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Combatting the Algorithms:

How Chinese Delivery Riders Survive and Thrive in the Platform Economy

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Abstract

The burgeoning platform economy has given rise to a new form of gig labor, providing flexibility yet entrenching workers in a precarious state of existence. In this paper, I investigate the paradox of technological innovation and deteriorating labor conditions, focusing on the case of China's food delivery industry. Drawing on published sociological ethnographies and firsthand social media accounts from delivery riders, I find that the delivery platform enforces pervasive yet covert digital surveillance on riders through acting as the enabler, mediator, and evaluator of the delivery process. Platforms also restructure labor relationships to evade employer responsibilities and legal obligations. I argue that the platform, despite appearing to be a neutral agent, has enforced "submerged algorithmic management" that systematically dictates, monitors, and disciplines workers' behaviors in ways that remain largely invisible to them. Despite the tightening grip of digital control, riders demonstrate creative resistance by leveraging algorithmic loopholes and solidarity networks. I conclude by highlighting recent legislation and public policies aimed to uplift the working conditions of delivery riders.

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“I’m running late again.”

I watch Chichi as she juggles through GPS, texts, and delivery instructions on her phone screen with one hand, two loaded takeout bags on the other, murmuring to herself in a low but exacerbated tone.

Chichi is a female delivery driver and content creator. I caught a glimpse of her life through social media where she shares clips of her daily routine as a delivery driver. As she traverses through the city traffic on her scooter, hiking up the stairs of residential condos and shuffling for the right orders at pickup counters, she rarely stops to take a breather. She can’t – the next delivery is running out of time. She has to hustle.



Figure 1 Delivery rider checking his phone for order information



Figure 2 Phone displaying delivery navigation
(Caption reads: “the algorithm will plan your route in advance.”)

Chichi averages 8-10 hours of delivery work every day, taking over 40 orders from kitchens to doorsteps. To get each order to the right place at the right time requires flawless execution. This is no simple task. Zhao Yan, who joined Meituan in 2019 as a part-time rider, distinctively remembers her first month on the job. She could only handle one order at a time as she kept running in circles trying to find the correct apartment building and unit number.

“Just run. Run like your life depends on it. My heart almost jumps out of my chest during peak hours,” she remarked (Sun 2024, 150). Zhao recalled climbing up so many floors that first week that her legs could barely function on the way down.

But things do get better with time. In his journal, Tom observed how much his efficiency improved over a month at the job. It used to take him ten hours to complete 18 orders. He now accomplishes the same in under four. In China, the average time it takes for a freshly placed order to arrive at one’s door has accelerated from one hour in 2016 to under 30 minutes today, and it is the hard work of millions of delivery riders like Chichi, Zhao Yan, and Tom who make this miracle a tangible reality. The riders weave together an intricate fabric across the urban landscape, embodying the mobility and connectedness of the modern Chinese economy.



Figure 3 Delivery rider on vehicle lane in snowy weather



Figure 4 Group of delivery riders leaving for work

The true orchestrator of this bustling urban network, however, remains behind the scenes – the delivery platforms. In the recent decade, China has undergone a drastic transition from labor-intensive manufacturing to a knowledge-based digital economy. The government invested heavily in domestic technology sectors as part of its market-oriented reform, mirrored by consumers' enthusiastic adoption of mobile internet. Platform enterprises emerged in this context and have rapidly expanded to capture almost all sectors of economic activities. Platforms are digital infrastructures that facilitate interactions between demanders and suppliers as an

intermediary (ILO 2022). In the delivery service industry, Meituan and Ele.me are two monopolies that have grown to dominate the market, capturing over 90% of combined market share since 2020 (China Labour Bulletin 2023). The burgeoning platform economy also creates the need for a new form of flexible, temporary, and on-demand employment – often referred to as “gig workers.” Meituan, for example, reports a record of 7.45 million delivery riders registered on its platform as of 2024, a near 20% increase from the year prior, it is a testament to the sweeping expansion of the platform economy (Meituan News 2024).

The platform economy, heralded as the technological revolution of the century, injects dynamism into the Chinese economy and envisions a new way of life in the digital age. Yet the plight of the delivery riders looms large. Like Chichi, many riders are stuck in a loop of endless hustling, always racing against the clock to get orders delivered. Why have the technological innovations brought by the platform companies paradoxically intensified the burdens of labor instead of alleviating them? Why has the meticulous organization and management within the platform economy failed to reduce participants' working hours, instead binding them ever more tightly to the platforms? Why do seemingly attractive earnings fail to retain delivery riders, instead accelerating their occupational turnover?

To answer these questions, I will first situate delivery riders in the context of gig labor and proceed to assess whether delivery service should be considered a “good job” under the platform economy. I find that strenuous physical and psychological work combined with the lack in legal protections and institutional support subject riders to a fragile and precarious existence, resulting in high occupational turnover.

