

# Research on the Impact and Path of Social Innovation on the Transformation of Resource Exhausted Cities: Analysis Based on Sociological Innovation Theory

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**Abstract:** *Resource exhausted cities face significant challenges in upgrading and transformation, and social innovation, as a new innovation model, plays an important role in urban transformation. This article is based on sociological innovation theory and takes resource exhausted cities as the research object to explore the impact and path of social innovation on urban transformation. Research has found that social innovation can introduce new concepts, technologies, and practices, promote the upgrading of urban economic structure and innovation capabilities, and promote urban transformation and upgrading. On this basis, this paper proposes the path of social innovation in urban transformation, including strengthening the construction of innovative culture, promoting industrial upgrading and transformation, cultivating innovative talents and organizations, and so on. The research results have guiding significance for the transformation and upgrading of resource exhausted cities.*

**Keywords:** *social innovation, resource exhausted cities, development and transformation*

## 1. Introduction

Resource exhausted cities refer to types of cities where the resources on which a city relies are gradually exhausted or severely lacking due to long-term large-scale development and excessive utilization of natural resources[1]. These cities are facing resource shortages in various aspects such as energy, water resources, and land, posing serious challenges to their sustainable development. Its characteristics include insufficient resource supply, decreased environmental carrying capacity, weak economic growth, and increased social development pressure. The existence of resource exhausted cities not only affects the quality of life of urban residents, but also has a serious impact on the overall development of cities. Therefore, how to effectively respond to resource exhausted has become an urgent issue facing these cities.

Social innovation refers to innovative activities that bring positive impacts to solving social problems and meeting social needs through the emergence of new concepts, values, organizational forms, technologies, and systems in the social field, which change social relationships and structures [2]. With the continuous advancement of social change and development, social innovation, as an important driving force for change, is increasingly valued. It includes innovative thinking and practice from a social perspective, aimed at promoting development in areas such as social equity, environmental sustainability, and economic prosperity. Currently, social innovation is showing a trend of diversification, strong participation, and cross-border cooperation, becoming an important force in promoting social change and urban development.

Social innovation is closely related to the transformation of resource exhausted cities, providing new ideas and paths for the transformation of resource exhausted cities. In the process of transforming resource exhausted cities, social innovation can stimulate various forces inside and outside the city, promote the efficient utilization and regeneration of resources, promote the development of green technologies and industries, strengthen social organizations and citizen participation, promote innovation in urban governance models and mechanisms, and inject vitality and momentum into urban transformation. Therefore, in-depth exploration of the relationship between social innovation and the transformation of resource exhausted cities has important theoretical and practical significance for seeking the path of sustainable development and enhancing urban risk resistance.

## **2. The impact of social innovation on the transformation of resource exhausted cities**

### ***2.1 The role of social innovation in the transformation of resource exhausted cities***

Social innovation plays an important role in the transformation of resource exhausted cities. Firstly, social innovation can promote urban transformation, help cities break free from single resource dependence, and achieve diversified economic development. For example, by promoting innovative methods such as environmental protection and cultural tourism industries, cities can become more diverse in their economic structure. Secondly, social innovation can promote the sustainability of urban development and make cities more resilient in the face of resource exhausted challenges. For example, promoting low-carbon living and encouraging residents to save energy and reduce emissions can slow down resource consumption and contribute to the sustainable development of cities.

### ***2.2 Application of social innovation in promoting sustainable development of resource exhausted cities***

Social innovation can be applied to promote the sustainable development of resource exhausted cities from multiple perspectives. Firstly, by introducing new technologies, industries, and other means, urban economic development space can be expanded and dependence on a single resource can be reduced. Secondly, by encouraging innovative thinking and practice, we can stimulate the vitality of urban innovation and promote urban transformation and upgrading. Finally, by leveraging the role of social organizations, civic groups, and other social forces, we can enhance the awareness and ability of urban sustainable development, and promote more coordinated, balanced, and sustainable urban development.

In short, social innovation is of great significance for the transformation and sustainable development of resource exhausted cities. Only through innovative thinking and practice can cities break free from single resource dependence and achieve sustainable development.

## **3. The transformation path of resource exhausted cities driven by social innovation**

### ***3.1 Urban economic structure adjustment under the guidance of social innovation***

Under the guidance of social innovation, resource exhausted cities can achieve transformation by adjusting their economic structure. Traditionally, these cities may overly rely on a certain resource industry, and once resources are exhausted or market demand decreases, they will fall into economic difficulties [3]. However, social innovation can promote the development of new industries in cities, such as green environmental protection and cultural and creative industries, thereby achieving diversified and sustainable economic structure. This diversified economic structure can not only enhance the city's risk resistance, but also create more employment opportunities for the city and promote comprehensive economic development.

