Scientific Research Publishing

Theoretical Economics Letters, 2025, 15(2), 313-348
https://www.scirp.org/journal/tel
ISSN Online: 2162-2086
ISSN Print: 2162-2078

Evolution of Global Institutional Quality Research: Hot Topics and Prospects (2005-2024)

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How to cite this paper: Duan, L. L., & Wan, X. (2025). Evolution of Global Institutional Quality Research: Hot Topics and Prospects (2005-2024). *Theoretical Economics Letters, 15,* 313-348.
https://doi.org/10.4236/tel.2025.152018

Received: December 14, 2024
Accepted: April 4, 2025
Published: April 7, 2025

Abstract

Institutional quality is a key indicator of the effectiveness of national governance, which directly affects economic growth, social equity and stability, as well as the enhancement of national competitiveness. Based on 3039 articles on institutional quality in Web of Science database from 2005 to 2024, we systematically analyzed its evolution, hot topics and prospects by using CiteSpace literature visualization tool. It is found that the research on institutional quality has gone through four phases since 1999, namely, the period of germination and accumulation (1999-2013), the period of slow start (2014-2017), the period of rapid development (2018-2019), and the period of comprehensive deepening and activation (2020-2024), and the heat of the research has increased significantly since 2018. The core topics cover the economic growth effect of institutional quality, the advantages and experiences of institutional quality in China, the synergistic mechanism of carbon emissions and environmental policies, the interaction between human resources and institutional quality, and the path of corruption governance and institutional quality improvement. Frontier areas focus on the dynamic interaction between the digital economy and institutional quality, the exploration of the mechanism of synergistic development between environment and institutions, and the far-reaching impact of institutional quality on gender equality and the well-being of families and children. These studies provide theoretical support and practical guidance for the promotion of global sustainable development, as well as useful reference for China's institutional reform and participation in global governance.

Keywords

Institutional Quality, WoS, Knowledge Graph Analysis, Bibliometrics

1. Introduction

Institutional Quality (Institutional Quality) refers to the combined performance of human-designed constraints in the political, economic and social interactions of a country or region, as measured primarily through the World Governance Indicators (WGI). These indicators include six dimensions: corruption control, government effectiveness, political stability, regulatory quality, rule of law, and public participation and accountability, and reflect the ability of institutions to promote economic growth, reduce corruption, maintain social stability, and safeguard citizens' rights (Pan et al., 2020a). Economic historian Douglass North defined institutions as the rules of the game in society, emphasizing that high-quality institutions can reduce transaction costs, promote cooperation, and maintain flexibility and sustainability in a dynamic socio-economic environment. From the perspective of property rights protection, Acemoglu and other scholars point out that good property rights protection can stimulate the enthusiasm and creativity of economic agents, while insufficient property rights protection can inhibit entrepreneurial returns and economic development. From the perspective of legal system protection, Djankov and other scholars believe that the legal system that guarantees the implementation of the contract is an important manifestation of the quality of the system, and that the lack of contractual guarantees reduces the efficiency of economic operation.

Together, these studies show that in the universal definition of institutional quality, the constituent elements of institutional quality include efficiency, freedom, democracy and unity of the whole, minimization of transaction costs, transparency, stability, fairness, and the rule of law and the protection of rights and interests. Together, these elements determine the overall effectiveness of the system and the level of governance. A high-quality system can promote economic growth, reduce social conflict, enhance public trust in government and social organizations, and improve national competitiveness by protecting property rights, reducing transaction costs, and stimulating innovation. At the same time, the formation and enhancement of institutional quality is influenced by a variety of factors, including the level of economic development, education, international openness, tax and income distribution policies, the degree of perfection of the legal system, political stability, and cultural background and values. Therefore, institutional quality is not only a multidimensional and comprehensive concept, but also an important foundation for modern social governance, with far-reaching significance for sustainable economic and social development.

However, there are still many controversies in the existing literature on the concept of institutional quality, especially in cross-country studies. On the one hand, the connotation and extension of institutional quality have not yet been fully harmonized, and there are differences in the definitions of institutional quality by different scholars from the perspectives of property rights protection, legal security and government governance. On the other hand, in cross-country comparative research, the measurement standard and indicator system of institutional

quality are also controversial, and the differences in the political, economic and cultural backgrounds of different countries make cross-country comparisons of institutional quality challenging. For example, some scholars argue that the measurement of institutional quality should focus more on legal and property rights protection, while others emphasize the importance of government governance and social equity. In addition, the dynamic and adaptive nature of institutional quality brings complexity to cross-country studies, with significant differences in the needs and performance of institutional quality in different countries at different stages of development. Although different countries or regions in the dataset may exhibit differences in the analysis depending on factors such as cultural background, level of economic development, political system and historical legal traditions, there is a commonality in the overall definition of institutional quality, i.e., the universal definition of institutional quality referred to above, and the analysis in the subsequent section is therefore based on this.

In China, the study of institutional quality is of special importance and urgency. As the world's largest developing country, China is at a critical stage in the modernization of its national governance capacity, and the improvement of institutional quality is the core support for Chinese-style modernization. Chinese-style modernization emphasizes high-quality economic development, social justice, ecological civilization and people's common prosperity, which cannot be achieved without an efficient, transparent, fair and adaptable institutional system. A high-quality system can provide a solid governance foundation for Chinese-style modernization, promote comprehensive economic and social development, and enhance the effectiveness of national governance and international competitiveness.

In view of the above controversies and challenges, the significance of this paper is to explore the future development of research on institutional quality in China, as well as the role mechanism and enhancement path of institutional quality in the process of Chinese-style modernization by systematically sorting out the evolution of institutional quality, hot topics and cutting-edge advances, and to provide theoretical support and practical guidance for promoting the modernization of China's national governance capacity in the light of China's actual situation.

2. Overview of Research Methods and Literature on Institutional Quality

2.1. Research Methodology

2.1.1. Data Sources and Scope of the Study

This study relied heavily on the Web of Science Core Collection for relevant literature. This database covers a wide range of academic resources and provides a rich data base for the study. The study spans from 2005 to 2024, aiming to comprehensively examine the research dynamics related to institutional quality during this period. Meanwhile, with the addition of published articles from January 2025, special attention has been paid to the time period from 2018 to January 2025 in order to analyze in-depth the characteristics and trends of relevant research within this period.

2.1.2. Search Strategy and Keyword Setting

In order to accurately screen the literature related to institutional quality, the study used specific search terms, i.e., "national institutional quality" or "institutional quality" or "the quality of the institution". These keywords can effectively cover various concepts and expressions related to institutional quality, ensuring the relevance and accuracy of the study.

2.1.3. Sample Characteristics and Statistics

With the above search strategy, a total of 3039 relevant literatures were retrieved within the timeframe of 2005-2024, which indicates that the topic has received extensive attention from academics over the past many years. Meanwhile, after adding the relevant literature in January 2025, a total of 2346 relevant literatures were screened in the focus interval of 2018 - January 2025, which shows that the heat of the relevant research has changed during this period.

2.1.4. K-Value Description

K-value is a statistical indicator commonly used in literature analysis to measure the degree of association between literatures. The K-value of 7 for the period 2005-2024 indicates that the associations between literatures were relatively dispersed in that time period. The K-value of 20 for the period 2018 - January 2025 indicates that the degree of association between literatures has increased in that period, which may reflect a greater concentration and clarity of the topics of related research in that period.

2.2. Literature Overview

2.2.1. Changes in the Volume of Literature

In order to explore the dynamic changes and evolutionary trends in the field of institutional quality research in more depth, we firstly plotted a line graph of research year-issues and a keyword emergence graph based on the annual distribution of the number of web of science documents in terms of the number of publications (as shown in Figure 1 and Figure 2).

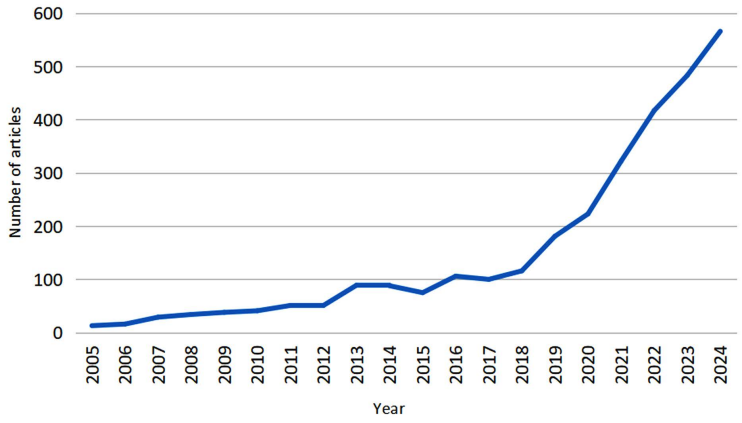

Figure 1. Years of institutional quality research, 2005-2024—Line graph of number of publications.

