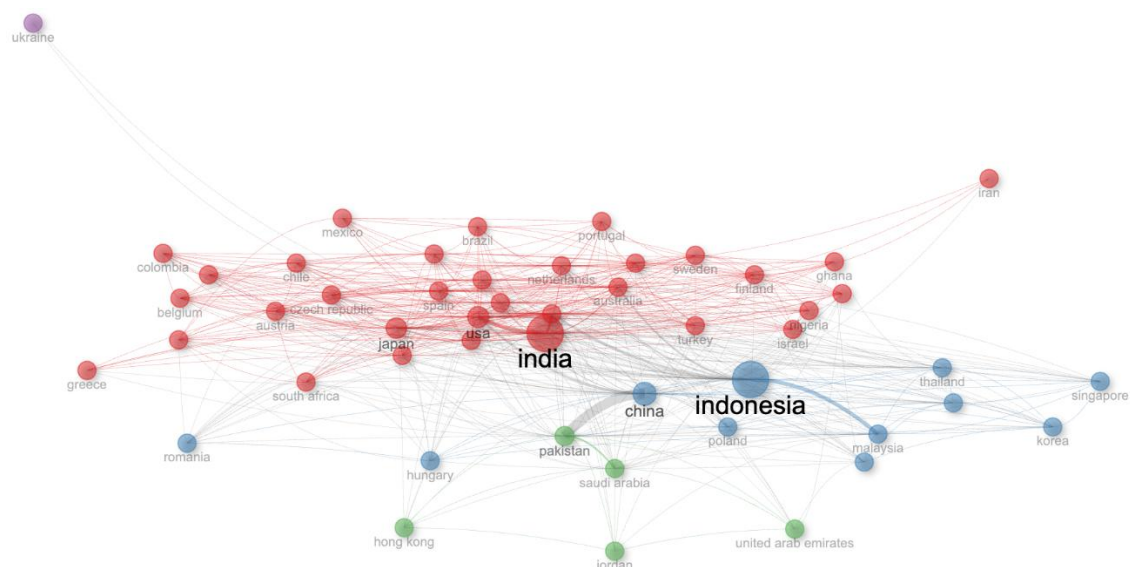


Figure 9. Collaboration network

Meanwhile, Indonesian researchers (marked in blue) collaborate more with countries in Southeast Asia, such as Malaysia, Thailand, and Singapore, as well as with China. This shows that research in Indonesia is more concentrated in the Asian regional network. The connection between India and Indonesia is also quite strong, indicating significant collaboration between the two countries in environmental policy studies. In addition, several countries, such as Pakistan and Saudi Arabia (marked in green), act as a link between the Indian and Indonesian research networks and the Middle East region, showing a cross-regional dimension in this study.

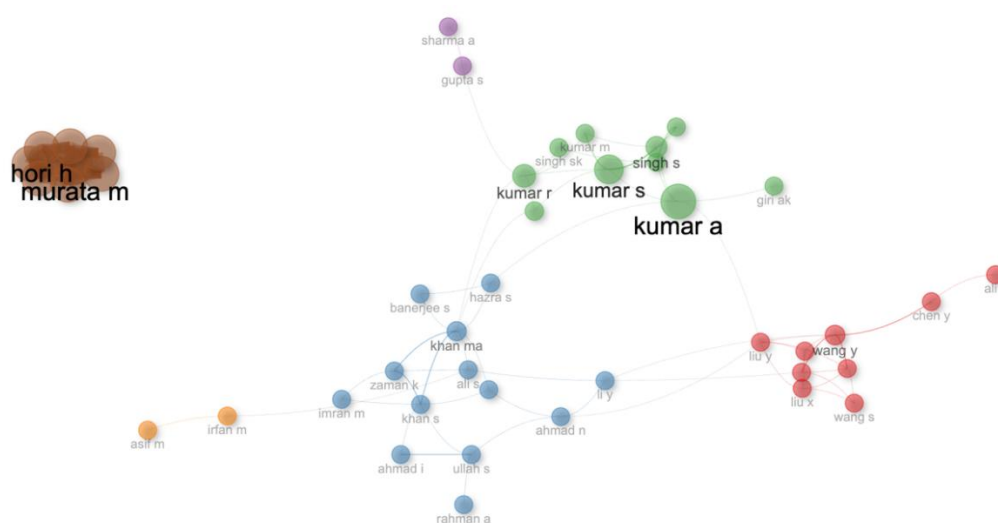


Figure 10. Author collaboration

Figure 10 shows the network of collaboration between authors in research related to the impact of political dynasties on environmental policy. The network consists of several main clusters featuring research groups with

