MINDWELL SCIENCE PRESS SDN. BHD.

Journal of Emerging Technology Governance
Volume 1, Issue 2

RESEARCH ARTICLE

A Comparative Study of Domestic and International Regulatory Policies on Generative Artificial Intelligence from a "Tools–Structure" Perspective

Shengli Deng[1,*], Weiwei Ding[1], Fan Wang[1], Haowei Wang[1]

[1] *School of Information Management, Wuhan University, Wuhan 430072, Hubei, China*

*** Corresponding author:** Shengli Deng, E-mail: victorydc@sina.com

Published: 28 October 2026

Abstract

This study adopts the dual perspective of policy tools and structural characteristics, taking the generative artificial intelligence (GenAI) regulatory policies of different countries as its object in order to uncover the structural features and internal connections of GenAI policy elements and thereby promote the sound development of generative artificial intelligence. Fourteen valid policy texts were collected, and bibliometric analysis, content analysis and BERTopic were used to encode and interpret 327 relevant text units. Their structural characteristics are analysed along three dimensions — the timing of policy issuance, the issuing bodies, and the thematic features of the policies — and the paths by which three categories of policy tool (environmental, demand-side and supply-side) take effect are examined. The study finds that GenAI regulation is still at an early stage; the overall characteristics of policy differ markedly between countries, and there are significant differences at the regulatory level. Taken as a whole, the path by which policy tools take effect is dominated by the indirect effect of environmental policy tools, and exhibits structural imbalance and a biased action path. Comparing the similarities and differences between national regulatory policies, the study proposes targeted countermeasures — building a collaborative governance mechanism, optimising the structure of policy tools, balancing their action paths, and evaluating the effects of policy implementation — in order to promote the coordinated development of the GenAI regulatory system.

Keywords: generative artificial intelligence, regulation, policy tools, text analysis, topic identification, collaborative governance

1 Introduction

Generative artificial intelligence (GenAI), a branch of artificial intelligence technology, has attracted worldwide attention through the speed of its development and the breadth of its applications[1]. In 2023 the emergence of GenAI, represented by ChatGPT[2], marked a step towards the realisation of artificial general intelligence (AGI)[3]. In February 2024 the text-to-video large model Sora[4] applied a new model of human–machine collaboration to complex real-world problems[5]. The regulation of GenAI nonetheless faces many risks and challenges. The speed of regulation, its scope, who is to regulate, how regulation is to be carried out, how the fairness, transparency and explainability of algorithms are to be ensured, how users' privacy and data security are to be protected[6], and how misuse is to be prevented are all problems that urgently require solution[7]. Xue Lan and 25 other leading experts and scholars[8] published a study in *Science* emphasising the major and extreme risks that general-purpose AI systems may bring, providing an important theoretical basis and practical guidance for the regulation and governance of GenAI[9]. In July 2024 the Central Committee of the Communist Party of China issued the *Resolution of the Central Committee of the Communist Party of China on Further Deepening Reform Comprehensively to Advance Chinese Modernization*[10], which stated explicitly that the mechanisms for the development and management of GenAI should be improved and that a safety regulatory system for artificial intelligence should be established. Although the governments of Germany, France, Italy, Spain, the Netherlands, Belgium, Luxembourg, Brazil and South Africa have not issued laws and policies directed specifically at GenAI, they have conducted active research and exploration with a view to effectively preventing and controlling the risks it may bring while safeguarding its sound development. On the whole, by taking reasonable regulation of GenAI as their management approach, states can, on the premise of a reasonable anticipation of AI technology, design appropriate legal arrangements in advance and so strike a balance between technological development and moderate regulation.

Taking the dual perspective of "policy tools and structural characteristics" and the GenAI regulatory policies of different countries as its object, this article compares and analyses the different modes of GenAI regulation at home and abroad, with

Copyright: © 2026 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

the aim of uncovering the structural characteristics and action paths of policy elements, identifying the themes of the policy texts, revealing their internal connections, and proposing targeted countermeasures so as to promote the sound development of GenAI.

2 Literature Review

2.1 Research on GenAI Policy

The existing literature offers a relatively rich range of research perspectives on GenAI. As of 31 March 2024, a search of the title, abstract or keywords for "GenAI" OR "Generative Artificial Intelligence" in domestic and international databases including CNKI, the Web of Science Core Collection, Elsevier ScienceDirect and SpringerLink returned 9,017 academic papers, but relatively few of these concern GenAI policy and regulation. Research that does address policy and regulation mostly proceeds from the theoretical level and focuses chiefly on technical principles[11], policy frameworks, governance systems[12] and risk challenges[13]. A selection of the relevant studies is given in Table 1.

Table 1 Selected GenAI policy studies

First author	Main content
Cheng[14]	Summarises the similarities and differences in how institutions use GenAI guidance; in view of the structural consensus on GenAI use and the pressing need for interdisciplinary guidance, provides a management and deployment reference for the formulation of policy frameworks.
He Jun[15]	Compares and analyses the legal governance practice of GenAI regulation in the United States, the European Union and Japan, providing a reference at the levels of legal policy, safety technology and social ethics.
Xu Wei[16]	Mines the governance system and optimisation path for GenAI data security risks on the basis of 38 policy texts.
Huang Weiwen[17]	Moves from legal regulation to legal governance, in order to manage and promote the development and application of GenAI effectively in practice.
Lorenz[18]	Addresses the transformative impact and policy challenges brought by GenAI, providing a reference and solutions for policy-making and decision-making.
Rao Han[19]	Provides business implications for the precautionary measures of the firms concerned through a comparative analysis of the development of GenAI-related policies and regulations in China, the United States and Europe.
Wan Bin[20]	Addresses the existing problems by improving the construction of China's GenAI legal regulation system in terms of both the subjects of obligation and the allocation of obligations.
Erkkilä[21]	Summarises the composition and evolution of global indicators, revealing through conceptual analysis and visualisation networks the path dependence and institutional practice of GenAI policy, and providing trend insight for policy-makers.
Ulnicane[22]	Analyses emerging international GenAI governance from the standpoint of key institutions and policy frameworks, conceptualising such key features as its polycentric governance system and providing a theoretical foundation for the construction of an international governance framework.
Mügge[23]	Analyses the EU *Artificial Intelligence Act*, discusses the balance between binding rules and self-regulation, and proposes a new perspective on the trade-offs of digital sovereignty.
Ulnicane[24]	Explores the interaction of GenAI policy and governance with ideology, cognitive dimensions, expressions of rights and global dynamics, revealing their correlation with key issues.
Khanal[25]	Uses a multiple-streams framework to analyse how the technological monopoly and political influence of big technology companies reshape the GenAI policy landscape, providing insight for policy-making.
von Ingersleben-Seip[26]	Examines the state of competition and cooperation in the setting of global GenAI technology and ethical standards, and, on the basis of interviews and text analysis, offers strategic recommendations for international cooperation and standard-setting.
Schiff[27]	Combines the technology policy paradigm with a content analysis of US GenAI policy documents, revealing how the government understands key policy problems, solutions and problem frames.
Roberts[28]	Evaluates two paths to strengthening global GenAI governance — establishing a new centralised international body and strengthening existing institutions — and explores the landscape of international institutional governance, providing a reference for the design of international cooperation mechanisms.

2.2 Research on Policy Text Analysis Methods

Policy text analysis at present chiefly employs content analysis[29], bibliometric analysis[30-31] and the LDA topic model[32] to trace the course of policy evolution and to uncover the implicit and internal relations among policy texts.

