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Empirical Research on How the Development of New-Quality Productivity Promotes Common Prosperity

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Abstract: ***This paper focuses on the theme of "Promoting Common Prosperity through the Development of New-Quality Productivity" and conducts a systematic empirical study. The paper begins by using CiteSpace to visualize and analyze relevant literature from CSSCI journals indexed by CNKI, clearly revealing that research hotspots in the field of new-quality productivity focus on technological innovation, the digital economy, data elements, and common prosperity. It also points out that there is still room for improvement in the current collaborative network between scholars and institutions. Based on this, the paper constructs an evaluation index system for new-quality productivity encompassing three dimensions: workers, labor objects, and labor resources. It then combines this with five dimensions of people's well-being to scientifically measure the common prosperity index. Through benchmark regression and heterogeneity testing using inter-provincial panel data, the results show that the development of new-quality productivity has a significant positive promoting effect on common prosperity; however, this effect exhibits regional heterogeneity, being less significant in the eastern region but more pronounced in the central and western regions. Finally, the paper proposes targeted policy recommendations, including increasing efforts to cultivate new-quality productivity, implementing differentiated regional development strategies, strengthening talent attraction, cultivation, and reserves, improving policy support and the market environment, and enhancing social security and public service provision.***

Keywords: New Quality Productivity, Common Prosperity, Citespace, Regional Disparities**.**

1. Introduction

In the great journey of socialist modernization, we must not only pursue rapid economic development, but also focus on the comprehensive progress of society. To achieve this goal, we need to deeply understand and grasp the connotation and extension of new-quality productive forces, and actively explore how to promote a more equitable and rational distribution of social wealth through the development of new-quality productive forces, thereby realizing the grand blueprint of common prosperity for all the people. The following content aims to deeply explain the two core concepts of new-quality productive forces and common prosperity, and to clarify the research purpose, significance, problems, and scope of this paper.

1.1 Definition of Key Terms: New Quality Productivity and Common Prosperity

New-quality productivity, a concept describing a form of productivity that, driven by new technologies, new management models, and innovative organizational structures, achieves significantly higher production efficiency and economic benefits compared to traditional production methods. This productivity is not only a powerful driving force for social progress but also a core element in promoting high-quality economic development. It represents innovation playing a leading role, abandoning traditional economic growth models and development paths, and possessing characteristics of high technology content, high efficiency, and high quality, fully aligning with the advanced productivity development state advocated by the new development philosophy. The formation of new-quality productivity stems from revolutionary technological breakthroughs, innovative allocation of production factors, and deep industrial transformation and upgrading; its development depends on technological and industrial innovation. New-quality productivity emphasizes a form of productivity that, driven by new technologies, new management models, and innovative organizational structures, achieves significantly higher production efficiency and economic benefits compared to traditional production methods. This productivity is not only a powerful driving force for social progress but also a core element in promoting high-quality economic development. It represents innovation playing a leading role, abandoning traditional economic growth models and development paths, and possessing characteristics of high technology content, high efficiency, and high quality, fully aligning with the advanced productivity development state advocated by the new development philosophy. The formation of new-type productive forces stems from revolutionary technological breakthroughs, innovative allocation of production factors, and profound industrial transformation and upgrading. Its development depends on technological and industrial innovation. New-type productive forces are not only a powerful driving force for social progress but also a core element in promoting high-quality economic development. They represent innovation playing a leading role, abandoning traditional economic growth models and development paths, and possessing characteristics of high technology content, high efficiency, and high quality, fully conforming to the advanced productive forces development state advocated by the new development philosophy. The formation of new-type productive forces stems from revolutionary technological breakthroughs, innovative allocation of production factors, and profound industrial transformation and upgrading. Its development depends on technological and industrial innovation.

Common prosperity, a concept deeply rooted in the core of socialism with Chinese characteristics, emphasizes ensuring

that every member of society can share in the benefits of social development through a fair and reasonable wealth distribution mechanism, striving to reduce the gap between the rich and the poor, and ultimately aiming to achieve common prosperity for all the people. Common prosperity is not merely an economic issue, but also a social one; its realization is directly related to the long-term stability and harmony of the nation and society. Achieving common prosperity requires us to adopt a fair and reasonable wealth distribution mechanism in the economic sphere to ensure that every member of society can share in the benefits of social development and strive to reduce the gap between the rich and the poor. Simultaneously, common prosperity also requires efforts in the social sphere, such as improving education, raising healthcare standards, and ensuring housing security, to improve people's living standards and promote social fairness and justice. Only by achieving common prosperity can our country achieve long-term stability and security, and can our society maintain harmony and stability.

This article will focus on the concepts of new-quality productivity and common prosperity, explore the intrinsic connection between them, analyze how new-quality productivity can promote the realization of common prosperity, and how to promote the sustainable development of new-quality productivity in practice.

1.2 Overview of the Purpose and Significance of the Research

The purpose of this paper is to conduct an in-depth study of the relationship between new-type productive forces and common prosperity, revealing the important role of the development of new-type productive forces in achieving common prosperity, and providing theoretical support and practical guidance for policymakers and practitioners in my country. The importance of this research lies in two aspects: firstly, through theoretical analysis, it can provide a scientific basis for my country's current and future economic development, guiding practice; secondly, it has significant theoretical and practical value for promoting the practice of socialist values and advancing the comprehensive development of my country's socialist society.

