Dignity of Rider under the Algorithm Management

King Tin Hu

Shenzhen Middle School, Shenzhen, China

Abstract

Millions of riders are on the streets every day, moving food from restaurants to doorsteps within tightly calculated time windows. The algorithm makes this possible. But the same system that delivers unprecedented efficiency also imposes serious costs on the people who carry out the work - costs that are systematically transfered onto riders rather than absorbed by platforms. This paper starts from a simple claim: efficiency is valuable, but not when it is achieved through the externalisation of harm. This paper proceeds in two stages. Chapter 1 examines algorithmic management as it actually operates: the information asymmetries embedded in order allocation, the lack of clarity around pay and penalties, and the ways in which performance pressure produces physical exhaustion, income insecurity, and psychological distress. Chapter 2 shifts from critique to remedy. It compares platform labour regulation in the United States, the European Union, and China, and identifies reforms that offer protection without dismantling the platform model. Two concrete proposals are developed in detail: rider-centred transparency that works in practice, and industry-wide insurance funds that attach to riders themselves rather than to any single platform. What emerges is not a trade-off between efficiency and dignity, but a recognition that the two can coexist - provided the institutional conditions are right. The platform economy is not going away, nor should it. But its sustainability depends on whether it can protect the people who sustain it. That is not a moral afterthought; it is a practical necessity.

Keywords

Algorithmic Management; Food Delivery Riders; Platform Economy; Human Dignity; Labour Regulation.

1. Introduction

Every day, over 10 million food delivery riders in China navigate streets and alleys to deliver approximately 80 million orders. Behind each swipe of a phone screen is a rider racing against an algorithm that sets tighter deadlines. The system works for efficiency. Yet the technology that enables instant delivery imposes serious costs on those who do the actual work.

Riders bear the heaviest burdens. To avoid penalties, many run red lights and skip breaks, leaving injury rates higher than in logging and construction [2,12]. Their earnings are equally precarious: opaque algorithms govern pay and order assignments, leaving riders unable to predict their income or challenge unfair treatment [15]. Meanwhile, platforms classify riders as 'business partners' rather than employees, leaving most without social insurance and shortening their working lives to just two or three years (ILO, 2022)[8].

These are structural outcomes of algorithmic management that pushes efficiency onto the backs of riders [6]. This paper argues that protecting rider dignity requires systemic regulatory change. Chapter 1 examines how algorithmic efficiency externalises costs through opacity and platform control. Chapter 2 compares regulatory responses in the United States, the European Union, and China, and proposes concrete reforms. Efficiency and dignity are not trade-offs to be balanced, efficiency should never come at the cost of human dignity.

Key Argument: Even though algorithm management results in efficiency improvements, efficiency should not go along with a cost of human dignity.

2. Economic Efficiency, Underlying Costs, and Ethical Limits

2.1. Economics of Algorithmic Incentive System: Ordering, pricing, and algorithms improve efficiency, while the strengthening of labor control causes rider fatigue and health problems.

The functioning of food delivery services is possible due to the algorithmic incentive system. In brief, algorithms assign millions of orders to riders simultaneously, optimizing routes and delivery times in order to satisfy users' expectations. From the perspective of the platform, it is a complicated mathematical problem of the maximization of efficiency.

For riders, the incentive scheme is quite simple since they are paid per order completed. Therefore, if riders are quicker, they are able to complete more orders and earn more money. Thus, the profit-driven motivation makes them push themselves and become faster; it also contributes to the achievement of the platform's aim, which is efficiency.

However, this system works on the basis of a significant information asymmetry. All of the information, including the rules of orders allocation, pricing logic, and evaluation criteria, is provided by the platform and remains unknown to the riders [15]. Riders get orders not knowing why they were chosen, how the time limit for completing orders is set, and whether the external factors such as weather conditions and restaurants' delays are taken into account. This information asymmetry is not accidental, but it is done intentionally since the platform declares itself a technical intermediary while controlling riders' behavior via algorithms [15]. Thus, not being able to prove the fairness of the system, the riders are forced to work harder and faster in order to sustain their income and ratings on the part of the platform [6].