Domestic scholars working on policy text analysis tend to combine a specific policy context with a suitable analytical method for in-depth interpretation. Wang Xiaoqian and others[33], for example, used content analysis to examine 40 provincial digital government policy texts; Chen Mei and others[34], drawing on policy tool theory, used the LDA topic

Copyright: © 2026 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

model to analyse 24 comprehensive provincial policy texts in force as of December 2022; Wu Lingqian and others[35], from the standpoint of bibliometrics and visual analysis, traced the development of policy text research in China; and Wang Changzheng and others[36], through grounded theory and social network analysis, uncovered the evolution of attention in 262 big-data governance policies issued at the local government level.

Scholars abroad place greater emphasis on quantitative analysis and statistics of policy texts by means of bibliometric tools and techniques, so as to identify the patterns and trends of policy evolution. Annaer[37], working from a corpus of 100 policy documents, identified the lexical features of policy texts; Malandrino[38] combined qualitative text analysis and interviews with quantitative text mining and natural language processing to understand policy networks; Rao and others[39] proposed a method for classifying information in education policy texts based on an improved attention mechanism model; Pop and others[40] used co-word analysis to examine the policy evolution logic of 81 representative policy texts; and Seo[41] applied text network analysis to Korean defence policy in order to explore key issues. With the breakthrough development of techniques such as deep learning[42], moreover, traditional analytical methods have struggled to meet the demands of increasingly deep research and of solving complex problems. Scholars have accordingly proposed BERTopic, a topic modelling technique based on the BERT model, which uses Transformer embeddings pretrained on context and class-based C-TF-IDF scores to identify interpretable topic representations. This method overcomes the limitations of probabilistic generative topic modelling and is markedly superior to LDA[43] in the effectiveness of topic extraction at the content level, the depth of topic words, specialisation, explicit inter-word relations and the retention of contextual semantic information; it also performs well in pretrained embedding.

In summary, scholars at home and abroad differ in their emphasis in exploring and discussing GenAI, concentrating chiefly on the current state of regulation, the construction of framework systems and the paths to implementation. There is as yet, however, no interpretive analysis of GenAI regulatory policy from the standpoint of global governance, and there is a methodological gap in the use of BERTopic to uncover the thematic features of such policy. The present study therefore reviews the current state of research at home and abroad, adopts bibliometric analysis and content analysis, and encodes policy texts from the perspective of policy tools[44-46] in order to reveal the features of their external attributes and internal structure. From the perspective of structural characteristics it then uses BERTopic to identify the themes of GenAI regulatory policy texts and to uncover their internal connections and content features, thereby providing a reference and basis for the sound development and compliant application of GenAI[46].

3 Research Design

3.1 Research Approach

Policy tool theory is often used in policy text analysis to classify policy tools from a range of perspectives[31,48]. This article follows Rothwell and others[49] in dividing policy tools into supply-side, environmental and demand-side categories, the three acting in complementary fashion.

From the "tools and structure" perspective, this article takes the GenAI policy texts of the United States, the European Union, China, the United Kingdom and Singapore as its analytical scope. It analyses the structural characteristics of policy along three dimensions — timing of issuance, issuing bodies and thematic features — and, on the basis of the action paths of the three categories of policy tool, further compares the similarities and differences between the GenAI policies of different countries and regions before proposing targeted countermeasures. The research framework is shown in Figure 1.

Themes can reflect the core content of a policy text. BERTopic is a deep-learning-based topic modelling method[50-51] capable of extracting the thematic features of a text and uncovering their internal connections. In the thematic analysis section this article uses the pretrained BERT model and topic modelling techniques to map the texts of a large-scale text dataset into topic space and automatically identify latent topics — including embedding, dimensionality reduction, clustering and topic identification — and then visualises the relations between topics, between topics and policy texts, and between topics and topic words.

Copyright: © 2026 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

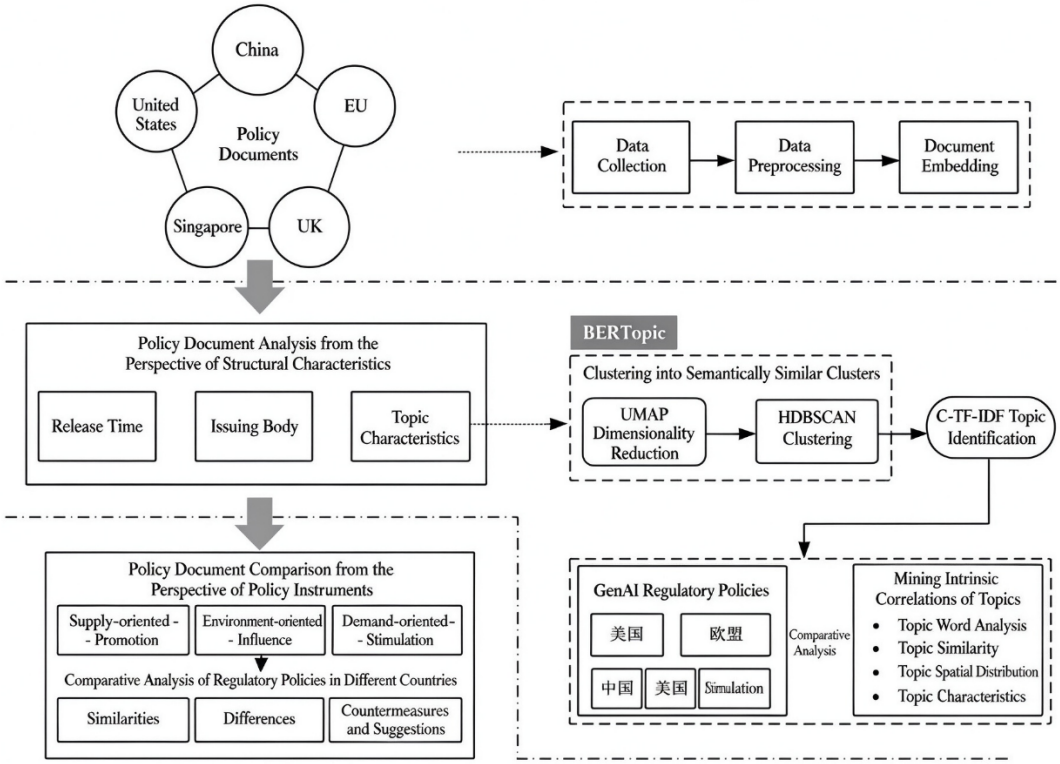


Figure 1 Research framework for the comparative analysis of GenAI regulatory policy

3.2 Data Collection and Processing

(1) Data collection. Official documents on GenAI regulation — including policy documents, statutes, guidance and executive orders — were collected from the United States, the European Union, China, the United Kingdom and Singapore through government websites, search engines and the relevant literature, so as to ensure the completeness and accuracy of the policy corpus. After manual screening, 14 valid texts were included in the study as of July 2024.

(2) Data processing. (i) The data format was cleaned and standardised for analysis, including tokenisation, removal of stop words, retention of the required words and stemming. (ii) The qualitative analysis software NVivo was used to encode, screen and classify the content of the policy texts, yielding 327 analytical units; examples are shown in Table 2. Coding proceeded item by item according to "policy number–point number", with the specific tool named according to the content of the text, and first- and second-level nodes formed for statistical purposes.