As my country is currently in a new stage of development of building a modern socialist country in all respects, in-depth research on the relationship between new productive forces and common prosperity is of great theoretical and practical significance for upholding and developing socialism with Chinese characteristics and achieving the goal of common prosperity for all the people.

1.3 Definition of Research Questions and Scope

This paper will focus on the following research questions: What is the intrinsic connection between new-type productive forces and common prosperity? How can new-type productive forces promote the realization of common prosperity? How can the role of new-type productive forces be better leveraged in policy formulation and implementation to promote common prosperity? The research scope will cover the theoretical connotation and characteristics of new-type productive forces, the relationship between new-type productive forces and common prosperity, and policy recommendations for promoting the development of new-type productive forces. Through in-depth research on these questions, this paper aims to provide useful theoretical and practical references for the cultivation and development of new-type productive forces in my country, as well as the realization of common prosperity.

2. Literature Review – Achieved using CiteSpace

11, 2023, during his inspection tour and research in Heilongjiang Province, General Secretary Xi Jinping, China's national leader, first proposed a thought-provoking concept—"new-quality productive forces." This concept not only profoundly answers the main challenges facing China's economy in innovation-driven development and achieving high-level technological self-reliance, but also provides new ideas and directions for China's economic development.

This concept, once proposed, has generated a great deal of interest in the academic community and become a new research hotspot. In just two years, thousands of related papers have been published, which not only demonstrates the academic community's attention to this concept but also reflects my country's progress in scientific and technological innovation and theoretical research.

Although "new-type productive forces" is an emerging research field, its theoretical foundation is built upon the basic concepts of international Marxist political economy, possessing a solid theoretical basis and profound academic depth. This also means that in the process of exploring and developing new-type productive forces, my country has both theoretical guidance and practical foundation, which will provide a powerful impetus for my country's high-quality economic development.

This paper utilizes the citation visualization analysis software CiteSpace to construct a scientific knowledge map of "new quality productivity," and based on this, conducts keyword co-occurrence analysis, cluster analysis, and scholar analysis in the field of Chinese youth studies. Using "new quality productivity" as the keyword, this paper sets the publication timeframe to 2023-2024 and conducts an advanced search on CNKI (China National Knowledge Infrastructure). To ensure the quality and authority of the retrieved literature, only CSSCI journals from CNKI were selected, yielding 459 articles. After manual screening to remove irrelevant articles, 370 valid articles were obtained.

2.1 Keyword Co-occurrence Analysis

Keywords are the core elements of an academic paper, and they play a crucial role in revealing the central idea and research hotspots of the article. Through co-occurrence analysis of these keywords, we can gain a deeper understanding of the essential meaning of new productive forces and grasp the hot issues currently being addressed in academia. In this process, we represent each keyword with a circle, and the size of the circle is used to measure the frequency of the keyword in the paper. The larger the circle, the more times the keyword is mentioned in the article;

conversely, the smaller the circle, the fewer times it is mentioned [1].

Through this keyword co-occurrence analysis, we can uncover key keywords in the field of new-quality productivity, including technological innovation, digital economy, data elements, and theoretical logic. The research and discussion of these keywords comprehensively cover all aspects of new-quality productivity, providing valuable reference materials for our in-depth understanding of it.

Our research focuses primarily on emerging productive forces based on technological innovation, as well as new production factors incorporating data elements. These studies and discussions not only help us understand the intrinsic meaning of new productive forces but also help us explore their development trends, thus providing important theoretical support for our in-depth research and discussion of new productive forces.

2.2 Keyword Cluster Analysis

Based on the co-occurrence analysis of keywords, we conducted in-depth cluster analysis and constructed a clustering network map containing 7 clusters with a Q value of 0.7955 and an S value of 0.9041 (see Figure 2 for details). Here, the Q value refers to the module value of the cluster. Generally speaking, a Q value greater than 0.3 indicates that the clustering results have a certain significance; while the S value, that is, the average profile value of the cluster, when it exceeds 0.7, indicates that the clustering results have high credibility. The Q value and S value obtained in our study are significantly higher than these two thresholds, which undoubtedly shows that the clustering map we constructed is very ideal. The 7 clusters are digital economy, technological innovation, innovation-driven, emerging industries, common prosperity, multiplier effect and digitalization [2].