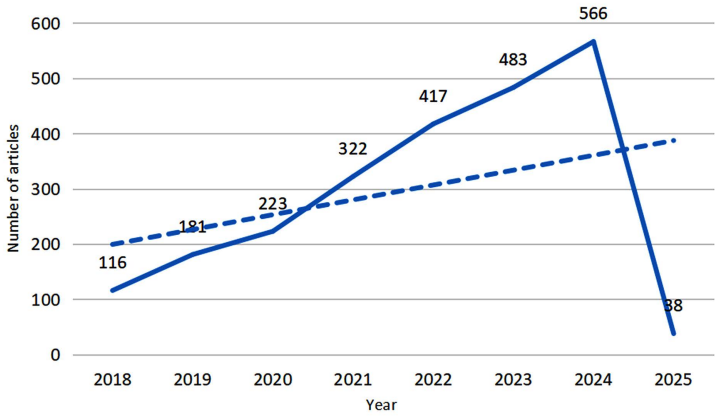

Figure 2. Line graph of institutional quality research year-postings, January 2018-2025.

According to the annual trend of publications can effectively identify the changes in the heat of academic research on institutional quality, by analyzing the annual trend of publications on institutional quality research, the author has a more intuitive understanding of the development of the relevant issues and the heat of the research situation, and concluded that the institutional quality research at different stages of the distinctive changes in the number of documents presented by the characteristics:

From the statistics of the number of articles published from 1999 to 2024, the study of institutional quality has experienced a process from germination and accumulation to rapid development. From 1999 to 2013, the field was in the germination period, and the number of articles published was extremely low and slow growth, reflecting the low level of academic attention, insufficient investment in research resources, and the initial accumulation of knowledge. Between 2014 and 2017, the number of publications began to rise slightly, indicating that the field is gradually attracting the attention of some scholars, but the overall development is still relatively slow, and has not yet formed an extensive research boom. 2018 to 2024, the number of publications will increase significantly, and as the importance of the institutional factors in global economic and social development becomes more and more prominent, it attracts more scholars and research resources, and the research team continues to grow, which will push the field into the stage of rapid development, and the output of the results will increase rapidly.

Because of the small number of literature in 2017 and before, the latter study focuses on the relevant literature published in January 2018-2025 for the sake of timeliness and accuracy of the study.

2.2.2. Country/Publication

Further, the author conducted country and author analysis through CiteSpace to draw a distribution table of countries with the top fifteen publication frequencies (see **Table 1**), as well as a list of publication sources with the top fifteen publication frequencies (see **Table 2**).

Table 1. Distribution of the top 15 countries in terms of the number of published studies on institutional quality.

Rank	Country	Number of Publications	Times Cited	Total Link Strength
1	People's Republic of China	702	18,241	592
2	United States	298	3806	197
3	Pakistan	284	10,226	389
4	United Kingdom	219	4481	245
5	Malaysia	132	2846	169
6	Australia	127	2873	129
6	Italy	127	1535	87
8	France	107	1836	117
9	Vietnam	105	2787	71
10	Germany	104	1342	99
11	India	102	2683	149
12	Spain	97	1717	70
13	Saudi Arabia	93	1787	161
14	Türkiye	81	709	96
15	South Africa	75	1502	76
15	Nigeria	75	1290	37

Table 2. List of top fifteen publication sources in terms of number of articles issued.

Rank	Source Publication	Number of Publications	Times Cited	Total Link Strength
1	*Environmental Science and Pollution*	138	5364	139,888
2	*Resources Policy*	137	4629	114,439
3	*Sustainability*	99	1360	66,653
4	*Journal of the Knowledge Economy*	54	492	56,260
5	*Environment Development and Sustainability*	46	625	41,751
6	*International Journal of Finance & Economics*	42	403	35,889
7	*Journal of Cleaner Production*	34	1885	37,429
7	*Sustainable Development*	34	310	36,794
7	*Heliyon*	34	274	27,612
10	*PLOS One*	31	238	23,389
11	*Economic Change and Restructuring*	30	388	25,624
12	*Economic Analysis and Policy*	27	605	17,361
13	*Journal of Environmental Management*	26	1165	30,983
13	*Frontiers in Environmental Science*	26	263	30,839
13	*International Journal of Emerging Markets*	26	284	20,935
13	*Journal of International Trade & Economics*	26	353	20,400

As a result, institutional quality research shows significant features in terms of country participation and publication distribution, which will be elaborated on in the following three levels: country, publication source and subject area.

1) National level

The performance of different countries in institutional quality research varies significantly. In terms of the number of publications, the People's Republic of China ranks first with an absolute advantage of 702 articles, which demonstrates the high research activity and strong output capacity in this field. The United States (298 articles) and Pakistan (284 articles) followed, also showing high research activity. Countries such as the United Kingdom, Malaysia, and Australia have published more than 100 - 200 articles, indicating that they have a certain degree of participation and research strength in institutional quality research. In contrast, countries such as South Africa and Nigeria have only 75 articles, reflecting the relatively low research activity of these countries in this field.

In terms of the number of citations, China's literature has been cited as many as 18,241 times, which fully demonstrates that its research results have been widely noticed and highly recognized in the international arena, and that they have a very strong influence. Pakistan has an outstanding performance with 10,226 citations, and its research results also have high influence. The United States, with 3806 citations, has the second highest number of publications, but there is a big gap between China and Pakistan in terms of influence. Most countries, such as Italy (1535 citations) and Germany (1342 citations), have relatively low citation counts, which further highlights the obvious differences in the impact of institutional quality research results among different countries.

In terms of total link strength, China leads other countries with a value of 592, which implies that China has a high level of relevance to other studies in the area of institutional quality research and may excel in international collaborative research, dissemination and exchange of results. Pakistan, with a total link strength of 389, is also at a high level, showing that its research has a certain degree of interaction and relevance at the international level. The total link strength of the United States is 197, which is relatively less relevant to other countries or research than China and Pakistan. Most of the remaining countries have a total link strength of less than 200, indicating that their research in this area is relatively weakly connected internationally.

2) Publication source level

The status and influence of publications in institutional quality research varies. In terms of the number of articles published, "environmental science and pollution research" (138 articles) and "resources policy" (137 articles) are in the leading position among many publications, indicating that they have paid high attention to the field of institutional quality research and become an important position for publishing academic results in this field. "Sustainability" (99 articles) also published more related research results. On the other hand, publications such as "natural resources forum" and "renewable energy" have a relatively small number of articles, which are around 20, indicating that their involvement in institutional quality research is relatively limited.

In terms of citations, "environmental science and pollution research" (5364)

and "resources policy" (4629) have received a lot of attention and citations, reflecting the high impact of the research results in these publications. The number of citations for "sustainability" is 1360, which is lower than the previous two, but still has a certain degree of influence. In contrast, "frontiers in environmental science" (263 citations), "plos one" (238 citations) and other publications have lower citation counts, indicating that their research results have relatively limited influence in the field of institutional quality research.

In terms of total link strength, "environmental science and pollution research" (139,888) and "resources policy" (114,439) occupy an important position in the academic network of institutional quality research, are closely linked to other research, and may play a key role in academic exchanges, collaborative research, and knowledge dissemination. The total link strength of "sustainability" is 66,653, which is also at a high level, while the link strengths of "international journal of emerging markets" (20,935), and "journal of international trade & economic development" (20,400) have relatively low total link strengths, suggesting that their academic relevance in this area of research is relatively weak.

To summarize, in institutional quality research, China has excellent performance in the country dimension, leading in terms of the number of articles, citations and total link strength; in the publication dimension, publications such as "environmental science and pollution research" and "resources policy" have significant influence, with excellent performance in terms of the number of articles, citations and total link strength.

3) Disciplinary field level

The interdisciplinary character of institutional quality research is remarkable, covering a wide range of fields such as environmental science and ecology, resource management and energy policy, economics and finance, interdisciplinary integrative research, and environmental management and sustainable business.

In the field of environmental science and ecology, the journals Environmental Science and Pollution Research, Sustainability and Journal of Cleaner Production focus on the mechanisms of institutional quality in environmental science and ecological conservation. The research includes the key institutional factors in the process of environmental policy making, such as the completeness of environmental regulations, the intrinsic linkage between enforcement intensity and institutional quality, and the direct impact of these factors on environmental pollution control and ecosystem maintenance. With the advancement of sustainable development strategies, studies have also focused on how institutional quality drives the sustainable use of resources, contributes to the realization of energy conservation and emission reduction goals, and has synergistic effects in addressing global environmental challenges such as climate change. These studies reveal the critical role of institutional quality in environmental protection and ecological restoration, and provide theoretical support for the optimization of environmental policies.

In the area of resource management and energy policy, journals such as Re-

sources Policy, Natural Resources Forum and Renewable Energy focus on the impact of key institutional elements such as resource property rights systems and resource allocation mechanisms on the rational development and efficient utilization of resources, as well as on resource security and safety. In terms of energy policy, studies focus on how institutional quality guides the optimization of energy structure, promotes the development of renewable energy, and plays a role in energy market regulation and energy investment incentives. These studies not only provide a theoretical basis for the sustainable management of resources and energy, but also provide practical guidance for policymakers to meet the dual challenges of resource scarcity and energy transition.

In the field of economics and finance, journals such as Journal of the Knowledge Economy, International Journal of Finance & Economics and Journal of International Trade & Economic Development focus on the mechanism of institutional quality in economic growth, financial stability, international trade and other economic and financial activities. Specifically, scholars focus on how institutional quality affects the productivity, innovation and market competitiveness of firms, thereby promoting economic growth. In the financial sector, research has focused on the impact of the quality of financial regulatory regimes on the behavior of financial institutions and the stability of financial markets; in international trade, it has explored how the quality of institutions affects trade flows, trade patterns, and the degree of participation in global value chains. These studies provide deep insights into understanding the central role of institutional quality in the economic and financial spheres and provide a scientific basis for policymaking.

