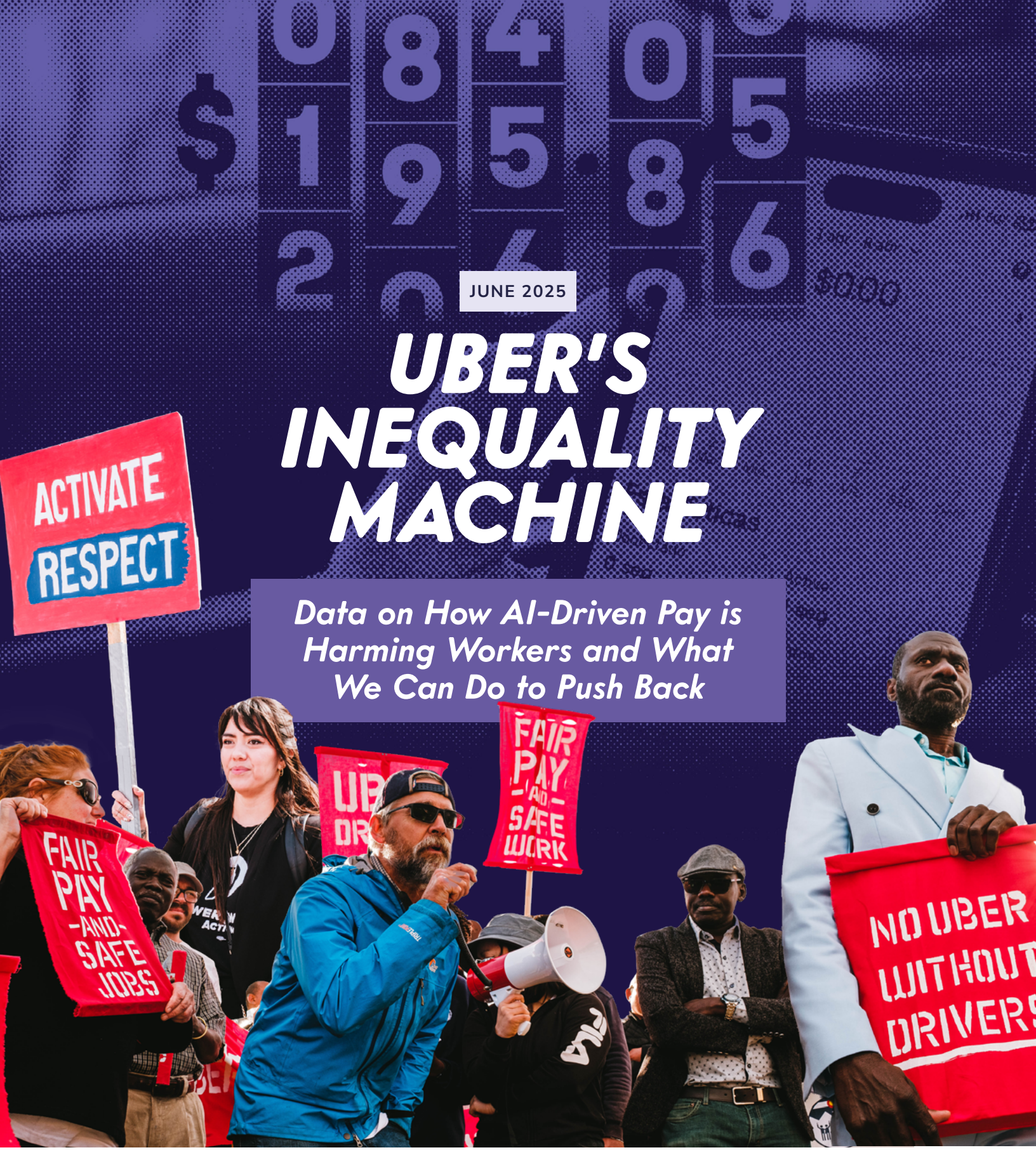
JUNE 2025

UBER'S INEQUALITY MACHINE

Data on How AI-Driven Pay is Harming Workers and What We Can Do to Push Back



PowerSwitch Action

Gig Workers Rising

> *"A lot of drivers don't talk about how bad it is money-wise because I think there's shame involved. People put the shame on themselves and blame themselves for not being able to make enough money. But the shame isn't ours. It's theirs."*

7 IN 10

drivers report experiences that suggest Uber's AI manipulates driver pay in ways that push drivers to accept lower fares or keep drivers on the road for longer.

EXECUTIVE SUMMARY

Uber's Inequality Machine is the nation's first and largest study of its kind. Our data stems from a survey of more than 2,500 Uber drivers in more than 45 states, fielded from March to April 2025. Our survey findings point to the widespread extent and impact of AI- and algorithmically manipulated pay based on the direct experiences of Uber drivers on the front lines of these practices.

The vast majority of surveyed drivers report getting squeezed and manipulated by Uber's pay algorithm, and commonly report serious financial hardship and psychological distress as a result of their unpredictable pay on the app.

Drivers who rely more on the app to make a living — disproportionately drivers of color and financially struggling drivers — are more likely to report these harms.

The differences in drivers' reported experiences suggest how algorithmic wage-setting systems can function as a new, tech-fueled "Inequality Machine," which we define as systems that can play a role in entrenching a new vulnerable class of workers by perpetuating, reinforcing, or amplifying existing economic and racial inequalities.[1] The drivers who report getting squeezed and manipulated are a miner's canary, alerting us to the first signs of a danger that threatens us all.[2]

KEY TERMS IN THIS REPORT

For survey questions, see Appendix D

- "**Unpredictable pay**" means earning less on the Uber app than drivers expected or planned for.
- "**Drivers who rely more on the app to make a living**" means: (1) drivers who report working 50 or more hours per week on the Uber app ("Overtime Drivers")[3]; and (2) drivers who report pay from the Uber app is essential for meeting their basic needs ("Essential Income Drivers").
- "**Financially struggling drivers**" means drivers who report that they probably or certainly could not come up with $400 if an unexpected need arose within the next month.[4]

Background

Algorithmic wage-setting systems were devised and scaled in the app-based economy by Uber and similar companies.[5] With AI-driven pay, workers' wages fluctuate for reasons it is difficult for them to predict, and workers are often paid differently for the same or similar work.[6] Two growing forms of AI-driven pay are what researchers have dubbed *algorithmic wage discrimination* or *surveillance wages*. Both practices remain unregulated by any explicit legal standards.[7]

At the heart of Uber's business is artificial intelligence (AI). Uber pioneered the use of AI in the rideshare industry, using algorithms and data systems to monitor drivers, manage performance, and trigger deactivations. These systems — including customer ratings, facial recognition technology, and automated fraud detection — are used to determine drivers' access to work. Yet, research has shown that algorithmic decision-making can reproduce biases and misinterpret context, potentially leading to unfair or inaccurate outcomes.

Uber turbo-charged its AI-fueled driver pay system[8] when, in July 2022, CEO Dara Khosrowshahi announced that the company was replacing its prior fixed time- and distance-rate driver pay scale with an opaque[9] algorithm that gave Uber the "flexibility" to offer each driver different pay for each ride.[10] Uber's adoption of its new driver pay system[11] ushered in a period of record-setting profits for the company[12] and hardship for its drivers. Over the next few years, driver pay fell,[13] passenger prices stayed high,[14] and Uber's profits soared.[15]

Uber's use of AI-pricing and compensation systems to extract greater profits from workers and consumers,[16] has created a blueprint for other corporations seeking to replicate its business model, which relies on the mass collection of worker and consumer data to refine its algorithms and widen its market advantage.[17] Although an air of secrecy often surrounds the use of these systems, evidence suggests that AI wage setting has spread beyond app-based ride and delivery to industries such as health care, engineering, and retail, including both in app-based and traditional employment settings.[18]

The unprecedented scale, unpredictability, and variability of these algorithmic pay systems are generating harms to working people. This report thus relies on drivers' experiences to document the impacts of AI- and data-driven payment systems.

KEY TERMS IN THIS REPORT

- **"Algorithmic wage discrimination,"** a term developed by legal scholar Veena Dubal, occurs when workers (including the same worker at different times) receive fluctuating amounts of algorithmically-determined pay for performing the same or broadly similar work.[19]
- **"Surveillance wages"** occur when workers' pay is determined not only by their job tasks or responsibilities, but by using personal and behavioral data gathered by the company. In theory, a company could use this data to keep wages low "by identifying just how little it takes to get any employee to perform a task."[20]

Our Survey Findings

Our survey data point to widespread, reported negative consequences from Uber's algorithmic pay system.

Seven in ten drivers report experiences that suggest Uber's AI manipulates driver pay in ways that push drivers to accept lower fares or keep drivers on the road for longer.	Specifically: ⚡ Nearly three in four drivers (73%) who declined low-fare rides in the past three months report that the app either slowed down their rides or their earnings went down because the app continued to offer them low-fare rides. ⚡ One third of drivers (33%) report that in the past three months, rides slow down in the app when they are approaching the amount of rides they need to achieve a bonus or the next level in Uber's rewards program, Uber Pro. ⚡ An overwhelming majority of drivers (78%) agree that driving on the Uber app feels like gambling — the occasional good fare keeps them going.
Large shares of drivers report getting squeezed by Uber's pay algorithm.	⚡ The vast majority of drivers (72%) report that in the last three months, it was more difficult to earn the same amount of money than it was a year ago on the Uber app.[21] ⚡ A significant majority of drivers (56%) report that in the last month, they earn less in a day on the Uber app than what they had planned or expected several times a week or more.
About four in ten drivers report experiences that suggest Uber's AI creates pressure on drivers to work while tired or in pain, or to accept rides they fear may be unsafe.	⚡ More than four in ten drivers (42%) report that in the last month, they continued to drive on the app even though they were tired. Four in ten drivers (40%) report that in the last month, they continued to drive on the app even though they were in pain. Both groups say they continued to drive in these conditions because they were earning less on the app than they expected. ⚡ Thirty-eight percent of drivers (38%) report that in the last month, they accepted rides they would normally decline, including rides they feared may be unsafe, because they were earning less on the app than they expected.

72%

of drivers report that in the last three months, it was more difficult to earn the same amount of money than it was a year ago on the Uber app.

4 IN 10

drivers continue to drive even though they are tired or in pain because they were earning less on the app than expected.

1 IN 3

drivers report that in the past year, they were hungry but did not eat because they could not afford food.

Serious financial and psychological hardship are commonly reported by drivers. Large shares of drivers attribute their hardship to difficulty predicting their pay on the app.

- A clear majority of drivers (59%) report experiencing one or more serious financial hardships in the past year. Three quarters (74%) of those drivers report that the financial hardship was because they earned less on the app than they expected.
- The situation for drivers is bad enough that one in three drivers (35%) reported that in the past year they were hungry but did not eat because they could not afford food, and one in seven drivers (15%) reported that in the past year they had to stay in a car, shelter or other place not meant for housing for at least a night.
- More than two-thirds of drivers (68%) reported experiencing one or more measures of psychological distress "some," "most" or "all" of the time in the last month. Two thirds (67%) of those drivers report that their psychological distress was because of their lack of control over their earnings on the Uber app.

Drivers who rely more on the app to make a living — disproportionately drivers of color and financially struggling drivers — are more likely to report harms.

- Drivers who rely more on the app to make a living are more likely to report less favorable pay conditions and more serious financial hardship and measures of psychological distress as a result of Uber's pay algorithm than other drivers.
- These effects are racialized. Drivers of color are more likely to report that their earnings from the app are essential for meeting their basic needs (76%) than white drivers (65%). They are also far more likely to report working long hours (50 or more hours per week) on the app[22] (33%) than white drivers (19%).

MEASURES OF SERIOUS FINANCIAL HARDSHIP

In the past year (1) you went hungry because you couldn't afford to eat; (2) you avoided seeing a doctor, going to the hospital, or buying medicine because you were worried about the cost; (3) you stayed in a shelter, abandoned building, automobile, or any other place not meant for regular housing, even for one night, and (4) your vehicle was repossessed or threatened to be repossessed.

MEASURES OF PSYCHOLOGICAL DISTRESS

In the last month: (1) feeling so sad nothing can cheer you up; (2) feeling nervous, anxious, or stressed, and (3) feeling hopeless.

Discussion

Together, these findings indicate that the pay unpredictability and opacity in algorithmic wage-setting systems can have widespread negative financial, psychological, and health and safety consequences for workers. They also suggest how algorithmic wage-setting systems can play a role in entrenching a new class of vulnerable workers. In particular, drivers' responses reflect a pattern in which drivers who rely more on the app to make a living are more likely to report being subjected to more unfavorable pay conditions on the app, and more hardship arising from those conditions.[23]

Although the rhetoric of a so-called "gig" economy of "flexible" "side-hustles" may seek to mask their existence, research indicates full-time drivers perform a disproportionately large number of trips on app-based passenger platforms.[24] These drivers are thus likely to bring in a disproportionately large amount of the companies' revenue. In our survey, drivers who rely more on the app to make a living are also more likely to be drivers of color and financially struggling. This indicates a clear racial and class element to drivers' experiences of unpredictable pay on Uber's pay algorithm.

We cannot definitively account for why drivers who rely more on the app to make a living are more likely to report harms — whether it is because of the app's design, structural injustices embedded in the app and in the larger society, because these drivers drive more hours on the platform, or some other factor. But we can measure the effect and extent of impacts reported by drivers.

Uber has denied intentional discriminatory profiling to determine driver pay.[25] Yet, as sociologist Ruha Benjamin warns, "[t]oo often people assume that racism and other forms of bias must be triggered by an *explicit* intent to harm."[26]

As secure, waged work becomes harder to find, many workers — particularly workers of color and more financially vulnerable workers — are pushed into the app-based economy as their primary source of income.[27]

Even absent intentional discrimination in the algorithm, drivers' survey responses suggest how unpredictable, AI-manipulated pay can further entrench a new class of vulnerable workers. Unless we push back, the Inequality Machine grinds on.

> ***"You lose hope thinking when will this get better, and instead it keeps on getting worse and worse. It's enough to drive you crazy."***
>
> Uber driver

Our Recommendations

Corporations are using technology to scale unpredictable and opaque AI-driven pay in the app-based economy,[28] and, according to forthcoming research, increasingly in traditional employment sectors as well.[29] We need to enact new laws, and, where applicable, enforce existing laws,[30] to safeguard all working people — whether in app-based industries or in traditional employment models — against these harms.

01 STOP THE BOSS'S DATA GRAB!

Policymakers should ban electronic monitoring of workers outright, especially mass continuous surveillance. To the extent intermittent monitoring is permitted, it should be for a strictly necessary purpose (such as legal compliance), collect the least amount of data necessary, be narrowly tailored, and use the least invasive means.

02 ENACT BRIGHT-LINE RULES BANNING ALGORITHMIC WAGE DISCRIMINATION AND SURVEILLANCE WAGES

Policymakers should pass a clear, bright-line ban on algorithmic wage discrimination, surveillance wages, and other forms of predatory AI wage-setting. Despite their growing prevalence, these practices remain unregulated by any explicit legal standards and enforcers have yet to challenge them under existing legal regimes.[31]

03 A REAL LIVING WAGE

Policymakers should update and enact industry- and jurisdiction-specific living wage laws that truly reflect the cost of living. When workers are financially struggling and need every "bonus" to keep food on the table, they are more vulnerable to algorithmic wage manipulation.

04 PREDICTABLE PAY LAWS

Policymakers should pass a new generation of predictable pay laws that require corporations to compensate workers when their pay is lowered without sufficient notice. The law can also require corporations to set stable rates of pay like a typical union contract.

05 GUARANTEED PAY AND HOURS

Policymakers should enact laws that require corporations and workers to establish pay rates and a minimum number of paid working hours prior to the start of work. One precedent for such an approach is Germany's Act on Part-Time and Temporary Work, or, in German, *Teilzeit- und Befristungsgesetz*, or "TzBfG."[32]

06 JUST CAUSE LAWS

Policymakers should support just cause laws that broadly protect workers against unfair terminations (or in the app-based driver context, so-called, "deactivations"). The nudging incentives of an algorithmic compensation system are more difficult to disregard if a worker can be terminated at any time, for any reason.

07 STRENGTHENING PATHWAYS TO COLLECTIVE BARGAINING

Policymakers should support laws and interventions that strengthen worker pathways to collective bargaining and building worker organizations. At their core, algorithmic wage discrimination and surveillance wages are tools that corporations can use to isolate workers from one another, and diminish worker power by eroding workers' ability to build common cause.[33] Rebalancing power asymmetries remains essential.

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PART 1

INTRODUCTION AND METHODOLOGY

INTRODUCTION

With an estimated two-thirds of U.S. workers reporting they are subject to electronic monitoring, we are now being digitally tracked, nudged, profiled, and prodded in the workplace, often in ways that are unknown to us.[34] Amid these shifts, a new form of predatory AI — what researchers have dubbed "*algorithmic wage discrimination*" or "*surveillance wages*" — has emerged as a growing and alarming trend.[35]

Despite their growing prevalence, both practices remain unregulated by any explicit legal standards.[36] Although these practices may, in some instances, violate existing laws, enforcement remains challenging due to these systems' lack of transparency, which makes it difficult to detect violations.[37]

Algorithmic wage-setting systems were pioneered and scaled in the app-based economy by Uber and similar companies, and are a technique corporations can use to grow profits and incentivize workers' actions while facilitating the appearance of workers as independent contractors because the company does not directly tell them what to do.[38] Experts warn that surveillance wages and algorithmic wage discrimination are on the verge of infiltrating numerous sectors of the labor market.[39]

If advancements in AI, machine learning, and algorithmic wage discrimination[40] allow firms to escape responsibility to workers under labor and employment laws while effectively shaping their every move, there is no incentive for corporations to enter a traditional employment relationship. This can fuel the expansion of the predatory gig model[41] to industries outside of app-based ride and delivery, and the arbitrary creation of a permanent vulnerable class of excluded workers.[42] Algorithmic wage-setting systems are also increasingly serving as tools for W-2 employers to make their jobs more like precarious gig work.[43] We are concerned that these tools can make it easier for corporations to adopt customized, fine-tuned, variable pay bonuses rather than base-rate pay raises — a practice that can likely reinforce long-term wage stagnation.[44] All of us have an interest in stopping the unchecked spread of these systems.

