

The application of artificial intelligence in economic decision-making and its impact on the labor market

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Abstract. While prospering the economy, artificial intelligence also widely affects the labor market. The exponential growth of production automation poses new challenges to work forms and work demands. Under the social background of the gradual decline of demographic dividend and the gradual decline of personal dividend, the competition for talents and labor among cities has gradually become the focus of Jiaocheng in the new era. Spatial mobility of labor force has become an important topic of regional economic development. AI applications represented by automated production lines, intelligent customer service, driverless cars, intelligent diagnosis systems, etc. have demonstrated the great promotion of technological progress to social productivity. Moreover, most of them focus on the process of introducing artificial intelligence technology to solve some complicated economic operations and data analysis. In the past decades, artificial intelligence has reached or even surpassed the human level in the fields of speech recognition, image recognition and natural language processing, and these technologies have been widely used in various fields. The overall primary product market is in a bull market, which has led to China's industrial producer ex factory price index being higher than the consumer price index for most years during this period, and the industrial producer purchase price index being higher than the ex factory price index. The application of artificial intelligence in the economic field can promote the rapid development of economic decision-making, strengthen business awareness in the leadership market, and play an important driving role in improving business level.

Key words: Artificial intelligence; Economics; Policy decision; Labor force influence.

1. Introduction

With the continuous development of computer technology and the improvement of data processing capabilities, artificial intelligence has gradually moved from theory to reality. While the economy is prospering, artificial intelligence has also widely affected the labor market. The exponential growth of production automation has posed new challenges to work forms and work requirements [1]. As the technology continues to mature, artificial intelligence is gradually exploring new application fields. The big data and historical nature of the economic field are just in line with the development requirements of artificial intelligence technology and have become an important application field [2]. In a social context in which the demographic dividend is gradually fading, the competition for talents and labor force among cities has gradually become the focus of focus cities in the new era. Spatial mobility of labor has become an important topic for regional economic development [3]. In addition, artificial intelligence can optimize investment portfolios, select the optimal asset portfolio based on different investment goals and risk preferences, increase return on investment, and automatically optimize the allocation of investment portfolios [4]. So as to achieve a better risk-return balance. AI applications represented by automated production lines, intelligent customer service, driverless cars, intelligent diagnosis systems, etc. have demonstrated the great promotion of technological progress to social productivity.

The strength of artificial intelligence lies in its self-learning ability, which can constantly learn from data and improve its performance, rather than relying solely on the knowledge contained in human coding to perform tasks. At present, the research on artificial intelligence mostly focuses on the development and utilization of artificial intelligence vehicles, artificial intelligence robots and other physical objects, and there is not much research on calculation and decision-making [5]. Moreover, most of them focus on the process of introducing artificial intelligence technology to solve some

complicated economic operations and data analysis. In the past decades, artificial intelligence has reached or even surpassed the human level in the fields of speech recognition, image recognition and natural language processing, and these technologies have been widely used in various fields [6]. Unemployment will not only make workers lose their sources of income, but also threaten the survival of the unemployed and their families and violate human dignity. It will also aggravate the pressure of the state in labor distribution and affect the ultimate realization of full employment and high-quality employment [7]. The primary product market is generally in a bull market, which leads to the fact that the ex-factory price index of industrial producers in China is higher than the consumer price index in most years during this period, and the purchase price index of industrial producers is higher than the ex-factory price index. The price increase of consumer goods in China's consumer price structure is higher than the increase of service prices. In terms of policy, clarifying the adjustment mechanisms such as aging, transfer payments and medical insurance provide support for building a supporting policy system and releasing the vitality of labor factors [8]. The application of artificial intelligence in the economic field can promote the rapid development of economic decision-making, strengthen business awareness in the leadership market, and play an important role in improving business levels [9].