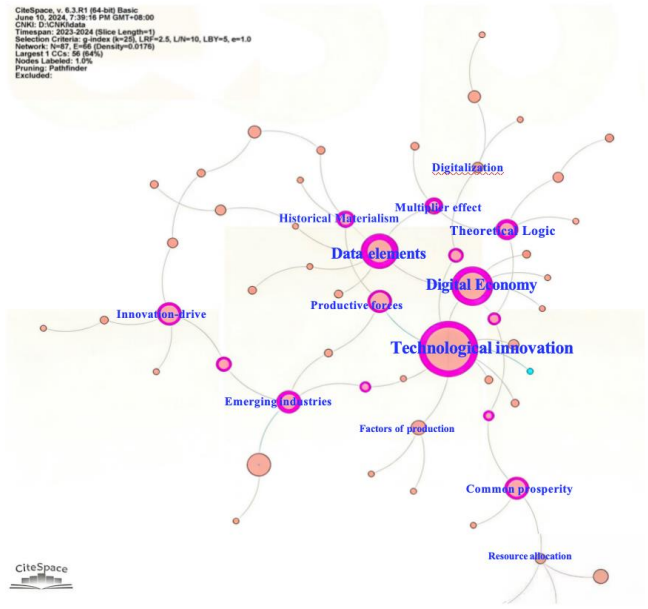

Figure 1: Co-occurrence map of keywords in the study of new quality productivity

It is worth noting that the earlier a cluster appears in the order, the more documents it contains, and the larger the cluster size. By comparing Figures 1 and 2, we can find a high degree of similarity between hot keywords and cluster names. This fully reflects that the core research in the field of new-quality productivity mainly focuses on the areas of digitalization and innovation, while also involving adjustments to production relations such as common prosperity. This reveals the forefront and hot issues of current academic research, and has important guiding significance for our further understanding and discussion of issues in these fields.

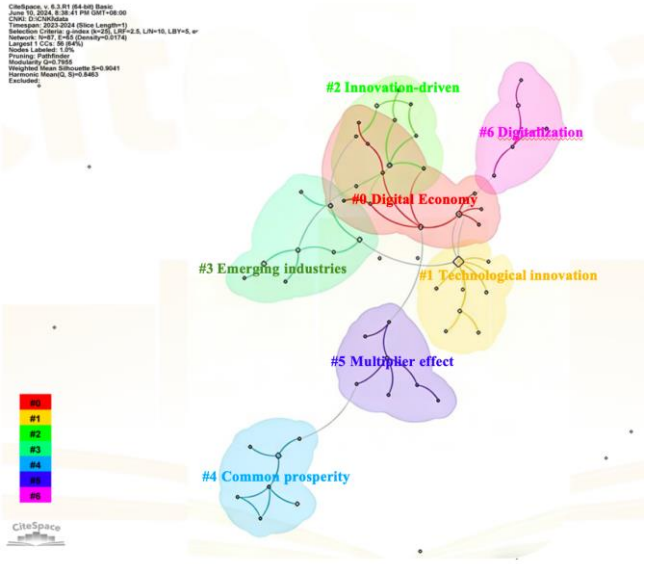

Figure 2: Clustering network diagram of keywords for new quality productivity

2.3 Author Analysis

Figure 3: Author collaboration network diagram for research on new quality productivity

In today's academic community, a group of outstanding scholars with significant influence in this field have emerged. If we observe the authors' collaborative network graph, we can find that it contains 87 independent network nodes and 46 lines connecting these nodes, which constitutes a relatively sparse network graph with a network density of only 0.0123. This data clearly shows that although there is some collaboration among the scholars, overall, the connections between individuals are still relatively few [3].

In terms of publication volume, the top five authors are Xu Zheng from the Party School of the Jiangsu Provincial Committee of the CPC, with 10 articles; Zhou Wen from

Fudan University, with 8 articles; Ren Baoping from Nanjing University, with 7 articles; Zhang Jiaoyu from Minzu University of China, with 6 articles; and Liu Zhibiao from the School of Business, Nanjing University, with 5 articles. These figures fully demonstrate the important position and contributions of these authors in the field.

It is worth noting that, apart from the relatively close collaboration between Xu Zheng, Zhang Jiaoyu, and Zheng Linhao, the research fields of most other scholars are relatively scattered. Although their geographical distribution is somewhat concentrated, their focus on research topics is not obvious.

Clearly, further strengthening collaboration among scholars in these fields and promoting the exchange and sharing of knowledge, information, and methods is crucial for the in-depth development of research on new productivity. Such collaboration can not only stimulate new research ideas and promote academic innovation, but also help form a broader research community, jointly driving research progress in this field.

2.4 Institutional Analysis

Figure 4: Network Diagram of New Productivity Research Institutions

By carefully observing the distribution map of institutions, we can clearly observe the following trend: higher education and research institutions such as Nanjing University, Jiangsu Provincial Party School, and Nanjing University of Finance and Economics, located in Jiangsu Province, together with well-known academic centers such as Peking University, Renmin University of China, Minzu University of China, and the Chinese Academy of Social Sciences, located in Beijing, the capital of China, together constitute the main centers of research on new quality productivity in China . These institutions have shown obvious advantages in the academic field and occupy the central position in research [4].

It is worth mentioning that in recent years, universities such as Northwest University in western my country and Sun Yat-sen University in Guangdong, a coastal province in southern China, have also emerged in the field of academic research, demonstrating strong research capabilities and development potential. This indicates that the strength of my country's higher education and research institutions is developing in a comprehensive and balanced manner, showing a positive trend of diversified development.

However, the cooperation and academic exchange among these higher education and research institutions are not limited to geographical proximity. In fact, a cross-regional and diversified cooperation network has been formed. Whether in academic conferences, joint research projects, or in paper publication and talent cultivation, these institutions are actively cooperating to jointly promote the prosperity and development of academic research in my country. This cross-regional cooperation network not only helps improve the research level and influence of each institution, but also contributes to the overall progress of higher education and scientific research in my country.

