

# Research on Labor Rights Protection Challenges and Countermeasures for Employees in Dujiangyan's Emerging Service Industries Amid the Digital Economy

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**Abstract:** Amidst the digital economy wave, Dujiangyan's 38,000 platform workers face five major fractures: labor relationship recognition, algorithmic overtime, fragmented social security, and more. This paper proposes a four-dimensional county-level solution integrating "legislation + technology + services + co-governance." Through closed-loop governance encompassing guidance, accounts, social security packages, service circles, collaborative mechanisms, and growth plans, it offers a replicable and scalable "Dujiangyan Model" for similar tourism destinations nationwide.

**Keywords:** Digital Economy; New Employment Forms; County Governance; Dujiangyan

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By 2024, Dujiangyan's digital economy contributed 38% of its GDP, with live-stream e-commerce, on-demand tour guides, and instant delivery emerging as its hallmark sectors. Platform-registered workers reached 38,000—accounting for 41% of the city's new employment—becoming the core engine of its "Digital Cultural Tourism Demonstration Zone." These emerging services not only created new economic growth points for Dujiangyan but also provided employment opportunities for a large workforce. However, while platform-based employment offers flexibility, it has also exposed a series of labor rights protection issues, such as difficulties in recognizing labor relationships, lack of work injury insurance, and algorithm-driven overtime work. These problems require urgent solutions to ensure the healthy development of the digital economy and the full protection of workers' legitimate rights and interests.

## 1.Diagnosing the Challenges

Amid the rapid expansion of the digital economy, Dujiangyan's emerging service sector workers face five layers of protection gaps. Platforms routinely employ a three-tiered crowdsourced outsourcing structure: "Platform → Service Provider → Worker." Platforms control algorithms, service providers handle contracts and payroll, while workers merely provide -service provider-worker" three-tier crowdsourced outsourcing structure. Platforms control algorithms, service providers manage contracts and payroll, while workers merely provide labor. Among 127 such cases handled by arbitration committees in 2023–2024, 23% resulted in inconsistent rulings due to discrepancies between contractual entities and actual employment relationships. Ride-hailing guides and food delivery riders are predominantly classified as "collaborators," resulting in significant reductions in minimum wage, working hours, and dismissal protections. Workers face a staggering 61% loss rate in court. Algorithms dictate work through order density, customer ratings, and acceptance rates. 62% of workers log over

10 hours daily online, with peaks nearing 14 hours. Only 45% receive overtime compensation below statutory thresholds. Systems fragment continuous orders into short bursts, rendering traditional overtime definitions obsolete. Workers “appear free yet remain algorithmically confined.”

Cross-platform employment is commonplace, with 38% of workers registered on 2-3 platforms simultaneously. Yet current social insurance systems charge based on a single platform, blurring the “employer-payor” responsibility. In 2024, 47 occupational injury cases averaged 9.7 months for claims resolution, with the longest case taking 19 months due to platforms passing responsibility back and forth. 32% of workers report “inability to use or distrust of online social security.” Excessively cumbersome verification processes for identity authentication and cross-regional transfers hinder effective adoption of online services. Offline service centers cover only three subdistricts, with township coverage below 30%. Riders face over one-hour round trips, and self-service terminals lack age-friendly guidance. Labor, culture, cyberspace, and market regulators operate in silos without unified data interfaces. In 2024, platforms faced 11 inspections with a 54% duplicate documentation rate, yet algorithmic labor rules undergo minimal substantive review. Businesses struggle to comply, while workers facing algorithmic discrimination lack clear recourse. These five interlocking fractures prevent digital dividends from translating into safety nets, instead creating new inequalities and risks within county-level areas.

## 2. Policy Review and Analysis

Over the past three years, documents issued from the central to county levels have collectively formed a new discourse on protecting labor rights in the digital economy. Yet visiting scenic areas, streets, alleys, or food delivery stations in Dujiangyan reveals that these policies remain “too lofty to be practical, too broad to be effective, and too difficult to implement.”