In the subsequent sections, I will delve into the multi-dimensional roles that the platform attempts to fulfill, or in some instances, avoid. I attempt to show that although the platform

portrays itself as an objective enabler, mediator, and evaluator of the delivery process, yet in every case it has strengthened its reign of power, perpetuating a pervasive yet submerged web of digital control. The platform has also tactfully restructured work relationships in order to evade employer obligations and circumvent legal liabilities. I argue that delivery riders experience what I term as “submerged algorithmic management”. While workers may perceive a sense of autonomy and discretion due to the lack of direct managerial oversight, they are often unaware or cannot fully comprehend the intensive data collection and surveillance technologies operating behind the scenes. As such, information and power asymmetries are built into gig working relationships. Workers must blindly navigate and conform to an increasingly demanding set of rules and expectations by the algorithm with little recourse.

Finally, despite the platform’s omnipresent yet invisible strings of control, I would like to shed light on how delivery riders thrive through ingenious acts of resistance against the algorithm. I hope to conclude on a note of hope by highlighting recent legislation and public policies aimed to uplift the working conditions of delivery riders.

I. Who are the Delivery Riders?

What are the people turning the wheels of the booming delivery service industry? What drew them to this line of work in the first place? Based on data collected by the International Labor Organization (ILO), riders are typically men between the ages of 20 and 35, with over 70% having an education level below high school (Chen 2024, 186; Chen and Sun 2023). Many

riders come from rural areas and have previously worked in service, manufacturing, and construction industries.

	2018	2019	2020	2021
Average Age	23.6	27.2	31	31.7
Gender Ratio (Male to Female)	2.7	5.3	10	5.3
Percentage of married workers	30%	49.2%	57.4%	58.7%
Percentage of migrant workers	90.7%	93.8%	93.1%	85.1%
Place of origin of the workers Top 3	Shanxi Gansu Beijing	Hebei Shanxi Henan	Hebei Henan Shanxi	Hebei Henan Shanxi

Figure 5 ILO Demographics of Delivery Workers (2018-2021)

Financial strain is a common challenge among riders as 84.91% of riders carry more than ¥10,000 RMB (~\$1,400) in debt (Sun 2024, 28). As opportunities in traditional sectors declined since the onset of the COVID-19 pandemic, rural workers struggled to secure a stable livelihood and increasingly turned to the delivery service industry, which happens to be scaling up its demand for labor. Yet, statistics show that few riders remain in the job long-term. Some delivery centers report over 70% annual turnover as many riders work part-time and leave within three months on the job. In any month, 20-30% of the team might leave while 50% more join (Sun 2024, 40). With its rapid growth and significant churn rate, the delivery service industry has become a pillar of the gig economy, absorbing a steady influx of transitory labor and providing critical job opportunities during times of uncertainty.

When asked about why they took up this job, riders often refer to “words on the street” about decent earning prospects (Sun 2024, 95). Indeed, in a 2024 report published by Meituan, frequent riders in the largest cities of China (Beijing, Shanghai, Guangzhou and Shenzhen) earn an average of ¥7629 - ¥10865 (\$1050-\$1550) a month, a figure well over the blue-collar average of ¥6043 (\$860) (Meituan News 2024). The promise of financial security attracts many who are struggling to make ends meet. Signing up to be a delivery driver is also a straightforward

process, there is virtually no requirement for previous work experience or qualifications other than proof of good health (Sun 2024, 26). Simply download the driver app, enter basic information, get an electric scooter, and you are ready for your first order. The low barrier of entry combined with the prospect of flexible hours and immediate payment is a strong appeal to many workers.

“Freedom” is another word that comes up in rider interviews (Dianwoda 2019, 13). As Yan, a Shanghai-based rider, explains, “(Riders) are definitely freer compared to a 9-to-5 job. If you're tired, you can go home and take a nap. Freedom also means that if something else comes up in your schedule, you no longer have to request a leave or work around your shift, like you would in a regular job” (Dianwoda 2019).

In the eyes of delivery riders, “freedom” has multiple meanings, it is the physical liberty to navigate city streets and the autonomy to choose their working hours. The more they work, the more they earn. Working as a delivery driver, therefore, seems like a decent short-term gig that provides financial security and flexibility as people search for the next stage in their lives.

II. Is Delivery Rider a “Good Job”?

The reality might paint a different picture. Meituan’s report on average earnings pertains only to frequent riders, which is defined as individuals active on the platform for more than 260 days a year. Among the 7.45 million riders registered on the platform, 11% fall into this category. The vast majority, however, are either “low frequency” drivers who are active at work between 30-260 days within a year (41%), or “temporary” drivers who log on for less than a month (48%) (Meituan News 2024). These part-time riders don’t earn nearly as much. The freedom being a platform worker means that most riders are not held to a minimum of working

hours and they also receive no base salary. How much riders earn, therefore, is a function of how many orders they get through in a day. Chichi, for instance, could be making anywhere between 150 to 250 yuan (\$21-35) per day depending on traffic, demand, and most importantly, how many hours she commits to delivery. Missing an hour of work comes with the real cost of losing an hour's worth of livable wages. Transitional laborers, therefore, are exposed to a higher level of financial uncertainty and volatility in their work.