In the field of interdisciplinary synthesis, journals such as PLOS ONE, Heliyon and Frontiers in Environmental Science combine the research methods and perspectives of natural and social sciences to explore the role of institutional quality in solving complex social-ecological system problems. For example, they study the integrated impacts of institutional quality on multiple fields, such as public health, social equity, science and technology innovation, as well as the synergy and integration mechanisms of institutions across different disciplinary fields. This interdisciplinary research approach not only broadens the horizon of institutional quality research, but also provides more comprehensive solutions to address complex global issues.

In the field of environmental management and sustainable business, journals such as Journal of Environmental Management, Business Strategy and the Environment) and Sustainable Business focus on the practical application of institutional quality in environmental management practices and sustainable business development. On the one hand, the research focuses on the connection between environmental management strategies and institutional quality at the enterprise level, and explores how enterprises can carry out green production and fulfill their social responsibility according to the requirements of the environmental system; on the other hand, the research focuses on the impact of the institutional quality of the government's environmental management policies on the improvement of

regional environmental quality and the construction of sustainable business ecosystems. These studies not only provide practical guidance for the sustainable development of enterprises, but also provide theoretical support for the government's environmental management policies, and promote the positive interaction between environmental management and business development.

To summarize, institutional quality research presents significant interdisciplinary characteristics at the disciplinary level, covering a wide range of fields such as environmental science, resource management, economics, finance, interdisciplinary integrated research and environmental management. This interdisciplinary research pattern not only provides diversified perspectives and methods for the in-depth study of institutional quality, but also provides more comprehensive theoretical support and practical guidance for solving complex problems in reality.

3. Evolution of Research on the Quality of the Global System and Topical Issues

3.1. Historical Division of the Evolutionary Chain

Institutional quality, as a core element affecting economic and social development, has become a key area of academic research in recent decades. Analyzing the number of articles published and the focus of research in this field between 1999 and 2024, it is clear that global research on institutional quality can be divided into four phases.

3.1.1. The Embryonic Period of Theoretical Foundations (1999-2013)

During this period, the number of related research articles has been at a low level for a long time, with slow growth and small fluctuations, reflecting that this field has received less attention in the academic world, and only a few scholars have been involved in it. The research work mainly centers on the construction of the basic theory of institutional quality, focusing on the definition of concepts and analysis of constituent elements. Scholars focus on the impact of the completeness of the legal system, the effectiveness of government governance and the strength of market regulation on institutional quality, laying a theoretical foundation for subsequent research.

Among them, Jacobsen's (2006) seminal study defines institutions as the rules of the game in society, emphasizing that high-quality institutions reduce transaction costs, promote cooperation, and maintain flexibility and sustainability in a dynamic socio-economic environment. Acemoglu et al. (2001), on the other hand, point out that good protection of property rights stimulates motivation and creativity among economic agents. while inadequate property rights protection inhibits its entrepreneurial returns and economic development. These studies laid the foundation for the theoretical framework of institutional quality and became an important starting point for subsequent research. In addition, Kaufmann et al. (2004) further expanded the measurement framework of institutional quality by proposing Governance Indicators for the first time, incorporating government ef-

fectiveness, regulatory quality, and the level of rule of law into the assessment system of institutional quality, which provides an important tool and methodology for subsequent empirical research. These studies not only clarify the core elements of institutional quality, but also provide theoretical support for subsequent interdisciplinary research.

3.1.2. A Slow-Moving Period of Exploration (2014-2017)

The number of articles published on the topic of institutional quality increased during this period, but the growth was limited, indicating that although this field has gradually entered the research horizons of some scholars, the overall development is still relatively slow and the investment of research resources is relatively insufficient. In terms of research content, the main focus at this stage was on the link between institutional quality and governance and corruption.

It is worth mentioning that scholars have deeply explored the mechanism of different governance modes on institutional quality, and analyzed how the efficiency and transparency of government governance can enhance institutional quality and thus promote economic and social development. Among them, the research of Kaufmann et al. (2016) is representative, in which they explored the relationship between governmental governance effectiveness and institutional quality, pointing out that transparent and efficient governmental governance is the core element for improving institutional quality. These studies provide a systematic theoretical and empirical analysis of the relationship between institutional quality and governance and corruption, and promote the initial development of the field.

3.1.3. Rapid Development Period of Diversified Expansion (2018-2019)

After entering 2018, the number of articles on institutional quality in academia has increased significantly, reflecting the importance of institutional factors in the process of global economic and social development, attracting the attention and participation of more scholars, and the investment of research resources has increased accordingly. In terms of research focus, it is characterized by multidimensional expansion and deepening.

One of them is in the field of energy and environment, where research has gone from superficial phenomena to the intrinsic links between energy consumption patterns, economic growth and environmental quality, focusing on the key role of institutional quality in the formulation and implementation of energy and environmental policies. For example, Salman et al. (2019) point out through cross-country data analysis that the improvement of institutional quality can effectively reduce carbon emissions and thus have a positive impact on the environment.

Secondly, in the field of international cooperation and regional studies, with the promotion of the Belt and Road Initiative and the emphasis on the development of different regions around the globe, scholars have focused on the impact of institutional differences between countries on trade and investment cooperation,

and explored the path of promoting regional economic integration and sustainable development through institutional harmonization and quality improvement. For example, Wang and Liu (2019) showed that in countries with lower institutional quality, FDI may exacerbate environmental pollution, while in countries with higher institutional quality, FDI helps reduce pollution. In addition, the trend of diversification of research methods in this period is obvious. Researchers are no longer limited to traditional theoretical analysis, but widely use econometric and empirical research methods to rigorously verify theoretical assumptions related to institutional quality, which promotes the development of research in the direction of specialization and precision.

3.1.4. Active Period of Comprehensive Deepening (2020-2024)

The period of 2020-2024 will be a period of comprehensive deepening of institutional quality research, with overall growth in the number of publications and further expansion and deepening of research focus areas.

During this period, green innovation and sustainable development began to become the core direction of institutional quality research, and scholars focused on the incentives of institutional innovation for green innovation and circular economy development of enterprises, as well as the social responsibility of enterprises in sustainable development, and analyzed in depth the role of institutional quality in the promotion of the development of the green industry and the economic-environmental synergism. In particular, Shepherd and Sriklay (2023) found that institutional quality has a significant moderating effect on the relationship between financial development and the environment, and that high-quality institutions can reduce the negative impact of financial development on the environment.

In addition, the research area has been expanded to emerging social fields such as tourism economy, health and culture. In the area of tourism economy, it focuses on the impact of institutional quality on the development of the tourism industry, including the role of tourism policy and market regulation on the growth of the tourism economy; in the area of health, it focuses on the impact of the medical security and public health system on the health of the population and the economic development; and in the area of culture, it probes into the interaction between the national culture and the quality of the system, as well as the institutional safeguard for the development of cultural heritage.

Overall, during the period of 1999-2024, the research on global institutional quality has gone from theoretical foundation to comprehensive deepening, the number of publications has gone from initial to active, the focus of attention has been expanded from basic theories to the fields of energy and environment, international cooperation, finance and economy, and emerging societies, and the contents of the research have been deepened and diversified. This evolution reflects the gradual deepening of the academic community's understanding of the importance of institutional quality in economic and social development, and also provides a rich foundation and broad space for subsequent research.

3.2. Hot Topic Analysis

3.2.1. Keyword Co-Occurrence and Key Research Areas

The keywords of the literature are the precise description of the focus of the whole article, which is the core around which the author's writing process revolves, and mastering the keywords can quickly and accurately refine the central concept of the study. In this study, the co-occurrence and clustering functions of CiteSpace software were used to identify the core hot topics of institutional quality research, and 2346 eligible documents were visualized. After adjusting Threshold (a parameter used in CiteSpace to control the number of nodes and edges displayed in the network), Font size (a parameter used in CiteSpace to control the font size of node labels), and Node size (a parameter used in CiteSpace to control the size of nodes), the keyword co-occurrence network mapping was obtained (see Figure 3). The cluster labels in the graph generated by Citespace can objectively reflect some core issues in the field of institutional quality research, according to which the hot topics of institutional quality research can be inferred. Combining the common characteristics of each keyword cluster, the author summarized the clustering results and finally formed the following five important research themes: the growth effect of institutional quality, China's institutional quality and advantages, carbon emissions and institutional quality, human resources and institutional quality, and corruption and institutional quality.