strong relationships within clusters but fewer connections between clusters. Names like Kumar A, Khan MA, and Wang Y are larger, signifying their role as centers of collaboration within their respective groups. The green clusters dominated by surnamed authors Kumar and Singh show close collaboration among researchers from regions that are likely to have similar backgrounds.

Meanwhile, the blue cluster led by Khan MA shows an extensive network of collaborations, with high connectivity among several authors. The red cluster led by Wang Y also showed solid collaboration, although it was more isolated from other groups. Of interest is the presence of separate clusters (Hori H and Murata M), which appear to work independently without direct connection to the main network. This indicates that research on the impact of political dynasties on environmental policy has several centers of collaboration developing in parallel, with varying degrees of integration among research groups.

3.5 Citation Chart

Figure 11 shows a list of the most cited documents globally in research on the impact of political dynasties on environmental policy in Asia.

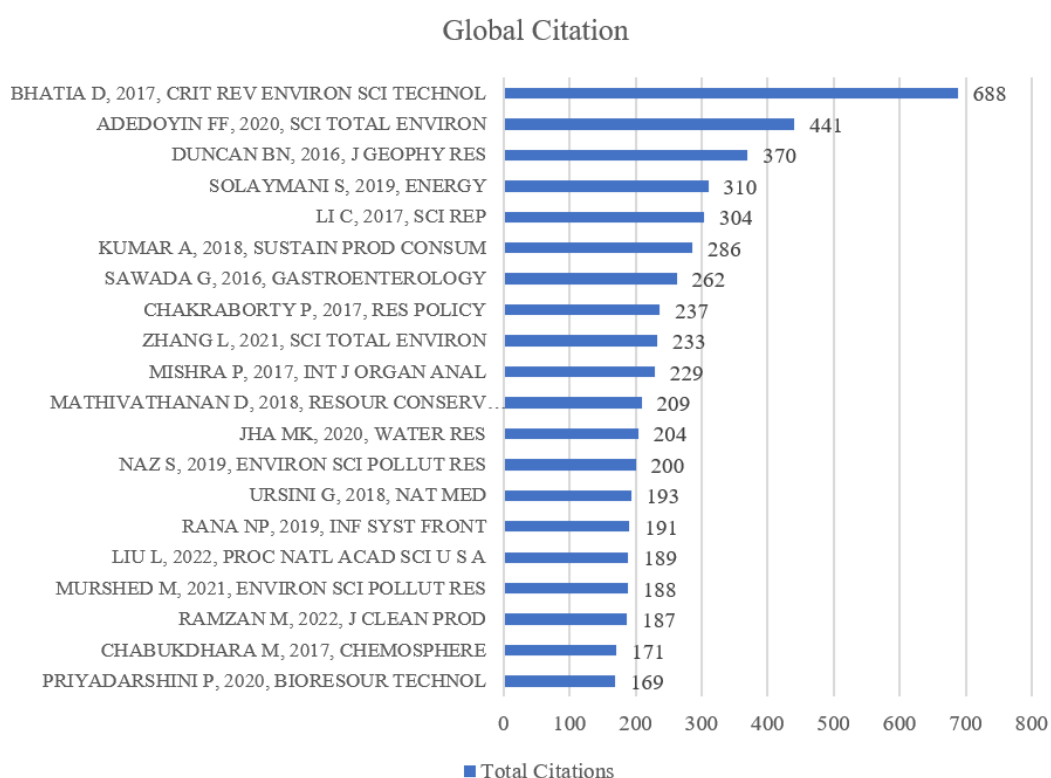


Figure 11. Most global cited document

The most cited document (Bhatia et al., 2017) published in Critical Reviews in Environmental Science and Technology, with 688 citations, showing that this research has a great influence in the field of the environment. While this work primarily focuses on environmental remediation technologies, its frequent citation reflects the increasing attention to environmental challenges in Asian contexts where political dynasties may influence policy priorities, including environmental regulation and industrial waste management. The next highly cited study (Adedoyin et al., 2020) published in Science of the Total Environment, with 441 citations. This paper is particularly relevant as it explores the role of regulatory quality, a domain often shaped by political leadership and governance structures. In dynastic political systems, regulatory institutions may be either strengthened or weakened depending on the interests of ruling elites, affecting environmental outcomes. The third (Duncan et al., 2016) with 370 citations. This study contributes methodologically to environmental monitoring, which is crucial for assessing the effectiveness of policies, including those shaped or obstructed by dynastic governments with long-standing control over urban development and industrial expansion. These highly cited documents, although not directly discussing political dynasties, offer important insights into environmental governance and policy areas where dynastic influence could have substantial implications.

These documents are the main reference for research related to environmental policy, sustainability, and