### ***3.2 Urban social governance innovation driven by social innovation***

Social innovation also poses challenges and opportunities for urban social governance models. In the process of transforming into a resource exhausted city, it is necessary to innovate and improve the social governance model of the city to adapt to new development needs. Social innovation can promote cooperation between urban governments and various sectors of society, enhance the strength and depth of citizen participation in urban governance, and form a joint force to promote urban development. At the same time, social innovation can also promote the reform of urban management systems and methods, improve the efficiency and transparency of urban governance, and enhance the innovation vitality and competitiveness of cities.

### ***3.3 Urban ecological environment improvement supported by social innovation***

With the continuous advancement of social innovation, resource exhausted cities can also improve their ecological environment through innovative thinking and technological means. By introducing new environmental protection technologies and promoting the utilization of clean energy, measures can effectively reduce resource consumption and environmental pollution, and promote the improvement of urban ecological environment. Meanwhile, social innovation can also encourage residents to adopt

low-carbon lifestyles, promote more environmentally friendly and sustainable urban construction, and create a more livable living environment for urban residents.

### ***3.4 Urban public service upgrading under the promotion of social innovation***

The transformation of resource exhausted cities still requires improving the public service system of the city, and social innovation can become an important force in promoting the upgrading of public services. By introducing new technological means and optimizing management models, the level of public services such as education, healthcare, and transportation in cities can be improved, meeting the diverse needs of urban residents. In addition, social innovation can promote the equalization and inclusiveness of public services, allowing more urban residents to share the fruits of urban development, and enhancing social equity and stability.

In summary, social innovation plays an important role in promoting the transformation of resource exhausted cities. By leading the adjustment of urban economic structure, driving innovation in urban social governance, supporting the improvement of urban ecological environment, and promoting the upgrading of urban public services, it can help these cities achieve sustainable development and comprehensive enhancement.

## **4. Conclusion and suggestion**

### ***4.1 Inspiration of social innovation on the transformation of resource exhausted cities***

Social innovation is the key to ushering in new development opportunities and solutions for resource exhausted cities. Through diversified industrial structures, citizen participation and community cooperation, environmental protection and sustainable development, education and talent cultivation, as well as cross-border cooperation and open innovation, cities can break free from single resource dependence and achieve sustainable development.

#### ***4.1.1 Citizen participation and community cooperation to promote the governance and development of resource exhausted cities***

Citizen participation and community cooperation are important means to promote social innovation, and are particularly crucial for the sustainable development of resource exhausted cities. Cities can actively advocate and organize citizen participation in community affairs, encourage residents to actively participate in the decision-making process of community governance and projects, and thus achieve the goals of democratic participation and community co construction.

Citizen participation in community affairs is the foundation for promoting social innovation. It can not only stimulate the enthusiasm and creativity of residents, but also enhance the cohesion and sense of belonging of the community. Cities can solicit opinions and suggestions from residents through various forms of symposiums, hearings, surveys, and research, making their participation in community affairs a normalized behavior. Encouraging residents to participate in the decision-making process of community governance and community projects can effectively promote the development of social innovation. Cities can establish diversified participation mechanisms, such as resident representative conferences, community meetings, etc., allowing residents to directly participate in community governance and project decision-making. Through community cooperation, cities can gather various forces, solve the problems they face, and promote the development of social innovation. Community cooperation can bring opportunities for resource sharing, information sharing, and experience sharing, which is conducive to solving various contradictions and challenges in urban development. In addition, community cooperation can cultivate community spirit and culture, enhance community cohesion and centripetal force. By carrying out various forms of community activities and projects,

Overall, citizen participation and community cooperation are important means to promote social innovation, and can achieve the goal of social innovation through democratic participation and community co construction. Cities should actively advocate and organize citizen participation in community affairs, encourage residents to participate in community governance and decision-making processes for community projects, strengthen community cooperation, gather all parties to solve the problems faced by the city, and further promote the development of social innovation. Only by fully leveraging the role of citizens as the main body can sustainable development and social progress of cities be achieved.

***4.1.2 Environmental protection and sustainable development are important directions for the transformation of resource exhausted cities***

Environmental protection and sustainable development are important directions for social innovation in resource exhausted cities. Cities should increase environmental protection efforts, promote the development of green economy, and promote circular economy and low-carbon lifestyle. Through the concept of sustainable development, cities can achieve effective utilization of resources and reduce negative impacts on the environment, creating a favorable ecological environment for social innovation. Social innovation can promote cities to adopt more environmentally friendly technologies and management methods, reduce resource consumption and environmental pollution, and encourage residents to adopt low-carbon lifestyles to jointly create a good ecological environment.