The result is a vicious cycle: tighter deadlines lead to speeding, skipped breaks, and chronic fatigue, both physical and mental [2]. The economic efficiency gained by the platform thus comes at a direct cost to the rider's health and well-being. Crucially, this cost is systematically shifted onto the riders themselves. The platform gets the benefits of faster delivery while riders bear the burdens of exhaustion, risk, and stress. This raises the central question: when efficiency is achieved by externalizing such costs onto workers, it becomes a violation of human dignity more than providing riders a job opportunity.

2.2. The Opacity Trap: Algorithmic Black Boxes as Tools of Control

Section 1.1 has mentioned the existence of information asymmetry between platforms and riders, this section examines how that asymmetry functions as an active mechanism of control. The platform's algorithmic system is not merely opaque by accident - it is designed as a 'black box' that hides the rules while extracting maximum value from those involved in the game.

This opacity is neither irrational nor hypothetical. This opacity is not a theoretical concern; it shows up in concrete practices. Take DoorDash in 2019. The company was caught using customer tips to cover base wages rather than adding them on top, so a rider ended up with the same total pay whether the customer tipped or not, meaning the platform, not the rider, effectively pocketed the gratuity (Rosenblat, 2018; Scheiber, 2019)[13-14]. Uber tells a similar story: riders and drivers got trip estimates, but had no way of knowing how distance, time, or surge pricing actually factored into the final number(Rosenblat, 2018)[13]. And these are not just one-off cases. Broader investigations show that algorithmic management systems routinely tweak pay and order allocation behind the scenes, in ways that riders cannot verify or contest. The result is a pervasive sense of being treated arbitrarily [6]. What looks like a series of scandals is in fact something deeper: these are structural features of a business model that depends on keeping riders in the dark.

This documented opacity is grounded in what scholars have termed 'algorithmic despotism' [6]. Drawing on Burawoy's theory of labor control, they argue that algorithmic management replicates the arbitrary authority of the traditional foreman, but through technological means. 'The boundary between technical and arbitrary control blurs,' they write, 'for it is the technological system itself that exerts what workers experience as unjust and personalized discretionary authority.' Opacity is essential to this despotic control. Transparency would allow riders to verify fairness and potentially organize around shared grievances. Opacity, by contrast, fragments the workforce, each rider experiences the algorithm alone, unable to determine whether their treatment is unique or universal. This asymmetry also enables what Griesbach et al. call 'individual-level pay discrimination': the algorithm learns the lowest wage a specific rider will accept and repeatedly offers that rate, while the rider cannot assess the full economic value of any given gig because key information is withheld [6].

By claiming to be a 'technical intermediary' while exercising detailed behavioral control, platforms maintain legal distance from employer responsibilities while wielding the practical power of employers. The black box is thus both a shield against accountability and a sword of control, not a technical limitation, but a deliberate feature of the platform model.

2.3. The Human Toll: Evidence of Physical Risk and Psychological Strain

Sections 1.1 and 1.2 have established how algorithms externalize costs onto riders. This section provides evidence that these costs are real, measurable, and fundamentally undermine human dignity.

The physical toll is stark. In China, over 60% of riders have experienced traffic accidents, with fatal injury rates three times higher than the urban average [2,8]. In New York, riders face injury rates comparable to logging and construction, which is the most dangerous traditional occupations. These are not accidents; they are predictable outcomes of a system that rewards speed and punishes delay [12].

The psychological toll is equally severe. Studies link algorithmic monitoring to high rates of anxiety, depression, and burnout [9]. Riders describe feeling that they are machines, doing the same tasks over and over again. One rider put it simply: 'I have no control over my own life(see Rosenblat, 2018) [13].'

Economically, despite 10-14 hour days, many riders earn barely above minimum wage after costs. Algorithms continuously lower per-order pay, forcing longer hours and greater risk just to maintain income [1].

This systematic danger and mental distress severely harm human dignity. Dignity means being treated as a real person, not merely a means to profit [10,7]. When riders are reduced to data points, when their safety is traded for seconds, they lose the recognition as human beings with intrinsic worth. The rider who dies to deliver a meal on time is not unlucky, he is sacrificed to a system that values efficiency over life.

However, it is understandable that platforms defend their algorithmic systems. Without them, affordable delivery would not exist, people are not able to receive their food at that fast pace while millions of riders would lose flexible income opportunities.

Platforms also argue that riders are voluntary participants, they are free to accept or reject orders, choose their working hours, and switch between different platforms. This flexibility, some argued, is itself a form of dignity.