Strenuous physical work over demanding hours places a heavy toll on their health. In a 2023 survey of Beijing delivery riders, 53.48% stated that they had experienced physical strain or injuries due to delivery (Sun 2024, 209). Besides physical exhaustion, riders also face stark psychological and identity challenges, as many report a high level of stress and anxiety when they fail to deliver orders on time. Even after work, they rarely feel a sense of belonging. Among the millions of delivery riders in Shanghai and Hangzhou, more than 90% do not hold city *Hukou* (户口), a legal certification of individuals' place of residence. Not having *Hukou* means riders are not entitled to essential services such as housing, education, healthcare, and other social benefits (Chau 2023). Floating like tumbleweeds, riders' informal status at the workplace and beyond leaves them in a vulnerable and marginalized state of being, feeling like “perpetual strangers” to the cities they once dreamed of settling in.

The platform economy thrives on the premise of flexibility and independence, but it also subjects workers to a precarious existence. Ashford et al. (2018) propose five structural characteristics that underscore the particular reality for gig workers: financial instability and job insecurity, autonomy, career-path uncertainty, work transience, and physical and relational separation. Taken together, these five conditions are emblematic of the socio-economic and existential challenges that workers have to navigate on a daily basis. As a result, workers find

themselves entangled in a world of oscillating emotions, experiencing heightened senses of anxiety and fulfillment at overlapping moments. Over the long term, however, the pervasive uncertainty about their ability to secure steady streams of work and identity constantly drains workers' coping resources, leaving them no time for recovery. A gradual accumulation of work strain can further erode workers' subjective well-being and sense of purpose (Ashford, Caza, and Reid 2018, 9-12). Without a proper institution to provide resources and support, workers are left precariously stranded in the face of the evolving complexity of their working lives. Many riders only viewed delivery work as a short-term survival strategy rather than a viable long-term career, leading to rapid churn as they seek better opportunities elsewhere.

III. The Platform Magic

Despite the fiscal and emotional plight of the delivery workers, the platform companies have delivered impressive financial results. According to Meituan's 2024 earnings report, the local commerce segment reached 60.7 billion yuan in revenue, with an operating profit of 15.2 billion yuan and an operating profit margin of 25.1%. For the same period, the total profit of Beijing's large-scale food catering industry (with annual revenue over 10 million yuan) was only 180 million yuan, a year-on-year decline of 88.8%, with a profit margin as low as 0.37% (Foodthink 2024). Against the grim backdrop of the food catering industry, Meituan seems to be performing extraordinarily well. As Meituan's margins continue to rise, however, riders' earnings per order keep declining from 4.77 yuan per order in 2018 to 4.40 yuan 2022 and further dropped to 4.13 yuan in 2024 (Meituan 2024). The data seems to suggest that the platform is more than just a passive intermediary. By strategically positioning itself as an

indispensable nexus through which goods and services must flow, the platform creates as much as it exploits value from both the supply and demand sides of the value chain.

How, then, does the platform make itself indispensable?

Imagine you're a delivery person who needs to drop off orders at different locations, but you want to take the shortest possible path, visiting each stop exactly once before returning home. Sounds simple, right? But as the number of stops increases, the number of possible routes actually scales to near infinity. For just 10 stops, there are more than 3.6 million potential ways to travel, and it is impossible to find the best and most time-efficient solution with the human brain (Wright 2024). The delivery industry back in the day relied on dispatchers to manually pair riders to orders, making judgements based on empirical experience. With the advent of machine learning algorithms, however, it is now possible to solve for the optimal delivery route in the blink of an eye.

Platform companies have solidified their dominance by pioneering algorithms that automate and optimize the delivery workflow, effectively replacing the need for a human planner. After receiving an order, the delivery algorithm works to factor in variables such as the rider's location, future order volumes, restaurant prep time, delivery difficulty, weather conditions, etc., to generate an estimated time of delivery. Then, it assigns the order to the most suitable rider and continues to monitor for potential delays, in which case it will dynamically rematch to the next best rider based on time and location. Meanwhile, the algorithm provides riders with the restaurant's expected prep time, integrates various order assignments into an optimal delivery route, and helps riders navigate through live voice messages. What seems to be an overly ambitious vision can now be accomplished in a split second. Indeed, data published by

Meituan shows that their delivery system “super brain” can optimize for a delivery route in as fast as 0.55 milliseconds (Chen 2021, 123).

The seemingly innocuous and utilitarian designs of the platform, however, have over time entangled more riders in a restless pursuit of speed and efficiency. While algorithms streamline operations, they also impose relentless surveillance, tighter delivery timeframes, and gamified incentive structures that push riders to work harder, faster, and longer—all without the benefits of stable employment.