***4.1.3 Education and talent cultivation are the foundation of social innovation in resource exhausted cities***

Education and talent cultivation are crucial for social innovation in resource exhausted cities. Reforming the education system and cultivating talents with innovative awareness and abilities will inject sustained innovation momentum into cities. Firstly, through educational reform, cities can attach importance to cultivating students' innovative thinking and practical abilities, guiding them to explore and constantly innovate in their learning and life. Secondly, cities can increase investment in higher education and vocational education, create a more open and innovative educational environment, and provide students with more opportunities and platforms for innovative development. At the same time, cities can also strengthen cooperation with enterprises and research institutions, promote school enterprise cooperation, promote the integration of industry, academia, and research, and provide students with more practical innovation and practical opportunities. Finally, cities can establish a comprehensive talent cultivation system, including a comprehensive talent evaluation mechanism and incentive policies, to attract more talents to come to the city and retain outstanding talents, accumulating more intellectual resources for social innovation in the city. Through these measures, cities will cultivate more talents with innovative spirit and practical ability, providing a continuous source of power and support for social innovation in the city.

***4.1.4 Cross border cooperation and open innovation are important ways for resource exhausted cities to obtain external resources and technological support***

Cross border cooperation and open innovation are important ways for resource exhausted cities to obtain external resources and technological support. Cities should actively cooperate with other cities, enterprises, and research institutions to jointly carry out innovative projects and research and development activities, and attract more innovative elements to flow in. Cross border cooperation refers to the cooperation and exchange between different fields and industries. Through cross-border cooperation, resource exhausted cities can obtain resources and technological support from other cities, enterprises, and research institutions. For example, cities can establish friendly cooperative relationships with other cities, jointly carry out project cooperation, and share resources and experiences. At the same time, cities can also cooperate with enterprises, leveraging their technological research and development capabilities and market channels to achieve optimized resource allocation and the transformation of innovative achievements. In addition, cities can collaborate with research institutions to jointly carry out scientific research projects, obtaining cutting-edge scientific and technological achievements and professional technical support. Open innovation refers to the opening up of innovative resources and elements to the outside world, attracting external innovative elements to flow in. Cities can attract innovators and entrepreneurs to come to the city and jointly carry out innovation activities by establishing innovation platforms and incubators. In addition, cities can formulate policy measures to encourage enterprises and individuals to participate in innovation, provide support such as innovation funds and tax incentives, and attract more innovation factors to flow in. In order to achieve cross-border cooperation and open innovation, cities need to actively establish connections with other cities, enterprises, and research institutions. Cooperation channels can be expanded through organizing exchange activities, participating in international conferences, attracting investment, and other means. At the same time, cities should also strengthen their innovation capabilities and environment construction, enhance their attractiveness and competitiveness, and attract more innovative elements to the city. Through cross-border cooperation and open innovation, resource depleted cities can not only obtain external resources and technological support, but also promote the improvement of local innovation capabilities. Collaboration and communication can promote the dissemination and sharing of knowledge, stimulate innovative thinking and vitality. At the same time, the inflow of external innovation factors can also drive the upgrading and transformation of local industries, promoting the development and growth of urban economy. Therefore, resource exhausted

cities should actively promote cross-border cooperation and open innovation, establish good cooperative relationships with external cities, enterprises, and research institutions, and jointly promote innovative projects and research and development activities. Through cooperation and communication, we aim to optimize resource allocation and introduce technology, injecting new vitality and momentum into the social and economic development of cities.

#### ***4.2 Suggestions for enhancing the social innovation capacity of resource exhausted cities***

##### ***4.2.1 Establishing an innovation support mechanism***

In resource exhausted cities, economic development faces many challenges, especially the need to enhance the competitiveness and sustainability of cities through innovation. Therefore, establishing an innovation support mechanism is very necessary. These mechanisms include policy and financial support, providing guarantees and incentives for innovative projects, so that cities can better utilize and develop existing resources, and find new economic growth points. Policy support is an important component of innovation mechanisms. City governments should introduce a series of policies to encourage innovation, including support in reducing taxes, preferential loans, and technical services. Financial support is another key element of innovation mechanisms. City governments should establish dedicated innovation investment funds to provide financial support for innovation projects. Intellectual property protection and technology transfer are also important components that cannot be ignored in innovation mechanisms. Cities should strengthen the protection and maintenance of intellectual property rights, and provide better legal protection for innovative achievements. At the same time, cities should actively promote technology transfer and intellectual property transactions, help enterprises better transform innovative achievements into commercial value, and accelerate the pace of urban development.