Uber offers a unique preview — and warning — of what this new form of algorithmic wage setting has in store for working people.[45] Uber has gone to great lengths to conceal the inner workings of their driver pay algorithms.[46] But our understanding of the impact of what it means and feels like to labor under a system of AI-driven, unpredictable pay is not wholly dependent on cracking open Uber's "black box." In the end, our understanding of this system is human, not technical.[47]

Drivers — not Uber — are best suited to identify the harms and injustices of how they are impacted by these black-box payment systems. Only they can describe the full range of consequences they experience — economically, psychologically, and socially — from being pushed and prodded by an opaque pay algorithm.

KEY TERMS IN THIS REPORT

- "**Black box**" refers to a "usually complicated electronic device" — including an AI system or algorithm — whose "internal mechanism is usually hidden from or mysterious to the user."[49]

The experiences of frontline Uber drivers are a kind of miner's canary of an emergent form of AI-fueled exploitation that allows corporations to shape, influence, and manipulate worker behavior, while disclaiming responsibility under the facade of technological progress. They alert us to the first signs of a danger that threatens us all.[48]

For these reasons, this report relies on the actual experience of drivers to document the impacts of algorithmic wage discrimination, surveillance wages, and other AI- and data-driven black-box payment systems. In the first and largest national survey of its kind, our original research documents how Uber's algorithmic wage-setting practices are impacting Uber's frontline drivers.

We begin by providing background on algorithmic wage discrimination and surveillance wages, describing prior research on how Uber has used AI- and algorithm-based technologies to maintain elevated prices for passengers while simultaneously lowering driver pay. We also discuss the growing threat of the "Uberization" of workers' paychecks to suppress workers' pay and to exert power over them.

We then describe our methodology of surveying 2,552 Uber drivers and report our survey findings. We present evidence on how the unpredictable pay and work hours associated with algorithmic pay systems are related to the financial and psychological hardships reported by drivers. This includes unequal impacts on drivers who rely more on the app to make a living — who, in our sample, are disproportionately drivers of color and financially struggling drivers. We conclude with policy recommendations to stop the spread of algorithmic wage discrimination, surveillance wages, and other predatory AI wage-setting systems.

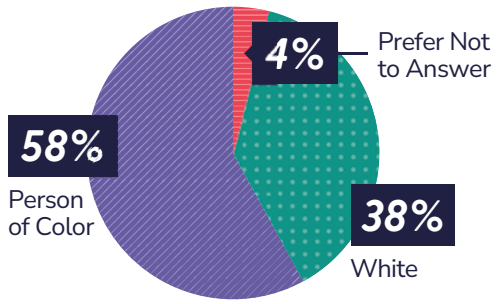
ABOUT THIS STUDY

This study is based on a national survey of 2,552 Uber drivers fielded from March to April 2025. The survey was offered online in three languages: English, Spanish, and Arabic. The survey describes the patterns and themes in the data shared by this specific group of drivers, and may reflect the views of drivers who are more likely to participate in an online survey to share their experiences. The dataset represented workers from more than 45 states. More information on the survey and methods are included in Appendix A (Descriptive Data), Appendix B (Survey Methodology) and Appendix D (Survey Questions).

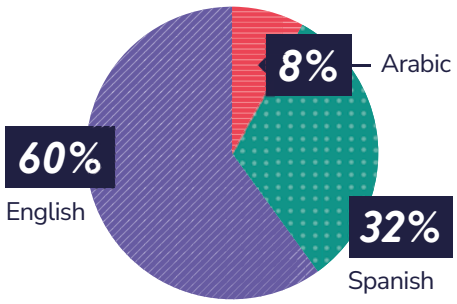
SURVEY SAMPLE

Of the 2,552 Uber drivers who completed our survey:[50]

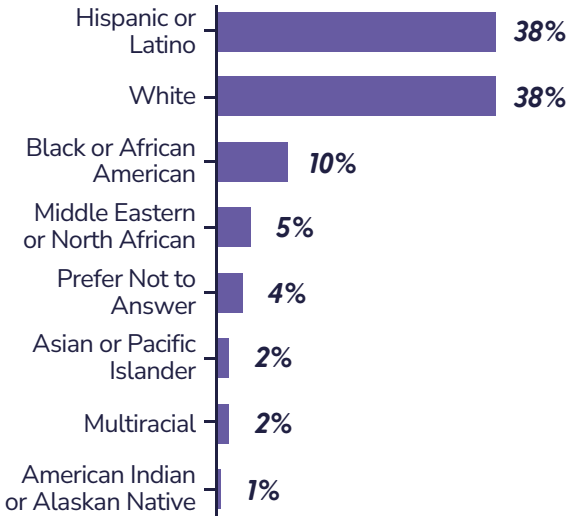
DEMOGRAPHICS



SURVEY LANGUAGE



RACE AND/OR ETHNICITY



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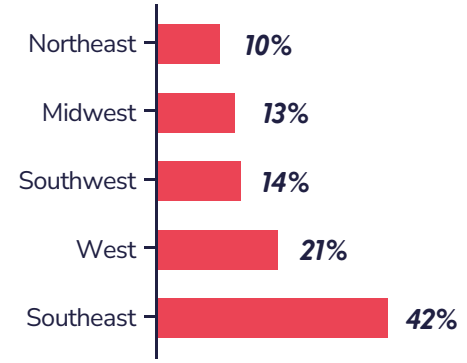
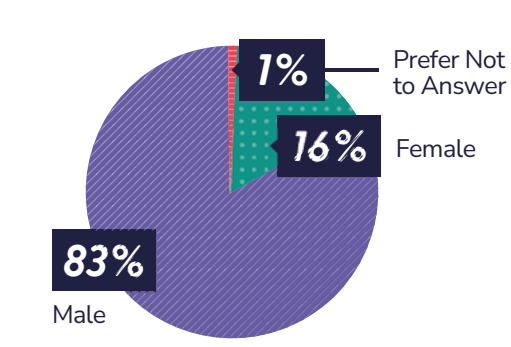
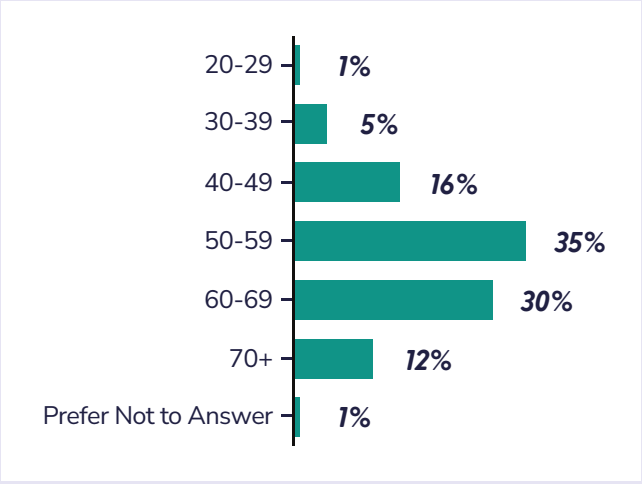


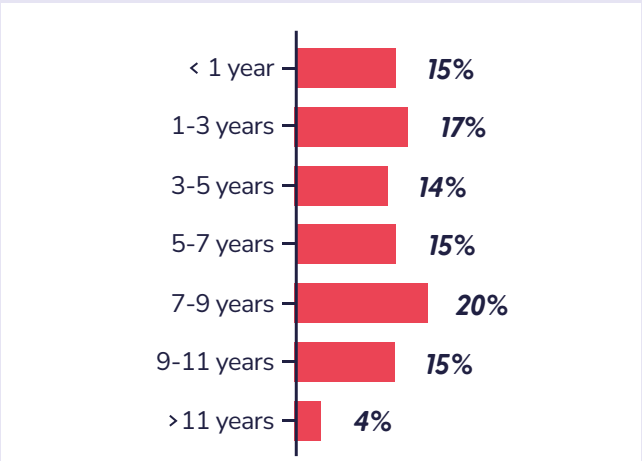
GENDER



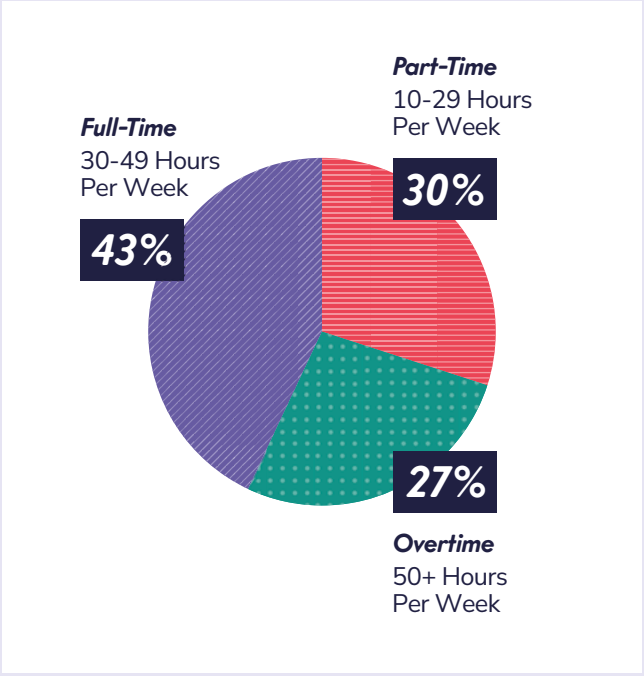
AGE



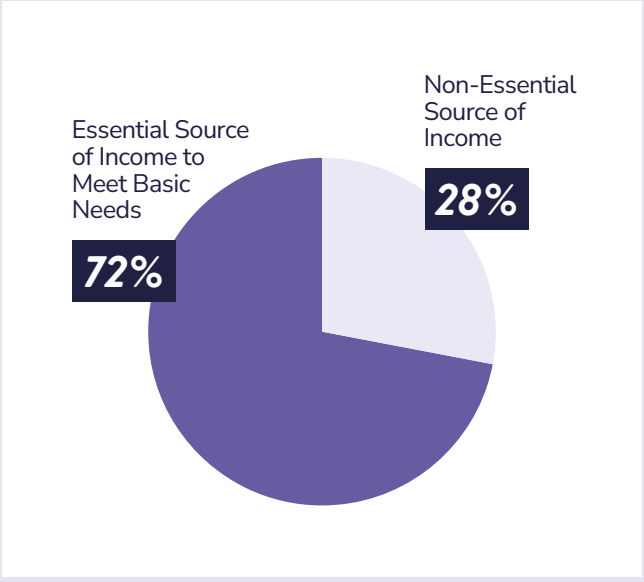
NUMBER OF YEARS DRIVING FOR UBER



PART-TIME, FULL-TIME, AND OVERTIME DRIVERS



SOURCE OF INCOME



PART 2
BACKGROUND

Overview of Algorithmic Wage Discrimination and Surveillance Wages

Algorithmic wage discrimination, surveillance wages, and other predatory AI-driven wage-setting practices occur when corporations rely on opaque black-box algorithms, fueled by vast storehouses of worker and behavioral data, to offer workers variable pay on a basis that is largely hidden from them.[51] One Uber driver describes their experience this way: "[T]hey are like puppet masters and they psychologically manipulate you."[52]

Tech journalist Brian Merchant explains:

> ***"Let's say I'm a delivery driver for Uber Eats or Postmates .... [T]he amount I earn for picking up that sushi is going to be different every time I do the same delivery — and different from another worker making the same delivery for the same company. I may make $6.50 in one set of conditions but $4.25 in another; I am given little insight into why. And another driver might never make more than $3 for doing the exact same amount of work."[53]***
>
> ***Brian Merchant***
> Tech Journalist

From the corporation's perspective, this type of AI-driven wage setting can be used to keep wages low "by identifying just how little it takes to get any given employee to perform a task."[54]

The harms caused by algorithmic wage discrimination, surveillance wages, and other forms of predatory AI wage-setting are wide-ranging. From the worker's perspective, this form of pay is deeply unstable and uncertain.[55] It means that workers, for the most part, don't know how much money they will make from day-to-day or task-to-task, how long they'll need to work in order to earn that amount of money, and on what basis their variable pay is calculated, including whether it "is the result of a game, an experiment, a punishment, or reward or changing circumstances."[56] In what sociologist Tressie McMillam Cottom describes as a "rebrand [of] economic insecurity as economic opportunity," workers labeled by corporations as "entrepreneurs" or "hustlers" chase after paid tasks "on uneven and often exploitative terms."[57]

The harms caused by algorithmic wage discrimination and surveillance wages also encompass industries and society as a whole. At the industry level, these practices prop up the (mis)classification of app-based workers — who are disproportionately workers of color — as independent contractors, creating a vulnerable class of workers that corporations will exploit.[58] Algorithmic wage discrimination and surveillance wages can also fuel monopoly power and market abuses by allowing large corporations to exploit their greater access to data and advanced technologies to gain a widening unfair advantage over smaller competitors.[59] At the societal level, algorithmic wage discrimination and surveillance wages risk magnifying economic[60] and racial[61] inequality, and hollow out the basic social contract of work, by "mak[ing] hard work and long hours disconnected from any certainty of economic remuneration."[62] By obscuring the nature of worker pay and interfering with workers' ability to make collective demands around their compensation, they also erode labor solidarity.[63]

Uber's Algorithmic Wage Setting: Insecurity Disguised as Flexibility

Few companies are as closely associated with debates over algorithmic wage discrimination, surveillance wages, and algorithmic wage-setting as Uber.[64] "Drive when you want, make what you need. Earn on your own schedule," whispers a recent Uber driver recruitment ad.[65] But the flip-side of Uber's enticements of freedom and flexibility, has long been a deep level of driver insecurity and instability with regards to work, which can lead to driving long hours and a sense of hopelessness.[66] One scholar has described app-based drivers' working conditions as the "worst of both worlds," in which app-based companies typically consider drivers to be self-employed, thus shifting nearly all operational costs and risks onto drivers, and yet often exert a level of control that arguably meets or exceeds the standard employer/employee model.[67] Drivers decry low pay and arbitrary deactivations in the grinding reality of their day-to-day work.[68]

> ***"Uber now only has to pay the minimum any driver will accept."***
>
> ***Len Sherman***
> Columbia Business School professor

Digitized variable pay has long been present in Uber's wage-setting system — and has served as a key leverage point for the company to influence and shape driver behavior by adjusting driver compensation, while maintaining at least the appearance of drivers' status as independent contractors because the company does not directly tell them what to do.[69] With increased technical abilities to analyze more data and exploit information asymmetries, Uber's capacity to use its algorithmic wage setting systems to extract more profit from drivers and passengers has grown even more.[70]

Last year, during a February 2024 earnings call with investors, Uber CEO Dara Khosrowshahi announced that Uber was aiming to improve its use of "behavioral patterns" in its ride matching and driver compensation algorithms.[71] Specifically, Khosrowshahi stated that what Uber "can do better is actually targeting different trips to different drivers based on their preferences or based on behavioral patterns that they're showing us."[72] Khoshowshahi stressed, "[T]hat really is the focus going forward, offering the right trip at the right price to the right driver."[73]

Khosrowshahi's statements were in response to a question on the company's July 2022 roll-out of a new black-box payment system for drivers, dubbed Upfront Fares.[74] Although Uber had previously varied driver pay through adjusting bonus offers and ride dispatch times, the company had still maintained some element of a driver compensation system based on job responsibilities by guaranteeing drivers a base fare for each trip based on a per-mile, per-minute rate that was periodically updated by the company.[75]

In what was arguably the biggest shift in driver payments since Khosrowshahi took the helm five years earlier, Uber's so-called Upfront Fares eliminated those guaranteed per-mile, per-minute rates.[76] Under its new opaque driver pay policy — which Uber announced under the headline, "The Most Flexibility and Choice on the Road" — Uber could offer any driver, any amount of pay, for any trip.[77] This unleashed the possibility, as Columbia Business School professor Len Sherman explained, that "Uber now only has to pay the minimum any driver will accept."[78]

Under the new driver payment system, shareholders profited but, Sherman concluded, driver incomes "sharply declined".[79] The first full year of so-called Upfront Fares, 2023, was the first year since Uber's 2019 Initial Public Offering that the company turned a profit, reversing what the *Wall Street Journal* noted had been "years of heavy losses."[80] Since the launch of the new driver pay system, Uber's share price has continued to soar, increasing by more than three-fold (see Figure 1).[81]