3. Characteristics and Development Trends of New-quality Productivity

New-type productivity, as a crucial driving force for continuous social progress and sustained economic growth, have always been a focus of attention due to their unique characteristics and constantly evolving development. The components of new-type productivity, such as cutting-edge technology, sustainable green energy, and the digital economy, are not only key areas of modern social development but also represent the direction of future development. Among these components, high technology, with its significant characteristics of innovation, cutting-edge nature, and practicality, injects continuous vitality into the vigorous development of the economy. The continuous progress of high technology has not only driven the innovation of traditional industries but also spawned numerous emerging industries, bringing unlimited possibilities for socio-economic development.

The development of new productivity has a comprehensive and far-reaching impact on the economic structure. With the rapid growth of new productive forces, the optimization and upgrading of the economic structure has become increasingly necessary and urgent. The rise of new productive forces has, on the one hand, promoted the intelligent, green, and service-oriented transformation of traditional industries, enabling them to unleash greater vitality and efficiency; on the other hand, the development of new productive forces has also driven the birth and growth of a series of emerging industries, which have become new engines of economic growth [5].

Furthermore, the development of new-type productivity has also had a significant impact on the employment structure. It has created numerous high-quality job opportunities, which demand higher levels of talent, thus contributing to the overall improvement of the workforce's quality and providing a strong talent pool for economic development. Therefore, it can be said that the development of new-type productive forces is not only an important trend in current social development but also has a profound impact on the adjustment and optimization of the economic structure.

Given the importance of new-type productive forces and their enormous potential, we should attach great importance to them and actively promote in-depth research and widespread

application. Through continuous exploration and practice, we can better leverage the role of new-type productive forces, drive high-quality economic development, and make greater contributions to social progress and human well-being.

4. Theoretical Analysis of New Productivity and Common Prosperity

New-quality productivity, as a fundamental driving force for the continuous progress of society, continuously improves production efficiency and product quality through multiple paths such as technological innovation, management innovation and institutional innovation, thereby promoting a qualitative leap in social productivity. The theory of productivity in Marxist political economy is a profound summary and theoretical abstraction of the development and transformation of productivity in human society. These principles are not only applicable to traditional and old forms of productivity, but also to the analysis and understanding of new-quality productivity. New-quality productivity refers to the new forms and characteristics of productivity in human society in the context of modern scientific and technological revolution and industrial transformation. The emergence of this new-quality productivity is an inevitable result of the development of social productivity and science and technology, and also a manifestation of the continuous progress and development of human society [6].

The continuous development of new-type productive forces is of great significance to human society. First, it creates richer material wealth for human society. With continuous technological progress and increased productivity, the level of productivity in human society is constantly rising, enabling the production of more abundant and higher-quality material products, thereby improving the material standard of living and quality of life. Second, the development of new-type productive forces also promotes the formation of new production relations. It not only changes the mode of production, production relations, and forms of production organization, but also alters the economic and social structures of human society, thus driving profound transformation and progress.

The new production relations are formed on the basis of new quality productive forces. They emphasize the close integration of laborers and means of production and focus on stimulating and mobilizing the enthusiasm and creativity of laborers. Under this relationship, the distribution model is more fair and reasonable, reflecting both the laborers' efforts and contributions and taking into account the benefits and development needs of enterprises. This fair and reasonable distribution model is conducive to stimulating social vitality and promoting the sustained, healthy and rapid development of the economy. This new production relations are of great significance for promoting social equity, increasing the income level of laborers, and achieving social harmony and stability. It helps to narrow the income gap, increase the overall social consumption level, and thus promote economic prosperity and social progress. In addition, the new production relations can also promote the rational allocation of resources, improve production efficiency, promote technological innovation and industrial upgrading, and provide strong impetus for sustainable economic development. Under this production relationship, enterprises can better play the role of market entities, maximize economic benefits, and create more employment opportunities for society, thus promoting employment stability. In short, the new production relations are production relations that adapt to the requirements of economic development in the new era. They help to build a fair and just society, achieve high-quality economic development, and create a better life for all people [7].

Common prosperity is one of the core values of socialism with Chinese characteristics. It emphasizes achieving common prosperity for all the people through developing productive forces and optimizing distribution methods. Driven by new-quality productive forces, new-type production relations help to achieve a more equitable and reasonable distribution, thus enabling the goal of common prosperity to be realized more broadly. This common prosperity includes not only the sharing of material wealth but also the enrichment of spiritual and cultural life, embodying the principles of socialist fairness and justice and contributing to the building of a harmonious society.

In general, new-type productive forces and new-type relations of production are mutually reinforcing and interdependent, jointly driving social development. Within the framework of these new-type relations of production, the distribution model is more equitable and reasonable, and the goal of common prosperity is widely achieved. This not only helps improve people's living standards and sense of well-being but also contributes to maintaining social stability and harmony, and promoting the continuous advancement of socialism with Chinese characteristics.