(3) Topic identification with BERTopic. The semantic information of the policy texts is captured through the BERT model, and topic modelling is used to cluster that semantic information so as to identify topics.

Table 2 Text analysis unit coding table

No.	Document title	Content analysis unit	Code
1	*Blueprint for an AI Bill of Rights*	Entities developing or using automated systems should establish clear governance structures and procedures.	1-11
2	*Interim Measures for the Management of Generative Artificial Intelligence Services*	Those providing and using GenAI services shall observe laws and administrative regulations and respect social morality and ethics.	2-4
14	*A Pro-Innovation Approach to AI Regulation*	Within the rules established by existing law, develop and use AI in accordance with standards, guidance and other tools.	14-9

4 Policy Text Analysis from the Perspective of Structural Characteristics

In analysing the policy texts this article proceeds from three dimensions — timing of issuance, issuing bodies and thematic features — in order to examine in depth the logic of policy evolution and its structural characteristics.

Copyright: © 2026 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

4.1 Analysis of the Timing of Policy Issuance

The timing of issuance is essential to understanding policy evolution and development; the statistical results are shown in Figure 2. On the whole, although different countries and regions have made some progress in GenAI regulation, the field remains at an early stage.

(1) The US government and its agencies have gradually increased the importance they attach to GenAI management and regulation, chiefly to promote innovative development, and have tended towards soft regulation and flexibility[52]. In October 2022 the United States put forward the *Blueprint for an AI Bill of Rights* as the framework of its AI regulatory policy; the Department of Commerce sought public comment on AI accountability measures in April 2023; in July 2023 the US Association for Computing Machinery's Technology Policy Council (ACMTPC) issued *Principles for the Development, Deployment and Use of Generative AI Technologies*; and in October 2023 President Biden signed an executive order on "safe, secure and trustworthy artificial intelligence", issuing the White House's first set of regulations on GenAI. In addition, in April and July 2024 the United States issued the *Generative AI Copyright Disclosure Act* and *The Content Origin Protection and Integrity from Edited and Deepfaked Media Act* (the COPIED Act). Yet although the United States has continued to issue policy reports, very little has in the end been enacted into law, which shows that the US government has come to a deeper understanding of the importance of the field and has begun to act, but that there remain difficulties and challenges in the policy-making process.

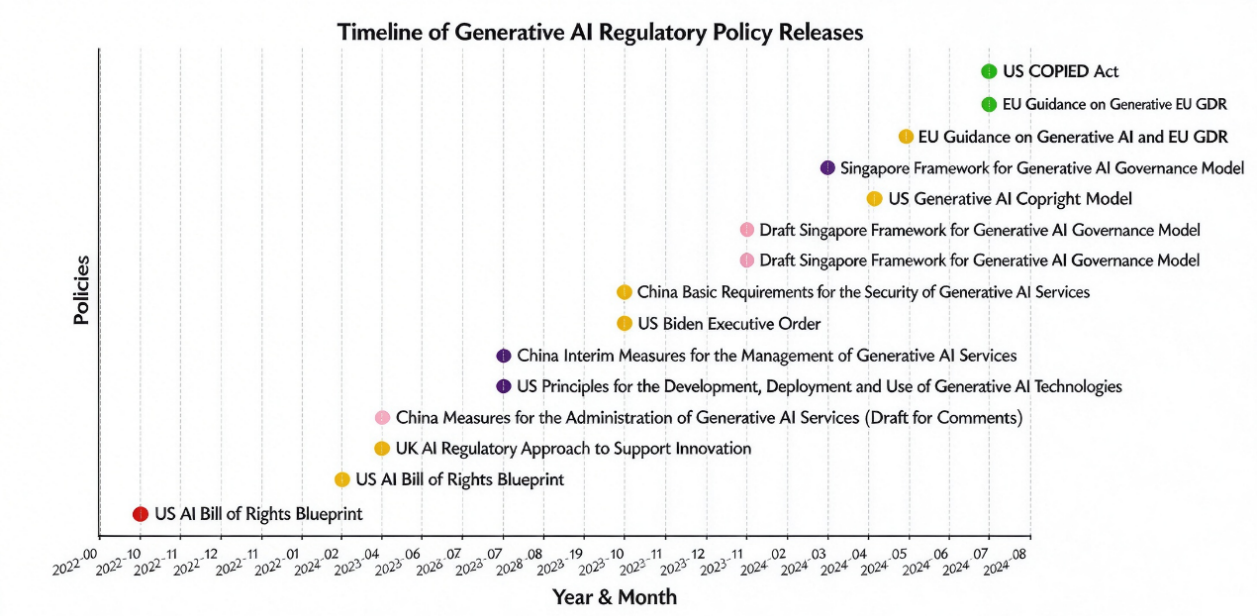


Figure 2 Progress of GenAI regulatory policies in different countries and regions

(2) The European Union has been exploring and practising legislative and regulatory mechanisms for GenAI, and regulates relatively strictly, emphasising comprehensiveness and policy differentiation[53]. Following the European Commission's proposal of the *Artificial Intelligence Act* in April 2021 and its approval by the European Parliament in June 2023, the Act was formally published in the *Official Journal of the European Union* in July 2024 as Regulation 2024/1689 and entered into force in August 2024. In June 2024 the EU also published *Generative AI and EUDPR*, the first data security guidance applicable to the EU and its member states. As the world's first comprehensive regulatory framework applicable to multiple countries, the EU *AI Act* marks the EU's continuing regulatory practice in promoting the application and system-building of GenAI technology, and lays a foundation for future GenAI regulatory practice worldwide.

(3) China has consistently promoted industrial development. On GenAI regulation it published a draft for public comment in April 2023, issued the *Interim Measures for the Management of Generative Artificial Intelligence Services* for implementation in July, and published the *Basic Safety Requirements for Generative Artificial Intelligence Services* (draft for comment) in October, indicating that China encourages the innovative development of GenAI, promotes GenAI for the good, and supports, standardises and supervises the sound development of GenAI while actively advancing the construction of the relevant regulatory system[54].

(4) The United Kingdom published *A Pro-Innovation Approach to AI Regulation* in March 2023, encouraging innovative regulatory models without dedicated legislation, and has continued to adjust and improve its AI governance system flexibly in practice[55]. Compared with other countries, the UK's regulatory approach is outcome-oriented, relies on existing

Copyright: © 2026 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

regulators for implementation, and tends towards inclusive and pluralistic coordination, seeking a balance among multiple stakeholders.

(5) Singapore has adopted a relatively flexible approach in pursuit of a win-win outcome for development and governance, and remains in the lead in innovating regulatory tools. In January 2024 it drafted a *Model AI Governance Framework for Generative AI* and sought comments at home and abroad, and in May 2024 published the *Model AI Governance Framework for Generative AI* in order to cultivate a trusted GenAI ecosystem.

4.2 Comparison of Policy Issuing Bodies

The results of the statistical analysis of the policy issuing bodies of different countries and regions are shown in Table 3, in which every body has issued two or more documents. The results show that the US Congress, the President and the White House Office of Science and Technology Policy are the principal issuing bodies, and that most of their documents are issued independently, indicating that these bodies play a leading role while departments remain relatively independent and flexible. In the EU the European Commission is chiefly responsible, GenAI governance being entrusted to a central regulatory body. In the United Kingdom government departments take the lead, with government departments and cross-governmental organisations working in concert from top to bottom under a principle of cross-departmental regulation intended to ensure a coordinated approach. Singapore, building on government leadership, encourages innovative development and technology regulation and has introduced governance through regulatory tools in order to advance international consensus on GenAI governance.