UBER OPENING SHARE VALUE 2019-2025

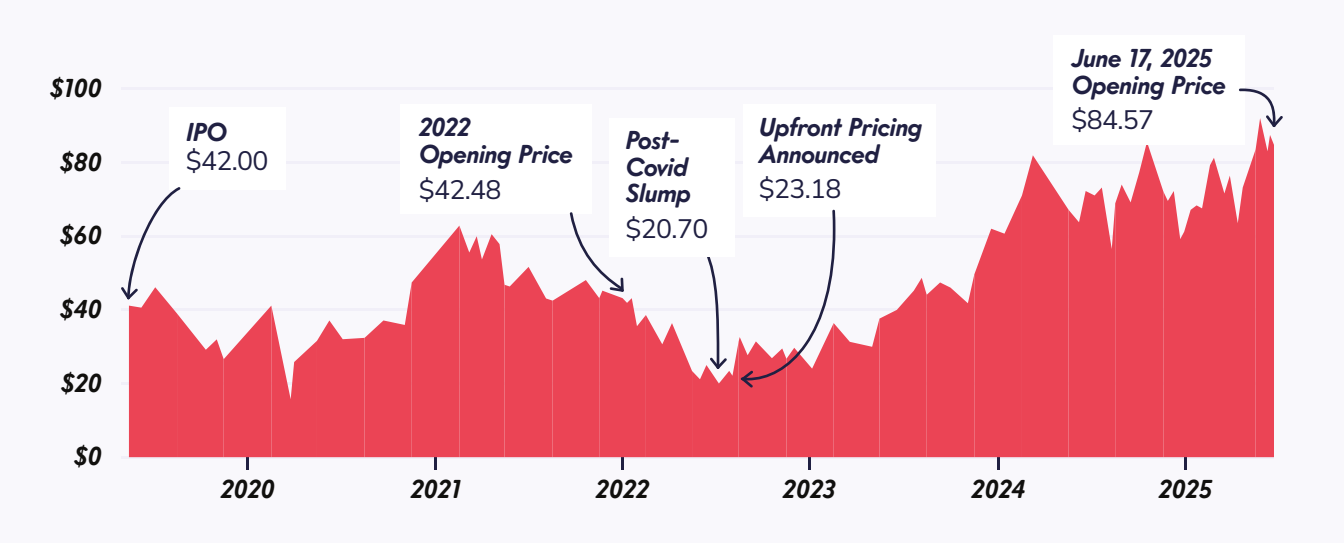


Figure 1.[82]

Even as Uber and its shareholders gained, drivers lost. In 2023, under the new, opaque driver payment system, Uber's average monthly driver earnings reportedly declined 15%–17%, year-on-year, which Sherman described as a "uniquely steep pay cut compared to its gig company competitors Lyft, DoorDash, Instacart, and Grubhub."[83] Sherman attributed much of Uber's gain and drivers' loss to the enormous information gap between the company, passengers, and drivers:

> ***Given its market dominance, Uber knows more about customer and driver behavior than any other company, and thus is in the best position to utilize sophisticated AI technology to exploit price discrimination on both sides of its marketplace. In essence, Uber's asymmetric information advantage gives the company the flexibility and ability to maximize its profit margin – the difference between rider price and driver pay (commonly called take rate) on every trip."***[84]

Uber denied Sherman's conclusions.[85] As, however, we discuss in the next section, the profits Uber has generated give other corporations a strong incentive to follow suit.[86]

The "Uberization" of Employees' Paychecks

Despite having some of its earliest roots in the app-based economy, uncertain, variable, algorithmically-determined pay is no longer confined there. "Uber-style" apps have sprung up in retail, restaurant, computer science, finance, and health care.[87] There are indications algorithmic wage setting is increasingly spreading into the W-2 employer context as well. A forthcoming study has reportedly identified AI vendors who likely market machine-learning products that set or influence workforce compensation and/or calculate individual wages.[88]

Taking a page from Uber's playbook, corporations promoting algorithmic wage-setting technologies have adopted the marketing language of "flexibility" and "transparency." A recent report documents how promotional materials for on-demand, app-based nursing firms promise workers the ability to "set your own schedule," "work the way you want," and "opt for independence and work on your own terms."[89] The same on-demand nursing report, however, documents how the nurses working for app-based platforms face substandard working conditions of high risk and low reward, as well as safety and health risks for both workers and patients.[90] Questioning the entire premise of flexibility, one nurse explained, "[t]he only reason I'm doing this right now is because I have no choice."[91]

With the spread of algorithmic wage discrimination, surveillance wages, and algorithmic wage setting, the so-called "Uberization" of work is undermining labor from both sides. On one side, it means deploying technology to side-step the benefits, protections, and responsibilities of the employer-employee relationship by deeming workers as independent contractors.[92] On the other side, there is a growing risk that, left unchecked, the growth of algorithmic wage-setting systems could infiltrate the employer-employee relationship, making employees' pay ever more precarious, uncertain, and unstable.

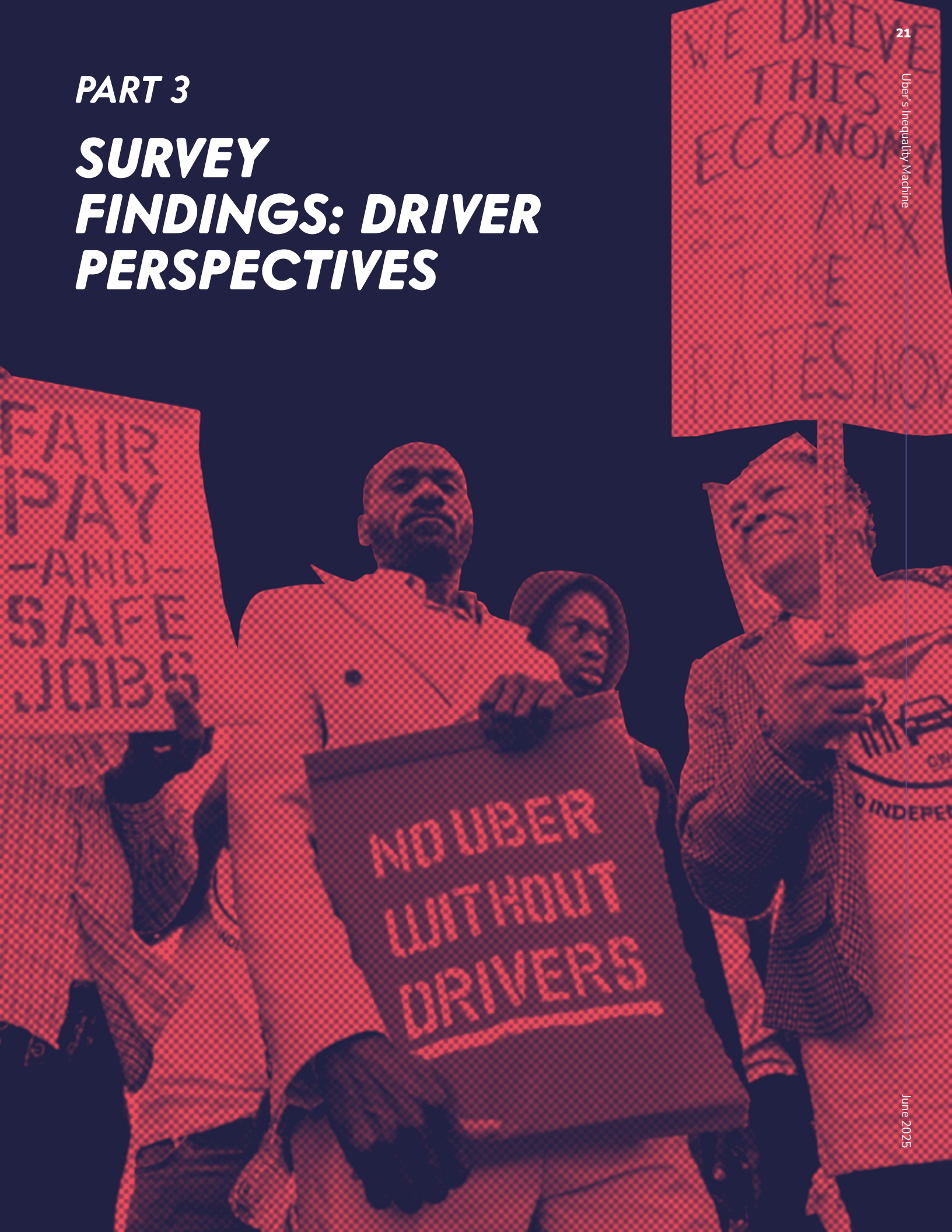
A TWO-SIDED, RIGGED GAME: SURVEILLANCE PRICING & SURVEILLANCE WAGES

It is perhaps not surprising that Uber's embrace of variable, black-box pay for drivers happened under the leadership of Dara Khosrowshahi, a former CEO of Expedia.[93] The airline and travel industry was one of the earliest adopters of dynamic pricing, in which prices fluctuate based on external factors like demand.[94] The data and electronic surveillance boom has fueled corporations' turn from dynamic pricing into surveillance pricing, in which corporations use data derived from consumer behavior, habits, or attributes to set targeted, tailored prices based on consumers' individual characteristics.[95] Allegations of engaging in surveillance pricing have followed Uber for years.[96] Researchers have also found that app-based companies' pricing algorithms charged passengers in Chicago higher prices for pick-up and drop-off in neighborhoods with a higher percentage of residents of color.[97]

In many ways, surveillance pricing and surveillance wages are two sides of the same coin. By exploiting data and AI technology on both sides of the transaction, Uber has profited by raising prices for consumers and lowering driver pay.[98] Like surveillance wages, surveillance pricing is on the rise. A January 2025 study by the Federal Trade Commission has found evidence of surveillance pricing being actively marketed in a wide array of industries: "grocery stores, apparel retailers, health and beauty retailers, home goods and furnishing stores, convenience stores, building and hardware stores, and general merchandise retailers such as department or discount stores."[99] Left unchecked, corporations can use surveillance pricing and surveillance wages to squeeze working families at both ends — by simultaneously lowering pay and jacking up prices.

PART 3

SURVEY FINDINGS: DRIVER PERSPECTIVES



Overall, drivers report far-reaching negative consequences from Uber's black-box algorithmic wage-setting system in terms of their working conditions, health and safety, financial hardship, and psychological distress. Drivers who rely more on the app to make a living report these more.

Our survey findings cover driver perspectives on: (1) AI and algorithmic wage setting, (2) health and safety, (3) serious financial hardship, (4) measures of psychological distress, and (5) impact on drivers of color.

In their survey responses, Uber drivers report far-reaching negative consequences from the company's black-box algorithmic wage-setting system in terms of their working conditions, health and safety, serious financial hardship and measures of psychological distress. Yet, clear fault-lines also emerge among different groups of drivers. (See Table 1 for a description of driver categories.)

There is a clear racial and class element to drivers' experiences of unpredictable pay on Uber's pay algorithm.

In particular, drivers' responses reflect a pattern in which drivers who rely more on Uber to make a living are more likely to report being subjected to more unfavorable pay conditions on the app, and more hardship arising from those conditions.

Throughout this report, these drivers include: (1) drivers who report working 50 or more hours per week on the Uber app ("Overtime Drivers"); and (2) drivers who report their pay from the Uber app is essential for meeting their basic needs ("Essential Income Drivers"). These drivers are also disproportionately likely to be drivers of color and financially struggling drivers.

TABLE 1. DRIVER CATEGORIES[100]

RELY MORE ON THE APP TO MAKE A LIVING	*RELY LESS ON THE APP TO MAKE A LIVING*
Essential Income Drivers: Drivers reporting the income they earn from Uber is essential for meeting their basic needs. ⚡ **Drivers of color** are more likely than white drivers to be essential income drivers (76% vs. 65%). ⚡ **Financially struggling drivers** are more likely than financially more secure drivers to be essential income drivers (80% vs. 68%).	**Discretionary Income Drivers**: Drivers reporting that the income they earn from Uber is important or nice to have, but not essential for meeting their basic needs. ⚡ **White drivers** are more likely than drivers of color to be discretionary income drivers (35% vs. 24%). ⚡ **Financially more secure drivers** are also more likely than financially struggling drivers to be discretionary income drivers (32% vs. 20%).
Overtime Drivers: Drivers reporting that in the last three months, they spent, on average, 50 hours or more a week working as an Uber driver.[101] ⚡ **Drivers of color** are more likely than white drivers to be overtime drivers (33% vs. 19%). ⚡ **Financially struggling drivers** are also more likely than financially more secure drivers to be overtime drivers (30% vs. 26%).	**Part-Time Drivers**: Drivers reporting that in the last three months, they spent, on average, 10-29 hours a week working as an Uber driver. ⚡ **White drivers** are more likely than drivers of color to be part-time drivers (35% vs. 26%). ⚡ **Financially more secure drivers** are also more likely than financially struggling drivers to be part-time drivers (31% vs. 27%)

In contrast, drivers who rely less on the Uber app to make a living are more likely to report more favorable conditions under Uber's pay algorithm and less hardship from those conditions. These drivers include: (1) drivers who report working 10 to 29 hours per week on the Uber app ("Part-Time Drivers"); and (2) drivers whose pay from the Uber app is not essential for meeting their basic needs ("Discretionary Income Drivers"). White drivers and more financially secure drivers are disproportionately likely to fall into these two categories.

How Machine Learning Can Lead to Unequal Pay

Uber has publicly stated that it does not use information on an individual driver's personal characteristics (like their gender, race, or ethnicity) or individual driver histories (such as ratings, past trips, or acceptance behavior) to determine specific fare offers.[102] However, modern machine learning techniques mean that Uber doesn't need to use individual data to customize driver pay.

Avoiding targeting specific, individually identifiable drivers or avoiding using "personal" data that is traceable to a particular driver doesn't necessarily avoid treating drivers unequally or unfairly.

For example, a machine learning model can still learn that drivers in a certain neighborhood, at a certain time of day, tend to accept lower fares. If these patterns correlate with structural factors like race or economic necessity, then the system can still generate disparate impacts that can reproduce, reinforce, or amplify existing inequality, even without being explicitly told to discriminate.[103]

Advanced technologies also allow corporations to technically avoid accessing a worker's "personal data," while still using machine learning to manipulate pay. Specifically, cutting-edge tools allow companies to simulate how a driver might respond to a given offer, even without using their personal history. Techniques like counterfactual modeling or creating "virtual twins" of drivers using synthetic data can help predict how different groups of drivers might respond to different offers.[104] These simulations can be used to find the lowest pay likely to be accepted by different groups.

Corporations can also use de-identified data to learn from groups of workers that act similarly or have similar characteristics. This lets machine learning systems predict how a group behaves.[105] The result is a system that allows corporations to claim they are not individually "targeting" workers to calculate their pay, even as they are using machine learning, large data sets, and behavioral patterns to drive down pay and grow profits.

While we don't know exactly what kinds of technologies Uber may or may not use, modern machine learning systems make it possible for corporations to shape worker pay in ways that reflect and reinforce existing inequalities — even without using individual data and in ways that can avoid the application of current anti-discrimination laws.[106] The spread of these machine learning techniques allows corporations to use the rhetorical veil of protecting "personal data" even as they perpetuate, embed, or amplify pay inequalities and wage suppression to devastating effect for working people.

KEY FINDINGS

AI AND ALGORITHMIC WAGE SETTING

Manipulation to Accept Lower Fares or Stay on the Road for Longer

Large shares of drivers report experiences that suggest Uber's AI manipulates driver pay in ways that push drivers to accept lower fares or keep drivers on the road for longer. Financially struggling drivers report this more.

Uber has used what a 2017 *New York Times* article described as "psychological inducements and other techniques unearthed by social science to influence when, where, and how long drivers work."[107] According to the article, "Uber has experimented with video game techniques, graphics, and noncash rewards of little value that can prod drivers into working longer and harder — and sometimes at hours and locations that are less lucrative for them." A landmark study by legal scholar Veena Dubal described drivers' feelings of being constantly tricked by the app as "ride-hail roulette."[108]

Seventy-eight percent of drivers (78%) "agree" or "strongly agree" that driving on the Uber app feels like gambling — the occasional good fare keeps them going.

An overwhelming majority of drivers agree that the occasional good fares they receive while driving can keep them going on the app. The use of unpredictable, dopamine-triggering rewards — referred to as Intermittent Variable Rewards ("IVR") — is a common feature used widely in social media apps.[109] The classic example of IVR is a slot machine.[110] IVRs are one of the subjects of ongoing litigation by State Attorneys General and others against social media companies as a design feature that corporations use to keep users hooked on and compulsively using their platforms.[111] We are concerned about whether Uber drivers could be vulnerable to similar forms of manipulation.

Seven in ten drivers report experiences that suggest Uber's AI manipulates driver pay in ways that push drivers to accept lower fares or keep drivers on the road for longer.[112] Specifically:

- Seventy-three percent of drivers (73%) who have declined a low-fare ride in the last three months report that after they decline a low-fare ride, the Uber app either slows down rides or their earnings go down because the app continues to offer them low-fare rides.
- One third of drivers (33%) report that, in the past three months, rides slow down in the app when they are approaching the amount of rides they need to achieve a bonus or the next level in Uber's rewards program, Uber Pro.

Notably, **financially struggling drivers** are more likely to report these experiences than more financially secure drivers (see Figure 2).

This is consistent with prior research that has documented "digital discrimination against the poor, fueled by the scope, speed, and scale of big data networks."[113]

FINANCIALLY STRUGGLING DRIVERS REPORT MORE EXPERIENCES THAT SUGGEST MANIPULATION TO ACCEPT LOWER FARES OR TO STAY ON THE ROAD LONGER

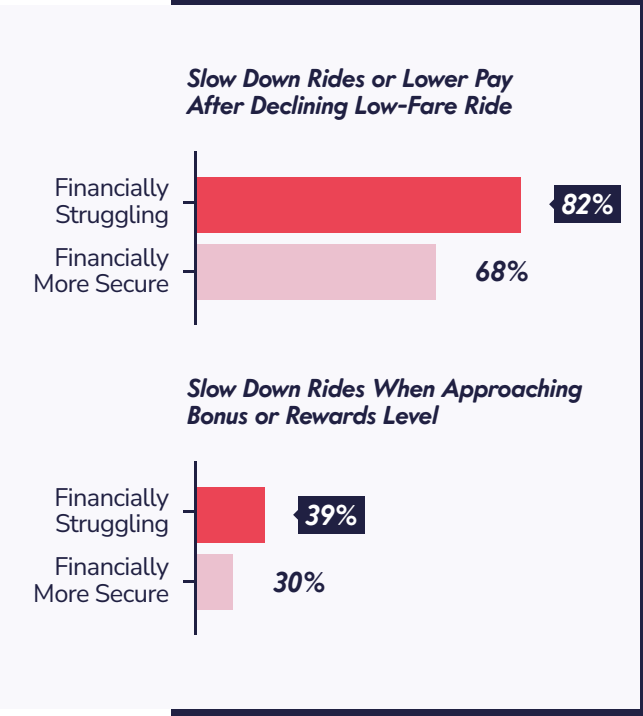


Figure 2.

