Asia Pacific Science Press

*Critical Humanistic Social Theory*
*ISSN(O):3005-9291*
*ISSN(P):3005-9283*
*Vol. 2 No.2 (2025)*

# Research on the Path of Promoting High Quality Development of County Economy through New Quality Productivity: Based on Field Research in Deqing of Zhejiang Province

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**Abstract:** New quality productive forces is crucial to the high-quality development of counties. Technological innovation, as the core of new quality productive forces, promotes the rational allocation of production factors and helps the county economy to be of high quality. The high-quality development of the county economy is an important part of the Chinese-style modernization strategy, and the development achievements of Deqing, Zhejiang Province, as a national innovative county, demonstrate and verify the application and positive impact of new quality productive forces in the high-quality development of the county economy. From the perspective of the development experience of new quality productive forces in Deqing, to further promote the coordinated development of new quality productive forces and county economy, we should start from the aspects of industrial system, human capital, and institutional mechanism improvement, and formulate a strategy for empowering county economic development with new quality productive forces, so as to provide reference for the high-quality development practice of other counties.

**Keywords:** New Quality Productive Forces; County Economy; High-quality Development; Deqing

**Published:** Jun 16, 2025

**DOI:**https://doi.org/10.62177/apemr.v2i3.373

## 1.Introduction

### 1.1 Research Background and Importance

In September 2023, during his inspection tour in Heilongjiang Province, General Secretary Xi Jinping first proposed the concept of “new quality productive forces.” Since then, General Secretary Xi Jinping has repeatedly elaborated on this concept. In December 2023, the Central Economic Work Conference explicitly called for the vigorous development of new quality productive forces; the Third Plenary Session of the 20th Central Committee of the Communist Party of China proposed, “Improve the institutional mechanisms for developing new quality productive forces in accordance with local conditions”[2]. Promoting the development of new-quality productive forces through comprehensive deepening of reforms provides institutional support for their growth. New-quality productive forces are characterized by high technology, high efficiency, and high quality, which are conducive to fostering new business models and driving high-quality economic development. As the basic units of the national economy, the high-quality development of county-level economies is crucial for optimizing the national economic structure and achieving modernization characterized by common prosperity for all people.

As an important showcase for socialism with Chinese characteristics, Zhejiang Province has promoted a coordinated urban-rural development model. In 2023, Deqing's per capita GDP reached 122,500 yuan, with an urban-rural income ratio of 1.54:1. In response to the Initiative of the Central Committee of the Communist Party of China and the State Council to support Zhejiang Province in building a demonstration zone for high-quality development and common prosperity, Deqing has prioritized high-quality economic development. In 2023, Deqing was included in the list of national innovative counties and once again won the Science and Technology Innovation Award. On April 22, 2024, the Deqing Government publicly released the “Several Policies to Further Accelerate High-Quality Economic Development”, providing policy support for the high-quality development of the county economy. Its development achievements demonstrate and validate the application of new productive forces in county-level economic development and their positive impact. Summarizing the specific application of new quality productive forces in Deqing's high-quality county-level economic development is of great significance for promoting the formation and high-quality development of new quality productive forces in county-level areas, addressing shortcomings in their development, better empowering high-quality development, and achieving common prosperity.

### 1.2 Research Objectives

This study aims to systematically explore theinternal logic and practical path of new quality productive forces to empower the high-quality development of the county economy from three dimensions: theory, empirical evidence and countermeasures, in order to provide academic support and policy reference for the construction of a more adaptable county development model. (1) Theoretical elucidation objectives. The internal logical relationship between the new quality productive forces and the high-quality development of the county economy is systematically analyzed. (2) The empirical analysis objectives. The specific path in Deqing of empowering the high-quality economic development of the county economy is empirically investigated. (3) Universal policy suggestions are put forward to provide decision-making reference for the high-quality development of the county economy across the country.