regulation. The three studies with the highest citations discuss the impact of industry and human activities on the environment, including textile waste, carbon emissions from coal, and air pollution from nitrogen dioxide. All research highlights how environmental policies and regulations can reduce negative impacts on ecosystems. The study has significant global relevance and shows that environmental issues are cross-border. Research on environmental policy in the context of political dynasties in Asia is influenced not only by specific studies of politics and governance but also by the broader literature on the environmental impacts of industrial and regulatory activities. This indicates that policies made in a political system dominated by political dynasties often must respond to larger environmental challenges, such as water pollution, carbon emissions, and air pollution.

4. Discussion

The findings in this study show that political dynasties have a complex influence on environmental policies in Asia. This role can be seen in regulatory efforts that support sustainability, and in policies that have the potential to accelerate environmental degradation, as seen in research themes. The analysis categorizes key research topics into clusters: resource exploitation and deforestation, environmental regulation and sustainability, pollution and public health, and circular economy and waste management. The cluster of topics reflects how the political interests of the ruling family can shape environmental policy, both in progressive and regressive directions.

In Indonesia, the influence of political dynasties can be seen in contradictory policies, such as the Food Estate program, which increases food security, attracts investment, and increases farmers' incomes. However, there are risks such as land conflicts, environmental degradation, and deforestation (Redi & Mizuno, 2025). Intensive agricultural practices in India aimed at meeting food needs due to population growth have led to the use of agrochemicals, such as pesticides, in large quantities to increase productivity, which ultimately pollutes the environment (Kashyap et al., 2024). In Japan, the energy policy known as “Abenergonomics” reflects an approach that prioritizes the economic growth objectives of Abenomics. This policy was able to persist despite pressure and criticism from the international community due to its support from a strong political power (Incerti & Lipsy, 2021). Shinzo Abe inherited political influence from his family, which held important positions in the Liberal Democratic Party (LDP), a party that has historically dominated the Japanese parliament. Structural support and patronage networks that benefit hereditary politicians enabled Abe to implement conservative and pro-nuclear energy policies with minimal obstacles.

Meanwhile, a similar situation occurred in Thailand, where the democratic system has not always led to effective environmental policies. Although there is freedom of expression, the weakness of political parties has made it difficult for the interests of various social groups to be effectively represented in the legislative process. Public participation in policymaking, including environmental policy, is often limited to elections, without meaningful involvement in policy formulation. The political dynasty of Thaksin Shinawatra, through the dominance of the Thai Rak Thai Party, actually had the power to build a broad social consensus, but instead chose to restrict public participation to maintain control. This approach resulted in environmental policies that were elitist and failed to reflect the wider public interest (Unger & Siroros, 2011).