5. Empirical Analysis

5.1 Model Setting:

$$windex = \alpha_0 + \alpha_1 NQ + \alpha_2 Controls + \mu + \theta + \varepsilon$$

Where windex represents the common prosperity index, NQ represents the new quality productivity level, Controls are other control variables, μ and θ represent the province fixed effect and time fixed effect, respectively, and ε is the residual term.

5.2 Variable Description

The dependent variable is the common prosperity index (windex). Based on the paper by Wan Guanghua et al. [8], the common prosperity index is measured using the entropy method, starting from the three components of prosperity, commonality and sustainability, and based on five dimensions: material, spiritual, environmental, social and public service fields. As shown in Table 1, the data has been standardized.

▲ indicates a positive indicator. For positive indicators, the standardized indicator value is obtained using the following formula: $index_{ijt} = \frac{s_{ijt} - s_{tj.min}}{s_{tj.max} - s_{tj.min}}$

▼ indicates a negative indicator. For negative indicators, the standardized indicator value is obtained using the following formula: $index_{ijt} = \frac{s_{jt.max} - s_{ijt}}{s_{tj.max} - s_{tj.min}}$

Where S_{ijt} represents the observed value of indicator j in province i in year t, $S_{tj,max}$ is the maximum value of indicator j among all provinces in year t, and $S_{tj,min}$ is the minimum value of indicator j among all provinces in year t.

Table 1: Common Prosperity Indicator System Based on People's Happiness

Level 1 index	Level 2 index	Level 3 indicators	unit	rich	common	Sustainable	Data source
	income	per capita disposable income of residents	Yuan/person	▲			CGSS Database
substance		Gini coefficient of residents' disposable income	Standardization Index		▼		
Life	Consumption	per capita retail sales of consumer goods for all residents	Yuan/person	▲			China Urban Statistical Yearbook
		Regional disparities in per capita retail sales of consumer goods	Standardization Index		▼		
		Urban-rural gap in per capita retail sales of consumer goods	standardization		▼		
	housing	per capita living space	square meters per person	▲			CGSS Database
		Gini coefficient per capita housing area	Standardization Index		▼		
		Frequency of residents' participation in cultural activities	Next/week	▲			China Urban Statistical Yearbook
Spirit	culture	Gini coefficient of cultural activities	Standardization Index		▼		CGSS Database
Life	Activity						
		Fiscal revenue growth rate minus culture, media and sports	%			▲	China Fiscal Statistics Yearbook
		Public budget expenditure growth rate					
		Disease incidence rate (number of people diagnosed with diseases during premarital checkups /	%	▼			EPS National Health and Wellness
	healthy	(Actual number of people inspected)					Commission Database
	level						
	Air	Annual average concentration of inhalable fine particulate matter	micrograms per cubic meter	▼			China Urban Statistical Yearbook
Ecology	quality	(Geographically weighted)					
environment	water quality	Centralized treatment rate of sewage treatment plants	%	▲			
		Harmless treatment rate of domestic waste	%	▲			
	Life						
	Rubbish						
	Ecology	Forest coverage	%			▲	EPS China Environment
	Protect						database
		Carbon emissions per unit of GDP	ton/10,000 yuan			▼	China Energy Statistics Yearbook
	low carbon						China Statistical Yearbook
	economy						
		Crime rate	Standardization Index	▼			The China Procuratorate Yearbook and
society	society						People's Procuratorates of all provinces and municipalities
environment	Safety						Work Report
		Fiscal revenue growth rate minus public safety expenditure growth rate	%			▲	China Fiscal Statistics Yearbook
	society	Social fairness	Standardization Index	▲			CGSS, CSS database
	fair	Gini coefficient of perceived social equity	Standardization Index		▼		
		Urban basic old-age insurance coverage rate	%	▲			China Urban Statistical Yearbook
public	society	Urban basic medical insurance coverage	%	▲			
Serve	Assure	Regional disparities in per capita social security and employment expenditures	Standardization Index		▼		
		Fiscal revenue growth rate minus social security and Employment expenditure growth rate	%			▲	China Fiscal Statistics Yearbook
		Teacher-student ratio in ordinary primary and secondary schools	%	▲			China Urban Statistical Yearbook and
	educate	Gini coefficient for regional disparities in teacher-student ratio	Standardization Index		▼		Statistical Yearbook of Districts of Municipalities
	resource	The gap between teachers and students in urban and rural areas	%		▼		China Urban Statistical Yearbook and
							Statistical Yearbook of Districts of Municipalities
		Fiscal revenue growth rate minus education Operating expenses growth rate	%			▲	China Fiscal Statistics Yearbook
		Number of hospital beds per capita	Zhang/Thousands of people	▲			China Urban Statistical Yearbook
	Medical	Regional disparities in the number of hospital beds per capita	Standardization Index		▼		
	resource	The average number of licensed (assistant) physicians per person	per thousand people	▲			
		Regional disparities in the number of licensed (assistant) physicians	Standardization Index		▼		
		Fiscal revenue growth rate minus medical and health care Growth rate of family planning expenditure	%			▲	China Fiscal Statistics Yearbook
	transportation	Number of transportation facility service stations per capita	Individuals/thousand people	▲			China Urban Construction Statistical Yearbook
	facility	Regional disparities in the number of transportation facility service stations per capita	Standardization Index		▼		