### 1.3 Data Source Description

The data for this study comes from a survey conducted during the 2024 summer social practice program of postgraduate, based on the seventh “Red Forging” postgraduate summer practice group of Zhejiang University of Technology. The survey was conducted in Deqing, an economically strong county in Zhejiang Province and one of the top 100 counties in China in terms of comprehensive strength. Relying on the school-local cooperation model between Zhejiang University of Technology and Deqing, a School of Geographic Information was established in Deqing to promote the development of the geographic information industry, creating a regional innovation community.

## 2.Literature Review

As the core driving force of high-quality economic development, academic research focuses on the countermeasures of new quality productive forces for high-quality development, which provides certain ideas for this study, such as Xu Zheng and Zheng Linhao (2023) believe that it is necessary to promote the reform of institutional mechanisms, cultivate “talent dividends”, and develop new quality productive forces in high-level opening up, so as to promote high-quality economic development; Liu Yang and Li Haoyuan (2024) proposed green transformation, the development of green technology, and the new scenario of green technology application; Shen Kunrong (2024) believes that it is necessary to optimize the industrial development environment, improve the scientific and technological innovation system, and improve the talent training mechanism to accelerate the formation of a new quality of productivity. However, the existing research lacks the study of typical cases at the county level, and the countermeasure research is not targeted.

Therefore, this study aims to fill this gap by conducting an in-depth literature review and case study analysis at the county level. By examining the specific countermeasures implemented in various counties, this study seeks to provide more targeted and practical suggestions for promoting high-quality economic development through new quality productive forces. Additionally, this study will also explore the potential challenges and obstacles faced by counties in the process of developing new quality productive forces, and propose corresponding solutions and strategies to overcome these difficulties.

## 3.The Internal Logic of New Quality Productive Forces Empowering the High-quality

## Development of the County Economy

New quality productive forces is emerging in the new round of technological revolution and industrial transformation. Characterized by digitization, networking, and intelligence, it represents a new stage in the development of productivity. It is not only reflected in improved production efficiency, but also in innovations in production methods, organizational forms, and business concepts. In the high-quality development of the county economy, the introduction and application of new-quality productivity has become an important driving force for high-quality development. New quality productive forces is intrinsically aligned with high quality county economic development, as shown in Figure 1 below.

First of all, the new quality productive forces can help achieve the goal of high-quality economic development at the county level. Taking big data and cloud computing as examples, they can help county governments and enterprises better understand market demand, achieve precise investment and production, and improve resource efficiency. In addition, the application of artificial intelligence and the Internet of Things in traditional advantageous industries such as agriculture and manufacturing, through precise monitoring and automatic control, has greatly improved product quality and production efficiency. Moreover, the adoption of circular economy principles in agriculture and manufacturing, facilitated by technological advancements, has led to more efficient use of resources and minimized waste generation. These developments not only enhance the ecological footprint of counties but also pave the way for sustainable economic growth.

Second, the new quality productive forces has reshaped the industrial structure of the county economy. The introduction of new quality productive forces has changed the traditional mode of production, and the application of new technologies has led to the rise of new industries, such as Internet-based service industries, tele-medicine, and online education. These new industries tend to have stronger growth and higher added value, which helps the county economy get rid of traditional resource dependence and develop in a more diversified and sustainable direction. Furthermore, the integration of new quality productive forces with traditional industries has facilitated technological upgrading and efficiency improvements in the latter. Manufacturing industries have undergone transformation through the adoption of automation, robotics, and data analytics, leading to enhanced productivity and competitiveness.