A. Platform as Enabler

The platform supplies various technological tools and aids to streamline the delivery process. As the virtual “dispatch center,” the platform is responsible for aggregating real-time demand and optimally matching delivery riders to orders. The key to this puzzle, as Meituan’s technology team explicates in their research blog, is the vast amount of historical data they accumulated from delivery backlogs, driver location and trajectories, and real-time environmental and traffic input. The data is then fed into the machine learning algorithms, which extract patterns and knowledge from the data to generate accurate predictions. Meituan’s tech team has developed what they call a “super brain” delivery system, encompassing seven core capabilities including big data processing and computation, learning-based optimization, multi-sensor integration, IoT and location-based management, dynamic pricing, dispatch, and zoning

systems. Below is a visual representation of the “Super Brain” and its core functionalities, as translated from Meituan’s tech blog (Meituan Tech Team 2018).

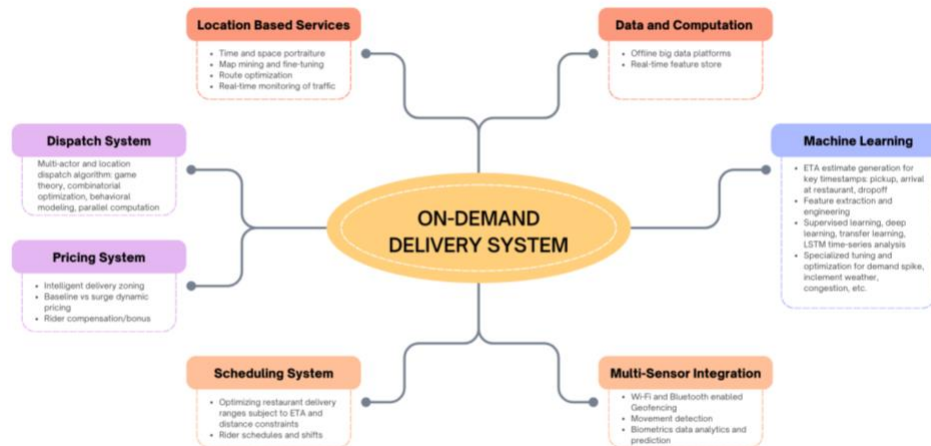


Figure 6 Mindmap of Meituan's "Super Brain" Algorithm, translated from Meituan's blog post (2024)

As a tech enabler, the delivery platform has streamlined the delivery process with unprecedented precision and granularity. How does it keep every minute detail in check? To get orders to the right place at the right time, location and ETA estimates are of critical importance. Consider first the navigation feature. Thousands of riders traverse the city streets in any given moment, weaving through tightly clustered buildings and dense webs of traffic, thanks to the live instructions and guidance from the embedded navigation system. Riders are expected to meet their customers at the exact designated location, often down to a specific unit number in an enclosed space with poor GPS signal. Navigating riders to the wrong drop-off location could be disastrous in this case, very likely leading up to a thirty-minute detour and a cascading number of delays.

In their blog, Meituan’s tech team discloses how they solved this challenge using data from rider trajectories. Every day, thousands of orders are delivered in a given residential area, and riders are always required to confirm their delivery upon meeting customers at drop-off. Meituan was able to log riders’ GPS coordinates at the point of delivery and plot their location data on a digital map (see below).



Figure 7 Digital Representation of Meituan Riders' GPS Coordinates

As order volumes accumulate, so does the density of the location coordinates. Through data pruning and sanitization, the algorithm was then able to pin down the most accurate and frequently requested drop-off locations. At the 2022 World Artificial Intelligence Conference, Dada Express, a delivery platform company, presented how it utilized clustering algorithms to analyze billions of rider-generated trajectory data points to identify building locations within residential communities. After calibration, the accuracy of building coordinates improved to 95.1%, significantly higher than third-party apps (Chen 2022, 87).

ETA estimate is another crucial variable to get right. As riders move along in their delivery journey, phone sensors detect their state of motion in real time (e.g., sitting, standing, or running), and GPS data is collected to track their movement trajectories. Through a technique called “geofencing,” the algorithm leverages GPS, radio-frequency identification (RFID), Wi-Fi, cellular, and Bluetooth data to construct a “virtual fence” around the merchant and residential areas, capturing riders’ range of movement even in indoor spaces. Finally, riders’ biometric

information such as height, step size, and average walking speed are encoded as feature data, which the algorithm factors in to generate the most accurate personalized proximation of their delivery time (Meituan Tech Team 2018).

In both cases, rider-generated data is essential for achieving the precision and granularity required in location and ETA estimates. Arguably, the rider's data is what enabled the algorithm to flourish in the first place, allowing it to constantly iterate and improve the quality of its predictions. With their situated knowledge and know-how of Chinese cities, delivery riders effectively assume a dual identity fulfilling delivery orders in the physical world while mapping out a digital twin of the cityscape in the virtual world (Chen 2022, 92). Although the platform has benefitted immensely from both roles, riders rarely get accredited or compensated for the latter. They are perhaps also (blissfully) unaware of the incessant data gathering and tracking behind the scenes and many just click through the data privacy notice without giving it much thought.

