

Research on the hierarchical protection of intellectual property rights and the construction of a dynamic benefit-sharing mechanism for local public cultural achievements: based on the categorized practice of intangible cultural heritage, tangible cultural heritage, and characteristic cultural and creative products

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Abstract. This paper focuses on the hierarchical protection of intellectual property rights and the construction of a dynamic benefit-sharing mechanism for local public cultural achievements, aiming to address the new challenges brought by the development of digital technologies. Based on a categorized approach involving intangible cultural heritage, tangible cultural heritage, and characteristic cultural and creative products, the study proposes an interdisciplinary research framework, clarifies legal boundaries, optimizes protection systems, and introduces blockchain technology to achieve dynamic benefit sharing. The findings provide scientific support for policy formulation and promote the sustainable development of cultural heritage.

Keywords: intellectual property protection of local public cultural achievements, hierarchical protection, dynamic benefit-sharing

1. Introduction

1.1. Research background and significance

1.1.1. Research background

In today's digital age, the rise of short video platforms and digital exhibition technologies has presented new opportunities for the dissemination of local public cultural achievements. These technologies allow a broader audience to conveniently access and understand these valuable cultural resources. However, the double-edged nature of digital technology has become increasingly apparent, with growing concerns over Intellectual Property (IP) infringement, which has caused significant losses to rights holders.

Local public cultural achievements possess unique cultural value and social attributes. Their intellectual property protection requires a delicate balance among cultural inheritance, public interest, and the interests of rights holders. Traditional IP protection tends to emphasize static and single-entity rights, which fails to meet the demands of dynamic dissemination and multi-party benefit-sharing in the digital environment.

1.1.2. Research significance

Theoretical Significance: This study explores suitable IP protection models for different types of cultural achievements by classifying them into intangible cultural heritage, tangible cultural heritage, and characteristic cultural and creative products. Adopting an interdisciplinary approach, it integrates legal, sociological, and heritage protection theories and methodologies to construct a systematic and scientific framework for protection and sharing. This contributes new theoretical perspectives to cultural heritage protection studies.

Practical Significance: Constructing a dynamic benefit-sharing mechanism helps balance the relationships among cultural inheritance, public interest, and commercial interest, promoting the sustainable development of cultural achievements. Through

the rational distribution of economic benefits generated during the digitization of cultural products, this model encourages all parties to actively participate in the protection and dissemination of cultural achievements. Furthermore, the study provides policy references for government departments in formulating IP protection policies for local public cultural resources.

1.2. Research objectives and methods

1.2.1. Research objectives

Local public cultural achievements include intangible cultural heritage (ICH), tangible cultural heritage (TCH), and characteristic cultural and creative products (CCP). These achievements differ significantly in terms of legal attributes, protection needs, and utilization methods, necessitating a more targeted protection system. This study aims to construct a hierarchical protection framework and a dynamic benefit-sharing mechanism, clarify IP boundaries, analyze the rational utilization and benefit distribution of cultural achievements, and safeguard the rights and interests of both creators and users.

1.2.2. Research methods

Literature Review: To ensure comprehensive and in-depth research, this study reviews numerous core journal articles and synthesizes prior research outcomes to summarize theoretical and practical experiences. The literature spans classic legal theories and cutting-edge research in sociology and cultural heritage protection.

Legal Hermeneutics: The study applies legal hermeneutics to conduct in-depth analyses of relevant laws and regulations such as the IP section of the Civil Code and the Implementation Regulations of the Copyright Law. Detailed interpretation of specific legal provisions ensures the study's theoretical depth.

1.2.3. Innovations of the study

Existing research often overlooks the uniqueness of cultural achievements. This study innovatively proposes a dual-track framework combining "typological legal application + dynamic interest adjustment" to provide precise protection for various types of cultural achievements and to achieve equitable benefit-sharing. The specific proposals are as follows:

For Intangible Cultural Heritage: Based on Article 29 of the Intangible Cultural Heritage Law, the study designs a collective rights protection mechanism for communities, integrating individual rights into collective ones to enhance enforcement capability.

For Tangible Cultural Heritage: With reference to Article 5 of the Cultural Relics Protection Law, a franchising system is proposed to separate ownership from operational rights, ensuring reasonable utilization under the premise of protection.

For Characteristic Cultural and Creative Products: By applying the Copyright Law, the study optimizes copyright registration and infringement remedies, ensuring rapid registration and protection for creators while establishing an efficient rights enforcement mechanism.