Table 3 Statistics on issuing organisations

Country	Issuing body	Documents	Joint issuance (%)
United States	Congress	6	0.0
	President	3	0.0
	White House Office of Science and Technology Policy	3	0.0
	National Institute of Standards and Technology	2	0.0
European Union	European Commission	15	0.0
Singapore	Infocomm Media Development Authority	3	100.0
China	Ministry of Industry and Information Technology	10	40.0
	Ministry of Science and Technology	7	28.6
	National Development and Reform Commission	6	83.3
	Ministry of Education	6	50.0
	National People's Congress	4	0.0
	Standing Committee of the National People's Congress	3	0.0
	Cyberspace Administration of China	3	100.0
	Central Committee of the Communist Party of China	2	0.0
	Ministry of Commerce	2	100.0
	Ministry of Finance	2	100.0
	State Administration for Market Regulation	2	100.0
	National Bureau of Statistics	2	100.0
United Kingdom	Office for Artificial Intelligence	3	100.0
	Department for Science, Innovation and Technology	3	66.7
	AI Select Committee	2	0.0
	UK Statistics Authority	2	50.0
	Department for Digital, Culture, Media and Sport	2	100.0
	Department for Business, Energy and Industrial Strategy	2	100.0

Compared with the United States, the United Kingdom, the EU and Singapore, China's policy issuing bodies display a diversity of character and are closely interconnected [56], reflecting the need for coordination among the departments responsible for making and implementing policy. Among them, the Ministry of Industry and Information Technology, the Ministry of Science and Technology, the National Development and Reform Commission and the Ministry of Education have issued a larger number of documents and also rank relatively high in joint issuance, reflecting the considerable role

Copyright: © 2026 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

these bodies play in promoting the sound development of GenAI.

Beyond quantitatively surveying the basic situation of the issuing bodies of different countries and regions, future work could further assess the authority and influence of those bodies and, following each government's organisational structure, classify the types of body (administrative, legislative or public organisation, for example) so as to understand which bodies play a leading role in policy-making.

4.3 Comparison of Thematic Features

In analysing the policy texts this article examines thematic features and content structure from the two aspects of topic words and topic space.

4.3.1 Topic word analysis

This study used the BERTopic model to visualise the first eight topics of high salience[57-58] for the comparative analysis of the principal content of the policy texts of different countries, as set out in Table 4.

As Table 4 shows, the first eight topics for the EU and the four countries mostly concern general standards, system-building, model training and data security, reflecting the current emphasis worldwide on attending to technology and regulation together. Beyond this, the United States also attends to rights protection and human–machine interaction; Singapore to accountability; the United Kingdom to international cooperation; and China emphasises the prevention of algorithmic discrimination and the maintenance of ethical safety, indicating that China strives to reconcile fairness with ethics in the course of application. There are some differences in topic between countries and regions, which may be related to differences in language, culture and social background.

Table 4 Topic keyword statistics

Topic	United States	European Union	China	United Kingdom	Singapore
Topic 0	Application deployment	Graded regulation	Ethical safety	International cooperation	Model evaluation
Topic 1	Security measures	Risk control	General standards	Standards and norms	Technology regulation
Topic 2	Risk control	Application regulation	Content security	Data security	Application deployment
Topic 3	General standards	Model training	System-building	Implementation	Trusted development
Topic 4	Rights protection	Data standards	Application deployment	Cross-departmental regulation	Testing and training
Topic 5	Human–machine interaction	Evaluation requirements	Model training	System-building	Accountability
Topic 6	Equality of service	System-building	Algorithmic discrimination	Trusted development	Data quality
Topic 7	System-building	User guidance	Risk control	Joint collaboration	Content security

4.3.2 Distribution in topic space

As Figure 3 shows, US regulatory policies are relatively dispersed and fewer policy topics were identified, indicating that the United States has adopted a relatively loose and flexible approach to regulation; Singapore's distribution is close to that of the United States, but its policy topics are fewer still, because Singapore is at the stage of framing its regulatory policy and has not formed a detailed and complete governance system. Compared with the United States and Singapore, the UK's policy topics are relatively concentrated, reflecting that country's adoption of an overall strategy — that is, in the course of policy-making and implementation it relies on a distinctive strategic positioning and on national conditions, attends more to reconciling the interests of all parties, and seeks to reach consensus through a consistent regulatory approach. The EU and China are relatively dense and cover multiple topics and fields, which may reflect a tendency in those two jurisdictions, in the course of policy-making and implementation, to consider different problems and factors together and to give clear guidance and norms for GenAI services so as to ensure their sound development.

Copyright: © 2026 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

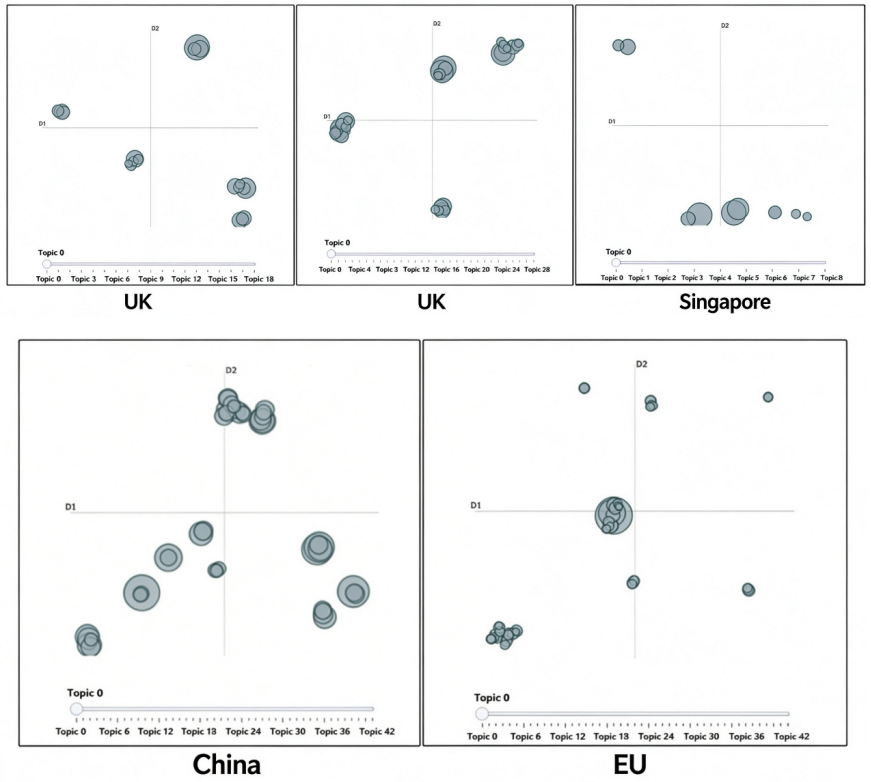


Figure 3 Thematic spatial distribution map. Panel (a): distribution of the 14 policy texts in topic space. Panel (b): second view of the same topic space.

5 Comparison of Policy Texts from the Perspective of Policy Tools

5.1 Analysis of the Action Paths of Policy Tools

As Table 5 shows, environmental policy tools account for the largest share (51.1%), supply-side tools for the next largest (31.2%) and demand-side tools for the smallest (17.7%). On the whole, GenAI regulatory policy is at present dominated by environmental policy tools, and exhibits structural imbalance.