2. Theoretical analysis and research hypotheses

2.1. The impact of artificial intelligence on labor spatial mobility

The role of artificial intelligence in replacing labor has been widely recognized. The reason is that artificial intelligence itself has extremely high production efficiency and relatively cheap production costs [10]. Structured data is the primary source of information for traditional investment analysis. As these data become more and more complex and high-dimensional, traditional statistical methods and human analysis are facing great challenges. Using the industrial robot data of American industry level to construct the instrumental variable of robot penetration in China city level:

$$AI_{ict} = \frac{E_{ict}}{E_{ct}} robot_{ct} \quad (1)$$

$$AI_{ict}^{US} = \frac{E_{ict}}{E_{ct}} \times \frac{ROB_{ct}^{US}}{L_{ct}^{US}} \quad (2)$$

In addition, the final evaluation results can also be combined with evaluation methods in systems engineering to evaluate the project and obtain an evaluation value for investment comparison with other projects. By using a distributed computing framework, large-scale datasets can be processed in a computer cluster in a distributed manner. Tasks can be decomposed into multiple subtasks and executed simultaneously on multiple machines, thereby accelerating data processing speed. The continuous development of artificial intelligence and automation will further replace old equipment, and the adoption of new equipment will shorten the unit production cycle. Production costs are reduced, ultimately reducing the labor required for production and reducing job opportunities. The economic personnel of various enterprises have been transferred to the economic center, and the nature of the work of the remaining personnel has also been changed from accounting to cost analysis and economic management, improving the motivation of personnel. Different regional resource endowments affect the substitution effect of artificial intelligence on labor, which in turn leads to differences in the attractiveness of labor space.

2.1. Mechanism analysis of the influence of artificial intelligence on the spatial mobility of labor force

Labor migration is not only related to local productivity levels and employment opportunities, but also to migration costs. The migration cost consists of four parts: economic cost, emotional cost, market failure cost, and institutional cost. Low skilled workers find it difficult to find suitable positions in the new job market due to a lack of corresponding skills training and transformation opportunities. Artificial intelligence technology can automatically identify and select the most

relevant factors, and dynamically adjust factor weights based on market changes and risk factors, thereby improving the accuracy and robustness of multi factor models. However, human knowledge and information are limited and may overlook some key variables or trends, and human decision analysis requires a certain amount of time and cost. It should also include inputs for specific business plans, such as rental to sales ratios, rent, expected income, bank interest rates, and other information. Generally speaking, most companies currently have not summarized and solidified mature business processes into a replicable information language, and management processes are mostly preserved in human experience. However, the efficiency of transferring and migrating experience is far from enough, which makes the process of sorting out business for newly established companies lengthy. Feature selection and extraction, based on specific financial decision-making goals, select appropriate features, and process and transform the original data to facilitate the application of machine learning algorithms. On the subjective side, it creates widespread employment insecurity. On the objective side, long-term unemployment and large-scale unemployment have occurred, threatening personal identity, belonging and happiness.

3. Optimization strategy to deal with the influence of artificial intelligence technology on labor market

3.1. Adjustment of employment policy

Firstly, formulating policies that encourage innovation and entrepreneurship is the key to stimulating market vitality. Compared with traditional physical option models, artificial intelligence technology can provide more accurate and reliable prediction results, thereby more accurately evaluating the value and risk of enterprises. In this case, human intelligence can determine whether the patterns detected by machines reflect a reasonable and sustainable relationship, or are simply overfitting caused by noise. The analysis report focuses on macro data analysis, lacks meso and micro analysis, and lacks in-depth analysis of the supply and demand characteristics of human resources. As shown in Figure 1.