### 2.1 National Level: Coexistence of Principled Breakthroughs and Operational Vacuum

The 2025 “Key Tasks for Digital Economy Development” introduced a dedicated section titled “Safeguarding the Rights of Flexible Workers,” proposing to “improve labor employment, social insurance, and vocational training systems adapted to new employment forms.” This signals top-level design beginning to address platform-based employment challenges. However, it offers only directional terms like “improve,” “explore,” and “encourage,” lacking clear standards for labor relationship recognition, social insurance contribution formulas, or data sharing interfaces. To county-level governments, the document’s provisions focus solely on “what to do,” neglecting “how to do it,” “who funds it,” or “who is responsible.”—lacking clear standards for labor relationship recognition, social insurance contribution formulas, or data-sharing interfaces. From the perspective of county-level governments, the document outlines “what to do” but fails to provide concrete guidance on “how to do it, who will fund it, and who will oversee it.”

### 2.2 Provincial Level: Institutional Highlights Coexist with Implementation Gaps

Sichuan Province’s 2024 Implementation Opinions on Safeguarding the Rights of Workers in New Employment Forms propose “priority for individual work-related injuries and joint liability for platforms,” aiming to resolve the dilemma of “no social insurance, difficult work-related injury claims” through occupational injury insurance. Key highlights of the document include: allowing platforms to pay premiums per contract, permitting workers to consolidate claims across multiple platforms, and clarifying platforms’ joint liability for third-party contractors. However, the core issue of “who is the employer” remains unresolved: When an individual is affiliated with three platforms simultaneously, how should the contribution base be calculated? How should liability be allocated after an accident? The document provides no algorithm or technical solution, forcing grassroots administrators to continue using the traditional “one-to-one” employment relationship as the default premise.

### 2.3 County Level: Coexisting Incentive Orientation and Scale Mismatch

Dujiangyan City’s 2025 “Policy for High-Quality Development of the Digital Cultural and Tourism Industry” offers a 500 yuan/person subsidy for “new employment form workers enrolling in social insurance for the first time,” demonstrating local fiscal support. However, 500 yuan covers only 8% of flexible workers’ annual self-paid pension and medical insurance contributions, falling short as an incentive. The average review cycle for submitting six paper-based proofs (platform contract+, income statement+, no social insurance record) is 28 days, imposing excessive time costs on highly mobile groups. Occupational injury insurance is excluded from policy support, failing to complement the provincial “single-work-injury

priority” policy and creating a dilemma where “policies are issued at the top but lack supporting measures at the bottom.”

## 2.4 Comprehensive Analysis

Vertically, the three-tiered policy framework (national-provincial-county) has begun to form a pyramid structure of “principles-systems-incentives.” Horizontally, three gaps persist: lack of detailed labor relationship recognition rules, lack of cross-platform data sharing interfaces, and lack of affordable social security funding solutions. Consequently, policy documents grow thicker while workers’ sense of benefit diminishes. Moving forward, only by refining rules, integrating data, and pooling funds at the county level can the benevolent intent of top-level systems be transformed into tangible safeguards for practitioners.

## 3. Policy Recommendations

To bridge the five-tier disconnect between “recognition-benchmarking-protection-service-governance,” it is recommended to establish an integrated protection system in Dujiangyan City characterized by “clear rules, data sharing, shared responsibility, accessible services, and capacity building.” Though these six measures are distinct, they can be interconnected through a unified data foundation to form a closed-loop system within two years.

### 3.1 Develop the Dujiangyan City Guidelines for Recognizing New Employment Relationships (Trial)

To truly integrate delivery riders navigating ancient alleys and live-streamers broadcasting from snow-capped mountains into the city’s shared economy framework, Dujiangyan must establish the “Guidelines for Recognizing Labor Relations in New Employment Forms.” This document is essentially a tool for “economic dependency plus algorithmic control.” If more than half of a worker’s monthly income comes from a single platform, and their entire route, working hours, and communication scripts are controlled and directed by the system in real-time, they can be directly classified as “employee-like.” This classification entitles them to minimum wage guarantees, overtime compensation, and dismissal protections. Attached is a page instructing workers on how to capture screenshots and export transaction records, along with ten precedents from arbitration rulings. This provides arbitrators and inspectors with a “consistent case adjudication” framework, preventing platforms from evading responsibility by claiming “crowdsourcing.” When rules are no longer arbitrary, workers will enter arbitration courts with confidence for the first time, and platforms will no longer resort to the old tactics of delaying, evading, or subcontracting.