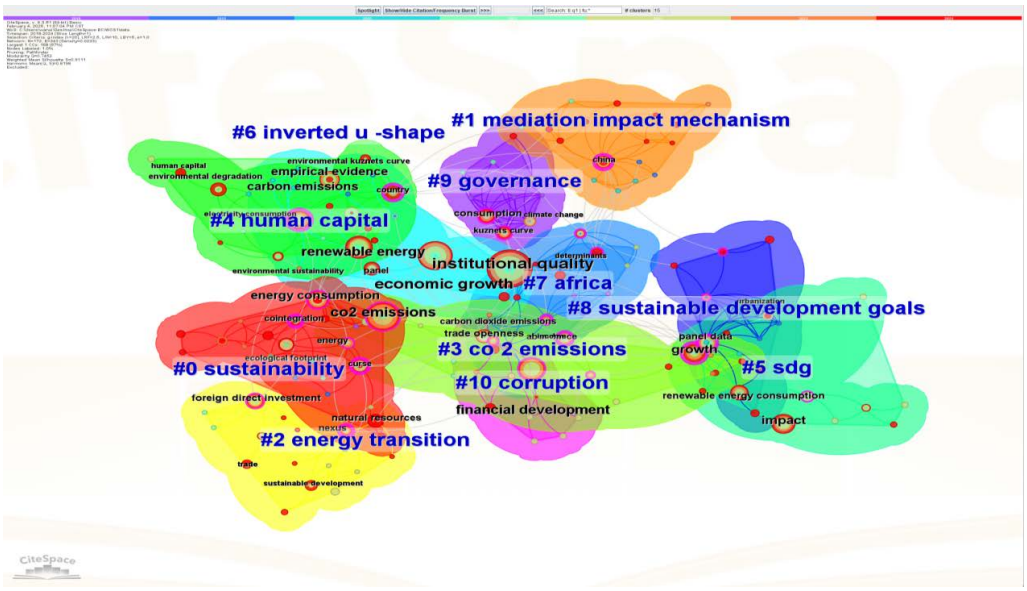

Figure 3. Keyword co-occurrence network mapping for institutional quality research.

3.2.2. Analysis of Hot Topics

Next we elaborate on each hot topic of institutional quality research in the context of highly cited literature.

1) Growth effects of institutional quality

Institutional quality is not only the foundation of a country's economic development, but also the key to sustainable economic growth. From theory to empir-

ical evidence, a large number of studies have shown that the impact of institutional quality on economic growth is mainly realized through the mechanisms of incentive mechanism, resource allocation efficiency and sustainability of economic growth. Moreover, institutional quality has dynamic adaptability, and its impact on economic growth is not static, but rather presents complex and diverse mechanisms in different areas, depending on the economic environment, policy choices and market structure.

At the micro level, the impact of institutional quality on economic growth is mainly reflected in the incentives for enterprises and individuals. A good institutional environment provides firms and individuals with stable expectations and fair competition opportunities, and incentivizes them to increase investment and innovation activities. For example, a transparent property rights protection system can incentivize firms to make long-term investments and technological innovations (Butkiewicz & Yanikkaya, 2006), while effective market rules can reduce the operating costs and transaction risks of firms and improve their competitiveness. Meanwhile, the dynamic adaptability of institutional quality also affects the incentives of firms and individuals. When the institutional environment can respond to the needs of enterprises and individuals in a timely manner, its incentive effect will be more significant. For example, in some countries, governments have provided enterprises and individuals with a more favorable institutional environment by continuously optimizing the tax system and market regulation rules, thus stimulating their incentives to innovate and invest.

From the perspective of industry and market, the impact of institutional quality on economic growth is mainly reflected in the efficiency of resource allocation. A good institutional environment can promote the flow of resources, such as capital, labor and knowledge, to high-efficiency industries and enterprises, thus improving the efficiency of resource allocation and promoting industrial upgrading and economic development. However, the dynamic adaptability of institutional quality also affects the improvement of resource allocation efficiency. In countries with lower institutional quality, resource mismatch and market distortion are more serious due to imperfect market rules or insufficient law enforcement, leading to inefficient resource allocation. For example, in some industries dominated by state-owned enterprises (SOEs), resources often fail to flow to high-efficiency firms due to the inadequate institutional environment, leading to industrial inefficiency and slow economic growth (Katarzyna, 2021). Therefore, the optimization of institutional quality is not only the key to improving resource allocation efficiency, but also an important guarantee to promote industrial upgrading and economic restructuring.

At the macro level, the impact of institutional quality on economic growth is mainly reflected in the sustainability of economic growth. A good institutional environment can reduce economic uncertainty, attract domestic and foreign investment and promote long-term stable economic growth. For example, in some developed countries, transparent market rules and effective legal systems provide

stable institutional guarantees for economic growth, enabling them to maintain relatively stable growth in the midst of global economic fluctuations. Similarly, the dynamic adaptability of institutional quality affects the sustainability of economic growth. Economic growth is more sustainable in countries where institutional quality is continuously optimized. For example, some emerging economies have achieved rapid economic growth and industrial upgrading while maintaining high economic growth sustainability by continuously promoting institutional change and technological innovation (Lee et al., 2016).

In recent years, a large number of empirical studies have further revealed the moderating role of institutional quality in different economic sectors. For example, a study by Lee et al. (2016) examines the impact of institutional environment on the relationship between insurance development and economic growth. This study finds that insurance development has a significant negative effect on economic growth in countries with poor institutional environments, while this negative effect is insignificant in countries with better institutional environments. The study by Katarzyna et al. (2021), on the other hand, analyzes the impact of state-owned enterprises (SOEs) on economic growth and explores the moderating role of institutional quality. This study finds that the impact of SOEs on economic growth is not constant but depends on institutional quality. In countries with poor institutional quality, SOEs have a significant negative impact on economic growth, while in countries with better institutional quality, SOEs have a significant positive impact on economic growth. Furthermore, the study by Olaoye et al. (2023) focused on the relationship between government intervention and economic growth in the Economic Community of West African States (ECOWAS). The study found that there is a threshold effect of government expenditure on economic growth. When institutional quality is below a certain threshold, the effect of government expenditure on economic growth is insignificant or even negative, while when institutional quality is above the threshold, government expenditure has a significant positive effect on economic growth.

Summarizing the above empirical studies, we can see that the impact of institutional quality on economic growth is not static, but has significant dynamic adaptability. This dynamic adaptability is not only reflected in its responsiveness to the economic environment, but also in its role in regulating policy choices and market structure. The connotation and mechanism of institutional quality differed at different stages of economic development and in different areas, and a good institutional environment could significantly improve the efficiency of resource allocation, stimulate innovation and investment, and reduce economic uncertainty, thereby promoting economic growth. Therefore, countries should pay attention to institution-building and realize sustainable economic growth by improving the quality of institutions.

2) China's institutional quality and strengths

Driven by the wave of globalization, the economies of the world's countries are deeply integrated and increasingly interdependent. The quality of institutions, as

a core variable in economic development and international economic interaction, has received great attention from all sectors of the global community. In the course of its rapid economic rise, China's institutional quality has demonstrated unique advantages.

First, the quality of China's institutions is characterized by an efficient judicial system and trade guarantees. Studies have shown that an efficient judicial system and contract enforcement mechanisms are key factors in attracting foreign investment and promoting trade (Acemoglu et al., 2001), and China's institutional arrangements in this regard provide a solid foundation for economic growth. In the case of processing trade in coastal areas, for example, the industry is highly dependent on an efficient judicial system to ensure contract enforcement. The fast-track platform for trade disputes set up by the local judiciary is able to resolve contractual disputes between enterprises quickly and appropriately by virtue of its specialized legal knowledge and efficient enforcement process, which greatly reduces trade risks. This institutional advantage not only consolidates the important position of processing trade in China's trade system, but also attracts a large number of foreign-funded enterprises to participate in it, injecting a strong impetus for the diversification and high-end development of China's trade structure (Pan et al., 2020b).

Second, the Chinese Government's implementation of differentiated support strategies for different types of enterprises further highlights the superiority of institutional quality. This differentiated policy support strategy is not only in line with the experience of international economic development, but also provides China with institutional advantages in global economic competition. For foreign-funded enterprises, the government has helped them overcome difficulties such as cultural differences and unfamiliarity with market rules and integrate smoothly into the Chinese market by formulating precise policies and regulations, such as providing tax incentives and relaxing market access restrictions. For domestic small and medium-sized enterprises (SMEs), the government has introduced a series of policies to encourage innovation and support development, covering a wide range of aspects such as entrepreneurship support and financing facilitation, which have stimulated the innovation vitality and development potential of SMEs. This kind of institutional arrangement, which provides precise policies according to the nature and development needs of enterprises, fully reflects the flexibility, adaptability and scientific nature of China's system, and creates a favorable ecological environment for fair competition and synergistic development for all kinds of enterprises, which strongly promotes the diversified prosperity of the economy (Pan et al., 2020b).

Further, China's institutional quality is characterized by its investment in countries along the Belt and Road, which is not only an export of capital, but also an all-round, multi-level win-win model of cooperation. In infrastructure construction projects, Chinese enterprises not only invest a lot of money to improve the hardware facilities of the host country, but also give full play to their advantages

in management and technology, and help the host country improve the relevant institutional system by providing systematic training for local employees and introducing advanced management models. For example, in the transportation infrastructure construction projects of certain countries, Chinese enterprises have assisted local governments in building modern transportation management and operation mechanisms, from optimizing the management process to improving the quality of service, which has improved the management efficiency and public service level of local governments in all aspects, and promoted the modernization and transformation of local systems (Pan et al., 2020b). Research shows that China's OFDI not only promotes the economic growth of the countries along the Belt and Road, but also helps them reduce the impact of the "resource curse" by improving the quality of local institutions. This model of investment-led institution-building provides a model for other countries to learn from and a new way of thinking for global economic cooperation (Liu & Zhang, 2023).