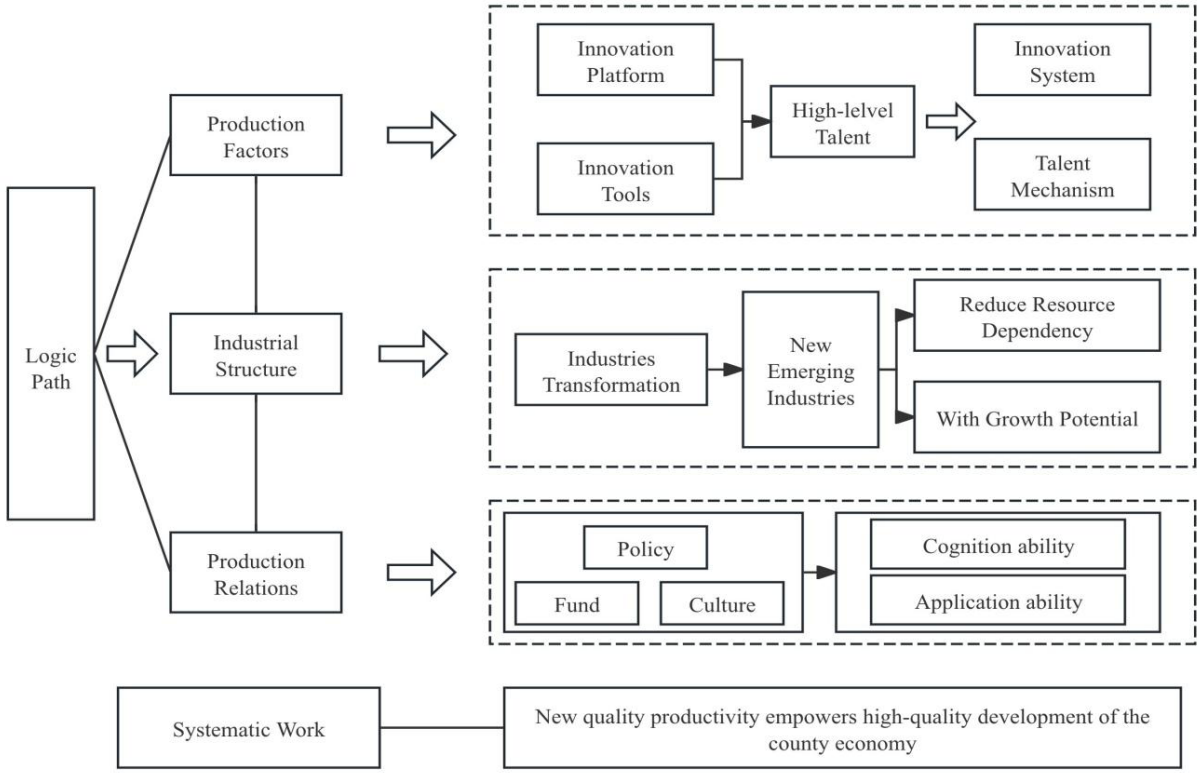
In addition, the new quality productive forces optimizes the development factors of the county economy. Under the requirements of high-quality development, the county economy needs to rely on innovation to promote industrial upgrading and transformation. The development of new quality productive forces provides innovative tools and platforms for the county economy, promotes the transformation and application of scientific research achievements, attracts high-skilled talents, promotes the establishment of an innovation system and the improvement of talent mechanism, and injects new vitality into the county economy. This process enhances the competitiveness of county enterprises. By adopting advanced technologies and management concepts, these enterprises can improve production efficiency, reduce costs, and enhance product quality. Consequently, they gain a competitive edge in the market, contributing to the overall economic growth of the country. Additionally, the optimization of industrial structure facilitated by new quality productive forces leads to more sustainable and environmentally friendly development patterns, which are crucial for addressing issues.

Finally, the promotion of new quality productive forces to the high-quality development of the county economy is a systematic project, which requires all-round support in terms of policy guidance, financial support, and cultural cultivation. County governments need to formulate corresponding policies to encourage and guide enterprises and research institutions to carry out technological innovation and application. At the same time, through the establishment of a multi-level capital market, we will provide financial guarantee for the development of new productive forces. In addition, it is also necessary to establish a talent training system that adapts to the development of new quality productive forces through education and training, and improve the awareness and application ability of the whole society for new quality productive forces.

From the framework of Figure 1 we find that there is an intrinsic logical relationship between the new quality productive forces and the high-quality development of the county economy, and the new quality productive forces is the key factor to promote the transformation and upgrading of the county economy and achieve high-quality development. Through the deep integration of various elements and industrial chains within the new quality productive forces, we can effectively promote the optimization of the county's economic structure and industrial upgrading, so as to achieve the sustainable and healthy

development of the economy and the ultimate goal of a better life for the people.