Working More for Less

Seventy-two percent of drivers (72%) report experiences suggesting they worked more for less on the Uber app in the last year — meaning they report that in the last three months it was more difficult to earn the same amount of money on the Uber app than it was a year ago. Drivers who rely more on the app to make a living report this more.

Seventy-two percent of drivers (72%) report experiences suggesting they *worked more for less* on the Uber app in the last year — meaning they report that considering their overall ability to earn money on the Uber app in the last three months as compared to a year ago, it is now *more difficult* to be paid the same amount of money.[114] This statistic can be considered a reflection of Uber drivers' experience of a recent decline in their overall earnings capacity on the app, which has been reported in various studies.[115] However, because under Uber's opaque algorithm, pay can vary from ride to ride, and from driver to driver, less is known about whether this decline was experienced equally across all drivers, or if certain groups were impacted more.

We find evidence of differences in drivers' reported experiences. In particular, **drivers who rely more on the app to make a living** are more likely to report that in the last three months it was more difficult to earn the same amount of money on the Uber app than it was a year ago (see Figure 3). Overtime drivers are more likely to report this (76%) than part-time drivers (67%).

- **Overtime drivers** are more likely to report this (76%) than part-time drivers (67%).
- **Essential income drivers** are more likely to report this (74%) than discretionary income drivers (66%).

DRIVERS WHO RELY MORE ON THE APP TO MAKE A LIVING REPORT WORKING MORE FOR LESS

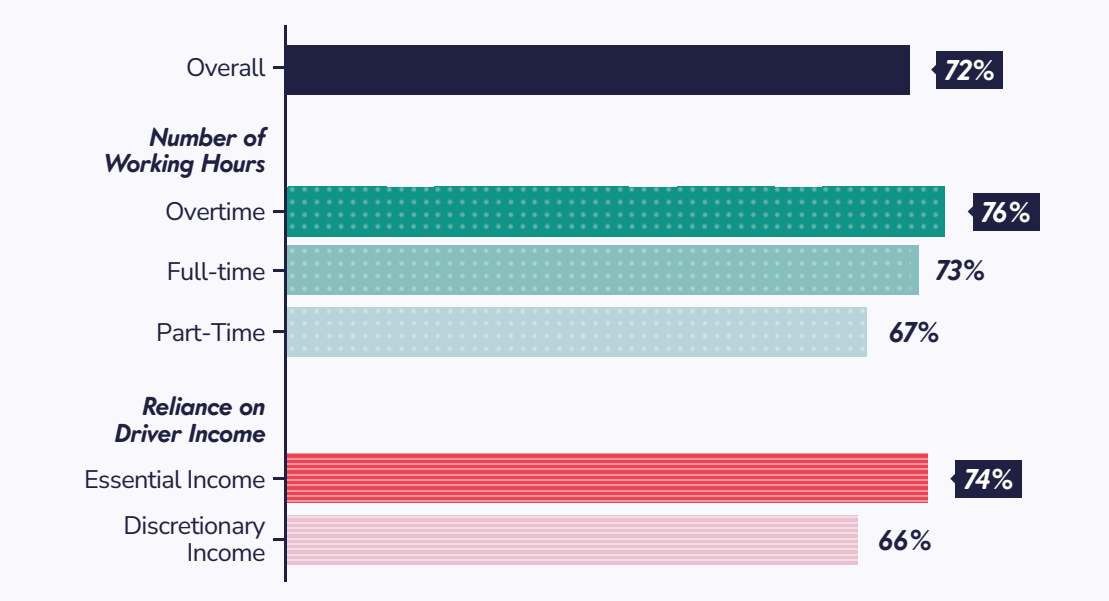


Figure 3.
Share of drivers reporting greater difficulty earning the same amount of money than a year ago.

Unpredictable Pay

Fifty-six percent of drivers (56%) report they were frequently subjected to unpredictable pay on the Uber app in the last year. Drivers who rely more on the app to make a living report this more.

A clear majority of drivers (56%) report being frequently subjected to unpredictable pay on the Uber app — meaning, in the last month, they earn less in a day on the Uber app than what they expected or planned several times a week or more. Clear divisions also emerged between different groups of drivers.

Drivers who rely more on the app to make a living report this more (see Figure 4).

- **Overtime drivers** are more likely to report this (60%) than part-time drivers (49%).
- **Essential income drivers** are more likely to report this (59%) than discretionary income drivers (49%).

Our data also show that more experienced Uber drivers (i.e., those who have been driving for one year or more) are more likely to report earning less in a day on the app than what they expected or planned several times a week or more (58%) than less experienced drivers (48%, i.e., those who have been driving for less than a year). This suggests that factors other than a driver's knowledge or experience may be shaping the predictability of driver pay.

DRIVERS WHO RELY MORE ON THE APP TO MAKE A LIVING REPORT GREATER UNPREDICTABLE PAY

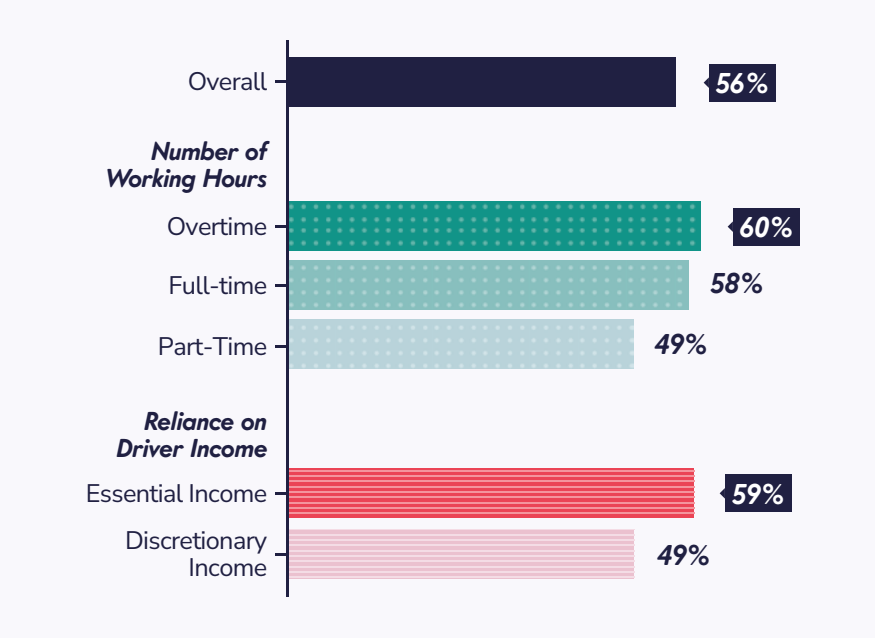


Figure 4.
Share of drivers reporting earning less than they expected or planned several times a week or more.

Unpredictable Work Hours

Fifty-nine percent of drivers (59%) report experiencing unpredictable work hours — working more hours on the app than they had planned — as a result of their unpredictable pay. Drivers who rely more on the app to make a living report this more.

A substantial majority of drivers (59%) report that in the last month they worked more hours on the Uber app than they had originally planned because they earned less on the Uber app than what they expected. This finding reflects how the flexibility Uber promotes to drivers to "earn on your own schedule" can ring hollow.[116] Without a baseline floor of decent and predictable pay, drivers may feel compelled to drive longer hours to make up for their low earnings.

Drivers who rely more on the app to make a living report this more (see Figure 5).

- **Overtime drivers** are more likely (70%) to report this than part-time drivers (51%).
- **Essential income drivers** are more likely (63%) to report this than discretionary income drivers (52%).

DRIVERS WHO RELY MORE ON THE APP TO MAKE A LIVING REPORT MORE UNPREDICTABLE WORK HOURS

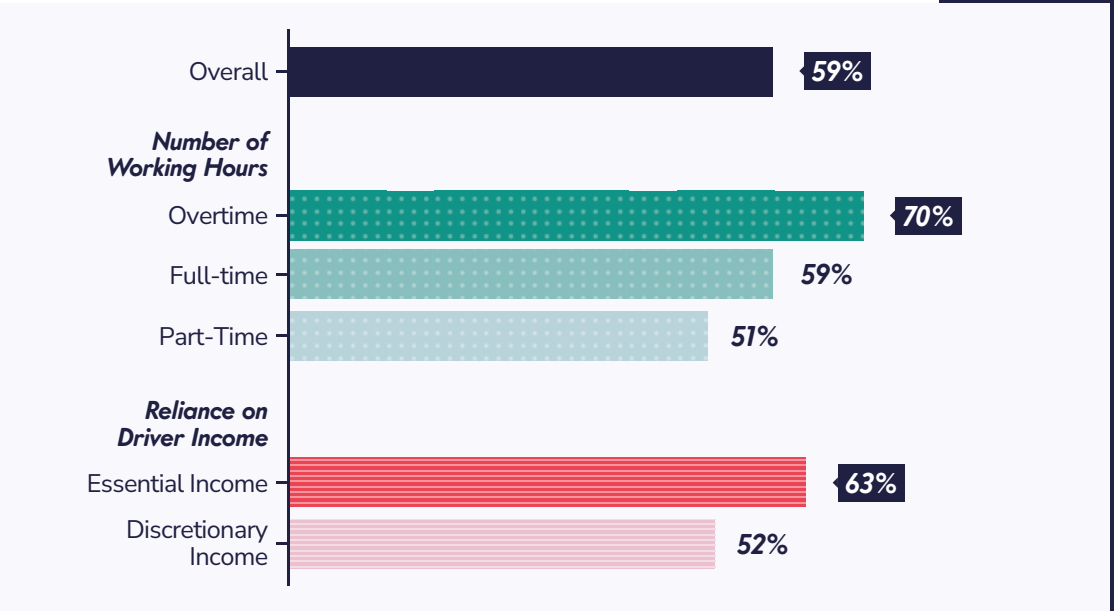


Figure 5.
Share of drivers reporting working more hours on the app due to earning less than they expected.

KEY FINDINGS

HEALTH AND SAFETY

Driving While Tired

Forty-two percent of drivers (42%) report working on the Uber app even though they were tired, due to unpredictable pay — earning less on the app than what they expected. Drivers who rely more on the app to make a living report this more.

Researchers have found that an estimated 18% of all fatal car crashes in the United States from 2017 to 2021 involved a drowsy driver.[117] Other research underscores that sleep deprivation, fatigue, and drowsiness are "unique stressors [that app-based ridehailing drivers face] while driving."[118]

In our data, forty-two percent of drivers (42%) report that, in the last month, they kept working on the Uber app even though they were tired, due to unpredictable pay. **Drivers who rely more on the app to make a living** report this more (see Figure 6).

- **Overtime drivers** are more likely (48%) to report this than part-time drivers (33%).
- **Essential income drivers** are more likely (45%) to report this than discretionary income drivers (33%).

DRIVERS WHO RELY MORE ON THE APP TO MAKE A LIVING MORE FREQUENTLY REPORT DRIVING WHILE TIRED DUE TO UNPREDICTABLE PAY

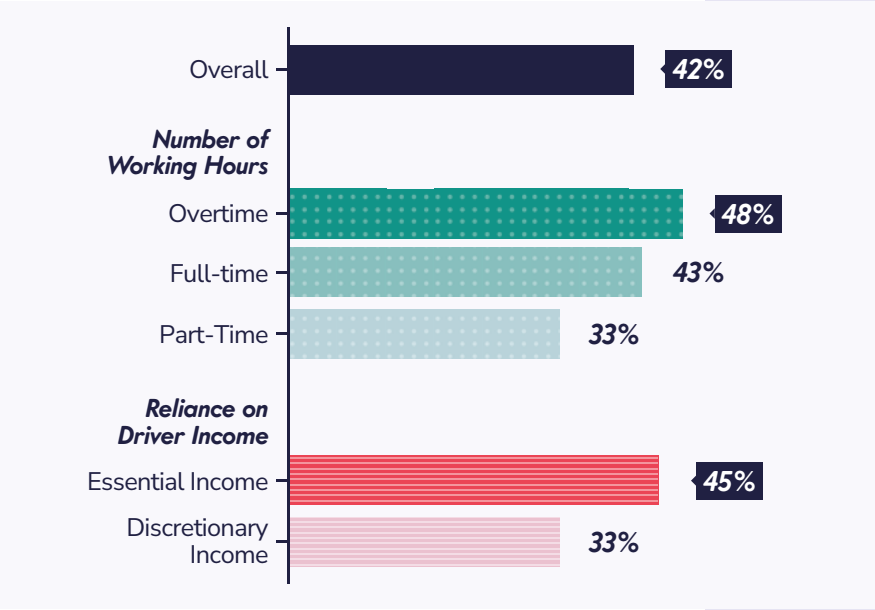


Figure 6.
Share of drivers reporting working on the app even though they were tired, due to earning less than they expected.

HEALTH AND SAFETY

Driving While in Pain

Forty percent of drivers (40%) report working on the Uber app even when they are in physical pain, due to unpredictable pay — earning less on the app than what they expected. Drivers who rely more on the app to make a living report this more.

There is some evidence that driving while experiencing chronic pain could increase crash risk and change driving behavior.[119] Prior research shows that more than 37% of app-based ride drivers report experiencing acute muscle or joint pain associated with increased time spent driving per week.[120] Forty percent of drivers (40%) report that, in the last month, they kept working on the app even though they were in pain — that is, they were experiencing foot, neck, back, joint, headache, or other physical pain — due to unpredictable pay. **Drivers who rely more on the app to make a living** report this more (see Figure 7).

- **Overtime drivers** are more likely (47%) to report this than part-time drivers (30%).
- **Essential income drivers** are more likely (44%) to report this than discretionary income drivers (30%).

> ***"It affects our health too much. The physical wear and tear on us is serious. It wears us down. It's too much."***
>
> Uber Driver

DRIVERS WHO RELY MORE ON THE APP TO MAKE A LIVING MORE FREQUENTLY REPORT DRIVING IN PAIN DUE TO UNPREDICTABLE PAY

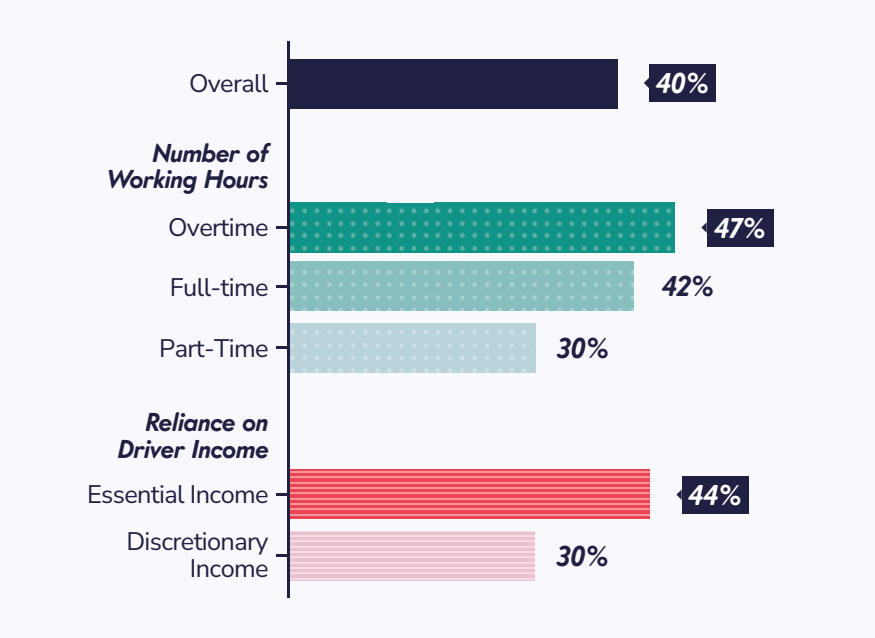


Figure 7.
Share of drivers reporting working on the app even though they were in physical pain, due to earning less than they expected.

HEALTH AND SAFETY

Accepting Rides Drivers Fear May Be Unsafe

Thirty-eight percent of drivers (38%) report accepting rides they would normally decline, including rides they feared would be unsafe, due to unpredictable pay — earning less on the app than what they expected. Drivers who rely more on the app to make a living report this more.

Highly unpredictable pay may make drivers more reluctant to decline rides, even when this may put a driver's own health and safety at risk. This is significant given that in a recent national study of over 900 app-based, passenger drivers, two-thirds of drivers reported having experienced some kind of violence, harassment or threatening behavior while on the job in the last year.[121]

In our study, thirty-eight percent of drivers (38%) reported that, in the last month, they accepted rides they would normally decline, including rides they feared may be unsafe, due to earning less than they expected on the app. **Drivers who rely more on the app to make a living** report this more (see Figure 8).

- **Overtime drivers** are more likely to report this (41%) than part-time drivers (32%).
- **Essential income drivers** are more likely to report this (39%) than discretionary income drivers (34%).