In addition, Chinese enterprises take the institutional quality of the host country as a key consideration in their outbound investment decisions, and countries with political stability and perfect rule of law are often more attractive to Chinese enterprises' investments. Before making investment decisions, Chinese enterprises will set up professional teams and utilize scientific assessment methods to conduct comprehensive, in-depth and detailed assessments of the host country's laws and regulations, policy stability, market regulatory mechanisms and other institutional factors, so as to ensure that the investment projects can be operated in a stable and predictable environment, and to safeguard the safety and profitability of the investment. This rational investment decision-making mode based on institutional quality not only reflects the maturity and professionalism of Chinese enterprises in the field of international investment, but also reflects that the advantage of China's institutional quality has prompted enterprises to pay more attention to long-term strategic layout and sustainable development in the international market. Studies have shown that Chinese OFDI has a significant positive impact on the institutional quality of host countries, especially in terms of regulatory quality and rule of law (Pan et al., 2020b).

Finally, at the level of global economic governance, the unique advantages of China's institutional quality have helped China to steadily increase its influence in global economic governance. By actively promoting the institutional construction of countries along the Belt and Road, China has played an important leading role in international economic cooperation, provided a development model for other countries to learn from, and vigorously promoted the development of the global economic governance system in the direction of diversification and equalization. In the process of international economic rule-making, China has actively participated in and deeply influenced the rule-making by virtue of its rising institutional advantages and increasing economic strength, gradually enhancing its discourse power in global economic governance, and contributing Chinese wisdom and Chinese solutions to the construction of a fairer, more reasonable and

stable global economic order (Liu & Zhang, 2023).

3) Carbon emissions and institutional quality

At present, the issue of carbon emissions has become a key obstacle on the road to global sustainable development. The quality of institutions, as a key influence on the implementation of economic and environmental policies, is increasingly being scrutinized by both academics and policymakers for its impact on carbon emissions. High-quality institutional systems, with their efficient policy formulation and implementation capabilities, are expected to reduce environmental degradation while promoting sustainable economic progress (Hunjra et al., 2020). However, the impact of institutional quality on carbon emissions is not fixed, and its mechanism of action may be diverse depending on factors such as different economic structures, energy consumption patterns, and policy environments across countries.

Earlier studies focused on the direct impact of institutional quality on carbon emissions. Salman et al.'s (2019) study in Indonesia, South Korea, and Thailand found that high-quality institutions not only promote economic growth but also reduce carbon emissions. This suggests that the mechanism of the impact of institutional quality on carbon emissions may be related to the degree of emphasis on environmental policies in the process of institutional quality improvement in each country. In other words, if a country focuses on the formulation and implementation of environmental policies while upgrading the quality of its institutions, it is possible to realize a win-win situation for both economic growth and environmental protection.

Subsequent studies have further explored the indirect effects of institutional quality on carbon emissions. For example, Teng et al.'s (2021) study of 10 OECD countries found that institutional quality has a significant positive effect on environmental degradation in the long run. This result implies that the improvement of institutional quality may indirectly lead to a rise in carbon emissions by promoting economic growth and increased economic activities. That is, when a country's institutional quality improves, it tends to be more economically active, which may lead to more resource consumption and carbon emissions. Similarly, Godil et al.'s (2020) study in Pakistan has shown that institutional quality has a significant positive effect on CO_2 emissions in the long run. This suggests that further improvements in institutional quality may exacerbate CO_2 emissions when carbon emissions are already at a high level.

From the perspective of impact mechanisms, there are multiple possibilities for the impact of institutional quality on carbon emissions. On the one hand, high-quality institutions may indirectly lead to a rise in carbon emissions by promoting economic growth and increased economic activity. In this case, while the improvement of institutional quality brings about economic prosperity, it may also increase resource consumption and carbon emissions due to the expansion of economic activities. On the other hand, high-quality institutions may also directly reduce carbon emissions through effective policy formulation and implementa-

tion. For example, by enacting stringent environmental regulations and promoting the application of green technologies, high-quality institutions may promote economic growth while reducing negative environmental impacts. In addition, institutional quality may indirectly affect carbon emissions by attracting foreign direct investment and promoting financial development. High-quality institutions can attract more FDI, especially those focused on environmental protection, thus promoting the development of a green economy. Meanwhile, good institutional quality can enhance the financial system's ability to identify and manage environmental risks, and push financial institutions to increase their investment in and support for renewable energy projects, promoting the development of a low-carbon economy (Omri et al., 2020).

In conclusion, the impact of institutional quality on carbon emissions is a complex multifactor interaction process. In the future, with the deepening of global economic integration and the advancement of sustainable development goals, the role of institutional quality in carbon emission reduction will become increasingly important. Countries should further improve the quality of institutions, optimize policy combinations, and promote green technological innovation and financial development in order to achieve the coordinated development of economic growth and environmental protection.

4) Human resources and institutional quality

Against the backdrop of increasingly fierce competition in the global economy, human resources and institutional quality have become key factors in promoting high-quality economic development and innovation. There is a complex interplay between the two, which not only affects the competitiveness of enterprises but also has a profound impact on the sustainable development of the economy as a whole.

First of all, the concept of human resources covers such dimensions as the education level, professional skills and practical experience of workers, which are directly related to the innovation ability and productivity of enterprises. As a key resource for economic development, its quality directly affects the performance of enterprises and the economy as a whole. A highly educated and professionally skilled labor force is better able to adapt to the rapidly changing technological environment and bring new ideas and methods to enterprises, thus enhancing their innovative capacity. Taking the technology industry as an example, highly qualified R&D personnel can drive technological breakthroughs, prompting firms to develop more competitive products or services, thereby increasing productivity and market share. In terms of empirical studies, Barasa et al. (2017) for the East African region found a significant positive relationship between employees' education and skill levels and firms' innovation output. This suggests that human resource quality is an important driver of firm innovation and economic growth.

Secondly, the quality of institutions plays a key role in the training and development of human resources. A high-quality institutional environment can cultivate more high-quality talents for the society through a perfect education system and training system. For example, as early as Heyneman's (2004) study pointed

out that there is a significant positive correlation between the quality of the education system and the quality of the labor force, and the enhancement of the quality of the system can effectively improve the education environment, which in turn improves the quality of education. In addition, a sound talent incentive mechanism can attract and retain excellent talents and stimulate their enthusiasm and creativity. For example, Shougang has incentivized industrial workers to participate in innovation activities through the establishment of an innovation incentive fund and a revenue-sharing mechanism for the transformation of innovation achievements, which significantly improved the innovation capacity and productivity of the enterprise. Ouedraogo et al.'s (2022) study also shows that the institutional quality of African countries, especially the government's governance capacity and corruption control capacity, has a significant positive impact. A high-quality institutional environment reduces wastage of educational resources and increases the efficiency of investment in education, thus providing strong support for human resource development.

At the same time, there is a close interaction between human resources and the quality of the system. On the one hand, high-quality human resources help to enhance the implementation and improvement of the system. Well-educated citizens and professionals are better able to understand and follow institutional norms, and are able to provide suggestions for institutional optimization with their professional knowledge and innovative thinking. On the other hand, a quality institutional environment in turn promotes the development of human resources. For example, in China, with the economic transformation and industrial upgrading, enterprises have further enhanced their innovative capacity by improving the human resource management system and building a scientific and efficient human resource management system. At the same time, the government has provided institutional guarantee for the high-quality development of human resources by deepening the reform of the talent development mechanism and optimizing the education and training system. Ouedraogo et al.'s (2022) study also points out that, in the process of improving the quality of the system in African countries, the increase in the penetration rate of education has provided more professionals for the implementation and supervision of the system, and the improvement of the system has further promoted the education quality improvement, creating a virtuous circle.

In conclusion, both human resources and institutional quality have a significant positive impact on economic growth and innovation, while there is also a complex interaction between them. In the context of global economic integration, upgrading human resources and improving institutional quality are not only the core of enterprise development, but also the key to achieving sustainable economic growth. By optimizing the education system, improving the talent incentive mechanism and reinforcing institutional construction, the synergistic effect of human resources and institutional quality can be further released to promote high-quality economic development.

5) Corruption and institutional quality

In economic and social development, corruption is closely linked to the quality of institutions and has a profound impact on many areas of the economy and society. Corruption not only directly undermines the healthy operation of the economy, but also undermines social justice and stability, while the quality of the system largely determines the breeding of corruption and the ability of sustainable economic and social development. An in-depth study of the relationship between the two and their mechanisms of action is of great significance in grasping economic laws and formulating policies.

First of all, the negative impact of corruption on the economy and society is multifaceted. Broccardo's et al. (2019) study shows that corruption significantly reduces investment and hinders economic growth. In some African countries, officials ask for bribes so much that firms have to pay bribes in order to obtain projects, which not only increases the operating costs of firms, but also leads to irrational allocation of resources. High-quality enterprises are excluded from projects because of their unwillingness to pay bribes, and those enterprises that obtain projects by paying bribes often lack technical strength and innovation capacity, which prevents capital from flowing to efficient production areas, thus affecting the vitality and competitiveness of the overall economy. In the area of resource allocation, corruption can lead to a mismatch of resources and discourage innovation and investment. For example, Arminen & Menegaki (2019) point out that in certain energy industries, companies obtain the right to extract resources through bribes, leading to resource waste and environmental pollution. This phenomenon not only undermines the fair competition mechanism in the market, is very likely to weaken public trust in the government, reduce government credibility, and even trigger social conflicts, but also makes resources not flow to the enterprises that really need them, affecting the sustainable development of the industry.