On opacity, platforms maintain that algorithms are their own trade secrets. They also point out that they finish safety training sections to the riders and pay for their insurance as evidence of concern for rider welfare.

Last but not least, overregulation may destroy a system that, despite its flaws, provides essential livelihoods. Efficiency, in this view, is not the enemy of dignity, but the foundation of opportunity.

Chapter 1 has demonstrated that algorithmic efficiency comes at a measurable cost to rider dignity: physical injury, psychological distress, and economic precarity are predictable outcomes of a system that externalizes costs onto workers.

Platforms, however, defend this system on four parts: voluntary participation, flexibility as dignity, trade-secret opacity, and the risk of overregulation. These defenses are unpersuasive. Consent is not truly free when riders lack the information to assess the fairness of any given order [6]. Flexibility without security is not dignity but precariousness. Targeted transparency per-order explanations of pay and time estimates, would not compromise trade secrets, as Meituan's 2025 reforms have already shown [11]. And the specter of overregulation ignores measured solutions like industry-wide insurance funds that protect riders without dismantling the platform model.

The question, then, is not whether reform is possible, but how. Chapter 2 turns from diagnosis to prescription, examining how the United States, the European Union, and China have responded to algorithmic labor governance, and what pathways emerge to place moral boundaries around efficiency without destroying the platform economy.

3. Reclaiming Dignity through Institutional Governance

3.1. Cross-National Regulatory Approaches

The United States, the European Union, and China have taken different paths in governing platform labor, each answering the same question differently: who bears the cost of efficiency?

The US (California's Proposition 22) places the burden on riders. By classifying drivers as independent contractors, riders bear the costs of injury, illness, and income volatility [4]. Proposition 22 offered limited benefits but denied collective bargaining rights. Efficiency is the most essential consideration; dignity is the rider's individual responsibility.

The EU's Platform Work Directive takes a different route: it shifts the burden onto platforms themselves. By treating riders as employees by default and requiring algorithmic transparency, the directive forces platforms to absorb the costs of protection [5,3]. Morally, it is a bold move. Politically, it is a fragile one: implementation has been slow, and platforms are pushing back hard.

China offers yet another model, best illustrated by Meituan's 2025 reforms. Meituan scrapped fines, rolled out safety bonuses, and started discussing algorithm logic with riders, not because the law compelled it, but because reputational pressure and regulatory heat left it little choice [11]. It is pragmatic, but also precarious: these are voluntary changes, and what is given voluntarily can be taken back just as easily.

The contrast between these approaches could not be starker. The US sacrifices riders for efficiency; the EU sacrifices efficiency for rider rights; China attempts both but depends on platform goodwill. China's model offers the most practical lesson: reform is possible without legislation, but to be sustainable, it must be institutionalized, not left to platform discretion(ILO, 2022)[8].

3.2. Policy Recommendations and Implications

The comparative analysis above suggests that effective reform requires moving beyond the false choice between total deregulation and heavy-handed legislation. Two practical approaches stand out.

Firstly, algorithmic transparency should be rider-centered, not code-centered. The EU's demand for full disclosure is politically unworkable and practically unnecessary. Riders do not need to see the algorithm's source code. What they need to know for each order they receive, is the key factors that determined its assignment, its pay, and its time estimate(Kellogg et al., 2020; De Stefano & Aloisi, 2021)[3][9]. Platforms should be required to provide a plain-language explanation with every order: 'This order was assigned to you because X; your pay is calculated as Y; the delivery time accounts for Z.' This targeted transparency would allow riders to assess fairness in real time, without compromising trade secrets. Meituan's publication of general algorithm logic is a step forward, as it lists all the details of each delivery that riders care about [11].

Second, protections should be pooled across the industry rather than tied to individual platforms. The fundamental problem with current approaches is that they assume a single employer-employee relationship, but riders work across multiple platforms and value flexibility. A sector-wide insurance fund, financed by all delivery platforms through a per-order levy, would provide injury coverage, basic income support during illness, and a minimum earnings floor(Autor, 2020; ILO, 2022)[1][8]. This approach has three advantages: it protects riders regardless of which app they are using; it distributes costs across the industry, reducing any single platform's competitive disadvantage; and it preserves riders' flexibility because benefits are not tied to a single employer. China already has experience with industry-wide social insurance pools in other sectors, this model could be adapted for platform work.