What riders *do* know, however, is that the clock is ticking faster on the platform. Orders that used to be granted 50 minutes for delivery are now expected to be dropped off in less than 45 minutes. Delivery time, arguably the most essential variable being measured and scrutinized, informs the platform how long an order should take on average. If most riders arrive in less than 50 minutes, then the platform learns about the overestimate and recalibrates its expectations, allowing less time for delivery the next time a similar order shows up.

This is how time disappears in the system. No longer a natural rhythm dictated by human needs, time has been transformed into a tool of discipline as it is meticulously measured, standardized, and regimented by the algorithm. The modern platform algorithm dictates the pace of riders, converting every second into a measurable unit of productivity, a striking parallel to

E.P. Thompson's (1967) description of how time first became mechanized in the 19th Century factories. Caught in the platform's ever-tightening expectations, riders are forced into a vicious cycle, racing against other riders and also themselves. When an order is running out of time, many riders resort to speeding, running red lights, or cutting dangerously through the flow of traffic at the expense of their own safety. Ironically, the faster they run, the harder the race becomes.

In essence, all-encompassing surveillance technologies situated riders in a "modern panopticon," where the slightest deviations and discrepancies do not escape the eye of the algorithm. Technology enables as much as it entraps riders in an endless loop of exhaustion and risk.

B. Platform as Mediator

The platform coordinates communication between the customer, merchants, and the delivery riders. The three important time stamps in the delivery process are arrival at merchant, order pick-up, and drop-off to customer with each step requiring the rider's active confirmation on the platform. When they arrive at a restaurant, for instance, riders need to hit a button on their app saying, "I have arrived." Once the rider's location is verified, the platform updates the order status to the next timestamp and pushes the change to the customer end simultaneously. Customers are also able to track the real-time location and status of their order on the app, with options to directly connect with the rider or customer support for assistance. As the restaurant prepares the order, riders can check on the platform for an estimated wait time and adjust their delivery plans on the fly. Experienced riders know which restaurants typically take the longest to

prepare orders and use this data to strategically prioritize more urgent orders or faster pickups (Chen 2021).

While the platform claims to be a mediator of communications, riders almost always bear the brunt of unexpected delays, customer disputes, and physical and financial risks. In her longitudinal ethnography of over 100 delivery riders, Sun Ping highlights how working as a delivery driver is a physically and emotionally intense form of labor (Sun 2024, 98). Platforms make the rider's location and trajectory highly visible to the customers, who can grow frustrated if they observe stagnation or unexpected movements of the rider. The likelihood of complaints spikes especially during peak hours, when order volumes balloon and riders are forced to strategize between multiple assignments. If an order runs overtime, however, customers tend to blame the driver, assuming their tardiness or incompetence caused the delay. What they don't know is that various situational factors lie beyond the rider's control such as the order prep time, road traffic, inclement weather, or unforeseeable hurdles such as an overcrowded elevator or difficult security guard. Most riders have experienced at least one furious customer lashing out at them for a delay, and they had no choice but to endure the heat. To prevent customers from filing complaints, some riders have rehearsed scripts for apologies, while others go the extra mile, giving out complimentary snacks and beverages or volunteering to take out their customer's trash in exchange for a good review (Sun 2024, 107).

Far from being a fair arbitrator, the platform consistently fails to address the challenges faced by riders. Instead, when disputes occur, it almost always rules in favor of customers and restaurants. From the perspective of the platform, maintaining the trust and satisfaction of their users is a top priority. To retain users, the platform frequently compensates customers for order issues by waiving charges or applying discounts for future orders. Without a beat, it then turns to

the riders to recuperate the financial loss. In cases of delayed orders, riders can have up to 100% of their delivery fees deducted as a penalty. The platform can also charge fines ranging from 200-1000 yuan depending on the severity of the situation.

Wei Dong, a Meituan crowdsourced rider, came back from two rounds of delivery with fresh scars on his left arm. He was going too fast on his scooter and tripped over, yet four orders still ran over time. When asked about what he would do, Wei sighed, “If the rider is not responsible for the delay, then theoretically they could appeal for the fine to be revoked. I waited too long for an order and the customer simply wouldn’t pick up my calls. I am requesting for the fines to be removed, but I doubt if the system will approve any” (Chen 2022). In reality, appeals are rarely successful. Worse yet, if a dispatch hub experiences repeated delays, its rating can be downgraded, impacting the entire team’s bonus. Riders are therefore subject to intensified stress and anxiety

While claiming itself as the mediator, the platform has strategically rendered itself invisible during times of conflict. Rather than actively intervening on riders’ behalf, the platform’s choice to remain silent implicitly shifted the downside financial and reputational risks onto riders.

C. Platform as Mediator

The platform publishes rider ratings and establishes a system of rewards and punishment to incentivize performance. Riders with consistent attendance, strong delivery performance (track record of high order volume and timely delivery), and positive customer ratings can “move up the ranks,” receiving benefits such as higher earnings per order and priority assignment by the platform. On the other hand, if riders receive negative reviews or complaints,

the platform may deduct a portion of their delivery fees, apply penalty charges, or even temporarily suspend their accounts as punishment.