Table 5 Frequency statistics of policy instruments

Tool type	Second-level tool	Analysis unit codes	Count	Share (%)	Total (%)
Supply-side	Talent assurance	3-18, 3-19 … 11-20, 12-11	11	3.4	31.2
	Funding input	4-11, 6-12, 11-24, 12-21	4	1.2	
	Technical support	1-10, 2-5 … 13-12, 14-15	43	13.2	
	Institutional support	1-5, 2-8 … 12-18, 13-22	39	11.9	
	Infrastructure	4-15, 5-17, 7-13, 9-19, 11-19	5	1.5	
Demand-side	International exchange	9-20, 10-14 … 12-24, 13-25	8	2.4	17.7
	Public–private cooperation	3-21, 4-9 … 12-13, 13-21	14	4.3	
	Pilot demonstration	5-10, 5-11 … 12-25, 13-26	11	3.4	
	Healthcare	1-11, 2-13 … 11-21, 12-15	25	7.6	
Environmental	Goal-setting and planning	1-11, 3-7 … 10-7, 12-9	7	2.1	51.1
	Regulatory control	1-1, 2-1 … 13-28, 14-17	54	16.5	
	Strategic measures	1-13, 1-15 … 13-20, 14-25	45	13.8	
	Standards and norms	1-2, 3-3 … 13-15, 14-23	61	18.7	

(1) Among supply-side policy tools, technical support and institutional support dominate, with talent assurance, infrastructure and funding input assisting the execution of regulatory policy. This emphasises the role of technology and

Copyright: © 2026 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

institutions in implementation, and also implies that government and the relevant bodies recognise that regulatory policy alone may not achieve the intended effect and that a combination of means is needed to drive implementation.

(2) Demand-side policy tools take healthcare as their principal instrument, and stimulate demand through public–private cooperation, pilot demonstration and international exchange. This implies that government and the relevant bodies recognise that promoting GenAI requires action on the demand side, and have accordingly adopted a series of measures to stimulate healthcare demand, promote application and drive innovation. Public–private cooperation can pool resources from all sides and accelerate the development and application of technology; pilot demonstration can verify the feasibility and effect of technology within a limited scope and accumulate experience for wider application; and international exchange allows experience from other countries to be drawn on, promoting cross-border cooperation and sharing of technology.

(3) Among environmental policy tools, regulatory control (16.5%), standards and norms (18.7%) and strategic measures (13.8%) account for relatively large shares, while goal-setting and planning accounts for relatively little. This indicates that environmental policy tools rely chiefly on the enactment and enforcement of regulations, the standardisation of norms and specific strategic measures to drive implementation. Regulatory control constrains and standardises the conduct of all parties through legislation and the relevant rules; standards and norms serve to unify industry practice and general standards and to promote standardised and professional management; and strategic measures comprise the various specific policies, plans and action programmes through which development goals are pursued. The relatively low share of goal-setting and planning may imply a greater emphasis on concrete regulation and action programmes — a preference for immediate and specific measures to meet present risks and challenges — while longer-term goals may lag or receive insufficient attention, so that planning needs to be adapted to technological change and to social needs.

5.2 Comparative Analysis of GenAI Regulatory Policies in Different Countries and Regions

5.2.1 Similarities

On the basis of the foregoing analysis, the overall characteristics of policy and the action paths of policy tools reveal similarities in the GenAI regulatory policies of China, the United States, the EU, the United Kingdom and Singapore[59].

(1) Overall characteristics of policy. First, all are committed to building general standards and a regulatory system for GenAI — China, the United States, the EU and the United Kingdom all seek to establish general standards and a regulatory framework applicable to GenAI so as to ensure its safety, reliability and sustainable development. Second, all seek to shape international regulatory guidance: every country and region hopes, through international cooperation and exchange, to formulate and promote GenAI regulatory guidance worldwide, so as to foster cross-border cooperation and share best practice. Third, all encourage innovative development: every country recognises the enormous potential of GenAI and is committed to supporting and encouraging innovation so as to advance technological progress and application.

(2) Action paths of policy tools. First, the structure of policy tools is unbalanced, and their complementary effect is not obvious or is weak. In GenAI regulation, supply-side, demand-side and environmental policy tools complement one another and together constitute the regulatory system. This study finds that the three are at present structurally unbalanced, and that their complementary effect is not obvious or is weak. Supply-side policy tools focus chiefly on technical and institutional support but neglect the importance of talent development and infrastructure. Demand-side policy tools, although they emphasise healthcare as the principal instrument, do not sufficiently support public–private cooperation, pilot demonstration and international exchange. Environmental policy tools, although they attend to regulatory control, standards and norms and strategic measures, lack policies concerned with goal-setting and planning.

Second, the action paths of policy tools are biased. Environmental policy tools account for a relatively large share while supply-side and demand-side tools account for relatively little. Such bias may make regulation incomplete and its effect unsatisfactory, and limit the exercise of its role.

5.2.2 Differences

As Table 6 shows, comparison across the five aspects of regulatory character, regulatory body, regulatory content, regulatory scope and governance framework reveals significant differences between national policies at the GenAI regulatory level. US GenAI regulatory policy, while safeguarding innovative development, minimises constraint and obstruction and tends towards flexible regulation directed at particular fields. In exploring legislative regulatory practice, the EU establishes a legal framework and elaborates specific application provisions so as to handle the potential risks and plural problems arising from the complex interconnections and cross-cutting effects between different fields. China is committed to building a complete GenAI regulatory system, and in making and implementing policy considers how to respond to diverse and complex situations and to cover multiple fields, scenarios and themes. The United Kingdom supports innovation and tends to flexible adjustment and improvement on the basis of the existing regulatory system so as to meet rapidly developing and diverse needs. Singapore attends to maintaining a balance between technological development and

Copyright: © 2026 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

social need in order to cultivate a trusted GenAI ecosystem. Because this article conducts a combined coding analysis of 14 policy texts issued by the United States, the EU, China, the United Kingdom and Singapore, it does not summarise the policy tool content of the differences in GenAI regulatory policy. In summary, proceeding from the level of global governance, this article analyses GenAI regulatory and governance practice and provides a policy reference for improving the AI regulatory governance system [12].

Table 6 Comparison of the content of GenAI regulatory policies in different countries and regions

Country	Regulatory character	Regulatory body	Regulatory content	Regulatory scope	Governance framework
United States	Soft regulation	Relatively independent and flexible bodies such as Congress	Emphasis on privacy protection and intellectual property; narrow coverage, relatively weak interconnection	Industry-specific; high-risk fields grouped into eight categories for supervision	Responsibility allocated and standards set by the relevant government departments, relying chiefly on market self-discipline and industry development
European Union	Strong regulation	Central regulatory body responsible for legislation and policy-making	Emphasis on risk management assessment and accountability; broad coverage, stressing comprehensiveness and policy differentiation	Risk-tiered management; a comprehensive regulatory framework for GenAI development, deployment and use	A two-level governance framework in the EU and its member states to implement comprehensive regulation
China	Flexible	Departments closely interconnected and jointly collaborating	Emphasis on risk control, covering multiple themes and fields and considering different problems and factors together	Inclusive and prudent regulation, classified and tiered; more comprehensive and cross-sectoral	A governance framework combining government regulation, industry self-discipline and technical standards
United Kingdom	Balanced regulation	Cross-departmental regulation led by government departments	Seeks balance, attending to reconciling the interests of all parties and reaching consensus	Practice guidance issued on the basis of five principles, with clear accountability for outcomes	A governance framework based on five principles
Singapore	Human-centred	All stakeholders participating jointly under government leadership	Emphasises the central role of data and trusted development and deployment; attends to technology regulation	Examines GenAI development and application deployment across nine dimensions and proposes specific measures	Publication of the GenAI governance model framework

5.3 Implications and Countermeasures

Comparing the similarities and differences between GenAI regulatory policies at home and abroad yields the following implications.

