How Algorithms and Digital Technologies Are Shaping the New Pattern of Social Class Division

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ABSTRACT

The deep integration of algorithms and digital technologies is reshaping the pattern of social class division. This article, from a theoretical perspective, analyzes how algorithms and digital technologies, through three core mechanisms of centralized intellectual distribution, centralized power distribution, and centralized wealth distribution, drive the evolution of the social class division pattern. At the application level, it explores the specific impacts on education, employment, resource allocation, and social collaboration, and proposes corresponding strategies. The research shows that algorithms and digital technologies not only pose challenges to social class division but also contain opportunities to promote social fairness and progress. The key lies in how to achieve a balance between efficiency and fairness through institutional design and technological governance.

Keywords: Algorithm; Digital Technology; Social Class Differentiation; Intellectual Concentration; Power Concentration; Wealth Concentration.

1. INTRODUCTION

With the rapid development of algorithms and digital technologies, human society is undergoing an unprecedented structural transformation. Algorithms, as the core driving force of digital technology, not only change the production methods and lifestyle patterns, but also profoundly influence the way social resources are allocated and the pattern of social class differentiation. From the acquisition of educational resources to the distribution of employment opportunities, from the path of information flow to the mechanism of wealth accumulation, algorithms and digital technologies are reshaping the underlying logic of social operation and promoting the evolution of the social class differentiation pattern in new directions [1]. Traditional social class differentiation was mainly based on differences in economic capital, cultural capital and social capital [2], while the new class differentiation brought about by algorithms and digital technologies is more dependent on the mastery of data resources, algorithm capabilities and digital skills [3]. This differentiation not only manifests in the economic field, but also permeates every aspect of social life, forming a completely new social stratification mechanism. In-depth exploration of how algorithms and digital technologies reshape the new social class differentiation pattern is of great theoretical value and practical significance for understanding contemporary social changes and formulating fair and reasonable social policies [4].

2. THE THEORETICAL FOUNDATION OF SOCIAL CLASS DIVISION REFORMATION BY ALGORITHMS AND DIGITAL TECHNOLOGIES

2.1 The Theory of Concentration of Intellectual Distribution

The development of algorithms and digital technologies has led to a trend of concentration in the distribution of intellectual resources. In traditional societies, intellectual resources were relatively dispersed, and individuals participated in social activities through their own cognitive and judgment abilities. However, with the widespread application of algorithms, complex problems were simplified into the execution of instructions, and humans gradually degenerated from thinkers to executors [5]. Algorithm developers, relying on their mastery of algorithm design and data modeling capabilities, became the core nodes of social intelligence, and their codes and models determined the key links of social operation such as traffic scheduling, information flow, and resource allocation [6].

This concentration of intellectual distribution not only weakened the active thinking ability of ordinary people but also exacerbated the intellectual gap between social classes [7]. The elite group with algorithmic technology can utilize algorithmic advantages to obtain more social resources and development opportunities, while the groups lacking

algorithmic knowledge and skills gradually become marginalized and unable to participate in the decision-making and operation of the core social fields [8]. The concentration of intellectual distribution has become one of the important theoretical bases for algorithms and digital technologies to reshape social class division.

2.2 The Theory of Concentration of Power Distribution

Algorithms and digital technologies have also triggered the trend of concentration in power distribution. Power is the ability to influence others' decisions, and algorithms have firmly grasped this ability by formulating rules. Unlike the traditional power that requires institutional endorsement, algorithmic power is hidden in code and data, but it can penetrate into every corner of life. Users think they can choose freely, but in fact they are passively screening within the range delineated by the algorithm; Enterprises think that they are operating independently, but they must abide by the traffic rules, sharing ratio and data requirements of the platform.

The concentration of algorithm power will inevitably lead to the concentration of social dominance in the hands of a few groups who master algorithms and enterprises. These algorithms control the flow of information, influence key decisions, allocate social resources, and build a social order centered on self-interest. The centralization of power distribution further aggravates the inequality of social classes and puts vulnerable groups in a more unfavorable position in social competition.

2.3 The Theory of Concentration of Wealth Distribution

Intellectual and power concentration ultimately point to the concentration of wealth. Algorithms and digital technologies have constructed a "profit funnel". Platforms that control user data and traffic distribution rights have mastered pricing and distribution rights. In various fields such as manufacturing, content creation, and small and medium-sized business operations, traditional industries are facing the predicament of being exploited for profits by platforms. Data becomes "digital oil", and algorithms become "refining technology", and platform-based enterprises naturally become the "black holes" of wealth accumulation.