Political dynasties often have a long-term interest in maintaining power, which contributes to decision-making that adversely affects economic development and environmental issues (Rehman et al., 2022). Leaders of political dynasties tend to use environmental policies as a political tool to maintain power. For example, in some Asian countries, there is a pattern in which popular environmental policies are used to strengthen political legitimacy, while stricter policies on the exploitation of natural resources tend to be ignored if they conflict with the economic interests of political elites. These findings align with previous studies suggesting that politicians are often motivated to preserve their economic and political power, even when it comes at the cost of long-term environmental sustainability (Cisneros et al., 2021).

Although in some countries the government is still influenced by the political realities of dynasties, this does not always hinder efforts to protect the environment. With proper regulations and sustainability-oriented policies, governments can still encourage industries to adopt environmentally friendly practices and reduce negative impacts on ecosystems. For example, in Pakistan, strong government regulations and sustainability-oriented industry practices have been proven to improve the environmental performance of manufacturing companies (Mehmood et al., 2024). Meanwhile, in Japan, new emissions regulations have proven effective in reducing air pollution (Xing et al., 2022).

On the other hand, civil society and community involvement also need to be considered. A study in the Philippines conducted by Nem Singh & Camba (2020) analyzing the mining policy cases under the Arroyo (2001–2010), Aquino (2010–2016), and Duterte (2016–2022) administrations found that involving civil society and mining communities in policymaking can help create more equitable and acceptable rules for those directly affected by mining activities. On the other hand, if policies are only made by a small group in government, this can provoke rejection and strengthen resistance and have a negative impact on the environment.

Publication Trends shows how environmental issues raised in international forums are a major driver of research. As is well known, international forums such as the COP require their members to contribute to environmental

issues, as well as provide financial resources to developing and vulnerable countries so that they can contribute to the objectives of the forum (Abbass et al., 2022). The network of collaboration between countries in this study indicates the linkage between countries with strong dynastic political traditions, such as India and Indonesia, in environmental policy discourse. India, as a major hub in this research network, has strong links with other countries that also face similar challenges in environmental governance influenced by dynastic political interests. This confirms that political dynasties not only have an impact on governance but also on the direction of environmental policies in these countries.

The findings of this study confirm that political dynasties in Asia have a significant impact on the direction of environmental policy. Despite efforts to improve environmental regulation, political dynasties are often an obstacle to the implementation of more sustainable policies. Therefore, the study highlights the importance of policy reform, increased transparency, and civil society involvement in environmental decision-making, as well as the need for stronger international collaboration to reduce the negative impact of political dynasties on environmental sustainability in the Asian region.

5. Conclusions

This research reveals that political dynasties have a complex influence on environmental policy in Asia. Political dynasties often use environmental policy as a tool to maintain power, both through the exploitation of natural resources and the development of infrastructure that supports their economic interests. The research collaborative network shows that countries with strong dynastic political systems tend to be more connected in studies focused on economic growth compared to climate change mitigation or long-term sustainability. In addition, the policy dynamics taken by dynastic leaders show a tendency to maintain the status quo, thus often hindering more progressive environmental reforms based on sustainability principles.

For future research, further exploration is needed on how other factors, such as international pressure, the role of civil society, and the participation of non-state actors, can moderate the impact of political dynasties on environmental policies. In addition, comparative studies that compare countries with and without dynastic political influence can provide deeper insights into the effectiveness of environmental policies in various systems of government. Future research may also adopt more systematic quantitative approaches, such as big data-driven policy analysis or broader network mapping, to identify patterns of relationships between political dynasties and environmental policy in the long term.

Practical Implications for Policymakers and Stakeholders: Political dynasties in Asia may play a significant role in shaping environmental policy agendas, influencing the continuity or stagnation of environmental reforms. Policymakers should consider how political family networks can either facilitate long-term policy implementation or hinder regulatory innovation, depending on their commitment to public and environmental interests. For environmental agencies and international development partners, recognizing the role of political dynasties is crucial in designing engagement strategies that align environmental goals with the political realities of each country. Civil society actors and watchdog institutions are also encouraged to increase transparency and advocate for inclusive policymaking processes that reduce elite capture in environmental governance.

Data Availability

Not applicable.

Conflicts of Interest

The authors declare no conflict of interest.

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