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Research on Employment Problems of China's Gig Economy Under Algorithm Guidance

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Abstract

Against the backdrop of algorithm-driven labor market transformation, China's gig economy grapples with structural tensions between employment innovation and labor rights protection. The research centers on "employment in China's gig economy under algorithmic guidance". Contradictions stem from the mismatch between algorithmic control and existing labor governance. The traditional system faces hurdles like liability-identification failures.A multi-faceted approach of "technical ethics reconstruction+institutional innovation+social collaboration" is proposed: clarify legal boundaries, promote algorithm transparency, strengthen supervision and collective bargaining, and boost employment security. Future research should focus on public-driven algorithm governance and cross-platform rights protection for a balance between gig economy growth and rights safeguarding, offering a Chinese model for digital-age labor governance and policy insights.

Keywords

Gig Economy; Algorithm-driven; Employment Issues

1. Introduction

China's gig economy has seen explosive growth with algorithm integration at its core. Platforms use algorithms to manage labor, forming a new governance model. Yet, algorithm-related employment problems are emerging. Task standardization boosts low-skilled jobs while sidelining mid-to-high-skilled ones, and algorithmic recommendations create monopolistic trends, concentrating occupations and squeezing niche fields. Current research lacks a systematic view of the "algorithm-employment structure". This study, through "algorithmic control", explores how algorithms reshape employment, contributing new perspectives to digital-economy employment research.

2. Problems In China's Algorithmic Gig Economy

2.1. Difficulty In Recognizing Labor Relations

The algorithm-driven gig economy blurs traditional employment boundaries. Platforms often use non-standard contracts like cooperation agreements, complicating injury claims and labor arbitration. For instance, delivery riders involved in accidents often cannot receive workers' compensation due to unestablished employment relationships.

2.2. High Work Pressure

Algorithms optimize workflows to compress working hours and increase intensity. In food delivery, shrinking time limits force riders to speed and run red lights to avoid penalties, causing severe safety hazards and harming their physical and mental health.

2.3. Unstable Employment

Gig work's flexible and temporary nature causes job instability. Algorithms change the number of workers based on market demand. When demand is low, many gig workers have no orders, leading to big changes in income and no stable career plans.The reasons behind the problem of China's gig economy under algorithmic guidance[4].

3. The Reasons Behind The Problems of China's Gig Economy Under Algorithmic

3.1. Causes of The Dilemma in The Identification of Labor Relations

3.1.1. Disconnection Between Legal Framework and Technology

Traditional labor law is based on "full-time dependent labor," making it ill-suited for the "quasi-dependent employment" under algorithmic management. The current Labor Contract Law's vague definition of part-time work objectively allows platforms to create "institutional avoidance" via cooperation agreements, making it difficult for gig workers to establish employment relationships through existing legal channels.[2].

3.1.2. Dual Paradox of Employment Subjects

Platform enterprises realize the dual operation of labor control and organization decoupling with the help of algorithmic system. Workers are subject to data monitoring and maintain formal autonomy at the same time. The relationship between platform enterprises and gig workers is very ambiguous, forming intermediate relationship where subordination and independence coexist.

3.1.3. The Dilemma of Judicial Discretion

The binary protection model of labor law, which is either all or nothing, conflicts structurally with the continuous employment status in the gig economy. Judges face

a value choice: strictly applying the subordination standard would lead to a lack of protection, while breaking current rules lacks institutional support and fails to clearly define the standards for labor relations in the new employment model dominated by algorithms.

3.2. Causes of High Intensity Workload

3.2.1. Algorithmic Monitoring and Autonomous Dissipation

Platforms create a "panoramic monitoring" network using real-time positioning and intelligent dispatching, digitizing the entire service process [1]. Algorithms strictly regulate every step from route planning to service duration, reducing workers' autonomy to zero and turning them into "data-driven execution tools."

3.2.2. Data Evaluation and Lack of Humanization

Platforms use gamified rules, such as rankings and reward contests, to link effort with order allocation. Higher levels grant priority, while lower levels face reduced dispatches. To maintain income, workers are forced to extend working hours to maintain their status. This shifts them from being "managed" to "self-exploitation," exacerbating the risk of overwork.