The concentration of wealth distribution not only changes the distribution pattern of social wealth but also exacerbates the solidification of social classes. Wealth concentration among a few enables them to further invest in algorithms and digital technologies, consolidating their advantageous position; while groups lacking wealth support have difficulty obtaining opportunities to enhance their skills and participate in the development of the digital economy, thus falling into a vicious cycle of poverty. The concentration of wealth distribution has become an important economic basis for algorithms and digital technologies to reshape social class division.

3. THE APPLICATION OF ALGORITHMS AND DIGITAL TECHNOLOGY IN RESHAPING SOCIAL CLASS DIVISION

3.1 Class Division in the Field of Education

Algorithms and digital technology have a great influence on the field of education, which makes the distribution of educational resources more unfair and causes the division of social classes. On the one hand, algorithm recommendation system has played a great role in the dissemination of educational content. Those high-quality educational resources are concentrated in a few elite schools, which can analyze students' learning data with algorithms and provide personalized educational services, thus improving the quality of education. However, ordinary schools have no technical support and data resources, and it is difficult to get enough educational help, so their education quality is relatively poor.

On the other hand, the application of the algorithm in educational evaluation may make the class differentiation more serious. Some educational evaluation algorithms pay too much attention to standardized scores, but ignore students' individualized needs and creativity cultivation. This evaluation method is beneficial to those students who can adapt to standardized tests, but some students with special talents but not outstanding test results may be marginalized. Moreover, algorithm bias may also lead to unfair treatment of some groups, making the problem of educational inequality more serious.

3.2 Class Division in the Field of Employment

The development of algorithm and digital technology has a great influence on our job search, which changes the skills needed for work and people's career path, and also makes the class differentiation in the employment field more obvious. On the one hand, algorithms play an important role in recommendation and recruitment. Good job opportunities are often given priority by algorithms to those with high academic qualifications and strong digital skills, while jobs with low skill

requirements are pushed aside. This stratification of the job market enables high-skilled people to get better career development and higher income, but low-skilled workers are under pressure to lose their jobs or have to change careers.

On the other hand, the extensive application of the algorithm makes many low-skilled jobs automatically completed. For example, in the manufacturing industry, people like assembly line workers and customer service staff in the service industry are gradually replaced by robots and intelligent systems. These displaced workers are unemployed because they lack the ability to retrain and change careers, and it is difficult for them to adapt to the algorithm-driven job market. At the same time, the rise of algorithms has also brought some new occupations, such as algorithm ethicists and AI trainers, but these new jobs usually require high skills, which makes the class differentiation in the employment field more serious.

3.3 Class Division in the Field of Resource Allocation

In the field of resource allocation, the application of algorithms and digital technology has also intensified social class differentiation. In the medical field, although the algorithm diagnosis system can improve the accuracy of disease identification, its accessibility has serious problems. Large hospitals and medical institutions can obtain advanced algorithmic diagnosis equipment and professional technicians to provide patients with high-quality medical services; However, due to the lack of financial and technical support, primary medical institutions can not apply algorithmic diagnosis technology, which leads to the imbalance of medical resources allocation.

In the financial field, the credit approval algorithm may judge the applicant as a high credit risk according to factors such as the living area, mobile phone brand used or social network contacts, and thus reject their loan application. This discriminatory screening not only deprives individuals of fair competition opportunities, but also may aggravate social inequality, making the vulnerable groups unable to obtain financial resources and fall into the poverty trap.

3.4 Class Division in the Field of Social Collaboration

Algorithms and digital technology have a great influence on the social cooperation mode, changing the way and rules of people's social interaction, and also making the social class division more serious. On the social media platform, algorithm recommendation will affect the flow of public opinion and information, resulting in different information and opinions seen by different social classes. The elite can have access to more diverse and high-quality information, so that their horizons will be broader and their cognitive ability will be stronger; However, ordinary people may fall into the information cocoon and only see the content that conforms to their own interests and preferences, which leads to limited cognition and more serious social stratification.

Moreover, the application of the algorithm in social collaboration may alienate people. The rise of virtual social networks makes people more accustomed to communicating with electronic devices and reduces face-to-face interaction. Although this kind of virtual social interaction is fast and convenient, it may also weaken people's emotional connection and social support network, and widen the gap between different social classes.