DRIVERS WHO RELY MORE ON THE APP TO MAKE A LIVING MORE FREQUENTLY REPORT ACCEPTING RIDES THEY WOULD NORMALLY DECLINE, INCLUDING UNSAFE RIDES, DUE TO UNPREDICTABLE PAY

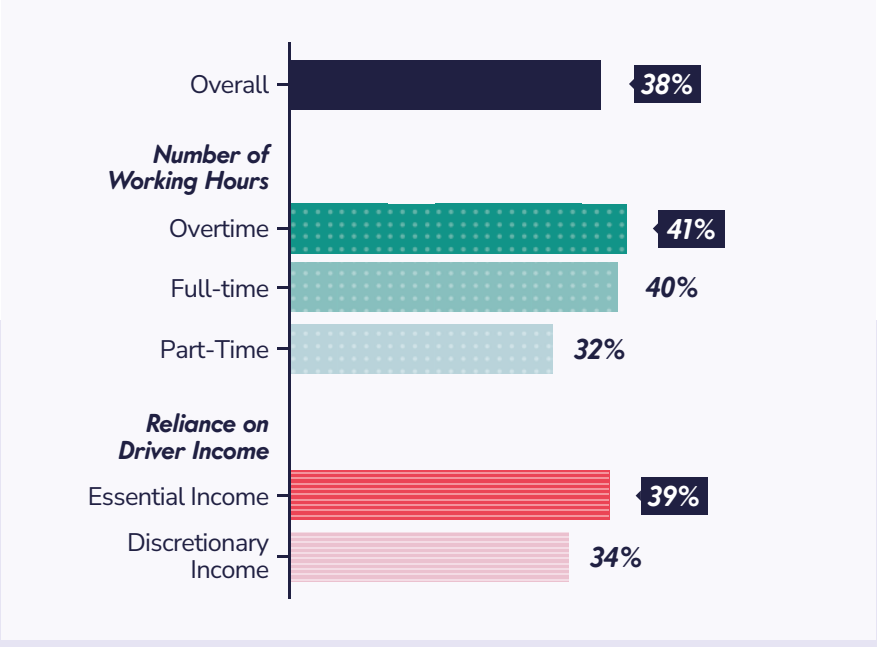


Figure 8.
Share of drivers reporting accepting such rides due to earning less than they expected.

KEY FINDINGS

SERIOUS FINANCIAL HARDSHIP

Serious Financial Hardship from Unpredictable Pay

Fifty-nine percent of drivers (59%) report experiencing one or more forms of serious financial hardship in the past year, and seventy-four percent of those drivers (74%) say it was caused by unpredictable pay — by earning less on the app than they expected.

Drivers who rely more on the app to make a living, report this more.

Serious financial hardship, as defined in Table 2, is widely reported among surveyed Uber drivers.

A clear majority of drivers (59%) reported experiencing one or more serious financial hardships in the past year.[122]

Drivers who rely more on the app to make a living report this more (see Figure 9).

- **Overtime drivers** are more likely to report this (68%) than part-time drivers (52%).
- **Essential income drivers** are more likely to report this (65%) than discretionary income drivers (45%).

TABLE 2. MEASURES OF SERIOUS FINANCIAL HARDSHIP

Hunger Hardship	In the past year, you went hungry because you couldn't afford to eat.
Housing Hardship	In the past year, you stayed in a shelter, abandoned building, automobile, or any other place not meant for regular housing, even for one night.
Medical Hardship	In the past year, you avoided seeing a doctor, going to the hospital, or buying medicine because you were worried about the cost.
Vehicle Repossession Hardship	In the past year, your vehicle was repossessed or threatened to be repossessed.

Further, the lack of pay transparency and predictability that working people experience under algorithmic wage discrimination, surveillance wages, and other forms of black-box algorithmic or AI-driven pay systems can make it challenging to budget and plan for basic needs.

DRIVERS WHO RELY ON THE APP TO MAKE A LIVING REPORT MORE SERIOUS FINANCIAL HARDSHIP

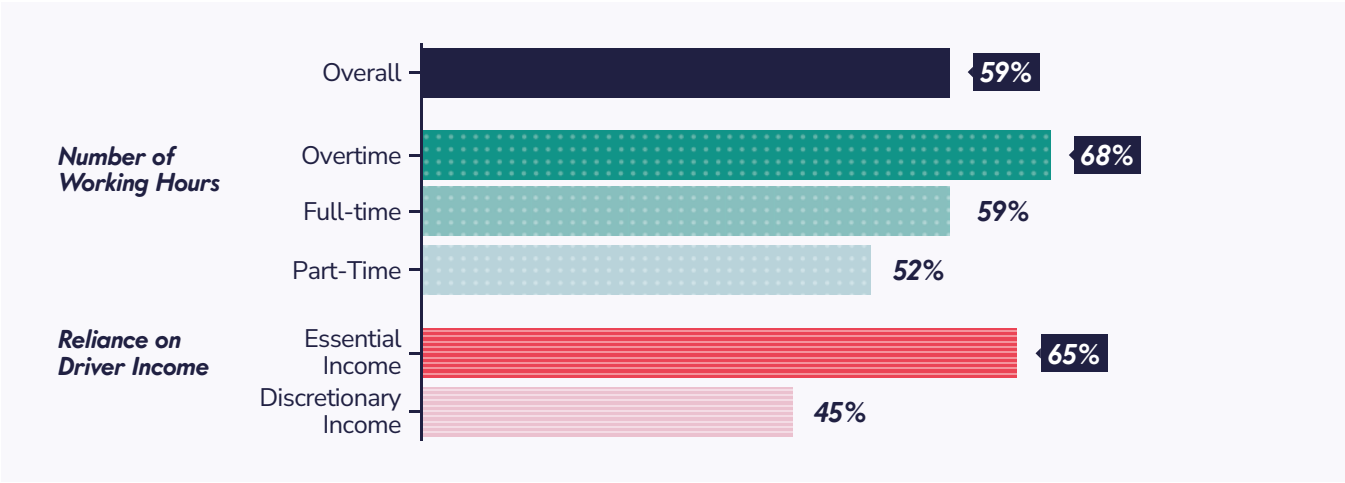


Figure 9.
Share of drivers reporting they experienced one or more serious financial hardships in the last year.

Seventy-four percent of the drivers (74%) who report experiencing one or more serious financial hardships in the past year say that it was caused by unpredictable pay — meaning, by earning less on the app than they expected.[123]

Drivers who rely more on the app to make a living report this more (see Figure 10).

- **Overtime drivers** are more likely to report this (79%) than part-time drivers (65%).
- **Essential income drivers** are more likely to report this (77%) than discretionary income drivers (64%).

DRIVERS WHO RELY MORE ON APP TO MAKE A LIVING MORE LIKELY TO ATTRIBUTE SERIOUS FINANCIAL HARDSHIP TO UNPREDICTABLE PAY

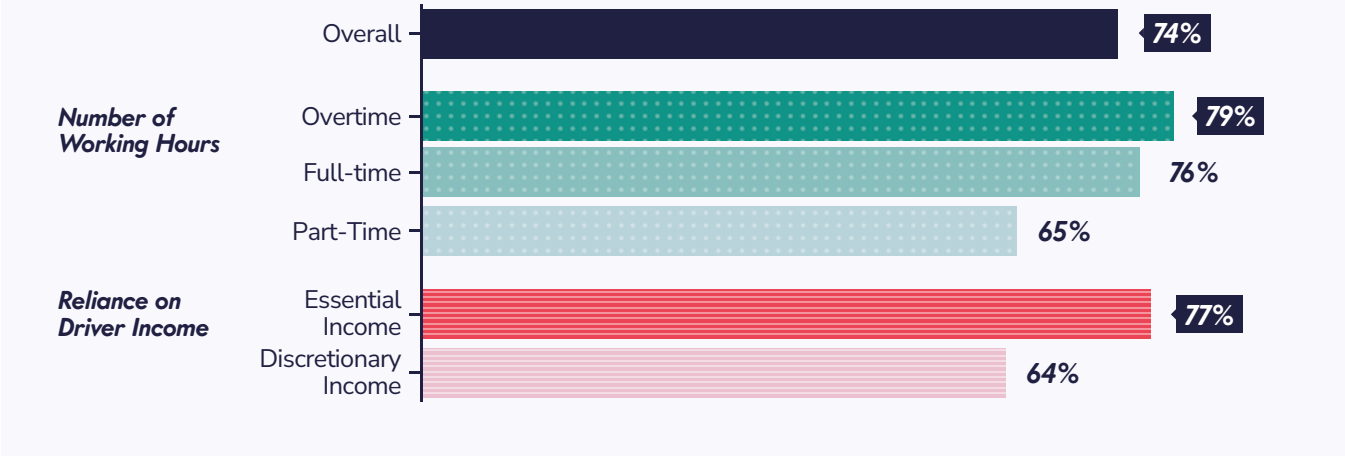


Figure 10.
Share of drivers reporting that serious hardship was caused by earning less on the Uber app than they expected.

SERIOUS FINANCIAL HARDSHIP

Hunger Hardship

Thirty-five percent of drivers (35%) report hunger hardship in the past year. Drivers who rely more on the app to earn a living report this more.

More than one-third of drivers (35%) report hunger hardship — at least one time over the past year when they went hungry because they couldn't afford to buy enough food.[124]

Drivers who rely more on the app to make a living were substantially more likely to report hunger hardship than other drivers (see Figure 11).

- **Overtime drivers** are more likely to report this (44%) than part-time drivers (29%).
- **Essential income drivers** are more likely to report this (39%) than discretionary income drivers (25%).

DRIVERS WHO RELY MORE ON THE APP TO MAKE A LIVING REPORT MORE HUNGER HARDSHIP IN THE LAST YEAR

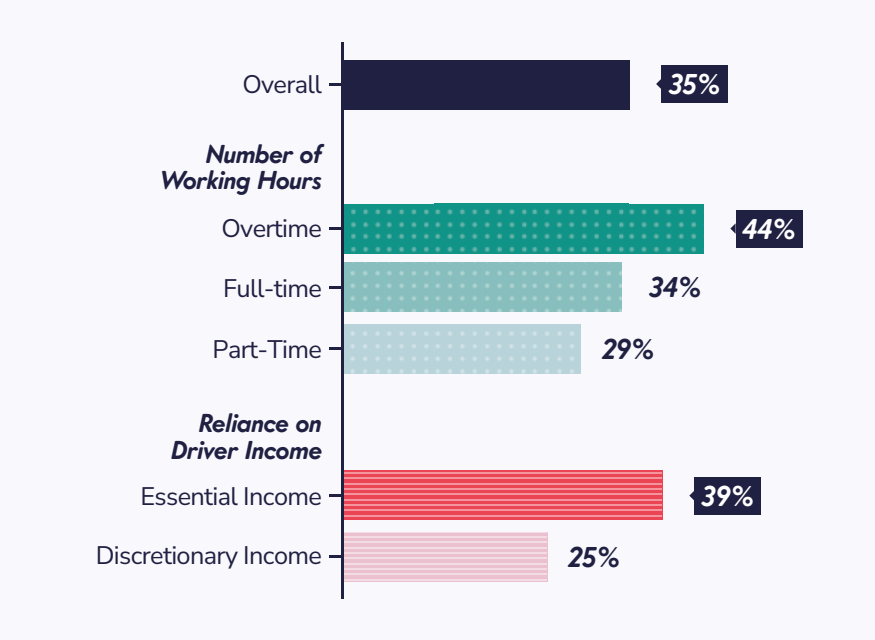


Figure 11.
Share of drivers reporting going without eating in the last year due to financial need.

> ***"I'm putting in 70, 80 hours a week. I'm working seven days a week. You do the math on that. That's definitely not safe. You kind of drive yourself to the ground that way."***
>
> Uber Driver

SERIOUS FINANCIAL HARDSHIP

Health Hardship

More than half of drivers (52%) report health hardship in the past year. Drivers who rely more on the app to make a living report this more.

Fifty-two percent of drivers (52%) reported experiencing a health hardship — avoiding seeing a doctor, going to the hospital, or buying medicine in the past year because they were worried about the cost.[125]

Drivers who rely more on the app to make a living report this more (see Figure 12).

- **Overtime drivers** are more likely to report this (58%) than part-time drivers (44%).
- **Essential income drivers** are more likely to report this (57%) than discretionary income drivers (39%).

DRIVERS WHO RELY ON THE APP MORE TO MAKE A LIVING REPORT MORE HEALTH HARDSHIP IN THE LAST YEAR

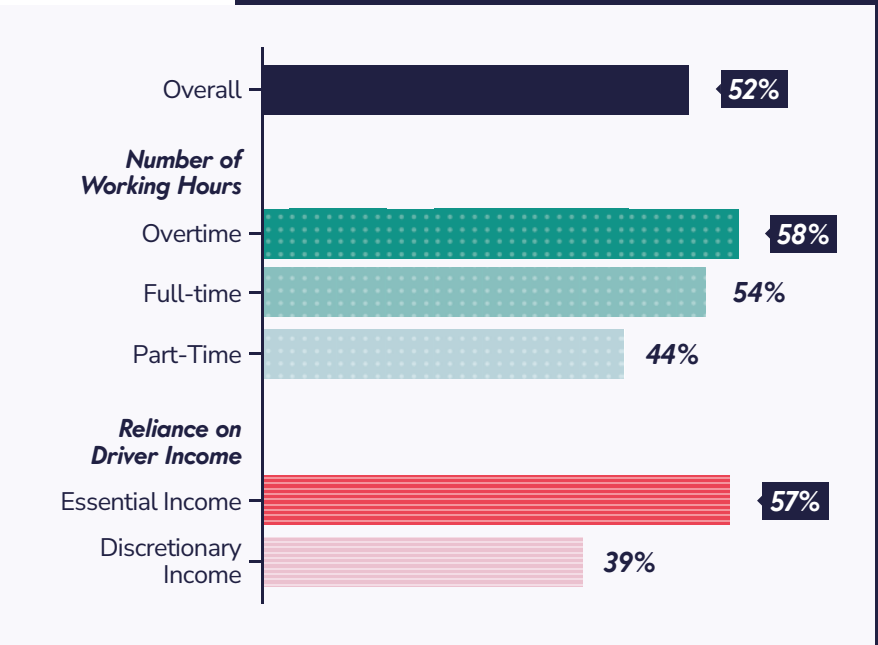


Figure 12.
Share of drivers reporting avoiding seeing a doctor, going to the hospital, or buying medicine due to financial need.

> ***"I am in need of dental treatment because I lost two teeth this past year. But I have no way of getting treatment. It's too expensive. I don't know how to do it."***
>
> Uber Driver

SERIOUS FINANCIAL HARDSHIP

Housing Hardship

One in seven drivers (15%) report experiencing housing hardship in the past year. Drivers who rely more on the app to make a living report this more.

One in seven drivers (15%) report experiencing housing hardship — in the past year, they stayed in an automobile, shelter, or any other place not meant for regular housing for at least one night.[126]

Drivers who rely more on the app to make a living report this more (see Figure 13).

- **Overtime drivers** are more likely to report this (23%) than part-time drivers (10%).
- **Essential income drivers** are more likely to report this (17%) than discretionary income drivers (10%).

DRIVERS WHO RELY MORE ON THE APP TO MAKE A LIVING REPORT MORE HOUSING HARDSHIP IN THE LAST YEAR

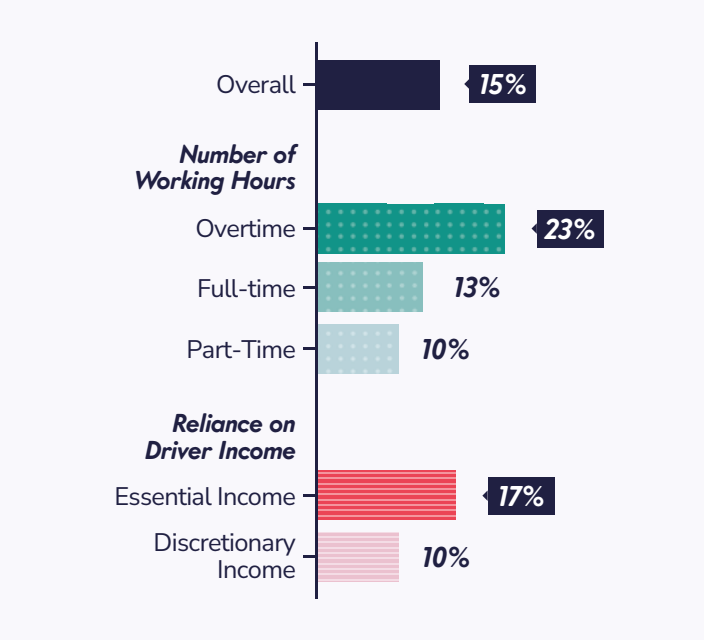


Figure 13.
Share of drivers reporting staying in an automobile, shelter or place not meant for housing for at least one night.

> ***"Driving for Uber is like the lottery. At the beginning of the day, you don't know how much you're going to earn for each ride you're going to give."***
>
> Uber Driver

SERIOUS FINANCIAL HARDSHIP

Vehicle Repossession

One in six drivers (16%) report having their vehicle repossessed or threatened to be repossessed in the past year. Drivers who rely more on the app to make a living report this more.

Sixteen percent of drivers (16%) report having their vehicle repossessed or threatened to be repossessed in the past year.[127]

Drivers who rely more on the app to make a living report this more (see Figure 14).

- **Overtime drivers** are more likely to report this (21%) than part-time drivers (11%).
- **Essential income drivers** are more likely to report this (18%) than discretionary income drivers (11%).