3.2.3. Game Mechanism and Labor Alienation

The platform adopts gamified mechanisms like rankings and reward competitions to link workers' efforts to order volume. Higher ranks grant priority for order acceptance, while lower ones receive fewer dispatches. To sustain earnings, workers voluntarily work longer hours, trapped in a self-perpetuating cycle of chasing rankings to keep their status. They shift from externally managed labor to self-exploitation, raising risks of overwork.

3.3. Causes of Poor Employment Stability

3.3.1. The Complexity of Labor Relations Intertwined with Unstable Market Supply and Demand

Gig workers often register on multiple platforms to boost income, leading to fragmented employment that disrupts traditional career paths. The lack of a single employer makes it hard to accumulate skills and experience, blocking promotions. For example, data silos between platforms prevent delivery riders and drivers from forming complete career histories or accessing training, hindering their long-term professional development [2].

3.3.2. Algorithmic Regulation and Disordered Professional Development

Algorithm-driven employment intensifies career instability. During off-peak periods, reduced order assignments cause "gig unemployment," income fluctuations, and job interruptions, undermining career predictability. Furthermore, platforms prioritize

short-term profits over career planning, failing to provide skill training or promotion opportunities, which makes it difficult for gig workers to transition into stable careers.

4. Targeted Measures

4.1. Solutions to The Dilemma of Identifying Gig Labor Relations Under Algorithm Orientation

4.1.1. Restructuring of The Legal System

Establish a "control-dependence" standard and reverse the burden of proof. Incorporate algorithmic control and economic dependence into employment criteria to clarify gig economy labor relations and better protect atypical workers.

4.1.2. Main Body Type Reconstruction

Introduce the legal concept of "similar workers" with tailored rights and obligations. Provide special protections for those highly dependent on algorithms or economically reliant, and require platforms to assume responsibility for gig workers' labor safety [3].

4.2. Solutions to The High Workload of Gig Economy Under Algorithm Orientation

4.2.1. Grant Workers Substantive Autonomy

Keep the rules of the reconstruction algorithm in monitoring. Gig workers can choose their working hours, routes, and how fast they work by themselves. But they must follow safety rules. This way, "panoramic monitoring" won't take away too much of their freedom.

4.2.2. Establish A Diversified Assessment and Positive Incentive System

Stop only looking at how fast workers work. Add things like how good their service is, if they follow safety rules, and how healthy they are. Cut down on fines for working overtime. Give rewards like "safety compliance awards" to help workers do their jobs well and fast.

4.2.3. Promoting Trade Unions and Collective Bargaining Mechanisms

We'll help set up trade unions in the industry. Workers and companies can talk together to make "fair work rules". We'll also encourage platforms and trade unions to make a fund to protect workers' rights. The government will give tax benefits to help with this[1].

4.3. Solutions to The Poor Employment Stability of Gig Economy Under Algorithm Orientation

4.3.1. Build A Diversified Vocational Skills Training System

Government,industry groups,and platform companies should jointly fund a training program. Tailored courses for the gig economy should cover practical skills like digital tools, customer service, and safety regulations to enhance workers' capabilities.

4.3.2. Reform The Concept of Labor Law Protection

Decouple labor protection from the strict requirement of a formal employment relationship. New regulations should assess factors like financial dependence and the degree of subordination. For workers without standard employment, protections and rights should be determined based on their actual working conditions [3].

5. Conclusions

The deep integration of algorithms into the gig economy has improved resource allocation efficiency but also caused structural contradictions like vague labor relation recognition, excessive workloads, and fragile employment stability. These stem from the mismatch between algorithmic control's technical nature and existing labor governance systems. Solutions require "rebuilding technical ethics + institutional innovation + social collaboration." Future efforts should explore public participation in algorithm governance and cross-platform rights protection to balance gig economy development and labor rights, offering a Chinese solution for digital-era labor governance.

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