*Figure1 The Internal Logic between New Quality Productive Forces and High-quality Development*




## 4.The Effectiveness of New Quality Productive Forces in Empowering the High-quality Development of the County Economy

As a bridge connecting urban and rural areas, counties are key areas for achieving high-quality common prosperity. New-quality productive forces embody the new characteristics and forms of productive forces, featuring new production environments, laborers, production factors, and corresponding production relations. Deqing has a first-mover advantage in the application of new-quality productive forces and serves as a model for development. In the process of high-quality development, the specific mechanisms of new-quality productive forces in Deqing across different industries provide valuable reference experiences for other counties in China, playing a leading role in the high-quality development of counties nationwide. Figure 2 shows Deqing in the ecological construction, industrial development and talent training in the three aspects of the development of new quality productivity to empower the county's economic development of the specific results, so as to grasp the reference experience.

### 4.1 Protecting Ecological Resources to Build an Environmental-friendly Society

Chinese modernization is the modernization of harmonious coexistence between man and nature. Deqing has accelerated the innovation of green technology and the promotion and application of advanced green technologies. Besides, it has strengthened research on green technologies, and provided new qualitative forces for the green and high-quality development of the country. For example, Dongheng Village in Deqing has achieved a win-win situation of resource recycling and environmental governance through Hangzhou urban construction slag backfilling of abandoned mine pits and river dredging, and relying on the advantages of forests to develop piano manufacturing and customized home furnishings, so as to enhance the added value of rural industries. Not only the ecological environment highlights green, but the industrial manufacturing industry also reflects the concept of ecological environmental protection. Actively develop emerging industries such as new energy vehicles and core components, produce and process vehicle-mounted lidar projects, and reach close cooperation with well-known new energy vehicle industries to develop the new energy market. Deqing places a high priority on environmental safety and has initiated the development of green technologies to reduce metal pollution caused by used batteries. The company is engaged in the development of new energy products, dismantling, testing, and sorting used power lithium-ion

battery packs or cells, and reassembling them into healthy battery packs or battery systems. Zhejiang Baotai Power Co., Ltd., located in Deqing, specializes in the manufacturing of new energy products. According to reports, the company's project has a total investment of 530 million yuan, to be delivered in two phases. Upon completion, it will establish five new production lines dedicated to the production of new energy lithium-ion batteries and automotive components.

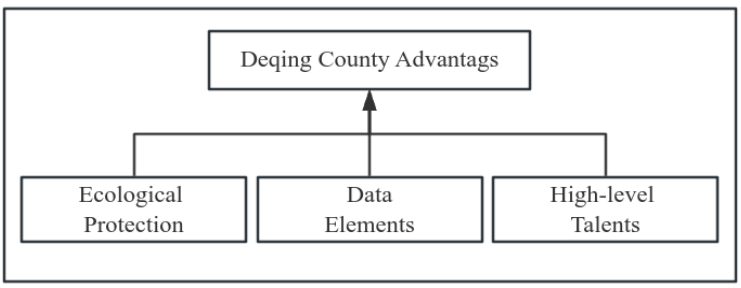
## 4.2 Utilizing Data Elements to Develop Strategic Emerging Industries

Data elements play a “dual-driver” role in China's economic growth, meaning that they can directly drive economicgrowth through their own economic growth effects and indirectly drive economic growth by promoting technologicalprogress. Deqing has pioneered the geographic information industry from scratching, processing, and application data[3]. Deqing has also planned the construction of a national spatio-temporal data open sharing center, seeking authorization to pilot the operation of geographic information spatio-temporal data, and fully tapping the value. It has established a spatio-temporal data element trading market, and issued management measures for spatio-temporal data transactions, exploring pathways for the valorization of urban comprehensive data. The key to new quality productive forces lies in organizational and technological innovation, continuously driving changes in the combination of elements, and thereby optimizing the output structure on the premise of improving the efficiency of element combination[4]. Relying on the foundation of the geographic information industry, connecting strategic emerging industries and future industries, and focusing on “geographic information + vehicle networking,” “geographic information + general aviation,” and “geographic information + artificial intelligence,” Deqing has promoted the integration and empowerment of geographic information technology with various emerging technologies to help the digital economy flourish. For example, Deqing seized the opportunity to set up the "World Geospatial Information Home", attracting organizations and organizations related to global geographic information to come to Deqing to carry out work, thereby effectively sharing China's Geographical Information achievements. Up to now, institutions from seven countries including Nigeria and Mongolia have successfully settled to explore industrial cooperation and global resource exchange effectively.