Table 2: Evaluation Index System for the Development of New Productive Forces

Target layer	Criterion layer	Primary indicators	Secondary indicators	Level 3 indicators	Measurement methods	property
new quality born Produce force	workers	Labor productivity	Economic output	GDP per capita	GDP/Total population	just
			Economic income	Average wage	Average wage of on-the-job employees	just
			Employment structure	The proportion of employment in the tertiary sector	Number of employees in the tertiary sector / Total employment	just
		Worker quality	Education level	Percentage of students with higher education	Average years of education per person	just
			Training funds	Education funding intensity	Education expenditure / Total fiscal expenditure	just
			Knowledge accumulation potential	Student Structure	Number of students enrolled / Total population	just
		Worker spirit	innovative spirit	Innovative human resource investment	R&D personnel full-time equivalent	just
			Entrepreneurial spirit	Entrepreneurial activity	Number of new startups per 100 people	just
	Labor objects	Industrial development level	Information technology level	Enterprise informatization level	Number of enterprises engaged in e-commerce transactions / Total number of enterprises	just
			Strategic industries as a percentage	proportion of emerging strategic industries	Value added of emerging strategic industries / GDP	just
			Future Industries	Robot installation density	Number of industrial robots installed in the region × (Number of industrial robots installed in the region) / (Number of employed persons / Total number of employed persons nationwide)	just
		ecological environment	Green Ecology	Green Resources	Forest coverage	just
				Environmental protection efforts	Environmental protection expenditure / government public finance expenditure	just
			Green production	Pollution prevention and control quality	Chemical Oxygen Demand Emissions / GDP	burden
					Sulfur dioxide emissions / GDP	burden
				Green invention achievements	Number of green patent applications / number of patent applications	just
	Labor materials	Material means of labor	Infrastructure	Traditional infrastructure	Highway mileage	just
					Railway mileage	just
				Digital infrastructure	Fiber length	just
					Number of broadband internet access ports per person	just
			Energy utilization level	Energy intensity	Energy consumption/GDP	burden
				Green energy consumption level	Low-carbon index of energy consumption structure	just
			Energy utilization potential	Pollution prevention and control potential	Waste gas treatment facility processing capacity	just
		Intangible labor resources	Technological innovation level	Number of patents per person	Number of patents granted / Total population	just
				New product economic investment	New product development expenditure/GDP	just
			Digitalization level	Digital Economy	Digital Economy Index	just

The core explanatory variable is the new quality productivity index (NQ). Based on the papers of Ren Yuxin, Wu Yan, and others [9], and Wang Yu et al. [10], the evaluation index system of the new quality productivity using the entropy method is constructed. The new quality productivity takes the qualitative change of the three major elements of laborers, means of labor, and objects of labor and their optimal combination as its basic connotation. The entropy method is used to determine the weight of each level of indicators and calculate the new quality productivity development index of each province (autonomous region, municipality) and other first-level administrative regions. The specific indicators are selected as shown in Table 2.

5.2.1 Workers.

According to the theory of new quality productivity, workers are assessed at the individual level in three aspects: theoretical level, skills training, and work efficiency. Therefore, eight indicators are selected to evaluate the dimensions of workers: GDP per capita, per capita income, employment rate in the tertiary sector, proportion of the population with higher education, education investment, number of students in school, innovation investment, and entrepreneurial activity.

5.2.2 Labor objects.

According to the theory of new-quality productivity, the focus of labor is primarily on emerging industries and the ecological environment. Only through more effective and sustainable utilization of labor can production efficiency and product quality be effectively improved. Therefore, seven indicators are selected to evaluate the dimensions of labor: enterprise informatization level, the development ratio of emerging strategic industries, robot application density, green resource development, environmental protection measures, pollution prevention and control level, and green innovation achievements. Among them, the development ratio of emerging strategic industries is measured by the proportion of the added value of emerging strategic industries to GDP, following the method of Lü Yanwei and Sun Hui.

5.2.3 Labor materials.

The development of new productive forces requires substantial support from means of production. These means of production include not only all material resources used to alter and influence the objects of labor, but also intangible resources that assist workers in transferring energy to these objects to achieve creativity. Therefore, nine indicators are selected to assess the dimensions of means of production: traditional infrastructure, digital infrastructure, energy intensity, green energy consumption level, pollution prevention potential, per capita patent quantity, new product economic input, digital economy development, and enterprise digitalization. Specifically, the assessment of green energy consumption level follows the method of Liu Yaqin and Zhao Guohao, using a low-carbon index constructed from the angle of spatial vectors to measure it. The digital economy development index references the research of Wang Jun et al., assessing the level of the digital economy from two dimensions: internet development and digital finance penetration. The assessment of enterprise digitalization is based on the frequency of keywords appearing in listed companies' annual reports to evaluate their digitalization level.