Meituan rider Wang shared a screenshot of the star rewards program launched by his dispatch center (see below). When riders reach the bar of 700 orders a month, their earnings per



Figure 8 Translated image of Delivery Center's Star Reward Program

order rise to 7.2 RMB (about 1 dollar), which will keep increasing if they hit higher thresholds like 800, 1000, or 1400 orders per month. Riders also accumulate points from quality service and high ratings. As riders level up from one-star to six-star, they receive incremental increases in bonus for every order. Higher level riders can also unlock additional privileges such as no-penalty overtime, extra order volume, peak hour bonus, and order transfer-out options.

While the platform claims to be an evaluator, it has distorted incentives and enticed riders to commit longer hours to work. Advancing in a tiered reward mechanism with special

promotions and privileges is not unlike the experience of upgrading in a game. The most obvious parallel is the special titles riders earn as they level up. Starting from bronze tier to silver, gold, and diamond tiers, these titles are an act of tribute to the most viral online game in China, “King of Glory.” Like in games, the platform outlines a series of rules and regulations that participants must follow, with clear mechanisms of reward and punishment (Chen 2019, 118). To further entice riders, the platform routinely publishes scorecards and leaderboards, ranking rider’s delivery performance in descending order. Moreover, the platform organizes seasonal rider competitions, where riders fulfilling the highest number of orders in a time period claim the final prize (Sun 2024, 66).

Beyond monetary rewards, the ranking system is also understood among riders as a status symbol, as those who dominate the leaderboard become sources of both admiration and envy. Moving a step forward in the leaderboard therefore provides riders a positive psychological validation, establishing a sense of worth and achievement in their work.

Liu Lidun is a well-respected “king of delivery” in his rider community. He logs on at 5 AM sharp every morning and stays on for more than 15 hours. Other riders jokingly call him a “robot” because he doesn’t seem to eat or sleep at all (Chen 2024, 75). Liu recognizes that delivery work is not skill-intensive, rather, it entails executing repetitive commands with care and patience. In order to earn more than other riders, he has to put in more hours. Indeed, many riders like Liu are acutely aware of the highly replaceable nature of their labor. Left with little room to bargain, those who are financially insecure become further entrenched in working longer hours. Wang, a full-time rider at Meituan, clocks out at 10 PM every day before logging on to Ele.me for his second shift as a part-time rider. Since platforms don’t allow individuals to sign up as both full-time and part-time, Wang and at least 20% riders like him elect to work for

multiple platforms or continuous shifts, committing double-digit hours at delivery every day (Hongxin News 2024).

By locking riders up in a gamified system, the platform has artfully disguised the exploitative nature of its demands. The platform manages to hold onto a delicate balance where they reward both financially and psychologically the riders just enough that they stay glued to the system. Swept up in the incentivization schemes, riders are propelled to take on more orders and deliver them in shorter increments of time. The platform fabricates an illusory sense of subjectivity, leading riders to believe that they are voluntarily embarking on a “thrilling and challenging adventure.” In truth, however, riders find themselves increasingly tethered to the platform’s commands, drawn deeper into a self-perpetuating cycle of relentless competition.

The delivery platforms seek to craft a story of the new world of labor, where workers would flourish in a decentralized network with unprecedented levels of independence and autonomy. Yet, the ultimate paradox of the platform is that its incentives are never aligned with the riders. At its core, the algorithms are designed to solve for the most efficient, profit-maximizing solution, prioritizing optimization over workers’ welfare. In the quest for productivity, workers are reduced to quantifiable and malleable data points, and every aspect of their labor is fine-tuned to extract the most output at the least cost. Assuming the three-pronged roles of an enabler, mediator, and evaluator, the platform institutes a ubiquitous and insidious form of digital control.

D. Platform as Employer?

The platform, in its omnipresence, surveils and controls every aspect of the rider's behavior. Yet, despite the many roles it assumes, there is one it carefully evades, the role of an employer.

When delivery service first started to gain traction (2010-2016), platforms adopted a direct hiring approach. In order to attract and retain workers in the labor market, platforms offered to sign formal labor contracts with workers and assumed full employer responsibilities, including contributions to social security, pension, health and injury insurance, etc. After 2018, as the market appetite for delivery services skyrocketed, the demand for delivery capacity also grew exponentially. As platform companies progressed with rapid-fire hires of a growing fleet of delivery riders, they also strategically pivoted their hiring practices.

Platform companies evaded employment law obligations by restructuring work relationships as contracting relationships, shifting the downside risk to third-party staffing agencies which eventually gets passed onto the riders. The hallmark of this shift is the outsourced hiring model. Platforms contract out the hiring process to third-party agencies, who manage compliance, payroll, and other human resource decisions on the platform's behalf. Furthermore, platforms reclassified their work relationship with riders into specific categories. Riders fall under either the dedicated delivery model or the crowdsourced delivery model.