## 4.3 Gathering Talents to Form Regional Comparative Advantages

The comprehensive construction of a modern socialist country must adhere to the principles that science and technology are the primary productive forces, talent is the primary resource, and innovation is the primary driving force. The development of new quality productive forces requires the formation of new quality workers to serve and lead the development of strategic emerging industries and future industries. Deqing adheres to a “Talent + Industry” development model, efficiently combining talent with government, talent with enterprises, and talent with technology to enhance production efficiency and provide strong momentum for the development of new quality productive forces. Deqing places great importance on talent development, introducing 18 measures for comprehensive reform of the talent development system and mechanisms in the northern wing of the West Science and Technology Innovation Corridor, upgrading its talent policies to version 5.0, and establishing a county-level high-level talent service center, “talent service zones” in towns (sub-districts), and a high-level talent service alliance. These initiatives provide talent with convenient services such as registration and patent applications, and have allocated over 3,000 talent apartments. In addition to providing “hard policies” for talent, the county also offers “soft services.” It has successively built cultural landmarks such as the City Library and the Deqing Grand Theatre, organized youth talent exchange and social activities, and conducted cultural activities popular among young talent, such as music festivals, flash mobs, and markets, to further improve the living conditions for young talent, form a talent pool, and achieve connectivity between talent and industries. In 2023, the county independently cultivated 28 national-level talents, recruited 141 PhDs, added 9,639 skilled workers, and enrolled 20,000 college students.

*Figure2 The Effectiveness of New Quality Productive Forces in Empowering the High-quality*



# 5.The Challenges Faced by New Quality Productive Forces to Empower the High-quality Development of the County Economy

Deqing has achieved certain results in empowering the high-quality development of the county economy through new-quality productive forces by means of ecological protection, green technology, and the efficient combination of production factors. However, due to factors such as a weak industrial foundation, inadequate urban supporting facilities, and restrictions on the flow of internal and external resources, the process of high-quality development still faces many challenges.

## 5.1 Incompletion of Industrial Structure

Deqing has achieved significant accomplishments in high-tech industries and the tertiary sector. However, its industrial structure and layout still require optimization, particularly in high-value-added and emerging industries such as artificial intelligence, future energy, future information technology, and third-generation internet, where there is significant room for improvement. Through research, it is evident that Deqing's policies and development are actively aligning with cutting-edge fields. However, due to its late start, the integration of upstream and downstream industries remains insufficient, and the agglomeration benefits of industries have not been fully realized. Moreover, the incomplete industrial structure in Deqing further complicates the talent attraction issue. Currently, Deqing's industrial base is relatively limited in diversity, with a concentration on specific industries rather than a balanced development across various sectors. This lack of diversity may deter high-skilled talent who seek opportunities in a wider range of industries. In the process of high-quality development, the county economy should avoid homogenization and instead adopt a “one county-one industry” approach tailored to local conditions to foster distinctive regional competitiveness with high industrial agglomeration.

## 5.2 Difficulties in Retaining High-end Talent

The development of high-tech industries relies on a large of highly skilled talent, but Deqing still faces challenges in attracting and retaining top-tier talent. Compared to major cities, Deqing's educational, medical, cultural, and other living facilities and public services are not yet as well-developed as those in nearby provincial capital cities. Although the relocation of Zhejiang University of Technology's Moganshan Campus has brought significant opportunities for talent development in Deqing, significantly improving local educational resources and talent cultivation environments, the supporting policies and facilities surrounding the university are still under development. Compared to Hangzhou, Deqing has fewer tertiary hospitals, uneven distribution of high-quality basic education resources (such as key primary and secondary schools), and a lack of large cultural venues and other facilities, resulting in lower willingness among high-end talent families to settle there. Additionally, due to its location at the heart of the Yangtze River Delta, Deqing is strongly influenced by the Shanghai and Hangzhou metropolitan areas, resulting in a significant “brain drain” effect. Many leading companies in Deqing are constrained by the shortage of high-level talent locally, prompting them to establish research institutes in Shanghai, Hangzhou, or even overseas, further exacerbating the outflow of high-level talent from Deqing and creating challenges for the county in retaining talent.