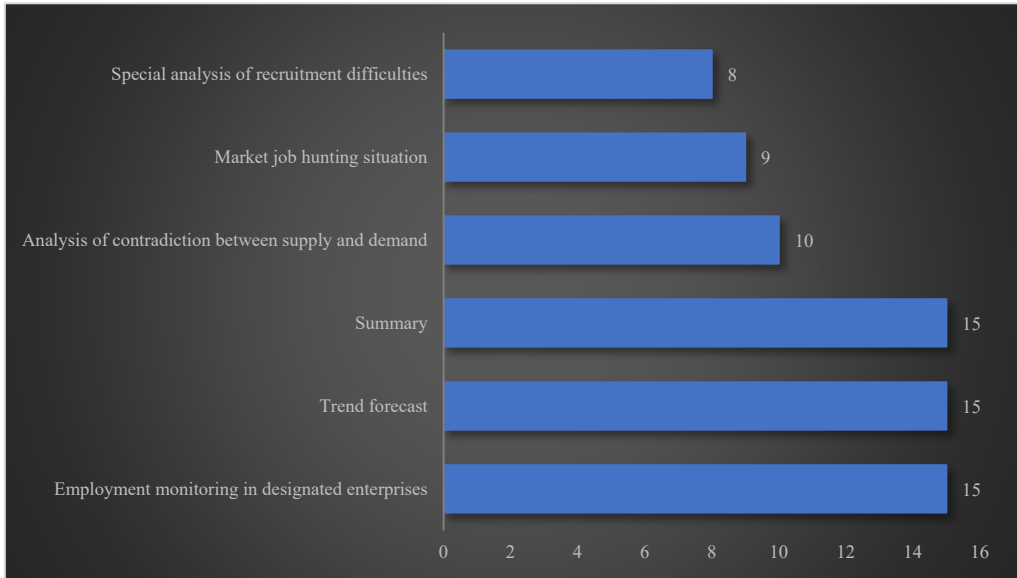


Figure 1 Content classification summary

The system will calculate according to each input value, and finally output each investment decision index of the project. Through organizing lectures and observation, we can exchange experiences with each other, urge and guide other enterprises to develop, integrate and utilize information resources in depth, and promote automatic control systems. Effective data integration and sharing such as online monitoring system and safety hedging system. Model evaluation and optimization, using test data to evaluate the trained model and examine its predictive accuracy, stability, and other indicators. The comparison of major index trends in recent years is shown in Figure 2.

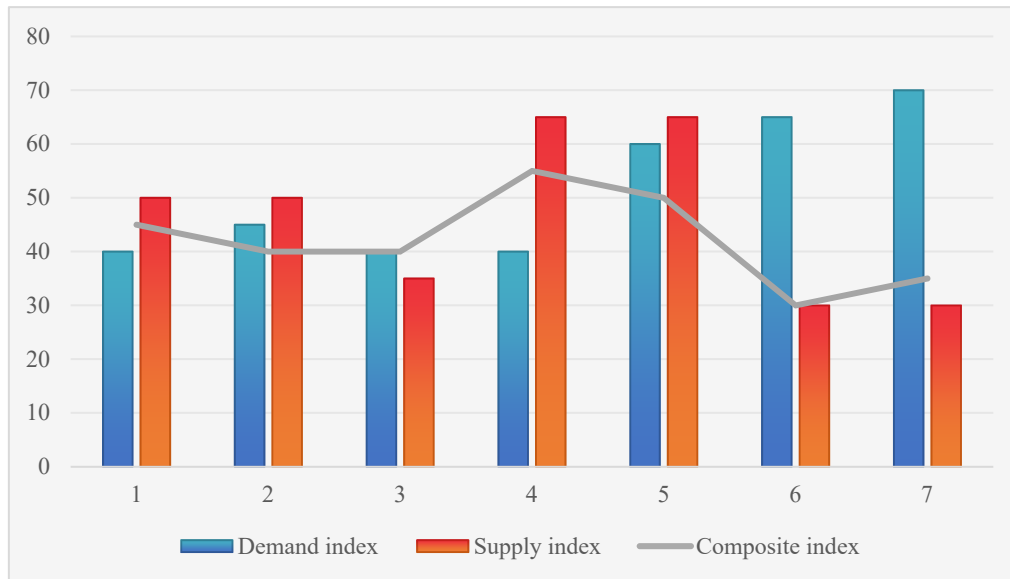


Figure 2 Comparison chart of main index trends

Today, material scarcity is no longer a major problem in modern countries, but there is a disproportion between the diverse risks brought about by technological development, the ability to predict and control risks, and the potential destructive power of high technology. It makes the past means of rationally overcoming poverty risks no longer effective in the face of new risk situations.