4. STRATEGIES FOR ADDRESSING THE RESHAPING OF SOCIAL CLASS DIVISION BY ALGORITHMS AND DIGITAL TECHNOLOGIES

4.1 Strengthening Algorithm Governance and Regulation

In order to solve the problem of social stratum differentiation caused by algorithms and digital technology, we need to strengthen the management and supervision of algorithms. The government should formulate a comprehensive algorithm management policy, requiring algorithm developers to abide by the principles of fairness, transparency and interpretability to ensure the fairness and rationality of algorithm decision-making. At the same time, it is necessary to establish an algorithm evaluation and review mechanism, regularly check and supervise the use of the algorithm, and find and correct the bias and discrimination in the algorithm in time.

In addition, it is necessary to strengthen the supervision of the collection and use of algorithm data to protect personal privacy and data security. When collecting and using user data, enterprises must obtain clear authorization from users and take necessary security measures to prevent user data from being leaked and abused. By strengthening the governance and supervision of the algorithm, the application behavior of the algorithm is standardized, and the negative impact of the algorithm on social stratum differentiation is reduced.

4.2 Promoting Education Equity and Skill Training

Education is an important way to promote social equity and personal ability. In order to solve the problem of educational placement brought by algorithms and digital technology, we need to promote educational equity and increase investment in educational resources, especially in rural and poverty-stricken areas. By improving educational facilities, improving teachers' level and developing digital education, we can narrow the gap between urban and rural areas and provide equal learning opportunities for all students.

At the same time, we should also strengthen skills training to improve the digital skills and adaptability of workers. The government and enterprises should cooperate to launch vocational training programs to provide workers with training courses related to algorithms and digital technology to help them master new skills and adapt to the algorithm-driven job market. By promoting education equity and skills training, we can enhance individual competitiveness and development opportunities, thus reducing the division of social classes.

4.3 Promoting Data Sharing and Openness

Data is the basic resource for the development of algorithms and digital technology. In order to break the data monopoly and promote the fair distribution of social resources, we need to promote data sharing and openness. The government should formulate data sharing policies, encourage enterprises and institutions to share non-sensitive data, and establish a public data platform to provide data support for the whole society. At the same time, it is necessary to strengthen the supervision and management of data sharing to ensure data security and privacy protection.

In addition, we should promote the diversity and inclusiveness of data and avoid data bias and discrimination. In the process of data collection and collation, we should fully consider the needs and characteristics of different groups to ensure the representativeness and fairness of the data. By promoting data sharing and openness, we can promote the fair distribution of social resources and reduce the negative impact of algorithms and digital technologies on social stratum differentiation.

4.4 Enhancing Social Collaboration and Inclusiveness

In order to cope with the stratification in the field of social cooperation caused by algorithms and digital technology, we need to strengthen social cooperation and inclusiveness. The government and various social organizations should actively promote the online and offline social cooperation mode, encourage people from different classes to participate in social activities, and promote social exchanges and interactions. Through community activities and voluntary service, we will strengthen people's social emotional connection and social support network and narrow the social distance between different classes.

At the same time, we should pay more attention to and support the disadvantaged groups and provide them with more development opportunities and resources. Through the implementation of social assistance and poverty alleviation development policies, we will help vulnerable groups get rid of poverty and improve their social status and quality of life. By strengthening social cooperation and inclusiveness, we will create a fair, harmonious and inclusive social environment and reduce the negative impact of algorithms and digital technology on social class differentiation.

5. CONCLUSION

The rapid development of algorithm and digital technology is profoundly changing the mode of social class division. The three core mechanisms of centralized distribution of intelligence, power and wealth promote the evolution of social classes in a new direction, showing obvious characteristics of class differentiation in education, employment, resource allocation and social cooperation. However, the social class division brought by algorithms and digital technology is not irreversible. By strengthening algorithm governance and supervision, promoting education equity and skills training, promoting data sharing and openness, and enhancing social collaboration and inclusiveness, we can effectively meet the challenges brought by algorithms and digital technologies and promote social equity and progress.

In the future development, we should fully realize the dual influence of algorithm and digital technology on social stratum differentiation. We should actively use algorithms and digital technologies to promote social progress and innovation, and at the same time, we should be alert to their possible bad effects. Through reasonable system design and technical governance, we can find a balance between efficiency and fairness, so that algorithms and digital technology can truly serve human happiness and jointly build a fairer, more harmonious and more inclusive society.

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