The broader implication is that reform is both possible and practical, but it requires moving beyond ideological positions [4,3]. Platforms will not voluntarily internalize costs; regulators must require it. But regulation must be designed with the actual realities of platform work in mind: riders multi-app, value flexibility, and do not fit the traditional employee model. The most effective reforms are those that work with the grain of the platform economy while placing moral boundaries around it. Efficiency and dignity are not incompatible, they just need the right institutional framework.

4. Conclusion

This paper has examined the tension between algorithmic efficiency and human dignity within food delivery platforms, arguing that efficiency gains should not come at the expense of riders' safety, security, or sense of worth. Chapter 1 showed how information asymmetry, opaque algorithms, and performance pressures push riders into a cycle of risk and uncertainty, while also addressing the platforms' own justifications for the current system. Chapter 2 compared how the United States, the European Union, and China have responded to these challenges. None of the three models offers a perfect answer, but together they point toward a middle ground: regulation that protects riders without dismantling the platform economy altogether.

Looking ahead, three directions seem most promising. First, transparency must be practical, not theoretical. Riders do not need to read code; they need to know, for each order, why the pay and time limit are what they are. Second, protections should follow the rider, not the platform. A sector-wide insurance fund, financed by a small levy on each order, would cover injury and illness regardless of which app a rider is using. Third, regulators should move beyond the old employee-versus-contractor debate and design new legal categories that fit the realities of platform work.

Efficiency and dignity are not opposites. The platform economy has brought real benefits, including convenience, flexibility, and jobs. But these should not be built on the backs of those who make them possible. A rider who dies to deliver a meal on time is not a victim of bad luck; he is the product of a system that prioritises speed over life. That system can change. The tools

are already there: what is missing is the will to use them. Protecting rider dignity is not just the right thing to do; it is the only way to build a platform economy that can last.

References

[1] Autor, D. (2020). Work of the past, work of the future. AEA Papers and Proceedings, 110, 1–32. https://doi.org/10.1257/pandp.20201080.

[2] Chen, J. Y., & Sun, P. (2020). Temporal fragmentation and occupational health of food delivery workers in China. Journal of Industrial Relations, 62(4), 563–582. https://doi.org/10.1177/0022185620934471

[3] De Stefano, V., & Aloisi, A. (2021). European legal framework for 'digital labour platforms'. European Commission.

[4] Dubal, V. B. (2021). The drive to precarity: A political history of work, regulation, and labor activism in San Francisco's taxi and Uber economies. Berkeley Journal of Employment and Labor Law, 42(2), 301–366.

[5] European Commission. (2021). Proposal for a Directive of the European Parliament and of the Council on improving working conditions in platform work. COM(2021) 762 final.

[6] Griesbach, K., Reich, A., Elliott-Negri, L., & Milkman, R. (2019). Algorithmic control in platform food delivery work. Socius, 5, 1–15. https://doi.org/10.1177/2378023119870041

[7] Hodson, R. (2001). Dignity at work. Cambridge University Press. https://doi.org/10.1017/CBO9780511583447

[8] International Labour Organization. (2022). World employment and social outlook: The role of digital labour platforms in transforming the world of work. ILO.

[9] Kellogg, K. C., Valentine, M. A., & Christin, A. (2020). Algorithms at work: The new contested terrain of control. Academy of Management Annals, 14(1), 366–410. https://doi.org/10.5465/annals.2018.0174

[10] Lucas, K. (2017). Workplace dignity: Communicating inherent, earned, and remediated dignity. Journal of Management Studies, 54(3), 305–328. https://doi.org/10.1111/joms.12238

[11] Meituan. (2025). Meituan 2025 rider algorithm transparency report. Meituan Corporate Communications.

[12] New York City Department of Transportation. (2022). Commercial cycling safety study. NYC DOT.

[13] Rosenblat, A. (2018). Uberland: How algorithms are rewriting the rules of work. University of California Press. https://doi.org/10.1525/9780520968585

[14] Scheiber, N. (2019, July 24). DoorDash will stop using tips to subsidize wages after uproar. The New York Times. https://www.nytimes.com/2019/07/24/technology/doordash-tipping.html

[15] Wood, A. J., Graham, M., Lehdonvirta, V., & Hjorth, I. (2019). Good gig, bad gig: Autonomy and algorithmic control in the global gig economy. Work, Employment and Society, 33(1), 56–75. https://doi.org/10.1177/0950017018785612