3.2. Industrial policies and economic restructuring

Secondly, supporting emerging industries and technological innovation is an important engine for achieving economic transformation. Different regions have different regional advantages due to varying levels of economic development, location advantages, and resource endowments. Faced with the continuous development of artificial intelligence, the spatial mobility of labor varies in different regions. After mastering basic data analysis skills, economic managers also need to master the application of new technologies such as artificial intelligence. Especially in cases where AI decisions may have a significant impact on economic or ethical aspects, it is necessary to consider who bears the responsibility for the decision. However, manual data information alone is not enough to achieve accurate information analysis, and "crawler" technology should be further introduced. Use big data methods to accurately mine real estate data required for preliminary analysis. The final database is shown in Figure 3.

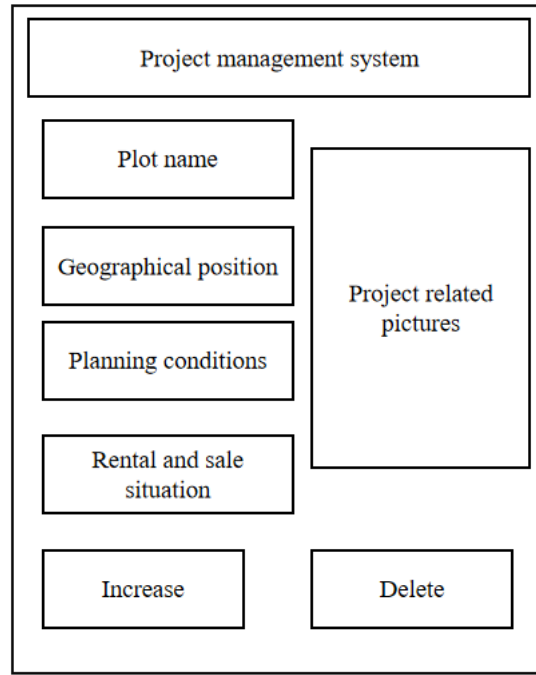


Figure 3 Database preliminary design interface

Software companies can develop customized functions and provide an open technology platform according to the needs of business departments. However, there is no ability to complete such work at the level of data specification such as material coding, specification and measurement. Through these measures, we can optimize the economic structure, enhance the overall resilience and risk resistance of the economy, promote high-quality economic development, and provide more diverse and stable employment opportunities for the labor market.

4. Conclusion

Overall, the application of artificial intelligence has a unique role in promoting the development of business finance integration, helping to improve business efficiency and enhance innovation. It is also beneficial to improve economic decision-making efficiency and prevent enterprise economic risks through data mining and intelligent analysis. For this reason, public policies and expenditures must play an important role in promoting the creation of new employment opportunities and protecting labor, and shift from employment as the basis for safeguarding rights to more universal social rights and broader financial support. The empirical results indicate that artificial intelligence has triggered spatial and indirect labor mobility. And this effect is particularly significant in the low-level labor samples, especially in the level labor samples, and the impact on the labor in different spatial locations is also slightly different. Therefore, economic managers need to constantly upgrade and improve their data analysis ability, investment strategy and risk management to better adapt to the impact of artificial intelligence technology progress on investment decision-making. In the future, through scientific and reasonable countermeasures, the benign interaction between technological progress and social development can be realized to the greatest extent, and the sustainable development of economy and society can be promoted.

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