However, research in recent years has shown that institutional quality has a dampening effect on corruption. Good institutions increase the costs and risks of corrupt behavior through clear rules, strict supervision and effective punishment mechanisms, thus creating a strong disincentive to corrupt behavior. For example, in the Nordic countries, the government has established a sound system of integrity, the law strictly regulates the behavior of officials, and corruption, once discovered, will face severe legal sanctions. Empirical studies have also shown that the improvement of institutional quality indicators, such as government effectiveness, shows a significant correlation with the reduction of corruption. Some Southeast Asian countries have strengthened their anti-corruption efforts and improved the efficiency of government management and the quality of services after undergoing political reforms and institution building. By improving laws and regulations, strengthening monitoring mechanisms and promoting open government, governments have effectively curbed the spread of corruption, improved the market environment, attracted more investment and promoted economic development.

It is worth mentioning that according to the latest research, Aksoy et al. (2025) found that the higher the level of corruption in the migrant's country of origin,

the higher the migrant's trust in the political institutions of the migrant's country of destination. For example, Eastern European immigrants, after comparing their countries of origin and destination, have a high level of trust in the political institutions of the Nordic countries and actively participate in political activities. This phenomenon can be analyzed from the psychological and cognitive point of view of immigrants. Migrants experience corruption in their home countries and have lower trust in political institutions. When they migrate to a new country, they compare the systems and environments of their home and destination countries and find that the destination country performs better in terms of political system, degree of democracy, and governmental governance, which leads to a higher level of trust in the political institutions of the destination country. This contrasting effect further enhances migrants' trust in the destination country and also reflects the importance of institutional quality for social trust.

Taken together, corruption and institutional quality have a multidimensional impact on the economy and society. Corruption not only directly harms economic development, but also undermines social justice and stability. Improvement of system quality, on the other hand, can effectively curb corruption, optimize resource allocation and promote economic growth and social development. Therefore, improving the quality of institutions and combating corruption should become an important task for Governments.

4. Frontier Perspectives on Institutional Quality Research

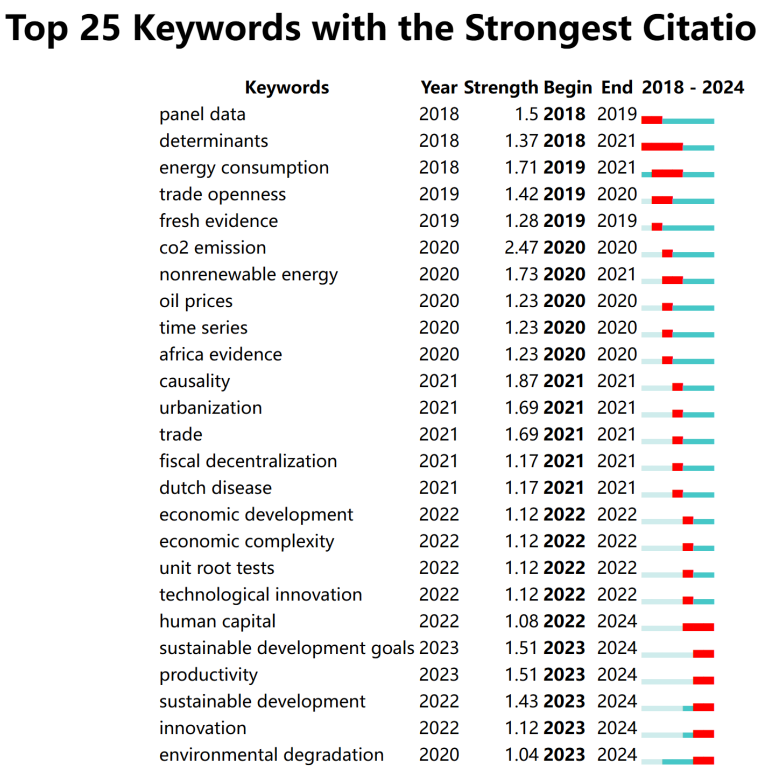

Figure 4. Sudden detection map in the field of institutional quality research.

After identifying the hot topics of institutional quality research, the author continues to use the CiteSpace keyword and citation clustering function and combines it with the reference to the keyword co-occurrence network mapping of institutional quality research (**Figure 3**) and the emergent detection map of the institutional quality research field (**Figure 4**) to identify the cutting-edge topics of institutional quality research, and ultimately obtains the three emerging cutting-edge topics of the future through the decomposition of the temporal map: digital economy and institutional quality, environment-institution synergistic development and institutional quality, and gender equality and family child well-being. In the following, the author will discuss the related research progress in detail.

4.1. Digital Economy and Institutional Quality

In today's digital era, the rise of the digital economy has become a key force driving global economic growth. With digital technology at its core, the digital economy realizes the digital transformation of economic activities through information and communication technology (ICT), which further positively affects economic growth by reducing transaction costs, improving production efficiency, promoting innovation and enhancing market competitiveness (Martinez & Williams, 2010). However, the development of the digital economy is not only dependent on technological advances, but is also significantly influenced by the institutional environment. There is a complex interaction between the digital economy and institutional quality.

First, institutional quality plays a crucial guiding role in the development of the digital economy. A good institutional environment can provide stable policy expectations for the digital economy and attract more investment and innovation resources. For example, a sound intellectual property protection system can incentivize R&D and innovation in digital technology and promote the development of core industries in the digital economy. At the same time, high-quality institutions can positively influence the development of the digital economy by protecting property rights, reducing transaction costs, and improving policy transparency and stability, thus creating a favorable environment for economic growth (Efendic et al., 2011). Further, institutional quality indirectly contributes to economic growth by influencing channels such as investment, technological innovation and human capital accumulation (Law et al., 2018).

At the same time, digitization affects the quality of institutions in several dimensions, both in terms of direct effects and indirect mechanisms. On the one hand, digitalization has significantly improved governance efficiency by directly optimizing the flow of information and decision-making processes (Niebel, 2018). For example, the widespread application of e-government platforms has not only improved the transparency of government services, but also effectively reduced the probability of rent-seeking behavior and corruption. At the same time, digitization also enhances the transparency of the system's operation and reduces information asymmetry by facilitating the disclosure and sharing of information,

which in turn enhances public trust in the system.

On the other hand, digitization indirectly affects the quality of the system by reducing the reliance on natural resources (Natural Resource Rent (NRR)). Research shows that digitization significantly reduces the level of dependence on natural resources, a change that may help mitigate the negative impact of the resource curse on institutional quality. Reduced resource dependence may reduce the problems of declining institutional quality caused by resource abundance, such as corruption and inefficient governance. In addition, the combination of digitalization and financial technologies (FTNs) can further contribute to the improvement of institutional quality. By innovating financial products and services, FTNs can facilitate the structural transformation of the economy and reduce the reliance on traditional resource-based industries, thus indirectly improving the quality of the system.

However, the rapid spread of digitalization also brings new challenges, such as the technological divide that may lead to increased inequality, while the rapid development of fintech requires new regulatory frameworks to address potential risks (Li et al., 2023).

At present, despite the fact that research on the digital economy and institutional quality is gradually gaining attention, there are still many current limitations. First, the boundaries of the digital economy are blurred, covering a wide range of fields from digital infrastructure, digital industries to digital services, and there is currently a lack of uniform statistical standards, making it difficult to accurately compare the size of the digital economy in different countries and regions. This conceptual and measurement ambiguity limits the depth and breadth of research and makes it difficult to effectively compare and validate results between different studies. Second, the narrowness of the research perspective is also a major problem. Existing studies mostly take developed countries as samples, ignoring the specificity of developing countries. Developing countries face different challenges in terms of digital economy and institutional quality, such as weak digital infrastructure, lagging institutional development, digital divide and other issues. These differences lead to limitations in the applicability of existing research findings to developing countries. Third, the interaction between the digital economy and institutional quality is a dynamic process, but most of the existing studies adopt static analysis methods. The rapid iteration of the digital economy and the gradual reform of institutions require dynamic models to analyze their long-term interactions, for example, how to cope with the new issues brought by the digital economy (e.g., data privacy, digital taxes, etc.) through institutional innovation. In addition, the study of digital economy and institutional quality involves a number of disciplines such as economics, law, information technology, sociology, etc., but most of the current research focuses on single-disciplinary perspectives and lacks interdisciplinary integration.

In conclusion, research in the area of digital economy and institutional quality is still in the stage of continuous development and improvement. Future research needs to make efforts in conceptual clarification, methodological improvement,

perspective expansion and policy orientation. Through interdisciplinary cooperation, dynamic analysis, micro-subject research and special attention to developing countries, the complex interaction between the digital economy and institutional quality can be better revealed to provide theoretical support and policy recommendations for the healthy development of the digital economy.

4.2. Environment-Institution Synergy

Sustainable development is one of the major challenges facing the world today, and its core lies in achieving coordinated economic, social and environmental development that meets the needs of the present without compromising the ability of future generations to meet their own needs. The quality of institutions, as an important foundation for the governance of nations and the functioning of societies, has a profound impact on sustainable development. In recent years, with the advancement of the global Sustainable Development Goals (SDGs), the relationship between institutional quality and sustainable development has gradually become a focus of attention for academics and policymakers.

A large number of empirical studies have shown that high-quality institutions can significantly reduce environmental pollution and thus improve environmental quality. For example, Ali (2019) found through the analysis of data from 47 countries that the improvement of institutional quality can effectively reduce carbon emissions, thus having a positive impact on the environment. The study of Azam et al. (2021) also pointed out that the quality of the institution has a significant positive impact on the environmental indicators, and is able to reduce the consumption of energy and thus reduce environmental pollution.