DRIVERS WHO RELY MORE ON THE APP TO MAKE A LIVING REPORT MORE VEHICLE REPOSSESSION HARDSHIP IN THE LAST YEAR

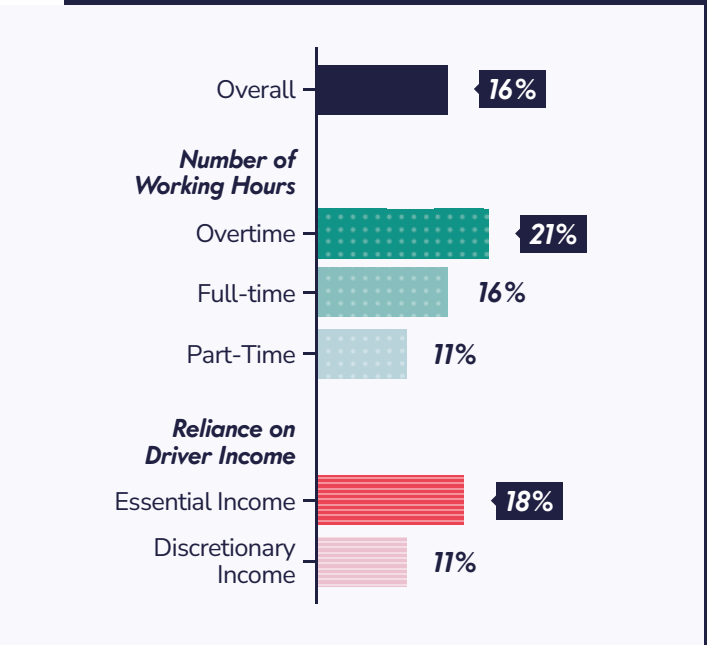


Figure 14.
Share of drivers reporting their vehicle was repossessed or threatened to be repossessed.

KEY FINDINGS

PSYCHOLOGICAL DISTRESS

Psychological Distress from Lack of Control Over Pay

More than two-thirds (68%) of drivers report suffering from one or more measures of psychological distress in the last month "some," "most" or "all" of the time. Two-thirds of those drivers (67%) say this distress was caused by their lack of control over what they earn on the Uber app. Drivers who rely more on the app to make a living, report this more.

Deep day-to-day uncertainty about how much one will earn, how much one will need to work in order to make a living and keep a roof over one's head, and the basis on which one's work will be measured and compensated, can lead to feelings of distress. Researchers have documented associations between insecure income (including payment by the task or piece-rate pay) and psychological distress.[128]

In our data, reports of psychological distress among drivers are common. Distress is measured as described in Table 3.[129]

More than two-thirds (68%) of drivers report experiencing one or more measures of psychological distress (see Table 3), in the last month "some," most," or "all" of the time.

Drivers who rely more on the app to make a living report this more (see Figure 15).

TABLE 3. MEASURES OF PSYCHOLOGICAL DISTRESS

Feel nervous, anxious or stressed
Feel so sad that nothing can cheer you up
Feel hopeless

DRIVERS WHO RELY MORE ON THE APP TO MAKE A LIVING REPORT MORE PSYCHOLOGICAL DISTRESS

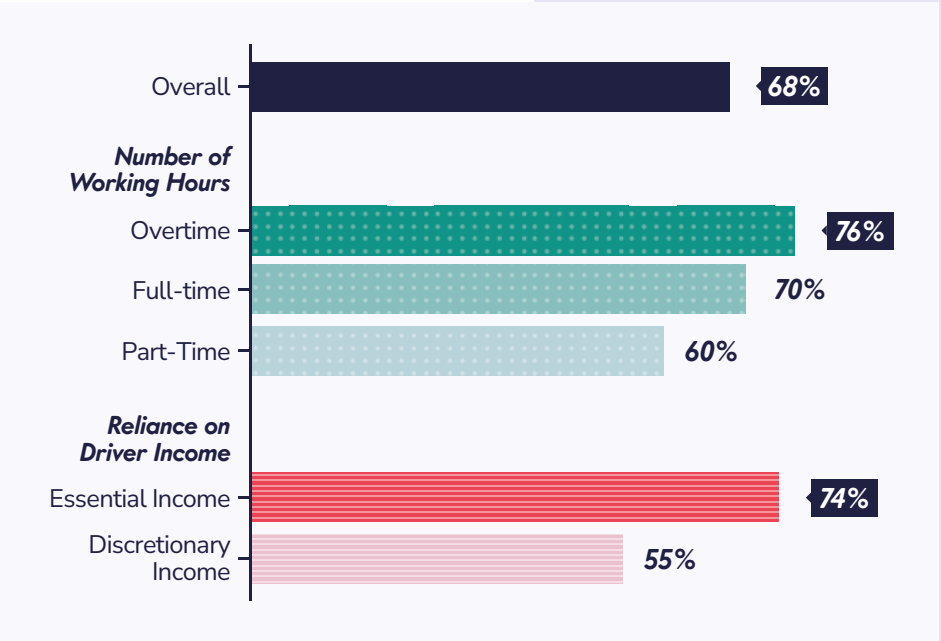


Figure 15.
Share of drivers reporting one or more measures of psychological distress "some," "most" or "all" of the time in the last month.

- **Overtime drivers** are more likely to report this (76%) than part-time drivers (60%).
- **Essential income drivers** are more likely to report this (74%) than discretionary income drivers (55%).

Two-thirds (67%) of the drivers who report experiencing one or more measures of psychological distress "some," "most," or "all" of the time last month say that it was caused by their lack of control over what they earn on the Uber app.[130]

This is suggestive of research finding that app-based passenger drivers face "mental health risks resulting from ride-sharing work that are distinct to ride-sharing work."[131]

Drivers who rely more on the app to make a living are more likely to say that their psychological distress was caused by their lack of control over what they earn on the Uber app (see Figure 16).

- **Overtime drivers** are more likely to report this (75%) than part-time drivers (57%).
- **Essential income drivers** are more likely to report this (71%) than discretionary income drivers (54%).

DRIVERS WHO RELY MORE ON THE APP TO MAKE A LIVING MORE LIKELY TO ATTRIBUTE PSYCHOLOGICAL DISTRESS TO LACK OF CONTROL OVER PAY ON APP

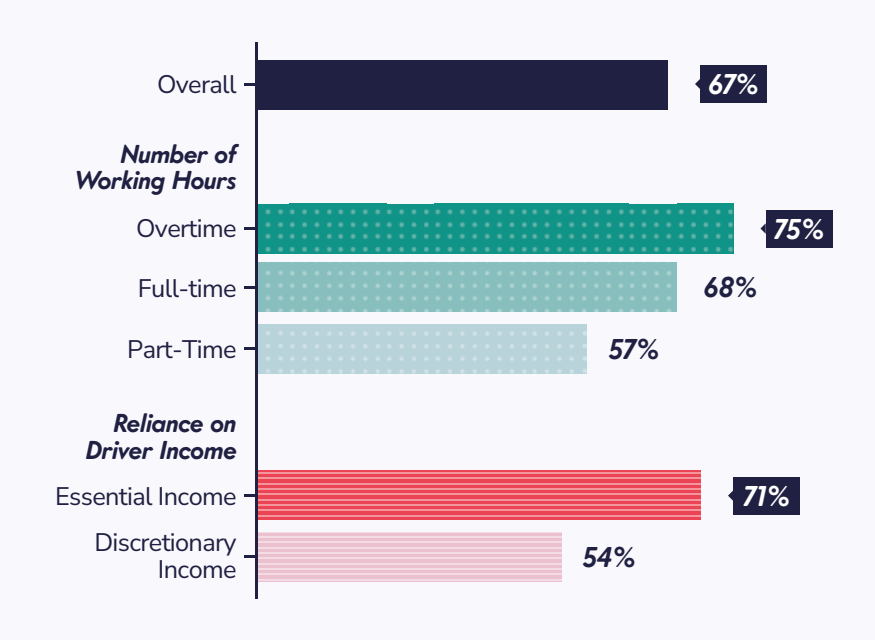


Figure 16.
Share of drivers reporting that psychological distress was due to their lack of control over their earnings on the Uber app.

> ***"There's a great deal of anxiety. Like not knowing whether you're going to be able to pay your bills at the end of the week. You go out there hoping that you're going to do well, that you'll do what you've planned, or that you're going to be in the right place at the right time. But you never know what those trips are going to be that they give you. It's that inconsistency because every trip will pay differently."***
>
> Uber Driver

PSYCHOLOGICAL DISTRESS

Nervous, Anxious, or Stressed

Sixty-five percent of drivers (65%) report feeling nervous, anxious, or stressed in the last month "some," "most," or "all" of the time. Drivers who rely more on the app to make a living report this more.

Of the three measures of psychological distress we surveyed, feeling nervous, anxious or stressed was the most common. A large majority — sixty-five percent of drivers (65%) — report feeling nervous, anxious, or stressed in the last month "some," "most" or "all" of the time.

Drivers who rely more on the app to make a living report this more (see Figure 17).

- **Overtime drivers** are more likely to report this (72%) than part-time drivers (58%).
- **Essential income drivers** are more likely to report this (71%) than discretionary income drivers (52%).

DRIVERS WHO RELY MORE ON THE APP TO MAKE A LIVING MORE FREQUENTLY REPORT FEELING NERVOUS, ANXIOUS, OR STRESSED

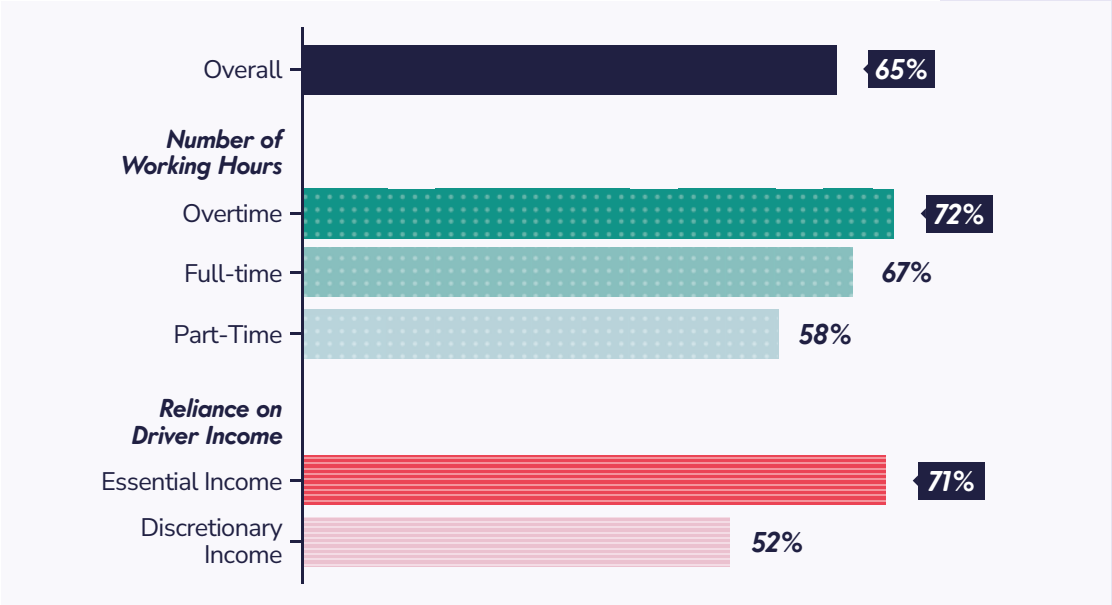


Figure 17.
Share of drivers reporting feeling nervous, anxious, or stressed in the last month "some," "most," or "all" of the time.

PSYCHOLOGICAL DISTRESS

Hopeless

More than four in ten drivers (47%) report feeling hopeless in the last month "some," "most" or "all" of the time. Drivers who rely more on the app to make a living report this more.

Forty-seven percent of drivers (47%) report feeling hopeless in the last month "some," "most," or "all" of the time. Again, there are significant differences between drivers.

Drivers who rely more on the app to make a living report this more (see Figure 18).

- **Overtime drivers** are more likely to report this (57%) than part-time drivers (38%).
- **Essential income drivers** are more likely to report this (52%) than discretionary income drivers (35%).

DRIVERS WHO RELY MORE ON THE APP TO MAKE A LIVING MORE FREQUENTLY REPORT FEELING HOPELESS

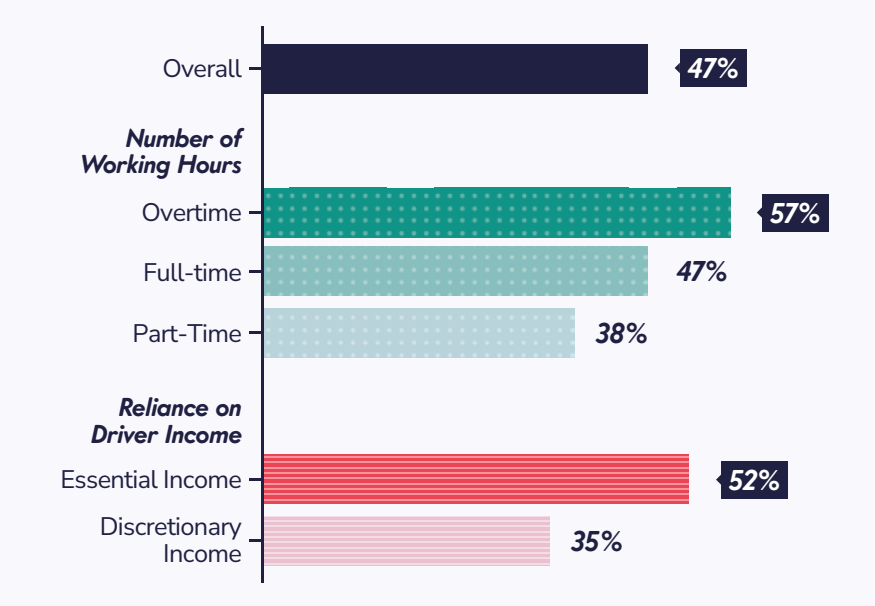


Figure 18.
Share of drivers reporting feeling hopeless in the last month "some," "most" or "all" of the time.

PSYCHOLOGICAL DISTRESS

So Sad Nothing Can Cheer You Up

More than one third of drivers (38%) report, in the last month, feeling so sad that nothing can cheer them up "some," "most," or "all" of the time.

Drivers who rely more on the app to make a living report this more.

Thirty-eight percent of drivers (38%) report feeling "so sad nothing can cheer them up" in the last month "some," "most," or "all" of the time. These impacts fell unequally across drivers.

Drivers who rely more on the app to make a living report this more (see Figure 19).

- **Overtime drivers** are more likely to report this (46%) than part-time drivers (29%).
- **Essential income drivers** are more likely to report this (42%) than discretionary income drivers (28%).

DRIVERS WHO RELY MORE ON THE APP TO MAKE A LIVING MORE FREQUENTLY REPORT FEELING "SO SAD NOTHING COULD CHEER THEM UP"

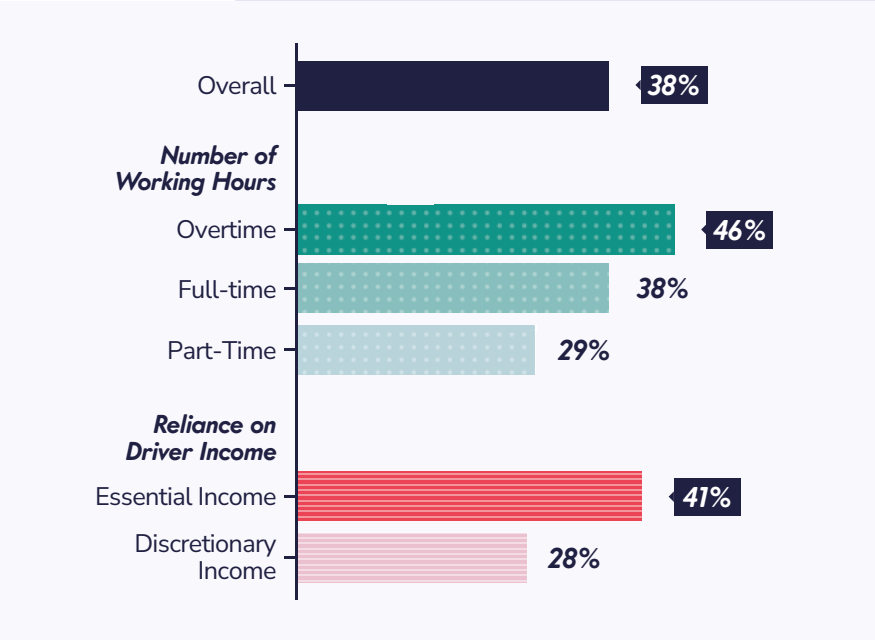


Figure 19.
Share of drivers reporting feeling, in the last month, "so sad that nothing could cheer them up," "some," "most," or "all" of the time.

> ***I have seen probably over the past year and a half, two years, like drivers just giving up and talking about harming themselves. It's just this helplessness of trying to work and support yourself and provide for yourself, for your family. You're just not able to. It's not about being lazier and not having a real job. I don't see things like that. It's just at a point where there's no way to budget."***
>
> Uber Driver

KEY FINDINGS

IMPACT ON DRIVERS OF COLOR

Disproportionately Impacts Drivers of Color

Drivers of color are disproportionately represented in the driver groups where reported harms resulting from unpredictable pay and other practices associated with algorithmic or AI-driven pay are more prevalent — overtime drivers and essential income drivers.

We find evidence of differential impacts across racial groups.

In our data, drivers of color are disproportionately represented in the driver segments where reported harms resulting from unpredictable pay and other practices associated with algorithmic or AI-driven pay are more prevalent — overtime drivers and essential income drivers.

Overall, drivers of color are more likely to report they belong to one of these groups (80%) than white drivers (68%, see Figure 20).[132]

- Drivers of color are far more likely to report that they are **overtime drivers** (33%) than white drivers (19%).
- Drivers of color are more likely to report that they are **essential income drivers** (76%) than white drivers (65%).