For Dynamic Benefit-Sharing: Drawing on Article 510 of the Civil Code, blockchain smart contract technology is introduced to automate and dynamically adjust profit distribution, ensuring fairness and transparency.

2. Theoretical foundation and current status of intellectual property protection for local public cultural achievements

2.1. Definition of core concepts

Local Public Cultural Achievements refer to cultural resources that embody regional characteristics, carry public cultural value, and meet the conditions for intellectual property protection. These achievements include intangible cultural heritage (ICH), tangible cultural heritage (TCH), and characteristic cultural and creative products (CCP).

Hierarchical Protection of Intellectual Property entails the use of differentiated legal protection methods tailored to the ownership, form, and value of cultural achievements.

Dynamic Benefit-Sharing Mechanism is a system guided by the fairness principle outlined in Article 6 of the Civil Code. It enables the dynamic adjustment of rights confirmation, value evaluation, and benefit distribution processes.

2.2. Theoretical foundation

2.2.1. Intellectual property theory

John Locke's labor theory of property asserts that individuals acquire ownership over the results of their labor through the transformation of natural resources. In the context of cultural heritage, this implies that inheritors and creators—through long-term labor and innovation—naturally hold rights over the cultural achievements they preserve and develop.

2.2.2. Public goods theory

Paul Samuelson's theory classifies public goods into pure and quasi-public goods. Pure public goods are non-exclusive and non-rivalrous and typically require government provision. Quasi-public goods combine public and private attributes and necessitate both governmental and market involvement. Local public cultural achievements often fall into the latter category, requiring coordinated efforts for protection and dissemination.

2.2.3. Stakeholder theory

Freeman's stakeholder model emphasizes that organizational decisions and behaviors should account for the interests of all stakeholders. In combination with Article 5 of the Company Law, which mandates corporate social responsibility, this theory helps delineate the rights and responsibilities of governments, inheritors, enterprises, and the public in the cultural domain[1].

2.3. Opportunities and challenges in the digital era

2.3.1. Opportunities brought by digital technology

Digital technologies offer new tools for the IP protection of local public cultural achievements, significantly enhancing protection efficiency and precision. For example, Article 14 of the Electronic Signature Law affirms that "a reliable electronic signature shall have the same legal effect as a handwritten signature or seal," thereby providing a legal foundation for digital rights confirmation. Additionally, blockchain technology—with its decentralized, tamper-proof, and transparent attributes—strengthens legal safeguards for intangible cultural heritage in digital environments.

2.3.2. Challenges posed by digital technology

However, digital technologies have also intensified the challenges of IP protection. According to the White Paper on Intellectual Property Prosecution Work (2024) released by the Supreme People's Procuratorate, there were 1,338 copyright infringement cases involving 3,266 defendants prosecuted in 2024, representing year-on-year increases of 27.9% and 18.9%, respectively. This surge highlights existing gaps in protection. The Copyright Law of China remains ambiguous regarding the scope of protection for traditional cultural expressions, leading to legal vacuums in safeguarding traditional crafts and folk arts. In the digital age, such cultural achievements are more susceptible to infringement. Creators often lack clear legal bases to defend their rights, which undermines their creative incentives and threatens the transmission of cultural heritage. Thus, there is an urgent need to improve the legal framework and clarify protection boundaries [2].

3. Strategies for the hierarchical protection of intellectual property rights in local public cultural achievements

3.1. Protection strategies for Intangible Cultural Heritage (ICH)

3.1.1. Construction of a living transmission system

According to Article 26 of the Intangible Cultural Heritage Law, schools are encouraged to offer education on intangible cultural heritage. Building upon this, a collaborative training mechanism involving inheritors, communities, and universities is proposed. This tripartite model fosters a virtuous cycle of knowledge transmission and innovation.

3.1.2. Strengthening legal protection

Currently, the Regulations on the Copyright Protection of Traditional Cultural Expressions have yet to be enacted, which limits the legal protection of intangible cultural heritage. China can draw on Japan's experience by establishing a special rights

protection system tailored to intangible heritage, offering more comprehensive legal safeguards for its inheritors.

3.1.3. Digital protection innovations

For example, using virtual reality (VR) to recreate the silver forging techniques of the Miao ethnic group, combined with blockchain-based digital copyright registration systems, allows for full-process evidence preservation from creation to transaction. The immutability and transparency of blockchain provide a robust guarantee for the copyright protection of intangible cultural works [3].