Table 3: Descriptive Statistics

variable name	Sample size	mean	Standard deviation	Minimum value	Maximum value
new_quality	135	0.2884692	0.1298516	0.1018746	0.6954021
windex	135	0.3203259	0.074711	0.175	0.581
Fiscal burden of aging	135	0.1903383	0.029938	0.124679	0.25081
Social consumption level	135	0.3904686	0.0706998	0.224949	0.538418
Economic development level	135	12920.84	8165.304	5422.97	42844.2
Transportation infrastructure	135	11.76013	0.705305	9.90738	12.93938
Theil Index	135	0.0886296	0.0398004	0.019	0.197

Control variables: Economic development level, social consumption level, fiscal burden of the elderly, Theil index (indicating urban-rural gap), and transportation infrastructure level are used as control variables.

5.3 Descriptive Statistics

As shown in Table 3, we can see that after a series of standardization processes and updates using the entropy method, the average values of both the new quality productivity index and the common prosperity index are controlled within 1. Specifically, the average value of the new quality productivity index is approximately 0.288, which reveals the development level of my country's new quality productivity. We also note that the minimum value of this index is approximately 0.10, while the maximum value is approximately 0.70. This wide range indicates significant differences in new quality productivity across different regions and time points. By calculating the deviation and standard deviation, we find that these differences are not accidental, but rather an objective reflection of the uneven development of my country's new quality productivity.

On the other hand, the average value of the common prosperity indicator is approximately 0.32, indicating that China has made substantial progress in promoting common prosperity. Meanwhile, we can also see that the minimum value of this indicator is approximately 0.175, and the maximum value is approximately 0.581. Although there is a certain gap in the numerical values, by calculating the deviation and standard deviation, we can find that these gaps are relatively small, indicating that China's achievements in building common prosperity are quite significant.

The differences between the indicators of new-quality productivity and common prosperity are due to multiple factors. First, the new-quality productivity indicator primarily reflects the level of productivity development, leaning more towards intensity indicators, while the common prosperity indicator is based on per capita indicators, reflecting people's life experiences more. Therefore, in terms of indicator composition, the common prosperity indicator is less prone to significant discrepancies. This also reflects that while developing new-quality productivity, China is also striving to promote common prosperity, ensuring a balanced development of the two indicators.

5.4 Benchmark Regression

Table 4: Benchmark Regression Results

VARIABLES	(1) windex
new_quality_forces	-0.145***
	(0.0541)
Economic development level	6.18e-06***
	(9.74e-07)
Social consumption level	0.156***
	(0.0589)
Fiscal burden of aging	-0.397**
	(0.184)
Theil Index	-0.659***
	(0.154)
level of transportation infrastructure	0.0218***
	(0.00813)
Constant	0.0989
	(0.0991)
Fixed area	N
Fixed year	N
Observations	135
R-squared	0.641

Standard errors in parentheses
***p<0.01, **p<0.05, *p<0.1

Clearly, the variable is significant at the 1% level, meaning it has extremely high statistical significance. According to the baseline regression results, the development of new-quality productivity has a significant promoting effect on improving common prosperity. This indicates that as the level of new-quality productivity increases, the distribution of social wealth will become more equitable and reasonable, thereby effectively promoting the improvement of common prosperity. In other words, the improvement of new-quality productivity will create more wealth for the whole society, while also providing people with more opportunities to share the fruits of development, thus contributing to the realization of common prosperity for all people.

Table 5: Regression results of time and location fixed effects.

VARIABLES	(1) windex	(2) windex
new_quality_forces / New Quality Productivity Index	-0.310**	0.665***
	(0.137)	(0.120)
Economic development level	2.48e-06	2.50e-06***
	(3.42e-06)	(8.36e-07)
Social consumption level	-0.0166	0.0607
	(0.0686)	(0.0707)
Fiscal burden of aging	0.157	-0.707***
	(0.258)	(0.148)
Theil Index	0.776	-0.552***
	(0.681)	(0.134)
level of transportation infrastructure	0.0239	-0.00717
	(0.0231)	(0.00729)
Constant	0.108	0.448***
	(0.292)	(0.0926)
Fixed area	Y	Y
Fixed year	Y	Y
Observations	135	135
R-squared	0.928	0.691

Standard errors in parentheses
***p<0.01, **p<0.05, *p<0.1

After addressing the fixed effects of time and location, the significance of the variables we observed decreased somewhat, but remained at the 5% statistical significance level. This result indicates that although we considered the variations over time and differences in location, these factors

did have some influence on the variables, but this influence was not sufficient to challenge our conclusions.

To further validate our findings, we conducted a robustness test. In this test, we replaced the core explanatory variable with Wang Jue's version of the new-quality productivity composite index. Even under this condition, our results remained robust, indicating that the development of new-quality productivity does indeed play a positive role in promoting common prosperity. This finding supports our fundamental view that the improvement of new-quality productivity is an important pathway to achieving common prosperity.