DRIVERS OF COLOR ARE MORE LIKELY TO REPORT BELONGING TO CATEGORIES OF DRIVERS WHO RELY MORE ON THE APP TO MAKE A LIVING

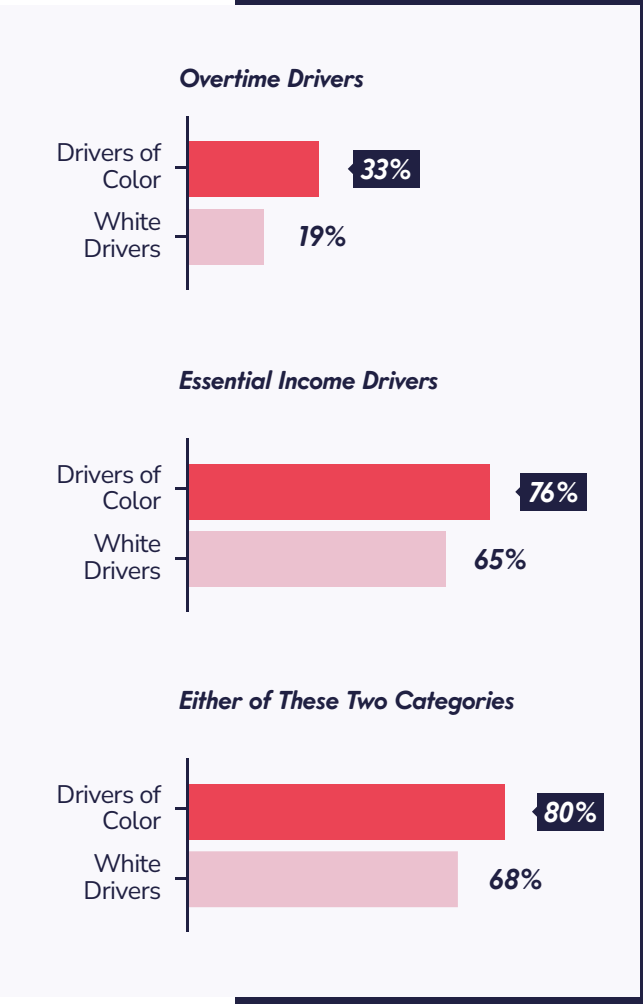


Figure 20.
Share of drivers reporting they belong to the driver categories above.

More Serious Financial Hardship

Drivers of color report suffering more serious financial hardship than white drivers. Large majorities of those drivers of color report that the hardship was due to unpredictable pay — because they earned less on the Uber app than they expected.

The financial harms of the unpredictable pay associated with algorithmic or AI-driven pay have a disproportionate impact on drivers of color as compared to white drivers.

- Drivers of color are more likely to report experiencing one or more serious financial hardships[133] in the past year (63%) than white drivers (54%, see Figure 21).[134] Seventy-five percent of those drivers of color[135] (75%) report that the hardship was due to unpredictable pay.[136]
- Drivers of color are more likely to report experiencing two or more serious financial hardships in the past year (37%) than white drivers (27%, see Figure 21).[137] Eighty-nine percent of those drivers of color (89%)[138] report that the hardship was due to unpredictable pay.[139]

> ***"You feel powerless. The cost of living is huge. I don't have a social life because I work full-time. I don't rest. I don't sleep. I'm in the car and sometimes I even do my business in the car, or urinate in the car because if I disconnect from the app, it's difficult. I stick to it. If I don't stick to it, I don't meet my earnings goal, and I don't meet my expenses."***
>
> Uber Driver

DRIVERS OF COLOR REPORT MORE SERIOUS FINANCIAL HARDSHIP THAN WHITE DRIVERS

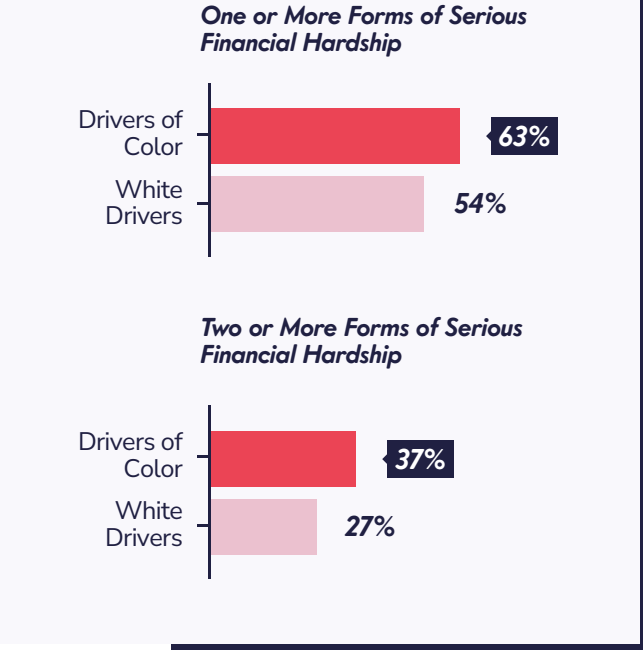


Figure 21.
Share of drivers reporting serious financial hardship in the last year.

More Psychological Distress

Drivers of color report suffering more measures of psychological distress in the last month than white drivers. Large majorities of those drivers of color report that the distress was caused by their lack of control over what they earn on the Uber app.

The psychological distress associated with workers' lack of control over their pay under algorithmic or AI-driven pay also falls disproportionately on drivers of color as compared to white drivers.

- Drivers of color are more likely to report experiencing one or more measures of psychological distress[140] "some," "most," or "all" of the time in the last month (71%) than white drivers (64%, see Figure 22).[141] Drivers of color are also more likely to report the distress was caused by their lack of control over what they earn on the Uber app (71%) than white drivers (60%).[142]
- Drivers of color (51%) are also more likely to report experiencing two or more measures of psychological distress "some," "most," or "all" of the time in the last month than white drivers (44%, see Figure 22).[143] Drivers of color are more likely to report that distress was caused by their lack of control over what they earn on the Uber app (84%) than white drivers (72%).[144]

DRIVERS OF COLOR REPORT MORE MEASURES OF PSYCHOLOGICAL DISTRESS THAN WHITE DRIVERS

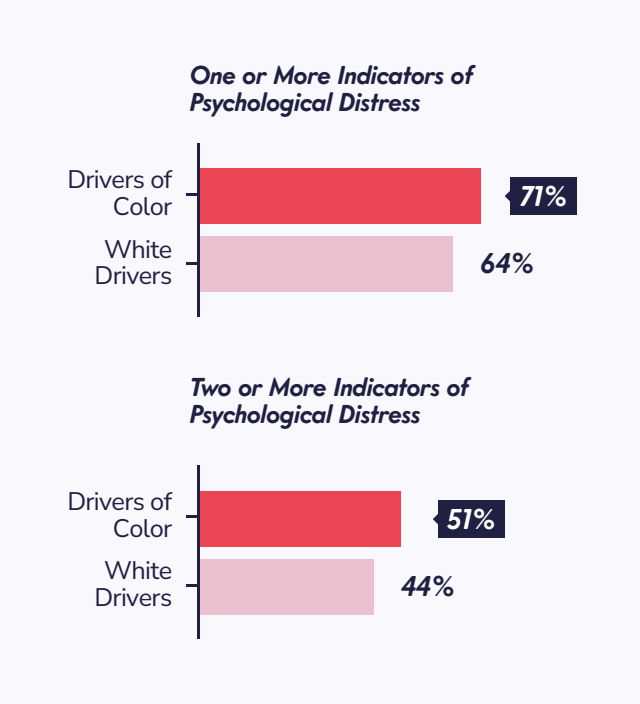


Figure 22.
Share of drivers reporting one or more indicators of psychological distress "some," "most," or "all" of the time in the last month.

PART 4
DISCUSSION

IS UBER'S PAY ALGORITHM AN "INEQUALITY MACHINE"?

We turn to the question of whether Uber's pay algorithm is an "inequality machine" — a system that can play a role in entrenching a new vulnerable class of workers by perpetuating, reinforcing, or amplifying existing economic and racial inequalities.

At the **market competition level**, statements by Uber's CEO, Dara Khosrowshahi, preview how Uber's black-box pay model and its superior access to data can be used to increase the company's dominance over smaller competitors. This, in turn, raises the possibility of the company acquiring a greater ability to extract more profit from each ride at drivers' and passengers' expense.[145] Khosrowshahi stated that the company's so-called "Upfront Fares" system depends on "point estimates for every single trip based on the driver," highlighting that "we make more of these point estimates, than anyone else."[146] He then emphasized how the company's asymmetric data advantage could continue to confer what was presumably an ongoing competitive advantage: "So all things being equal, our AI algorithms are going to be able to learn more and are going to be able to be more accurate than anyone else's, *which is an advantage that over a period of time is absolutely going to accrue to us*."[147]

At the **labor market level**, Uber's black-box pay algorithm can serve as a tool for the company to incentivize, disincentivize, and — as legal scholar Veena Dubal explains — otherwise "direct workers' behaviors without explicitly directing them," all the while facilitating the appearance of drivers' status as independent contractors because the company does not directly tell them what to do.[148] The wholesale exclusion of app-based drivers from the protection of labor and employment laws can create a new vulnerable class of workers subject to corporate exploitation.[149] It also blazes the trail for other app-based corporations to do the same — and increasingly, for W-2 employers to make their jobs more like precarious gig work.[150]

At the **worker level**, our survey found that a large share of respondents — drivers laboring under Uber's black-box algorithm — report they are suffering from pay and work hours unpredictability, indicators of manipulation by the algorithm, as well as serious financial hardship and psychological distress. Our data also indicate that drivers who rely more on the app to make a living are more likely to report both being subjected to more unfavorable pay conditions on the app and more hardship arising from those conditions. Because these drivers perform a disproportionate amount of trips, we can infer they are also key contributors to the company's bottom line.[151]

Uber has yet to provide a full accounting of the factors that influence its algorithm's driver pay calculations,[152] and, in the absence of this, the information we have available does not provide a definitive accounting of these patterns. The relationships in our data, nonetheless, offer suggestive evidence that a driver's reliance on the app or financial vulnerability could play a significant role. Regardless, however, whether these differences are due to the app's design, structural injustices embedded in the app and in the larger society, because these drivers drive more hours on the platform, or some other factor, the effect is the same.

The burdens of laboring under a black-box payment system — of fundamentally not knowing what one will earn from one task to the next, or why — while widespread in our survey, are also reported by the drivers themselves to fall more heavily on drivers who rely more on the app to make a living, including drivers who report working 50 or more hours per week on the app and drivers whose pay from the app is essential for meeting their basic needs. In our survey, these drivers are also more likely to be drivers of color and financially struggling drivers, indicating a clear racial and class element to drivers' experiences of unpredictable pay on Uber's pay algorithm. That disparate impact may in turn, feed into and exacerbate downstream consequences of financial, material and psychological hardship that differ across groups of drivers.

Drivers' survey responses suggest how the uncertainty and effects of unpredictable, AI- manipulated pay can make the ideal of hard work as a pathway to economic stability and mobility a cruel illusion, and exacerbate racial and economic inequality.[153]

As technologist Ruha Benjamin has keenly observed, "the 'frictionless' design of our favorite apps helps to hide and perpetuate the violent frictions of our world."154 Unless we push back, the Inequality Machine grinds on.

PART 5

POLICY RECOMMENDATIONS & CONCLUSION

POLICY RECOMMENDATIONS & CONCLUSION

As machine learning and AI technologies advance and become more widely available, surveillance wages and algorithmic wage discrimination are threatening to spur the creation of a new and growing class of vulnerable workers — whether in app-based industries or in traditional employment models. We need to enact new laws,[155] and, where applicable, enforce existing laws, to safeguard all working people against these harms before they become fully entrenched and it is too late to stop them.[156]

But if Uber drivers are a miner's canary, alerting us to the dangers presented by these new wage-setting technologies, they are also at the frontlines of signaling the way towards alternative policymaking futures. This report thus focuses on priority areas for intervention identified in dialogue with app-based driver members of Gig Workers Rising and PowerSwitch Action partners.

01

STOP THE BOSS'S DATA GRAB!

Systems for the continuous en masse electronic monitoring of workers are the engine of algorithmic wage discrimination and surveillance wages. They enable businesses to capture workers' individual behaviors and profiles; to run endless loops of low-cost, targeted forms of A-B testing and other experimentation; and to enable gamified, variable wage bonuses and penalties for the most minute differences in worker performance. One step policymakers should take is to ban electronic monitoring of workers outright, especially mass continuous surveillance. To the extent intermittent electronic monitoring is permitted, it should be only for a strictly necessary purpose (such as legal compliance), affect the smallest number of workers possible, collect the least amount of data necessary, be narrowly tailored and use the least invasive means to achieve its purpose.[157] There is ample evidence to support such a ban. Documented harms of continuous electronic monitoring include worsening workers' mental health, undermining worker solidarity efforts and morale, and the potential to magnify existing disability, racial, or gender inequalities in the workplace.[158]

02

ESTABLISH BRIGHT-LINE RULES BANNING ALGORITHMIC WAGE DISCRIMINATION AND SURVEILLANCE WAGES

Policymakers can also consider enacting a clear, bright-line ban on algorithmic wage discrimination, surveillance wages, and other forms of predatory AI wage-setting.[159] Policymakers may want to consider approaches that combine prohibitions on the use of AI/machine-learning based wage-setting algorithms with prohibitions on certain unfair outcomes associated with those systems, such as different workers receiving different pay for the same or similar task.

03

A REAL LIVING WAGE

Policymakers should update and enact industry- and jurisdiction-specific living wage laws that truly reflect the cost of living.[160] Algorithmic wage discrimination, surveillance pricing, and other predatory AI wage-setting practices are most pernicious in labor markets when the wage floor is minimal to non-existent. When workers are financially struggling, they are more vulnerable to manipulation — and predation — by algorithmically and AI-manipulated "bonuses" to supplement base-level wages that, on their own, are insufficient to make ends meet.

04

LAWS PROMOTING PREDICTABLE PAY

Another outcome-oriented approach to address the harms of predatory AI wage-setting is to enact predictable pay protections. Predictable pay legislation could require corporations to set a stable rate of pay and limit bonuses to a fixed percentage of a worker's base compensation, just like many collective bargaining agreements do.[161] Similar to how predictable scheduling laws require companies to compensate workers when the company changes a worker's schedule without sufficient notice, a predictable pay law could require that a company which lowers a worker's pay rate without sufficient notice must compensate the worker at the original rate.[162] Such laws should also include notice and transparency provisions, including rights to individual and aggregate worker pay data so that workers and advocates can surface suspected violations of the law.

05

GUARANTEED PAY AND HOURS

Another potential policy response to the rise of predatory algorithmic wage-setting systems are **guaranteed pay and hours laws**, or laws that require corporations and workers to establish pay rates and a minimum number of paid working hours prior to the start of work. One precedent for such an approach is Germany's "Act on Part-Time and Temporary Work," or, in German, *Teilzeit- und Befristungsgesetz*, or "TzBfG."[163] These types of laws: (1) require companies to enter into a pre-hiring contract with workers that would set a **minimum number of guaranteed work hours** for a particular time period;[164] (2) require the pre-hiring contract to **set dignified pay rate standards**, (3) **limit the frequency of a company's changes** to the pre-hiring contract, by requiring the contract to remain in effect for a specified period of time; and (4) require notice of any changes to the pre-hiring **contract terms** both *before* and *afterwards*.

06

JUST CAUSE LAWS

Policymakers should support just cause laws that broadly protect workers against unfair terminations (or in the app-based driver context, so-called, "deactivations"). Algorithmic age discrimination, surveillance wages, and other predatory AI wage-setting practices are most likely to flourish in contexts where there are gross disparities in bargaining power between workers and their employers. The opaque, nudging incentives of an algorithmic compensation system are much more difficult for workers to disregard in a workplace where they can be terminated at any time, for any reason.

07

STRENGTHENING PATHWAYS TO COLLECTIVE BARGAINING

Algorithmic wage discrimination and surveillance wages are tools that facilitate businesses' ability to "direct workers' behaviors without explicitly directing them,"[165] isolate them from one another, and diminish worker power by eroding workers' ability to build common cause. Laws and interventions that strengthen worker pathways to collective bargaining and building worker organizations remain essential for rebalancing power asymmetries.

APPENDICES

APPENDIX A

DESCRIPTIVE DATA[166]

RACE OR ETHNICITY			
Hispanic or Latino/a	38%	Prefer Not to Answer	4%
White	38%	Asian or Pacific Islander	2%
Black or African-American	10%	Multiracial	2%
Middle Eastern or North African	5%	American Indian or Alaska Native	1%

GEOGRAPHIC REGION	
Southeast	42%
West	21%
Southwest	14%
Midwest	13%
Northeast	10%

SURVEY LANGUAGE	
English	60%
Spanish	32%
Arabic	8%

GENDER	
Male	83%
Female	16%
Prefer Not to Answer	1%

AGE			
20-29 years old	1%	60-69 years old	30%
30-39 years old	5%	70+ years old	12%
40-49 years old	16%	Prefer Not to Answer	1%
50-59 years old	35%		

TENURE ON UBER APP			
Less Than 1 Year	15%	7 to 9 Years	20%
1 Year to 3 Years	17%	9 to 11 Years	15%
3 Years to 5 Years	14%	More than 11 Years	4%
5 Years to 7 Years	15%		

PART-TIME, FULL-TIME AND OVERTIME	
Part-Time Drivers	30%
Full-Time Drivers	43%
Overtime Drivers	27%

SOURCE OF INCOME	
Essential Income Drivers	72%
Non-Essential Income Drivers	28%

FINANCIAL VULNERABILITY	
Financially Struggling Drivers	35%
More Financially Secure Drivers	65%

APPENDIX B

SURVEY METHODOLOGY

For the National Survey of Uber Drivers, we recruited current Uber app-based ride drivers from across the United States. The online survey was offered on the Typeform platform in three languages: English, Spanish, and Arabic. Drivers also had the opportunity to submit comments. Survey respondents were offered the chance to enter a raffle to win one of ten $200 gift cards.