3.2. Protection strategies for Tangible Cultural Heritage (TCH)

3.2.1. Digital restoration and monitoring

In alignment with Article 21 of the Cultural Relics Protection Law, which stipulates "not altering the original state of cultural relics," oblique photogrammetry can be used to model ancient buildings and establish digital twin archives. Digital restoration, based on the principle of minimal intervention, emphasizes reducing physical interference through technical means to preserve the integrity of the relics.

3.2.2. Separation of ownership and usage rights

While maintaining state ownership, enterprises can be allowed to participate in development through franchising agreements, as per Article 324 of the Civil Code. Such contracts can clearly define the scope of development, profit distribution, and responsibilities for cultural relic protection, ensuring a balance between utilization and preservation.

3.2.3. Environmental and safety assurance

With the aid of Internet of Things (IoT) technology, microenvironment monitoring systems can be established for ancient buildings to track real-time data on temperature, humidity, and vibrations. When anomalies occur, the system triggers automatic alerts and emergency response plans, thus safeguarding cultural relics.

3.3. Protection strategies for characteristic Cultural and Creative Products (CCP)

3.3.1. Copyright registration and originality protection

By integrating artificial intelligence (AI) image recognition with blockchain technology, a copyright monitoring and service platform can be built. This provides creators with a convenient registration channel and enables the automatic generation of infringement reports, facilitating timely rights defense.

3.3.2. Market regulation and brand development

A quality standard and certification system for cultural and creative products should be established to ensure product reliability, enhance market recognition, and build consumer trust. Policy support and market guidance are also vital to nurturing influential cultural brands and promoting the sustainable development of the cultural and creative industry [4].

3.3.3. International exchange and cooperation

Through the intellectual property provisions of the Regional Comprehensive Economic Partnership (RCEP), a cross-border copyright dispute mediation mechanism can be established. Organizing international exhibitions and exchange activities will also help promote Chinese cultural and creative products to global audiences [5].

4. Construction of a dynamic benefit-sharing mechanism for local public cultural achievements

4.1. Stakeholder analysis

In the process of protecting and utilizing local public cultural achievements, a complex community of interests is formed among multiple stakeholders, including the government, inheritors, enterprises, and the public. The government plays a pivotal role in cultural heritage protection by enforcing restrictive provisions in the Cultural Relics Protection Law and promoting

technological innovation and application under the Law on the Promotion of the Transformation of Scientific and Technological Achievements. Inheritors, under the Intangible Cultural Heritage Law, enjoy the rights of attribution and remuneration. Enterprises acquire development rights through contractual agreements. The public is entitled to cultural consumption rights in accordance with the law. The rights and obligations of all parties are clearly defined through laws and contracts. They both restrict and support each other, forming a dynamically balanced network of interest relationships.

4.2. Construction of a benefit distribution model

4.2.1. Contribution-based evaluation index system

A four-level evaluation system is proposed, including: Cultural value: scored by experts; Capital investment: calculated based on actual financial contributions; Market operation: quantified using sales data; Risk bearing: assessed according to the specific characteristics of the project. This system enables a comprehensive assessment of each party's contribution.

4.2.2. Dynamic adjustment mechanism

To cope with uncertainties such as market fluctuations, technological iterations, and policy changes, a dynamic adjustment mechanism is designed. In cases of continuous decline in sales, technological innovation, or policy shifts, parties' contributions are reassessed, and the distribution plan is automatically adjusted through smart contracts.

4.3. Digital technology support

Digital technology plays a crucial role in the protection and utilization of local public cultural achievements: Blockchain technology enables full-process evidence preservation of copyright registration, transactions, and distribution, ensuring transparency and tamper-resistance throughout the protection process [6]. Big data helps analyze consumer preferences and purchasing behavior, providing data-driven insights into each party's contribution to market operations. Smart contracts can automatically execute contractual terms, improve distribution efficiency, and reduce errors and disputes caused by human interference.

In summary, the hierarchical protection system and dynamic benefit-sharing mechanism proposed in this study provide new perspectives and methodologies for the intellectual property protection of local public cultural achievements. As science and technology continue to advance and society continues to evolve, the field of cultural heritage protection will face even more new challenges and opportunities. It is imperative to persist in exploration and innovation to better promote the inheritance and development of outstanding traditional Chinese culture in the context of the new era.

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