However, the impact of institutional quality on environmental quality does not exist in isolation. In real-world situations, institutional quality further affects environmental quality through interactions with other key factors. In the case of foreign direct investment (FDI), for example, the environmental impact of FDI depends to a large extent on the institutional quality of the host country. High-quality regimes can attract more green investments and promote environmentally sustainable development, while low-quality regimes may attract highly polluting industries and exacerbate environmental pollution. Cong and Hong (2019) show that in countries with low institutional quality, FDI may exacerbate environmental pollution, while in countries with high institutional quality, FDI may help reduce pollution. Moreover, the environmental impact of FDI is moderated by institutional quality. High-quality institutions can ensure the flow of financial resources to green projects, while low-quality institutions may lead to the diversion of financial resources to highly polluting projects. Zakaria and Bibi (2019) show that institutional quality has a significant moderating effect on the relationship between financial development and the environment, and that high-quality institutions can reduce the negative impact of financial development on the environment.

In addition, from the perspective of regional differences, the quality of institutions varies considerably from one region to another, which leads to significant

differences in the quality of the environment. For example, African countries generally have low institutional quality, which makes them face greater challenges in environmental protection. Some developed countries and emerging economies, on the other hand, have been able to harmonize economic and environmental development by improving institutional quality. This regional difference suggests that the improvement of institutional quality is of great relevance to the improvement of environmental quality. Therefore, in order to realize the sustainable development of the environment, countries need to strengthen the construction of institutions and enhance governance capacity. Specific measures include strengthening the formulation and enforcement of legal rules, improving government transparency, and reducing corruption. In addition, the international community should also help countries with lower institutional quality to upgrade their institutions through technical assistance and financial support, etc., in order to meet global environmental challenges. In conclusion, the quality of institutions is one of the key factors affecting the quality of the environment, and by upgrading the quality of institutions, the sustainable development of the environment can be effectively promoted.

4.3. Institutional Quality, Gender Equality and the Well-Being of Children in Families

Institutional quality, as a key indicator of the level of governance in a country or region, not only affects economic and social development, but also profoundly plays a role in key areas such as gender equality, family harmony and children's well-being. In recent years, as public policy research continues to deepen, the relationship between institutional quality and gender, family and children has gradually become a hot spot for interdisciplinary research.

First, the quality of the system has a catalytic effect on women's empowerment. Improved institutional quality creates a fairer social environment for women and promotes women's empowerment and development in the economic, political and socio-cultural spheres. In the economic sphere, high-quality institutions guarantee equal employment opportunities and fair wages for women in the labor market through comprehensive anti-discrimination laws and vocational training systems. For example, many countries have passed legislation to prohibit employers from discriminating against women on the basis of gender in the recruitment and promotion process, while at the same time providing vocational training and re-employment support to help women upgrade their labor skills. Studies have shown that in countries and regions with higher-quality institutions, women's labor force participation rates and income levels have increased significantly, and the gender wage gap has narrowed substantially (Wu et al., 2024).

In the political arena, the improved quality of the system has provided women with a broader space for political participation. Fair electoral systems and quota systems for women are important means of promoting women's access to political decision-making. For example, some countries have significantly increased women's

influence in the political arena by legislating a minimum percentage of female representation in parliament. An open and inclusive political culture and social norms also encourage women to actively participate in political activities and express their political aspirations, thus bringing political decision-making closer to the interests of society at large.

In the socio-cultural sphere, institutional quality enhances women's social status and cultural rights through a sound social security and cultural education system. A good social security system provides support for women in such areas as childbearing and old-age pensions and reduces their social burdens; the cultural education system, on the other hand, changes traditional social stereotypes of women by spreading the concept of gender equality and increasing women's participation in social and cultural life.

At the same time, female empowerment is counterproductive to institutional quality. Women's active participation and empowerment play an important role in promoting institutional quality (Avom & Kamguia, 2024). In the political realm, female politicians tend to pay more attention to issues such as social equity, environmental protection and public services, and are able to propose comprehensive and balanced policy programs from different perspectives. In the economic realm, female empowerment has stimulated institutional innovation and prompted businesses to pay more attention to social responsibility and sustainable development. In the political sphere, female-led governments have invested relatively more in education, healthcare, social security and other areas, and the implementation of policies has been more focused on fairness and sustainability. In the social sphere, women's empowerment has helped to enhance social cohesion and stability, promote the development of social welfare and reduce social conflicts and contradictions.

Secondly, the quality of institutions affects the family economy and the family's social environment. In terms of family economic support and resource allocation, a high-quality system has a far-reaching impact on the family economy through a variety of institutional arrangements, including social security, tax policy and public services. The social security system provides stable economic support for families and reduces the economic pressure on families caused by problems such as old age, medical care and unemployment. For example, a sound old-age insurance system reduces the burden of old age on children, and the unemployment insurance system provides financial compensation to the unemployed and helps families maintain a basic standard of living. The tax system reduces the financial burden on families through reasonable tax policies and special deductions. For example, the special additional deduction policy for personal income tax enables families to devote more resources to education, health care and other needs.

With regard to the optimization of the social environment for families, the quality of the system has created more harmonious social conditions for families by optimizing public services and the social and cultural environment. The improvement of the education system provides fair educational opportunities for the chil-

dren of families and reduces family conflicts arising from imbalances in educational resources. A sound medical system protects the health of family members and reduces the risk of poverty due to illness. In addition, an open and inclusive social and cultural environment promotes gender equality and family harmony and reduces family conflicts arising from gender prejudice and cultural conflicts.

Thirdly, system quality also contributes significantly to children's health and development. High-quality systems significantly improve child health outcomes by optimizing policy implementation and resource allocation. Transparent and efficient governance environments reduce corruption and waste of resources and ensure the effective use of public health funds. Studies have shown that system quality is significantly associated with health indicators such as life expectancy per capita and infant mortality. High-quality systems can significantly increase life expectancy and reduce infant mortality.

A study by Anil et al. (2025) delves into the impact of educated politicians on child health in India. The study finds that regions with higher institutional quality, where elected politicians are also generally more educated, are able to more effectively drive improvements in child health, as evidenced by lower neonatal, infant, and under-five mortality rates. In addition, the study explores potential mechanisms by which educated politicians influence children's health, including early life investments and health infrastructure development. Educated politicians are more likely to promote early life investments such as pregnancy registration, use of nutritional supplements, institutionalized deliveries, and postnatal checkups. At the same time, they can increase the number of primary health centers and health clinics in rural areas and improve health infrastructure. These measures are particularly critical in areas with lower-quality systems, where basic health services are often lacking.

In sum, there is a close interplay between the quality of institutions and gender equality, family harmony and the well-being of children. High-quality institutions provide a favourable external environment for women's empowerment and development, and at the same time improve the economic and social environment of the family and promote children's health and development by optimizing the implementation of policies and the allocation of resources. In turn, women's active participation and empowerment play an important role in contributing to the quality of institutions. Throughout the latest literature, there are still many limitations, and future research needs to further deepen interdisciplinary studies, strengthen the analysis of micro-level and dynamic processes, and pay attention to the actual situation in developing countries and emerging economies, so as to provide more scientific and effective theoretical support and practical guidance for promoting gender equality, family harmony and child well-being.

5. Summary and Recommendations

5.1. Summary and Outlook

Relying on the bibliometric tool CiteSpace, the article comprehensively reveals the

current hot topics, evolutionary lineage, and cutting-edge progress of international institutional quality research through systematic combing and in-depth analysis of institutional quality research. Based on the bibliometric analysis, institutional quality research has experienced four phases since 1999: the budding accumulation period (1999-2013), the slow start period (2014-2017), the rapid development period (2018-2019), and the comprehensive deepening active period (2020-2024). The research heat has increased significantly since 2018 and will remain high during 2020-2024, showing a steady growth overall, reflecting the increasing attention and importance of the field in the global academic community.

At the same time, the current international research on institutional quality has formed five core themes: the economic growth effect of institutional quality, China's advantages and experience in institutional quality, the synergistic mechanism of carbon emissions and environmental policies, the interaction between human resources and institutional quality, and the path of corruption governance and institutional quality improvement. These themes cover a wide range of economic, environmental and social areas, fully reflecting the key role and multidimensional impact of institutional quality in promoting global sustainable development.

It should be noted that there are some shortcomings and deficiencies in Chinese research on institutional quality when compared with international journals. First, China's theoretical foundations and conceptual definitions of institutional quality are relatively vague. Current research mostly relies on international common indicators, such as the Worldwide Governance Indicators (WGI), which are widely applicable but fail to fully consider the specificity of China's national conditions, resulting in deficiencies in theoretical logic and conceptual refinement.

Secondly, China's research methodology is relatively homogeneous. International journals have widely used causal inference methods such as the instrumental variable (IV) method, regression with breakpoints (RDD), and double differencing (DID) to address endogeneity. For example, Acemoglu et al. (2001) used the instrumental variable method to analyze the causal impact of institutional quality on economic growth by addressing the endogeneity issue between institutional quality and economic growth through colonial history as an instrumental variable. In addition, structural equation modeling (SEM) and machine learning methods have been used to analyze the multidimensional impact of institutional quality. For example, Jabeur et al. (2022) use machine learning methods (e.g., random forests) to identify key drivers of institutional quality and analyze their heterogeneous impacts on economic development in different countries.