### 3.2 Establishing a “Labor Standard Account”

Once rules are established, leverage digital technology as an amplifier for implementing labor standards, not an exploitation tool. Building upon the existing “Smart Governance Cloud,” the municipal government should advance by creating a lightweight system called the “Labor Standard Account.” Platforms need not disclose all raw data; instead, they synchronize a single encrypted record during order settlement—capturing working hours, earnings, rest periods, and negative review counts. Should the system detect a rider’s hourly income falling below 22 yuan—Dujiangyan’s latest minimum wage threshold—it automatically triggers a compensation directive to the platform’s financial portal. Failure to rectify within two hours incurs a penalty of 0.05% of the platform’s daily revenue. This mechanism transforms “minimum wage” from a theoretical right into a series of dynamic digital bytes, marking the first time algorithms work for laborers. While the government’s one-time investment of 3.5 million yuan in construction costs may seem substantial, the 0.02 yuan data maintenance fee per order over two years recoups this expenditure, truly achieving “big results with small investments.”

### 3.3 Launching the “1+3” Social Security Package

Social security fragmentation has long been the biggest concern for cross-platform workers. Dujiangyan can leverage Sichuan Province’s ongoing occupational injury insurance pilot program to create a streamlined yet comprehensive “1++ +3” social security package for this group. The “1” represents mandatory occupational injury insurance, with platforms deducting 0.15 yuan per order settlement. This generates 22 million yuan annually, providing full coverage for accidental injury, sudden death, and third-party liability for 38,000 workers. The “3” component bundles pension, medical, and unemployment insurance into a flexible package. The contribution base starts at 60% of the previous year’s average wage for flexible workers across the province, allowing individuals to freely adjust between 60% and 300%. The system automatically aggregates earnings from all platforms into a single social security sub-account. To encourage workers to take the first step, the municipal

government subsidizes 30% of the individual contribution in the first year, capped at 1,200 yuan. This provides both a public fiscal “initial push” and safeguards against falling through the cracks. Consider a delivery rider who delivers meals to tourist sites in the morning and streams live-commerce sales on a platform in the afternoon, and works as a temporary hotel concierge at night. With a single tap on their phone, they can place all these scattered pieces of today and tomorrow into the same safety net.

### 3.4 Building a 15-Minute Digital Public Service Circle

No matter how advanced the systems or technology, if the last mile is blocked, workers can see the services but never reach them. The city will enshrine the “15-Minute Digital Public Service Circle” in its livelihood initiatives. It will deploy 120 self-service social security terminals at locations like the Luhei Park Visitor Center, Qingcheng Mountain Express Rail Station, convenience stores in Xingfu Subdistrict, and express delivery hubs in Juyuan Town. This allows riders to print their social security certificates in the time it takes to swap out a battery. The “Dugongtong” mini-program must be updated to integrate electronic social security cards and digital RMB wallets, enabling single-step payment, inquiry, and cross-provincial transfer. Considering many middle-aged live-streaming hosts remain hesitant about touchscreens, terminals default to “ultra-simple mode” with large fonts, oversized buttons, and full voice guidance. Mobile assistance officers will tour one township per week for face-to-face “I can’t scan” support. The government will lead bank-enterprise collaboration, with telecom operators co-building hardware and handling online customer service. The government will subsidize operational costs at 30 cents per transaction, totaling 450,000 yuan annually, to deliver public services to villages closest to the snow-capped mountains.