A detailed breakdown of the two models and their characteristics is outlined below

(iResearch 2024, 26):

	Dedicated Delivery Model	Crowdsourced Delivery Model
Employment Agreement	Sign labor agreements with hiring agencies	No labor agreements required
Management & Supervision	Stricter management from local dispatch centers	No direct supervision, self-managed
Work Structure	Fixed delivery zones, working hours, and order volumes	Self-register on the platform and claim orders as desired
Uniform & Training	Required to wear standard uniforms and participate in routine training	No uniform or training requirements
Flexibility	Limited flexibility due to fixed schedules and requirements	Highly flexible, riders choose their own working hours and order volumes

Figure 9 Comparison of Dedicated and Crowdsourced Delivery Models

What is shared among the different categories of riders, however, is that none of them are legally recognized as full-time employees. Transitioning from direct to outsourced hiring, the platform has tactfully dissociated itself from the employer role. As a result, the percentage of labor contracts signed has steadily declined. Riders are no longer entitled to receive base salaries, benefits, insurance, and various other employee protections. Instead, labor force management solely becomes the responsibility of HR service providers. Because of the sheer scale of their labor force demand, Meituan and Ele.me contract hundreds if not thousands of these third-party staffing agencies across cities. Due to the lack of regulation, disqualified providers engage in clearly violative and non-compliant practices, such as withholding or delaying monthly salaries from riders or requiring a two-month advance notice before riders could resign. Worse still, some agencies again shoved workforces beyond their service capacities to downstream subcontractors, further complicating the labor relationship composition (Zhicheng Legal Services 2021, 17).

At the same time, delivery platforms started recommending that riders register as “independent contractors,” claiming that it can help riders qualify for tax credits. However, what the platform perhaps intentionally omitted was that independent contractors do not constitute a

labor relationship with either the platform or staffing agencies. As a result, platforms only need to pay riders a commission fee for their service without offering other rights or protections as prescribed by labor laws (Sun 2024, 125-126).

Most delivery riders are left disoriented and overwhelmed by this new modality of workforce management. In a 2021 survey, 23.49% of riders said that they were unclear if they had signed a labor agreement, and 16.9% could not identify the specific type of labor arrangement they had agreed to (Sun 2024, 126). Another survey conducted with over 115 riders shows that 63% of dedicated riders assumed that third-party agencies are their legal employers, whereas 28% assumed the platform as their employer, both of which are in fact incorrect (Yilian Legal Center 2020). More than 60% of crowdsourced riders also did not purchase individual social security or health insurance, subjecting themselves to greater physical and financial risk during emergencies (Sun 2024, 36).

The intentionally elusive definition of labor relations also makes it exceedingly difficult for workers to defend their rights. During labor rights disputes, riders often find out that their labor arrangement has been transferred and contracted out to various agencies.

I was sent out for delivery by the Ele.me platform, and I worked at the food delivery station for DYS Logistics Co., Ltd., located in Beijing's Changping District, but my salary was paid by Taichang Food and Beverage Management, and taxes were withheld by a construction company in Tianjin and an outsourcing company in Shanghai (Zhicheng Legal Services 2021, 2).

This is the court testimony of rider Shao Xinyin, who sustained severe injuries during delivery. Shao went through multiple legal proceedings including labor arbitration and lawsuits but still could not find the liable party for his injury and the court found inconclusive evidence to determine who the actual employer was (China Labour Bulletin 2023). The highly convoluted and disorganized network of labor relationships is difficult to trace down for legal courts, let

alone individuals. Zhicheng, a pro-bono legal service center, examined 1907 cases of labor-related disputes filed by delivery riders and found that it has been increasingly difficult for the court to affirm employment relationships. The percentage of positive verdicts has dropped from 100% to 45-60% and is largely dependent on the severity of the circumstances (Zhicheng Legal Services 2021, 3).

The delivery platform ultimately stands to reap the economic and legal benefits of contract hiring. Through leasing instead of hiring workers, the platform has significantly reduced financial liabilities such as payroll expenses, social security benefits, and long-term pension obligations. As such, delivery companies are able to grow and scale without downside risks and legal ramifications. Quhuo, a staffing service provider, stated that it has helped delivery platforms save at least 40% in operating costs per order (Zhicheng Legal Services 2021, 18). Shaving off the employee count from their balance sheet is what allowed these platforms to attain an asset-light strategy and deliver exceptional financial returns to shareholders. Riders, however, are exposed to the precarious and vulnerable reality of minimal legal protection and institutional support, further entrenched in an unsustainable labor system.

IV. Plotting against the Algorithm

Despite the platform's tight grip, riders exhibit impressive creativity in navigating these challenges. It is no exaggeration to call riders the "walking encyclopedias" of the city, time and again, they use their bodies to delineate the outer bounds and inner capillaries of the city. Maneuvering between orders and adapting to contingencies with incredible agility, riders have demonstrated mental and physical resilience in the face of the totalizing control of the platform. They have also built a rich world of local and situated knowledge which they can creatively

leverage against the platform. Through acts of individual and collective resistance, I unpack how riders carved out a space of agency.