(1) Regulatory policy should be made "according to local conditions". In the development and application of AI technology and in its regulation and governance, there are marked differences between countries and regions arising from regional characteristics and great-power competition. Compared with the mature legal systems and regulatory frameworks of developed countries, developing countries, constrained by resources for talent development, infrastructure and technical support, face greater challenges in building inclusive, equal and pluralistic governance frameworks. Different countries and regions therefore need to formulate regulatory policies suited to their own conditions and to tailor policy-making to actual circumstances, so as to raise the influence and voice of developing countries at the global level and gradually narrow the gap with developed countries.

(2) Global regulatory standards and governance consensus should be promoted. International organisations such as the United Nations have already issued a number of governance plans and regulatory measures and have played an important role in GenAI regulation. No international organisation has yet emerged, however, with the role of a core regulator, and this is the principal obstacle to the effective operation of the global AI regulatory order. Promoting GenAI regulatory standards worldwide is therefore particularly critical. There is demand between states for data sharing and cross-border technology transfer, which requires states to strengthen cooperation, jointly formulate unified global regulatory standards, advance the building of a global governance consensus and promote cross-border cooperation and the sharing of best practice, so as to provide a more solid and coordinated framework for global AI regulatory governance.

(3) Innovative development and safety assurance should be balanced. It is necessary to strengthen regulation and evaluation while encouraging innovative development. Establishing a sound regulatory mechanism and evaluation system helps to ensure the safety, reliability and sustainable development of GenAI technology. Through such balance, the

Copyright: © 2026 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

potential risks that the technology may bring can be effectively addressed and the public interest and social safety safeguarded. Encouraging innovative development is a shared concern of all countries, but in the process it is equally important to ensure the public interest and social safety. By implementing strict regulation and evaluation while promoting innovation, countries can achieve both technological progress and social stability.

On the basis of the foregoing analysis, this article further proposes the following targeted countermeasures.

(1) Build a collaborative governance mechanism. Governments and the relevant bodies should strengthen international exchange and cooperation, jointly formulate regulatory standards, and build and improve an open and inclusive GenAI regulatory framework, further constructing a collaborative governance mechanism along the dimensions of goal alignment, actor alignment and process alignment. Policy-making and implementation should strengthen the evaluation of policy effects, identify problems promptly and make adjustments, so as to ensure effective implementation and the achievement of the intended results, form a collective policy force and ensure the coordinated advancement of the various policies[60].

(2) Optimise the structure of policy tools. The structure of policy tools should be more balanced, with a clear complementary relation among the various types forming a synergistic effect[61]. Governments and the relevant bodies can increase investment in talent development and infrastructure to raise the share of supply-side policy tools. At the same time, demand-side policy tools should receive more attention and support, encouraging public–private cooperation, pilot demonstration and international exchange so as to release and apply demand. The formulation of environmental policy tools should also be strengthened, with clear regulatory goals and plans established and coordination among the various types of policy tool enhanced, so as to guide the overall development of GenAI regulation. Optimising the structure of policy tools also helps to improve policy effect, build an optimal policy mix and advance the overall development of GenAI regulation; its purpose is, by rationally allocating different types of policy tool, to maximise their combined effectiveness and reach an optimal policy mix through synergy.

(3) Balance the action paths of policy tools. In GenAI regulation, the action paths of supply-side, demand-side and environmental policy tools should be balanced from the standpoint of collaborative governance by the state, industry, media and individuals[57], so as to avoid biased development. Supply-side policy tools (such as increased investment in technological research and talent development programmes) provide a solid foundation for the development of GenAI, while demand-side policies (such as market incentives and public education and participation programmes) further stimulate market vitality and promote the wide application of technology. Environmental policies (such as laws and regulations, standard-setting and regulatory frameworks) set the boundaries of the whole ecosystem and ensure the health and sustainability of technological development. The three reinforce one another and together constitute a dynamic, balanced and effective regulatory system. Governments should also observe the consensus set out in the World Internet Conference's *Developing Responsible Generative Artificial Intelligence*, apply all three types of policy tool in combination, and periodically evaluate and promptly adjust and optimise the proportion and mode of application of policy tools, so as to prevent over-reliance on any single type and form an overall policy effect that jointly promotes the sound development of GenAI.

(4) Evaluate the effects of policy implementation. Research on the effects of GenAI policy implementation helps to evaluate policy effectiveness and further guide the sound development of GenAI. Taking China as an example, this article briefly analyses the practical effects of the *Interim Measures for the Management of Generative Artificial Intelligence Services* (the "Interim Measures") from the three angles of acceptance, difficulty of implementation and long-term impact. First, acceptance is on the whole relatively high: China's major technology companies and AI research institutions have expressed support and responded positively, and public and media attitudes are generally favourable — the introduction of the Measures is seen as providing a clear legal framework and regulatory guidance for the development of GenAI technology, helping to ensure the sound and orderly development of the industry, protect personal privacy and prevent misuse of the technology. Second, there remain difficulties in implementation, chiefly the complexity of the technology, cross-sectoral coordination and the vagueness of legal definition. The handling by the relevant Chongqing authorities, in the first half of 2024, of several enterprises illegally engaged in GenAI services shows that, although the Interim Measures have been issued, challenges remain in practical implementation[62]. Government can use big-data management techniques[12] to assess policy effects, market response and potential problems with precision. Third, in the long term, the implementation of GenAI policy will help to move GenAI services gradually onto a standardised and sound[63] development track, building a healthier and more harmonious AI ecosystem.

6 Conclusion

This study finds that GenAI regulation is still at an early stage, that the structural characteristics of policy differ markedly between countries and regions, and that there are significant differences at the regulatory level. On the whole, the action path of policy tools is dominated by the indirect effect of environmental policy tools, and exhibits structural imbalance and a biased action path. Comparing the similarities and differences between national regulatory policies, the study proposes

Copyright: © 2026 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

targeted countermeasures — optimising the structure of policy tools, balancing their action paths and evaluating the effects of policy implementation — in order to promote the coordinated development of the GenAI regulatory system.

This study has certain limitations. First, given the current state of GenAI regulation worldwide, the number of policy texts available for study is relatively small, which may limit the depth and breadth of the analysis. Future research might collect more diverse policy texts and add plural perspectives so as to uncover the structural characteristics and development trends of GenAI policy more fully. Second, the analysis of the concrete circumstances of policy implementation and of its effect on industrial development and society is relatively limited; future work could focus on exploring differences in the effects of GenAI policy implementation between countries and on understanding in depth the actual circumstances of implementation and their specific effects on industrial development and society — including acceptance, difficulty of implementation and long-term impact — which would help in evaluating policy effectiveness and the direction of adjustment. Third, only the basic situation of the external characteristics of national policy has been statistically described, without further study; future work could classify institutional types according to each government's organisational structure and explore the weight and leading role of different types of institution in policy-making, so as to ensure balanced, comprehensive and effective policy outcomes.