In contrast, Chinese studies may rely more on traditional econometric models such as Ordinary Least Squares (OLS) and fixed-effects models in their analytical methods, which, although effective in some cases, may be slightly insufficient when dealing with complex causal relationships and multidimensional data. For example, some studies have used only fixed-effects models to analyze the impact of local government governance on economic development, while causal infer-

ence methods have been used to a lesser extent.

In addition, China's participation and voice in the construction of the international institutional quality system are still insufficient, especially in international rule-making, and although the Belt and Road Initiative has demonstrated China's potential in international cooperation, its overall influence still needs to be enhanced.

Meanwhile, institutional quality research in China is relatively lagging behind in terms of interdisciplinary exploration. In international journals, the research in this field extensively involves economics, political science, sociology, environmental science and other disciplines, forming an interdisciplinary research pattern, whereas China's relevant research mostly focuses on economics, with insufficient research on the far-reaching impacts of institutional quality in the environment, society and other fields, and is particularly weak in exploring the impacts of institutional quality on topics such as gender equality and family well-being. In addition, China has limitations in terms of data sources and empirical analyses. Existing studies mostly rely on cross-country data at the macro level and lack in-depth analyses at the micro level (e.g., enterprises and households), and it is difficult for the timeliness and coverage of data to comprehensively reflect the dynamic changes in institutional quality.

Looking ahead, research on institutional quality will further focus on such cutting-edge topics as the dynamic interaction between the digital economy and institutional quality, the exploration of mechanisms for the synergistic development of the environment and institutions, and the far-reaching impact of institutional quality on gender equality and the well-being of families and children. These areas are not only emerging hotspots for global academic research, but also key issues that need to be solved in the process of realizing the SDGs, and are of great theoretical and practical significance. In the future, China should, on the one hand, actively learn from international advanced experience and promote localized institutional innovation; on the other hand, actively participate in the construction of the international institutional quality system, enhance its discourse power in global governance, and contribute more wisdom and solutions to the sustainable development of the global economy and society.

5.2. Regional Analysis and Paths to Improve Institutional Governance

While, as mentioned above, studies have revealed significant differences in institutional quality across countries and regions, a more detailed regional analysis could further identify unique challenges and opportunities for improving institutional governance. Such an analysis would not only help to reveal the micro-dynamics behind the macro-data, but also provide more targeted strategies for global governance.

First, more detailed regional analysis can be achieved through subregional segmentation. Geographic regionalization is one such approach, whereby countries

or regions are further divided into smaller geographic units, such as the division of Africa into regions such as East Africa, West Africa, Central Africa and South Africa, or further refined to provincial or municipal units within countries. Such divisions help to identify institutional differences within regions. Another approach is economic regionalization, which divides regions based on indicators such as the level of economic development and industrial structure, such as dividing the globe into developed countries, emerging economies and developing countries. This division can better understand the interaction between institutional quality and economic development.

Second, multi-dimensional indicator analysis is also an important means to realize more detailed regional analysis. By constructing a more detailed system of indicators, it is possible to comprehensively assess institutional quality in different regions. In addition to using macro-level governance indicators (e.g., the World Bank's Governance Indicators), micro-level indicators can be introduced, such as firms' satisfaction with the institutional environment and residents' evaluation of public services (Kaufmann et al., 2016). In addition, institutional quality is not static, but dynamically adjusts with time and policy changes. Through time series analysis, it is possible to identify the evolutionary trend of institutional quality and its long-term impact on economic and social development (Law et al., 2018).

Further, case studies and field surveys can provide empirical support for more detailed regional analysis. Representative regions or cities are selected for in-depth studies to analyze their successful experiences and challenges in institutional governance. For example, study Singapore's successful experience in science and technology innovation and institutional environment, as well as the difficulties in attracting foreign investment and optimizing the business environment in certain regions in Africa (Pan et al., 2020a). In addition, direct feedback from enterprises and residents on the institutional environment is collected through questionnaires and interviews. Such first-hand information can reveal the concrete manifestations of institutional quality at the micro level, as well as the actual needs of enterprises and residents (Ouedraogo et al., 2022).

A more detailed regional analysis can identify, on the one hand, differences in institutional quality across regions and their specific impact on development. For example, some regions may face poor law enforcement and high levels of corruption, while others may have deficiencies in market rules and property rights protection (Broccardo et al., 2019). Micro-level analysis can reveal specific dilemmas of firms and residents in the institutional environment. For example, SMEs may face higher institutional transaction costs, while residents may be dissatisfied with the fairness and efficiency of public services (Wu et al., 2024). These micro-level challenges may be overlooked in macro analysis.

On the other hand, more detailed regional analyses can identify the unique strengths of different regions. For example, certain regions may have advantages in terms of natural resources, geographic location, or human resources, but these advantages are not fully utilized, possibly due to deficiencies in the institutional

environment (Olaoye et al., 2023). By improving institutional governance, these advantages can be better utilized for regional development. In addition, by comparing the institutional practices of different regions, some successful cases of policy innovation can be identified. For example, certain regions may have attracted large amounts of investment and innovation resources through measures such as decentralization and optimization of the business environment (Shepherd & Sriklay, 2023). These successful experiences can provide lessons for other regions to promote innovation in institutional governance.

Globally, for developing countries, by identifying specific problems in institutional governance, more targeted reform strategies can be developed to improve institutional quality and promote economic development and social stability. For example, African countries can attract more foreign direct investment (FDI) by strengthening anti-corruption and optimizing market rules (Ouedraogo et al., 2022). For emerging economies, regional analysis can identify their own strengths and weaknesses in institutional quality and further promote economic transformation and industrial upgrading. For example, through the Belt and Road Initiative, China has not only improved its own institutional quality, but also helped countries along the route to improve their governance capacity (Pan et al., 2020a). For developed countries, regional analysis can optimize the existing institutional framework and further improve governance efficiency and public services. For example, the Nordic countries have realized the coordinated development of economy and environment through high-quality institutions, which provides valuable experience for other countries (Broccardo et al., 2019).

In conclusion, through subregional division, multidimensional indicator analysis, case studies and field surveys, the micro dynamics hidden behind macro data can be revealed to provide more targeted recommendations for policy formulation. Globally, such analyses not only help to identify problems, but also provide precise guidance for countries to more effectively improve the quality of institutions and promote sustainable economic development. Future research should further strengthen the analysis of regional differences and micro-levels to better contribute to the optimization of global institutional governance. Through this global and more detailed approach to regional analysis, countries can better address the challenges in institutional governance while seizing development opportunities to promote sustainable global development.

5.3. Recommendations for Policy Development

Based on the above research, the following are some innovative and informative specific recommendations for policymakers aiming to improve the quality of institutions in low-performing regions or countries.

First, use digital technology to promote institutional innovation, such as applying blockchain technology to upload key information, such as government project bidding and fund flows, to ensure open and transparent information; at the same time, provide blockchain digital identity authentication for citizens and enter-

prises to simplify the approval process and improve efficiency. In addition, an artificial intelligence-based policy simulation platform is constructed to assess policy effects through big data analysis and machine learning, and a real-time policy feedback system is established to make timely adjustments to the policy direction. At the same time, it has developed a digital citizen participation platform based on mobile applications and social media, and set up a "policy suggestion box" and a virtual citizens' conference to encourage citizens to participate in policy formulation and supervision.

Second, in terms of cross-sectoral cooperation and collaborative governance, the importance of institutional quality can be publicized through cultural activities, and local cultural elements (such as fairness, honesty, and the rule of law) can be tapped and integrated into the modern institutional system. At the same time, a mechanism for synergistic governance between the environment and the system should be established, a "green system index" should be developed, and synergies between environmental and economic policies should be promoted, such as tax incentives to encourage enterprises to adopt environmentally friendly technologies. In addition, we should strengthen international cooperation and learn from the successful experiences of other countries, such as the carbon tax system of the Nordic countries.

Third, social participation and incentives are also important aspects of improving the quality of the system. Social enterprise incubation centers can be set up to provide financial, technical and policy support to social enterprises and encourage them to carry out innovative projects in education, environmental protection and poverty alleviation. At the same time, a new model of public-private partnership should be established, whereby the Government and social enterprises cooperate in the design and implementation of public service projects. In addition, a "System Quality Innovation Award" should be established to recognize and reward individuals, enterprises and government departments that have made outstanding achievements in system building, and a "System Quality Contribution Points" system should be set up to motivate citizens and enterprises to actively participate in system building.

Fourthly, the enhancement of institutional quality also requires dynamic monitoring and continuous improvement. Big data and artificial intelligence technology can be used to establish a dynamic monitoring system for system quality, analyze system operation data in real time, and regularly publish "system quality reports" for public supervision. At the same time, some regions have been selected as "institutional laboratories" to pilot institutional innovations, such as the "reform of the rural land transfer system", and a sandbox regulatory model has been introduced to allow enterprises to test new business models and institutional arrangements in a safe and controlled environment.

Fifth, paying attention to vulnerable groups and social equity is also an important part of improving the quality of the system. Anti-gender discrimination policies should be formulated to prohibit gender discrimination against women

in recruitment and promotion and increase the proportion of women in government decision-making bodies. At the same time, family economic support policies should be optimized, the social welfare system should be improved, the coverage of pension and medical insurance should be expanded, the uneven distribution of education and medical resources should be improved, and the economic pressure on families should be reduced, so as to promote social equity and harmonious development.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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