## 5.3 Insufficiency of Opening up

As an economically strong county in Zhejiang Province, Deqing has certain advantages in fields such as the digital economy and high-end equipment manufacturing. However, its level of outward-oriented economic development still lags behind that of leading counties and cities in the Yangtze River Delta region (such as Kunshan and Cixi), which may hinder the enabling effects of new-quality productive forces on the high-quality development of the county's economy. First, the level of foreign investment utilization is insufficient. In 2024, Deqing's cumulative actual foreign investment reached 0.9871 billion USD, while Kunshan and Cixi achieved 8.37 billion USD and 3.7984 billion USD, respectively, which are only 1/12 and 1/4 of the same period. Second, the reliance on foreign trade is relatively low. In 2024, Deqing's total foreign trade imports and exports reached 34.47 billion yuan, accounting for only 0.6% of Zhejiang Province's total (526.4126 billion yuan). In terms of enterprise structure, Deqing's foreign trade enterprises are primarily small and medium-sized manufacturing companies, lacking globally influential leading enterprises. In contrast, places like Kunshan and Cixi have cultivated multiple multinational corporations (such as Wistron in Kunshan and Fangtai Group in Cixi), which can deeply participate in global supply chain division of labor. Deqing enterprises still face significant challenges in securing foreign trade orders,

building international brands, and expanding overseas market channels, which places them in a relatively weak position in international competition. Among export products, traditional machinery and electrical products, as well as textiles and clothing, account for a high proportion, while exports of high-tech products remain low, making it difficult to form high-value-added export growth points.

# 6.The path of New Quality Productive Forces to Empower the High-quality Development of the County Economy

Deqing's exploration in the dimensions of ecology, industry and talent has achieved certain results in promoting the development of new quality productivity, ensuring the consistency of new quality productivity and the high-quality development of the county's economy, and its development experience is worthwhile to learn from. At the same time, counties should also take into account the actual situation of the region and the industrial base. As shown in Figure 3, counties should formulate industrial development strategies and policy support according to the development needs of the local conditions, continue to transport professionals to the industry, and provide an open, coordinated, and shared development environment, so as to enhance the comprehensive competitiveness of the region.

## 6.1 Innovate Industrial Structure Continuously

The industrial system serves as the vehicle for innovation, and accelerating industrial transformation is a critical step in enhancing the competitiveness of enterprises and the county-level economy. We must plan strategically for emerging industries and future industries with foresight[5], further promote the healthy development of technology in the industry, and enable counties to form a complete industrial chain from hardware to software and services. Deqing's Geographic Information Town has made full use of its emerging industry advantages, continuously strengthened the "geographic information +" industrial cluster, encouraged cooperation between enterprises and scientific research institutions, and promoted the transformation and application of technology to achieve refined management of resources. The development of new productive forces cannot be separated from the high-quality development of traditional industries[6]. Cultivating emerging industries does not mean completely abandoning traditional industries. Instead, it involves using technology to drive the transformation of traditional industries, addressing issues such as overcapacity, insufficient innovation capabilities, and low production efficiency. This will help shift the industrial structure from traditional handicrafts and agriculture to a more diversified model, with traditional industries serving as a foundation for emerging industries, thereby promoting the sustainable development of the county's economy.