One creative tactic riders use is placing “bait orders.”. As explained earlier, the platform’s algorithm dynamically matches riders with nearby orders and generates an optimized path for them to deliver all orders without visiting the same place twice. When a rider accepts an order, the system may assign additional orders along the same route to improve efficiency. Recognizing this pattern, some riders will ask friends to place “baits,” or orders in favorable locations with high demand to increase their chances of receiving more assignments in the same vicinity (Sun 2024, 187). Riders also employ clever strategies to mitigate potential delays. When pressed for time, they can preemptively request an extension by claiming the *restaurant* is taking longer than usual to prepare the order. Alternatively, with the customer’s consent, riders may confirm order drop-off in advance while still en route, avoiding potential punishment for overtime orders (Chen 2021, 129-130).

Riders also mobilized WeChat to build solidarity networks to assist each other and better cope with the platform economy. Relying on WeChat group chats, they created both a safety net and a secondary marketplace for information exchange and delivery updates. These chats serve as a support system where riders proactively share real-time traffic conditions and order distribution updates, assist new joiners in navigating the system, and provide critical support during emergencies (Yu, Treré, and Bonini 2022). Additionally, riders strategically use these networks to redistribute resources among themselves, particularly during order surges. During rush hours or inclement weather, the platform often becomes overwhelmed, misallocating orders and assigning riders to unreasonable routes in opposite directions. In response, riders leverage

the group chats to informally transfer orders, coordinating drop-offs to optimize efficiency and support one another.

Different from engineers who directly operationalize the algorithms, delivery riders may not be able to fathom how the platform works mechanically, but they nevertheless share an intimate, embodied experience of its pervasive control. Through their day-to-day encounter, drivers conjure up numerous imaginations and hypotheses about this illegible but ever-present other, and they engineer creative coping mechanisms to use existing loopholes to their advantage. Some riders even find remarkable joy in interpreting the various rules and stipulations of the platform, often posting on social media or sharing with fellow riders when they have “cracked the code.”

However, the underlying power imbalance is not to be overlooked. Many glitches and loopholes were identified by the platforms precisely because of riders’ patterned use. Riders have again generated data that strengthens the very system that exploits them, setting off a cycle of reinforced control and oversight. Through enforcing “submerged algorithmic management”, platform companies are the epitome of surveillance capitalism, which “operates through unprecedented asymmetries in knowledge and the power that accrues to knowledge” (Zuboff 2019, 16). The platform almost always prevails in the tug-of-war with humans because the power dynamics is skewed in their favor. The best conclusion for this section is Zuboff’s apt remarks:

Surveillance capitalists know everything about us, whereas their operations are designed to be unknowable to us. They accumulate vast domains of new knowledge from us, but not for us. They predict our futures for the sake of others’ gain, not ours (Zuboff 2019, 16).

V. Conclusion: The Evolving Landscape of Gig Work

Although delivery platforms present themselves as neutral facilitators of economic exchange, I have showed in this paper that they have assumed pervasive yet submerged control of the delivery process. Furthermore, platforms have strategically reorganized work relationships to consolidate their power while evading employer responsibilities. Delivery riders have to survive in an environment where algorithmic surveillance dictates their daily operations, amplifying both the pace and precarity of their work. Yet, riders have not remained passive recipients of algorithmic control. Instead, they have mobilized and devised ingenious acts of resistance, finding ways to navigate, negotiate, and even subvert the rigid structures imposed upon them.

The ongoing combat between Chinese delivery riders and platform companies exemplifies the evolving landscape of gig work, bringing to light the fundamental inadequacies of the current regulatory framework in both safeguarding workers and holding corporations accountable. Existing legal tests such as control-based criteria and economic dependency remain inconsistent across jurisdictions, whereas the lack of legal consensus has led to international divergence in regulatory approaches (Koutsimpogiorgos, Herrmann, and Frenken 2020; Rogers 2016).

Recognizing these gaps, the Chinese government has taken explorative steps to redress the platform's exploitative practices and establish institutional labor protections. Through a combination of ministerial guidelines and legal frameworks, authorities have sought to establish a middle-ground classification for gig workers that grants them essential rights without fully imposing traditional employment obligations on platform companies. The Ministry of Human Resources and Social Security has emphasized the need for enhanced social protections, fair

remuneration, and comprehensive safety measures. Meanwhile, the People's Supreme Court and the State Administration for Market Regulation have introduced clarification on labor relationships, aiming to curb corporate misclassification and ensure that platforms contribute to social security benefits (iResearch 2024). These policy experimentations are building blocks for a full-fledged regulatory framework that ensures the financial, psychological, and social well-being of gig workers. As the platform economy continues to evolve, so too must the policies that govern it. A truly equitable gig economy will not emerge solely from technological advancements but from deliberate, societal efforts to uphold the dignity and rights of its workers.

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