5.5 Heterogeneity Test

Table 6: Heterogeneity Test

VARIABLES	west windex	mid windex	east windex
new_quality_forces	-0.127	-0.429***	-0.407***
	(0.179)	(0.119)	(0.145)
Economic development level	-2.01e-06	2.78e-06	8.54e-06
	(4.02e-06)	(5.67e-06)	(6.99e-06)
Social consumption level	-0.0700	-0.0804	0.477***
	(0.118)	(0.103)	(0.120)
Fiscal burden of aging	-0.132	-0.443*	0.787*
	(0.388)	(0.230)	(0.389)
Theil Index	3.142***	-1.608***	-0.688
	(1.024)	(0.451)	(0.417)
level of transportation infrastructure	0.0194	0.0364**	0.0293
	(0.0371)	(0.0150)	(0.0190)
Constant	0.249	0.190	-0.280
	(0.446)	(0.178)	(0.235)
Fixed area	Y	Y	Y
Fixed year	Y	Y	Y
Observations	55	45	35
R-squared	0.957	0.680	0.783

Standard errors in parentheses
***p<0.01, **p<0.05, *p<0.1

Heterogeneity Analysis: In China's provincial classification, we divide provinces into eastern, central, and western regions based on geographical location and economic and social development levels. The eastern region includes some economically developed provinces and municipalities, such as Beijing, Tianjin, Hebei, Liaoning, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong, Guangxi, and Hainan (12 provinces, autonomous regions, and municipalities directly under the central government). The central region includes Shanxi, Inner Mongolia, Jilin, Heilongjiang, Anhui, Jiangxi, Henan, Hubei, and Hunan (9 provinces and autonomous regions). The western region includes Sichuan, Guizhou, Yunnan, Tibet, Shaanxi, Gansu, Ningxia, Qinghai, and Xinjiang (9 provinces and autonomous regions). We explored the differences in the impact of new-type productivity on the level of common prosperity development in different regions, and the regression results are shown in Table 6. The results show that only the central and western regions passed the significance test.

This situation may arise because the economic development of the eastern region is relatively rapid, and its level of new-type productivity is high. Therefore, its contribution to common prosperity is relatively small and not very significant. This results in the impact of new-type productivity on common prosperity not showing a significant effect in the eastern region. In contrast, in the central and western regions, due to the relatively lower level of new-type productivity, its contribution to common prosperity is more significant, thus passing the significance test. This also illustrates that in promoting common prosperity, China needs to adopt differentiated strategies based on the actual conditions of different regions to better leverage the role of new-type productivity.

6. Conclusions and Policy Recommendations

Through the regression analysis and heterogeneity test above, we can clearly see the importance of new-type productivity in promoting common prosperity. Although its impact varies in different regions, overall, the development of new-type productivity has a significant positive effect on improving the level of common prosperity.

Based on the above findings, we propose the following policy recommendations:

1) Strengthen the cultivation and development of new productive forces: The government should further increase its support for new technologies, new industries, new business models, and new formats, encouraging enterprises to conduct innovation and research and development to improve the level of new productive forces. At the same time, it is necessary to create a favorable innovation ecosystem and provide more policy support and resource guarantees for innovative enterprises.

2) Implement a differentiated regional development strategy: Based on the different characteristics of the eastern, central, and western regions, implement a differentiated regional development strategy. In the eastern region, continue to promote the optimization and upgrading of the industrial structure, develop high-end manufacturing and modern service industries, and further promote fairness in development; in the central and western regions, focus on cultivating new productive forces, strengthening infrastructure construction, and improving the level of public services to lay a solid foundation for common prosperity.

3) Strengthen talent cultivation and recruitment: Talent is the core element for the development of new productive forces. The government should increase investment in talent cultivation and recruitment, optimize talent policies, and attract more outstanding talents to participate in the research and application of new productive forces. At the same time, it is necessary to strengthen vocational education and skills training to improve the quality and skill level of the workforce.

4) Improve the policy system and market environment: The government should further improve the policy system and market environment to provide strong support for the development of new productive forces. It should strengthen intellectual property protection and combat infringement; deepen institutional reforms to unleash market vitality; and strengthen supervision and enforcement to maintain a fair and competitive market order.

5) Strengthen Social Security and Public Services: While

promoting the development of new productive forces, the government should also strengthen the construction of the social security and public service system to improve people's well-being. Efforts should be increased to assist low-income groups and ensure their basic living needs are met; public service facilities should be strengthened to improve the level of public services, allowing the people to enjoy higher-quality and more convenient services.

By implementing the aforementioned measures, we can more effectively leverage the key role of new-type productive forces in promoting common prosperity, thereby fostering sustained and healthy growth in China's economy and society. These measures not only help optimize resource allocation and improve production efficiency but also stimulate innovation, accelerate technological progress, and provide a powerful impetus for China's economic transformation and upgrading. In this process, new-type productive forces will continuously grow stronger, becoming the core engine driving China's economic and social development. Through continuous innovation and deepening reform, we can further unleash the potential of new-type productive forces, enabling them to play a more significant role in promoting common prosperity. This will help improve people's living standards, narrow the income gap, achieve the goal of sharing the fruits of development with all the people, and lay a solid foundation for the prosperity and stability of China's economy and society. Simultaneously, the rapid development of new-type productive forces will also drive the upgrading and optimization of related industrial chains, promote employment, increase tax revenue, and provide strong support for the stable growth of national fiscal revenue. In short, by fully leveraging the leading role of new-type productive forces, China's economy and society will maintain sustained and healthy development, ultimately achieving common prosperity for all the people.

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