## 6.2 Strengthen Talent Cultivation Invariably

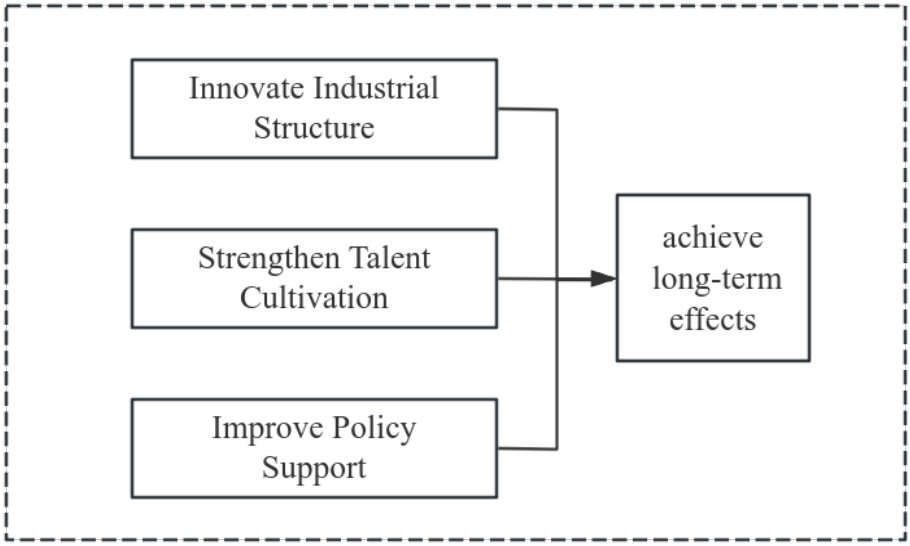
Workers are the active and subjective elements in the development of productive forces. By utilizing labor tools to transform labor objects, cultivating a high-quality workforce can further enhance the efficiency of new-quality productive forces, thereby enabling them to play a more significant role in promoting high-quality development at the county level. This includes cultivating workers' digital literacy and optimizing the training environment. The upgrading of workers as the primary element points to the cultivation of high-quality talent who can fully utilize information technology and possess rapid knowledge iteration and comprehensive innovation capabilities[7]. It is necessary to cultivate workers' digital literacy, continue to increase the popularization of digital literacy education, and cultivate and improve the digital literacy level of talent through diversified educational methods and means. Secondly, it is necessary to optimize the talent ecological environment. The talent ecological environment refers to the social and natural environment in which talent thrives and develops, encompassing various external factors that influence talent growth[8]. To create a “first-tier city-like” soft environment for development, we will draw on the experience of Hangzhou Future Science and Technology City to build a comprehensive talent innovation and entrepreneurship service center within the county, integrating 15 targeted services such as technology transfer, children's education, and medical and health care. This will help solve the problem of the "brain drain" in the county and promote the integration of talent resources and the development of new productive forces.

## 6.3 Improve Policy Support Persistently

The government should play a service-oriented leadership role in the process of developing productive forces, ensuring

the efficient integration of production factors within new-quality productive forces, shortening the technology conversion cycle, and enabling new-quality productive forces to better support the high-quality development of county-level economies. The government should actively integrate the resources of "industry-enterprise-research institutes (universities)" to enable multiple R&D entities to jointly establish high-tech research institutes, strengthen the shared use of resources such as experimental platforms, concept verification, and computing power and data, and promote interactive cooperation between knowledge innovation entities and technological innovation entities on industry-academia-research collaboration platforms to create innovation hubs for new-quality productive forces. Additionally, efforts should be made to actively promote the internationalization of scientific and technological innovation achievements to enhance the international influence of county industries. We must vigorously support the establishment and operation of international institutions. Around the operational needs of the United Nations Innovation Center, we should provide efficient operational support, establish rapid response and management mechanisms, and strive to secure special preferential treatment. Through the establishment of international colleges and other forms, we should build international cooperation and exchange platforms and mechanisms, deepen exchanges and practical experience with overseas businesses and markets, and provide continuous business exchange and skill training support for companies going global.

*Figure3 The path of New Quality Productive Forces to Empower the High-quality Development*




## Funding

Key Project of Graduate Education Reform at Zhejiang University of Technology: Research on the Optimization Path of Integrating Zhejiang Red Culture into Graduate Art Education under the Background of Great Ideological and Political Education”（No. 2024209）

## Conflict of Interests

The author(s)declare(s) that there is no conflict of interest regarding the publication of this paper.

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