Moreover, because countries and regions differ in their starting points and paths, substantive progress may be limited. Since 2023, global regulatory progress has included the G7's *International Code of Conduct for Organizations Developing Advanced AI Systems*, the Bletchley Declaration signed by 28 countries and the EU, the *Guidelines for Secure AI System Development* issued jointly by 18 countries, and a joint statement on AI competition signed by the regulators of the United States, the United Kingdom and the EU — indicating that many countries and regions have begun international exchange and cooperation on GenAI and its application tools. On the whole, however, global GenAI regulatory cooperation is proceeding slowly. There remain considerable differences in the principles and modes of GenAI regulation internationally, closely bound up with many complex factors. Future research could broaden the perspectives and methods of GenAI regulatory evaluation, and construct general substantive mechanisms or evaluation index systems for GenAI regulation or governance from a more macro perspective.

References

[1] Duan H, Zhang H, Wang D B. Researchers' attitude, cognition and coping strategies towards ChatGPT in the domain of information resource management[J]. *Information Studies: Theory & Application*, 2023, 46(7): 17-24. [in Chinese]

[2] Hopkins A M, Logan J M, Kichenadasse G, et al. Artificial intelligence chatbots will revolutionize how cancer patients access information: ChatGPT represents a paradigm-shift[J]. *JNCI Cancer Spectrum*, 2023, 7(2). doi: 10.1093/jncics/pkad010.

[3] Zhang Y, Zhao Y X, Wu D W, et al. Study of users' mind perceptions and responses to generative AI in a human–AI interaction context[J]. *Information Studies: Theory & Application*, 2024, 47(8): 140-149. [in Chinese]

[4] Gu N F. Industrial promotion and risk regulation in the development of generative artificial intelligence: taking Sora as an example[J]. *Library Tribune*, 2024(11): 120-128. [in Chinese]

[5] Wang S Y, Xiao X, Ni K M, et al. Sora's career impact: strategies for knowledge workers to address the replacement of core skills by AI[J]. *Library Tribune*, 2024, 44(4): 177-187. [in Chinese]

[6] Cao G H, Yuan P P, Deng S L, et al. Theory and frontiers of data science: profession construction and scientific research[J]. *Documentation, Information & Knowledge*, 2023, 40(2): 65-70. [in Chinese]

[7] Chen F X, Lian Y L, Wang N. European and American artificial intelligence regulatory models and policy implications[J]. *Chinese Public Administration*, 2024(1): 77-88. [in Chinese]

[8] Bengio Y, Hinton G, Yao A, et al. Managing extreme AI risks amid rapid progress[J]. *Science*, 2024, 384(6698): 842-845.

[9] Deng S L, Wang F, Wang H W. Identification methods of artificial intelligence generated content in online communities[J]. *Documentation, Information & Knowledge*, 2024, 41(2): 28-38, 149. [in Chinese]

[10] Resolution of the Central Committee of the Communist Party of China on Further Deepening Reform Comprehensively to Advance Chinese Modernization[EB/OL]. [2024-07-28]. https://epaper.cs.com.cn/zgzqb/html/2024-07/22/nw.D110000zgzqb_20240722_1-A07.htm.

[11] Dwivedi Y K, Kshetri N, Hughes L, et al. "So what if ChatGPT wrote it?" Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI for research, practice and policy[J]. *International Journal of Information Management*, 2023, 71: 102642.

[12] Deng S L, Wang F. Research progress and development trend of AIGC governance[J]. *Digital Library Forum*, 2023(11): 20-28. [in Chinese]

[13] Chen R, Jiang Y H. Research on the governance of training data as the core driving force of generative artificial intelligence[J]. *Information and Documentation Services*, 2024, 45(4): 87-95. [in Chinese]

[14] Cheng K M, Wu H Y. Policy framework for the utilization of generative AI[J]. *Critical Care*, 2024, 28(1): 128.

[15] He J, Yang H. International comparison and reference on ChatGPT-like generative artificial intelligence regulation[J]. *Journal of Hunan University of Science and Technology (Social Science Edition)*, 2023, 26(6): 119-128. [in Chinese]

[16] Xu W, He Y. Governance system and optimization path for data security risks in generative AI: a grounded analysis based on 38 policy documents[J]. *E-Government*, 2024(10): 42-58. [in Chinese]

[17] Huang W W, Li X Y. From regulation to governance: a new paradigm of generative artificial intelligence law management[J]. *Journal of Leshan Normal University*, 2024, 39(6): 94-102. [in Chinese]

[18] Lorenz P, Perset K, Berryhill J. Initial policy considerations for generative artificial intelligence[J]. *OECD Artificial Intelligence Papers*, 2023(1). doi: 10.1787/fae2d1e6-en.

Copyright: © 2026 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

[19] Rao H. A comparative study of policies and regulations on generative artificial intelligence between China, the US and Europe and its implications[J]. *China–Arab States Science and Technology Forum*, 2024(3): 157-162. [in Chinese]

[20] Wan B. Obligation subjects and obligation allocation in generative AI regulation: a case study of ChatGPT[J]. *Journal of Taiyuan University of Technology (Social Science Edition)*, 2024, 42(3): 29-35, 44. [in Chinese]

[21] Erkkilä T. Global indicators and AI policy: metrics, policy scripts, and narratives[J]. *Review of Policy Research*, 2023, 40(5): 811-839.

[22] Ulnicane I. Governance fix? Power and politics in controversies about governing generative AI[J]. *Policy and Society*, 2024. doi: 10.1093/polsoc/puae022.

[23] Mügge D. EU AI sovereignty: for whom, to what end, and to whose benefit?[J]. *Journal of European Public Policy*, 2024, 31(8): 2200-2225.

[24] Ulnicane I, Erkkilä T. Politics and policy of artificial intelligence[J]. *Review of Policy Research*, 2023, 40(5): 612-625.

[25] Khanal S, Zhang H Z, Taeihagh A. Why and how is the power of big tech increasing in the policy process? The case of generative AI[J]. *Policy and Society*, 2024. doi: 10.1093/polsoc/puae012.

[26] von Ingersleben-Seip N. Competition and cooperation in artificial intelligence standard setting: explaining emergent patterns[J]. *Review of Policy Research*, 2023, 40(5): 781-810.

[27] Schiff D S. Looking through a policy window with tinted glasses: setting the agenda for U.S. AI policy[J]. *Review of Policy Research*, 2023, 40(5): 729-756.

[28] Roberts H, Hine E, Taddeo M, et al. Global AI governance: barriers and pathways forward[J]. *International Affairs*, 2024, 100(3): 1275-1286.