In summary, resource exhausted cities should establish innovation support mechanisms, including policy and financial support, to provide guarantees and incentives for innovation projects. At the same time, strengthening intellectual property protection and technology transfer, encouraging the transformation and commercialization of innovative achievements, in order to promote sustainable urban development and long-term economic growth. Only with the joint efforts of the government and society can cities achieve innovative development and economic upgrading.

##### ***4.2.2 Strengthen cooperation between social organizations and enterprises***

In resource exhausted cities, promoting cooperation between social organizations and enterprises is an important way to jointly promote the development of social innovation. Social organizations have extensive social connections and resources, which can provide new ideas and resource support for innovation. The enterprises have rich technical knowledge and market experience, which can provide technical support and market promotion for innovative projects, forming a mutually beneficial cooperation pattern between the two parties. Resource exhausted cities can promote the development of social innovation by promoting cooperation between social organizations and enterprises. Social organizations can provide innovative ideas and social resources, while enterprises can provide technological and market support, achieving complementary advantages between both parties. Under the guidance and support of the government, cooperation between social organizations and enterprises will inject new impetus into the innovative development of cities, promoting sustainable development and long-term economic growth.

##### ***4.2.3 Establishing innovation platforms and incubators***

Resource exhausted cities can establish innovation platforms and incubators, providing a place for innovators to exchange, cooperate, and incubate. These platforms can gather innovative elements, stimulate innovative thinking, cultivate innovative projects, and provide necessary support and services. Specifically, these platforms and incubators can provide innovators with comprehensive services such as entrepreneurial counseling, marketing support, and fundraising, helping innovation projects grow rapidly and successfully land. At the same time, by organizing innovation salons, special lectures and other activities, these platforms can also promote communication and cooperation among innovators, and promote the sharing and integration of innovation resources.

##### ***4.2.4 Establishing a talent training system***

Resource exhausted cities should strengthen talent cultivation, reform the education system, and cultivate talents with innovative awareness and abilities. Innovation courses, organizing innovation competitions and practical activities can be offered to stimulate students' creativity and innovation

potential. Firstly, innovative courses can be offered, such as courses on innovative thinking, entrepreneurial management, product design, etc., to integrate innovative concepts and methods into education and teaching. Secondly, innovation competitions and practical activities can be organized in areas such as technological innovation, cultural creativity, and social innovation, providing students with opportunities to showcase and practice. In addition, cooperation with innovative entities such as enterprises and social organizations can be strengthened, providing students with more opportunities for innovative practice through school enterprise cooperation, school community cooperation, and other means. In summary, resource exhausted cities should strengthen talent cultivation, reform the education system, and cultivate talents with innovative awareness and abilities. Offering innovation courses, organizing innovation competitions, and practical activities can stimulate students' creativity and innovation potential, injecting new vitality into the innovative development of cities.

#### **4.2.5 Strengthening international exchange and cooperation**

Resource exhausted cities face unique challenges, and how to quickly and effectively transform and upgrade into an innovative city is a daunting task. At this point, communication and cooperation with other countries and regions become particularly important. By absorbing external innovation experiences and resources, urban innovation and development can be better promoted. International exchange projects and the introduction of foreign experts and institutions can broaden the innovation vision and cooperation network of cities, promoting their innovative development. Of course, when carrying out these cooperation projects, cities also need to consider their own actual situation and needs, formulate specific cooperation plans, and ensure the smooth progress of cooperation and the achievement of actual results.

In short, resource exhausted cities can achieve transformation and sustainable development through social innovation. Strengthening social innovation capabilities requires efforts in various aspects such as establishing support mechanisms, strengthening cooperation, establishing innovation platforms and incubators, cultivating talents, and strengthening international exchanges and cooperation. Through these measures, resource exhausted cities can overcome difficulties and achieve sustainable economic, environmental, and social development.

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#### **References**

- [1] T. Liu. *Economic Transformation Influencing Factors of Resources- Exhausted Cities In China* [J]. *Resources & Industries*, 2019, 12(1):49-53.
- [2] M. Wang and X. H. Zhu. *Development of Social Organizations and Social Innovation* [J]. *Comparative Economic & Social Systems*, 2009, (4):121-127.
- [3] Q. Yu and J. Y. Wang. *Economic Transformation of the Resources - Exhausted Cities: Theories and Experiences* [J]. *Shandong Social Science*, 2004, (5):39-43.