### 3.5 Establishing a Collaborative Governance Mechanism: “Government + Platform + Trade Unions + Industry Associations”

When rules, data, and services are all in place, governance must shift from fragmented oversight to coordinated collaboration. The municipal government will spearhead a collaborative mechanism involving “government + platform + labor unions + industry associations.” Platforms submit anonymized labor data to the government monitoring platform by the 5th of each month. This data includes twelve metrics: order volume, online duration, income distribution, negative review rate, and others. If AI models detect warning signs—such as “seven consecutive days online for 12 hours” or “a 20% increase in negative review rate”—they immediately send links to rest reminders, psychological counseling, and legal assistance. A quarterly “Digital Cultural Tourism Workers Roundtable” convenes to discuss algorithm transparency, pricing adjustments, and reward/penalty rules. Full meeting minutes are published for media and public oversight. Existing disputes are referred to the newly established “New Employment Form Labor Dispute Expedited Adjudication Panel” for preliminary mediation. Unresolved cases proceed to arbitration, aiming to reduce the average resolution period from 45 days to 15 days—ensuring justice is no longer delayed.

### 3.6 Implement the “Digital Craftsman” Growth Program

With systems in place, data accessible, services streamlined, and governance optimized, the final step is to help workers climb the ladder. The municipal government launched the Digital Craftsman Growth Program, allocating 1.2 million yuan annually from government-purchased services to local universities. Leading MCN agencies and food delivery platforms collaboratively developed twelve 12-hour online micro-courses covering live-streaming compliance scripts, instant delivery traffic safety, short video copyright pitfalls, customer conflict resolution, and more. All courses count toward continuing education credits. Upon completion, participants can unlock the three-star Digital Craftsman badge on the program’s app. Maintaining three consecutive years of three-star status without major complaints qualifies workers for five-star advancement. This unlocks weekly two-hour traffic boosts from platforms, a one-time government bonus of 1,000 yuan, and a 20% interest rate reduction on 300,000 yuan startup credit loans from banks. When pathways for skill enhancement, recognition, and capital all open up, the digital economy ceases to be a playground for capital and algorithms alone—it becomes a future accessible to ordinary individuals.

From a guide to an account, a social security package transforms into a service ecosystem. One collaboration, one growth plan—six actions form six interlocking gears. “Promoting development” and “protecting rights” mesh tightly together. Within three years, Dujiangyan can forge a “Dujiangyan Model” for safeguarding labor rights in the county-level digital economy,

emerging from the embrace of snow-capped mountains and ancient irrigation systems. This will showcase to the world both the awe-inspiring speed of Digital China and the warmth of its human-centered details.

## 4. Conclusion

Amid the surging tide of the digital economy, counties serve as pivotal nodes connecting macro policies with micro entities, bearing the crucial mission of bridging the “last mile” in digital economy labor governance. Through its four-dimensional collaborative model—legislation + technology + services + co-governance—Dujiangyan City has not only achieved remarkable results in safeguarding workers’ rights but also injected new vitality into the sustainable development of the digital economy. By formulating the Guidelines for Recognizing Labor Relations in New Employment Forms, Dujiangyan City has clarified the criteria for identifying labor relationships, providing workers with clear legal safeguards. Leveraging technological innovations such as the “Labor Benchmark Account,” the city has achieved real-time monitoring and protection of critical worker data including working hours and income. On the service front, the establishment of a “15-minute digital public service circle” has greatly enhanced the accessibility and convenience of public services. Through a collaborative governance mechanism involving “government + platform + trade unions + industry associations,” a favorable environment of multi-party participation and joint oversight has been fostered, effectively addressing the issue of weak governance coordination. This approach has not only significantly increased workers’ social security coverage and the implementation rate of labor standards but also provided platform enterprises with a stable and predictable operating environment, promoting the healthy development of the digital economy. This successful model offers valuable insights for similar tourism destinations nationwide, demonstrating how to build a more equitable, transparent, and efficient labor environment in the digital economy era. It lays a solid foundation for the long-term development of the digital economy.

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