[29] Jiang T H, Jia P P, Zhang Z Y. Content analysis and enlightenment of open science policies by European and American countries and international organizations from the perspective of policy tools[J]. *Library and Information Service*, 2022, 66(22): 119-133. [in Chinese]

[30] Zhou X Y, Yue L X, Pei J L, et al. Research on the changes and characteristics of emergency information management policy contents for emergencies in China: quantitative analysis based on 413 policy texts from 2003 to 2020[J]. *Information and Documentation Services*, 2021, 42(3): 33-43. [in Chinese]

[31] Hu J M, Luo X. The structural characteristics of China's information secrecy policy based on "subject–tool–theme"[J]. *Information Science*, 2024, 42(4): 18-26. [in Chinese]

[32] Zhou H, Xing Q G, Tang Y. Research on linkage between data openness and privacy protection policy based on policy text computing[J]. *Library Tribune*, 2021, 41(11): 118-127. [in Chinese]

[33] Wang X Q, Guo T. Research on digital government policy under the framework of "tool–goal": based on the analysis of 40 policy texts in China[J]. *Information Research*, 2023(11): 96-104. [in Chinese]

[34] Chen M, Sun R Q. Quantitative analysis of China's provincial digital economy policies from the perspective of policy tools: based on LDA topic social network analysis[J]. *Journal of Intelligence*, 2023, 42(11): 174-182. [in Chinese]

[35] Wu L Q, Ma H Q. Visual quantitative analysis of Chinese policy text research literature based on CSSCI[J]. *Journal of Modern Information*, 2023, 43(8): 4-13. [in Chinese]

[36] Wang C Z, Peng X B, Peng Y. Attention evolution of big data governance policies of local government: based on grounded theory and social network[J]. *Journal of Intelligence*, 2020, 39(12): 111-118. [in Chinese]

[37] Annaer D. Corpus-based analysis of lexical features of Mongolian language policy text[M]//*Lecture Notes in Computer Science*. Singapore: Springer Nature Singapore, 2024: 331-341.

[38] Malandrino A. Comparing qualitative and quantitative text analysis methods in combination with document-based social network analysis to understand policy networks[J]. *Quality & Quantity*, 2024, 58(3): 2543-2570.

[39] Rao Y T, Yang F. A method for classifying information in education policy texts based on an improved attention mechanism model[J]. *Wireless Communications and Mobile Computing*, 2022. doi: 10.1155/2022/5467572.

[40] Pop C V, Precup R E, Cadariu-Brailoiu L I. Analysis of monetary policy decisions of the National Bank of Romania with text mining techniques[C]//*IEEE 15th International Symposium on Applied Computational Intelligence and Informatics (SACI)*. Timisoara, Romania. Piscataway: IEEE, 2021: 21-26.

[41] Seo H J. Identifying key issues in Korea's defense policy: application of text network analysis to the 2018 defense white paper[J]. *Korean Journal of Military Affairs*, 2019, 6(6): 39-70.

[42] Deng S L, Wang F, Cai Y N, et al. Prediction and analysis of multiple causes of mental health problems based on machine learning[M]//Sserwanga I, Joho H, Ma J, et al. *Lecture Notes in Computer Science*. Switzerland: Springer Nature, 2024: 150-160.

[43] Hu K X, Li X, Wang L T. Detection of derived public opinion of cyber violence incidents based on BERTopic model[J]. *Journal of Intelligence*, 2024, 43(7): 146-153. [in Chinese]

[44] Shi Y H, Xue X. Research on information security policy in China from the perspective of policy tools: based on the quantitative analysis of 81 policy texts[J]. *Journal of Modern Information*, 2022, 42(1): 130-138. [in Chinese]

[45] Geng R L, Wu C C, Zang G Q, et al. Analysis of China's privacy protection law and regulation system from the dual perspectives of structural characteristics and policy tools[J]. *Digital Library Forum*, 2024(1): 39-49. [in Chinese]

[46] Zeng G, Deng S L. China's digital inclusion policy analysis and countermeasure research: based on the perspective of policy tools[J]. *Journal of Information Resources Management*, 2021, 11(5): 73-83. [in Chinese]

[47] Deng S L, Wang F, Pan M H, et al. Recognizing AI responses from generative AI in knowledge-based online Q&A communities[M]//*Knowledge Organization for Resilience in Times of Crisis: Challenges and Opportunities*. Würzburg: Ergon Verlag, 2024: 355-362.

[48] Zhang X J, Bu Y R, Mo F C. Research on public data governance policies of local governments in China from the perspective of policy instruments[J]. *Information Studies: Theory & Application*, 2024, 47(6): 21-30. [in Chinese]

[49] Rothwell R, Zegveld W. *Reindustrialization and Technology*[M]. London: Longman Group Limited, 1985.

[50] Wang H W, Wang F, Wang B Y. A comparison of generative AI-generated content and user-generated content from a thematic perspective[J]. *Information Studies: Theory & Application*, 2023, 46(10): 200-207, 199. [in Chinese]

[51] Yang S L, Yu Y H. Topic mining and evolution analysis of domestic information resource management research based on the BERTopic model[J/OL]. *Information Science*. [2024-06-16]. http://kns.cnki.net/kcms/detail/22.1264.G2.20240506.1701.012.html. [in Chinese]

[52] Shi F L, Zhang Z Y. On the public law regime of artificial intelligence: American and European models and China's path[J]. *Theory Monthly*, 2023(8): 127-139. [in Chinese]

[53] Xiao H J, Zhang L L, Yang Z. Ethical regulation of digital technology in the European Union: progress and enlightenment[J]. *Reform*, 2023(7): 73-89. [in Chinese]

Copyright: © 2026 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

[54] Chen B. Legal considerations and practical framework for promoting the regulated development of generative AI: a commentary on relevant provisions of the Interim Measures for the Management of Generative AI Services[J]. *China Review of Administration of Justice*, 2023(4): 108-125. [in Chinese]

[55] Zhou H, Jin X A. Artificial intelligence regulatory practice, innovation and lessons in the UK[J]. *Digital Rule of Law*, 2023(5): 194-206. [in Chinese]

[56] Yang H, Xu R B, Xue J L. A study on the evolution of policy themes and the network of issuing institutions in China's agricultural green development: an empirical analysis based on policy texts from 1982 to 2022[J]. *Journal of China Agricultural University*, 2023, 28(11): 236-250. [in Chinese]

[57] Gao F, Xu S J. Topic identification and content analysis in the field of digital government governance based on the BERTopic model[J]. *Information Studies: Theory & Application*, 2024, 47(8): 95-106. [in Chinese]

[58] Gao C L, Jiang L Y, Dong T Y. A study on the topic evolution of health information needs of the elderly based on BERTopic modelling: a case study of the Sina Weibo platform[J]. *Information Science*, 2024, 47(8): 95-106. [in Chinese]

[59] Han N, Qi C H. Security risks and the current regulatory landscape of generative AI[J]. *China Information Security*, 2023(8): 69-72. [in Chinese]

[60] Fan B, Nie S. Emergency collaborative governance in digital space government: an explanation of the "structure–mechanism–effectiveness" framework[J]. *Administrative Tribune*, 2023(6): 109-116. [in Chinese]

[61] Si L, Liu L. China's scientific data management policy: content structure and optimization strategies: a quantitative analysis based on the content of policy texts[J]. *Information Studies: Theory & Application*, 2023, 46(9): 16-23. [in Chinese]

[62] Yang L. Chongqing's internet information department investigates and handles websites illegally providing generative AI services[EB/OL]. [2024-07-28]. https://mp.weixin.qq.com/s?__biz=Mzg2MTcyNjc0NA==&mid=2247508308&idx=2&sn=b952d0bcb0a53bec8e8cc073a23aa999&chksm=cf823b8ce6e718abc07d05f975f2670dcc41cfd04e1e00495847d73c4022825cfab5fd75c6bb.

[63] Peng X Y, Zhang K H, Wang F. Digital-intelligent empowerment of human health management: minutes of the panel session at the 2023 annual meeting of the Health Informatics Committee of the China Society for Scientific and Technical Information[J]. *Documentation, Information & Knowledge*, 2023, 40(6): 112-116. [in Chinese]

Copyright: © 2026 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.