We advertised the survey based on a Meta/Facebook targeting method. Because Uber, the Census, and other government sources of data do not make publicly available the current demographics of Uber's national driver ridehailing workforce, we did not use post-stratification weighting techniques. This survey describes the trends and patterns in the data provided by this specific group of drivers.

We did however, implement numerous measures to help ensure data quality. All survey responses that took less than seven minutes to complete were excluded. We also asked respondents to answer a series of "driver knowledge" questions that were spread throughout the survey. Drivers who answered more than one of these "driver knowledge" questions incorrectly were excluded from the sample.

To be eligible for the full survey, participants had to be residents of the United States who had driven at least 10 hours a week for Uber over the last three months. Survey respondents who reported that they had worked for Uber less than 10 hours a week over the last three months, were immediately screened out.

Completed surveys included only those which met the data quality standards described above, and in which participants had responded to all of the survey questions. All survey responses were tested for statistical significance using a chi-square test or t-test (as applicable) with a p-value of less than or equal to 0.05.

APPENDIX C

DRIVER CATEGORY TABLES

Essential Income and Discretionary Income Drivers

TABLE 1: BY RACE[167]

	ESSENTIAL INCOME	DISCRETIONARY INCOME	TOTAL
PERSON OF COLOR	76%	24%	100%
WHITE	65%	35%	100%

TABLE 2: BY FINANCIAL VULNERABILITY

	ESSENTIAL INCOME	DISCRETIONARY INCOME	TOTAL
FINANCIALLY STRUGGLING	80%	20%	100%
MORE FINANCIALLY SECURE	68%	32%	100%

TABLE 3: BY PART-TIME, FULL-TIME, OVERTIME

	ESSENTIAL INCOME	DISCRETIONARY INCOME	TOTAL
PART-TIME	52%	48%	100%
FULL-TIME	76%	24%	100%
OVERTIME	88%	12%	100%

Overtime, Full-Time and Part-Time Drivers

TABLE 1: BY RACE[168]

	OVERTIME DRIVER	FULL-TIME DRIVER	PART-TIME DRIVER	TOTAL
PERSON OF COLOR	33%	40%	26%	100%
WHITE	19%	46%	35%	100%

TABLE 2: BY FINANCIAL VULNERABILITY

	OVERTIME DRIVER	FULL-TIME DRIVER	PART-TIME DRIVER	TOTAL
FINANCIALLY STRUGGLING	30%	43%	27%	100%
MORE FINANCIALLY SECURE	26%	43%	31%	100%

TABLE 3: BY SOURCE OF INCOME

	OVERTIME DRIVER	FULL-TIME DRIVER	PART-TIME DRIVER	TOTAL
ESSENTIAL INCOME	33%	45%	21%	100%
DISCRETIONARY INCOME	12%	37%	51%	100%

APPENDIX D

SURVEY QUESTIONS

QUESTION	ANSWER OPTIONS
1. In the past three months, have you worked as an Uber rideshare driver for at least 10 hours each week?	○ Yes ○ No
2. In the past three months, in which metropolitan area have you mainly driven for Uber?	○ Chicago, IL ○ San Francisco Bay Area, CA ○ Washington, DC, Maryland, Virgina (DMV) ○ A different metro area
[IF A DIFFERENT METRO AREA] **3.** Which metropolitan area was it?	○ Atlanta, GA ○ Austin, TX ○ Boston, MA ○ Dallas-Fort Worth, TX ○ Denver, CO ○ Fort Lauderdale, FL ○ Houston, TX ○ Las Vegas, NV ○ Los Angeles, CA ○ Miami, FL ○ New York City, NY ○ Orlando, FL ○ Philadelphia, PA ○ Phoenix, AZ ○ Pittsburgh, PA ○ Portland, OR ○ San Diego, CA ○ Seattle, WA ○ Other
4. Choose your age group	○ 20–29 years old ○ 30–39 years old ○ 40–49 years old ○ 50–59 years old ○ 60–69 years old ○ 70+ years old ○ Prefer not to answer

5. How would you describe your race or ethnicity?	○ American Indian or Alaska Native ○ Asian or Pacific Islander ○ Black or African American ○ Hispanic or Latino/a ○ Middle Eastern or North African ○ Multiracial ○ White ○ Prefer not to answer ○ Other
6. How would you describe your gender identity?	○ Man ○ Woman ○ Non-Binary ○ Prefer Not to Answer ○ Other
7. Which of the following statements best describes the income you earn from Uber?	○ It is essential for meeting my basic needs. ○ It is an important component of my budget, but not essential. ○ It is nice to have, but I could live comfortably without it.
8. How long have you been an Uber driver?	○ 1 year or more ○ Less than 1 year
[IF LESS THAN 1 YEAR] **9.** How many months have you been an Uber driver?	*Enter the total number of months, even if you were not driving continuously.*
[IF 1 YEAR OR MORE] **10.** How many years have you been an Uber driver?	*Enter the total number of years, even if you were not driving continuously.*
11. In the last three months, on average, how many hours per week did you work as an Uber driver?	*Enter the total number of hours per week. Count all the time you spent on the app: both giving rides and waiting for them.*
12. In the last month, how often do you earn less in a day on the Uber app than what you expected or planned for?	○ Never in the past month ○ 1–2 times in the past month ○ Once a week ○ Several times a week ○ Every day

13. In the past three months, how often have you experienced the Uber app slowing down the rate at which it sends you rides?

- ○ Always
- ○ Often
- ○ Sometimes
- ○ Rarely
- ○ Never

[IF ALWAYS, OFTEN, SOMETIMES, OR RARELY]

14. In the past three months, when does the Uber app slow down the rate at which it sends you rides?

- ○ At certain times of day
- ○ When I am approaching the amount of rides I need to meet an Uber Quest, Boost, or other bonus or promotion
- ○ When I am about to achieve a higher level on Uber Pro (for example, move from Gold to Platinum status)
- ○ After I decline a low fare ride on the Uber app
- ○ After I get a high fare ride on the Uber app
- ○ None of these
- ○ Other

15. In the past three months, have you ever declined rides on the Uber app?

- ○ Yes
- ○ No

[IF YES]

16. In the past three months, how often have you declined rides on the Uber app because the driver fare (or trip fare) is too low?

- ○ Always
- ○ Often
- ○ Sometimes
- ○ Rarely
- ○ Never

[IF ALWAYS, OFTEN, SOMETIMES OR RARELY]

17. In the past three months, which of the following best describes what happens when you decline rides on the Uber app because the driver fare (or trip fare) is too low?

- ○ *My overall earnings decrease*. The Uber app sends me less frequent, lower-paying rides.
- ○ *My overall earnings remain about the same*. The Uber app keeps sending me more lower-paying rides or makes me wait longer for higher-paying rides.
- ○ *My overall earnings increase*. The Uber app sends me higher-paying rides.
- ○ I don't know.

18. Thinking about your overall ability to earn money on the Uber app in the last 3 months, compared to one year ago, which of the following best fits your experience?

- ○ In general, it is now *more difficult* to be paid the same amount of money than it was a year ago.
- ○ In general, it is now *easier* to be paid the same amount of money than it was a year ago.
- ○ In general, it has *not changed*. I can be paid about the same amount with the same amount of effort.

19. Do you agree or disagree? Driving for Uber feels like gambling — the occasional good fare keeps me going.

- ○ Strongly agree
- ○ Agree
- ○ Disagree
- ○ Strongly disagree

20. How confident are you that you could come up with $400 if an unexpected need arose within the next month?

- ○ I am certain I could come up with the full $400.
- ○ I could probably come up with $400.
- ○ I could probably *not* come up with $400.
- ○ I am certain I could *not* come up with $400.

21. In the past month, has earning less on the Uber app than what you expected or planned for led you to ...

CHOOSE ALL THAT APPLY and then press OK:

- ○ Work more hours on the app than I had originally planned
- ○ Keep working on the app, even though I was experiencing foot, neck, back, joint, headache or other physical pain
- ○ Keep working on the app, even though I was tired
- ○ Have difficulty meeting a family, work, or school-related obligation
- ○ Accept rides I would normally decline, including rides that I feared may be unsafe
- ○ Not pay the full amount on a gas, oil, and/or electricity bill
- ○ None of these

22. In the past year have you ... Avoided seeing a doctor, going to the hospital, or buying medicine because you were worried about the cost?

- ○ Yes
- ○ No
- ○ Don't know/refuse

23. In the past year have you ... Stayed in an automobile, shelter, or any other place not meant for regular housing, even for one night?

- ○ Yes
- ○ No
- ○ Don't know/refuse

24. In the past year have you ... Felt hungry, but not eaten because you couldn't afford enough food?

- ○ Yes
- ○ No
- ○ Don't know/refuse

25. In the past year have you ... Had your vehicle repossessed or threatened to be repossessed?

- ○ Yes
- ○ No
- ○ Don't know/refuse

26. When you experienced those hardships over the last year, was it because of earning less on the Uber app than you expected?

- ○ Yes
- ○ No
- ○ Don't know/refuse

27. Last month, how often did you ... Feel nervous, anxious, or stressed?

- ○ All of the time
- ○ Most of the time
- ○ Some of the time
- ○ A little of the time
- ○ None of the time

28. Last month, how often did you … Feel hopeless?	○ All of the time ○ Most of the time ○ Some of the time ○ A little of the time ○ None of the time
29. Last month, how often did you … Feel so sad that nothing could cheer you up?	○ All of the time ○ Most of the time ○ Some of the time ○ A little of the time ○ None of the time
30. Were these feelings as a result of your lack of control over what you earn on the Uber app?	○ Yes ○ No ○ I don't know/refuse

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ENDNOTES

1 Researchers have elucidated how algorithmic wage-setting systems and app-based work can contribute to racial and economic inequality. See, e.g., Veena Dubal, On Algorithmic Wage Discrimination, 123 Colum. L. Rev. 1929, 1992 (2023) (describing how algorithmic wage discrimination practices "have come to form what are, as this Article suggests, morally objectionable techniques of work control and compensation" that "circumscribe autonomy and economic mobility for highly racialized workforces" and "are seeping into other sectors' labor practices); Rejouis, Gabrielle. "A Sieve for Black Workers." *The Forge*, 29 Feb. 2024 (explaining how "today's gig workers, many of whom are Black, continue to be excluded from worker protections," which has, in turn contributed to the "arbitrary creation of a vulnerable class of workers"that "is already extending to 'professional' careers"); Teachout, Zephyr. "Algorithmic Personalized Wages." *Politics and Society*, vol 51, no. 3, 2023 (describing how algorithmically created personalized wages will "increase economic and racial inequality"); van Doorn, Niels. "Platform Labor." *Information, Communication, and Society*, vol. 20, no. 6, 2017, p. 907-08 ("[I]n the world of platform labor, inequality is a feature rather than a bug. Platform labor remains thoroughly embedded in a world … which hinges on the gendered and racialized subordination of low-income workers").

2 Guinier, Lani, and Gerald Torres. *The Miner's Canary*. Harvard University Press, 2002.

3 We use the phrase "overtime" to convey the long hours these drivers spend working on the app. These drivers, however, do not receive overtime "premium" pay like traditional employees. Uber classifies its drivers as independent contractors.

4 According to the U.S. Federal Reserve, "the question about the ability to pay for a $400 emergency expense … has become a go-to data barometer for measuring the financial fragility of Americans." Grover, Michael. "What a $400 emergency expense tells us about the economy." *Federal Reserve Bank of Minneapolis*, 11 Jun. 2021.

5 Dubal, "On Algorithmic Wage Discrimination," *supra*, pp. 1946–52; Teachout, "Algorithmic Personalized Wages," *supra*, pp. 8–10; Teachout, Zephyr. "Surveillance Wages: A Taxonomy." *Law and Political Economy Project*, 6 Nov. 2023.

6 Dubal, "On Algorithmic Wage Discrimination," *supra*, pp. 1933–34; Teachout, "When Big Brother Is Your Boss," *supra*; "The Gig Trap," *Human Rights Watch*, 12 May 2025, p. 53.

7 In other words, under U.S. federal, state and local law, such practices are generally not prohibited unless they violate existing anti-discrimination, competition, consumer protection, or other laws. See "Prohibiting Surveillance Prices and Wages." AI Now Institute, et al. Feb. 2025, pp. 15–20; Dubal, Veena. "Algorithmic wage discrimination requires policy solutions that enforce predictability and the U.S. spirit of equal pay for equal work," *Washington Center for Equitable Growth,* 12 Jul. 2023 ("Notably, this is not a problem that U.S. employment law (in its current form) alone solves."). Although these practices, may in some instances, violate existing laws, enforcement remains challenging due to these systems' lack of transparency, which makes it difficult to detect violations. *AI Now Institute*, "Prohibiting Surveillance Prices and Wages," *supra*, p. 15.

8 "Uber's Profit, Power, and Problems with CEO Dara K," Podcast Episode - On with Kara Swisher, 30 Oct. 2023 (Uber CEO Dara Khosrowshahi stating "We use AI … when a driver gets an offer for a particular ride …. AI is intermingled and every single part of our service at this point and these algorithms are superior to the technology we had 5 to 10 years ago because they learn a skill in a personalized way.")

9 According to Human Rights Watch, in October 2022, Human Rights Watch sent a letter to Uber requesting information about the factors guiding the company's algorithm's calculations, to which the company reportedly responded, but declined to provide the requested information. "The Gig Trap," *supra*, fn. 124.

10 Khosrowshahi, Dara. "Only on Uber: more flexibility, choice, and support." *Uber*, 29 Jul. 2022; "Upfront Fares," *Uber Help*, last checked 27 May 2025; Kerr, Dara. "Secretive Algorithm Will Now Determine Uber Driver Pay in Many Cities," *The Markup*, 1 Mar. 2022; Sherman, Len. "Uber's CEO Hides Driver Pay Cuts to Boost Profits." *Forbes*, 15 Dec. 2023; Toh, Amos. "Gig workers think they work for themselves. They don't." *San Francisco Chronicle*, 17 Oct. 2022.

11 Specifically, according to Uber's April 4, 2022 Fare Addendum and September 30, 2024, Driver Fare Addendum, "[o]n certain trips, when [drivers] receive a Ride request" the app may display "a pre-trip [Driver Fare]." ("Fares; Gratuity," April 4, 2024, Fare Addendum ("4/4/2022 Addendum"); "Driver Fares; Gratuity," September 30, 2024, Driver Fare Addendum ("9/30/2024 Addendum").) If a driver does **not** receive a pre-trip Driver Fare, then the Driver Fare may be based on "per-minute" or "per-mile rates." (*Ibid*.) According to the Addenda, the Driver always has the right to "charge a [Driver Fare] that is **less than** the [pre-trip Fare]," or "negotiate … a [Driver Fare] that is **lower than** the [pre-trip Fare]." (*Ibid*. Emphasis added.) If the driver does not request a negotiated fare, "the [Driver Fare] recommended by Uber shall be the amount used in the transaction." (*Ibid*.)

12 Saul, Dereck. "Uber Sets Profit Record as Lyft and DoorDash Keep Losing Money." *Forbes*, 7 Feb. 2024.

13 Bitter, Alex. "Gig Workers worked more but earned less in 2024, a new study shows." *Business Insider*, 18 Feb. 2025; Sherman, "Uber's CEO Hides Driver Pay Cuts to Boost Profits," *supra*; Craggs Mersinoglu, Yasemin and Camilla Hodgson, "Uber's Next Act." *Financial Times*, 24 Sep. 2024; "The 2025 Annual Gig Mobility Report," *Gridwise*, 18 Feb. 2025. See also Part II.A, *infra*.

14 Sherman, Len. "Uber's New Math." *Forbes*, 16 Jan. 2023; "Uber Takes Us for a Ride." *PowerSwitch Action*, last accessed 27 May 2025; Lung, Natalie, "Uber, Lyft risk losing customers as fares jump 7.2%," *Los Angeles Times*, 19 Feb. 2025; "The 2025 Annual Gig Mobility Report," *supra*.

15 Sherman, Len. "Why the FTC Needs to Investigate Uber's Anti-Competitive Practices." *Forbes*, 6 Sep. 2024; "Uber Announces Results for Fourth Quarter and Full Year 2024," *Uber Investor*, 5 Feb. 2025; Jasper, Jolly, and Graeme Wearden. "Landmark Moment as Uber Unveils First Annual Profit as Limited Company." *The Guardian*, 7 Feb. 2024.

16 Ocampo, Dan. "Uber's Price-Gouging and What We Can Do About It." *National Employment Law Project*, 14 Nov. 2024.

17 Ryan Calo, et al., The Taking Economy, 107 Colum. L. Rev. 1623, 1627–31 (2017).

18 See Dubal, "On Algorithmic Wage Discrimination," *supra*, p. 1941, fn. 39; Glick, Molly. "Why You Soon Might Be Paid Like an Uber Driver." *Slate*, 13 Oct. 2024. Wells, Katie and Funda Ustek Spilda, "Uber for Nursing," *Roosevelt Institute*, 17 Dec. 2024; "When AI Eats the Manager," FairWork, 2025; Dubal, Veena, and Wilneida Negrón. "How AI Uncouples Hard Work and Fair Pay." *Washington Center for Equitable Growth* (forthcoming).

19 Dubal, "On Algorithmic Wage Discrimination," *supra*, pp. 1933–1934.

20 Teachout, Zephyr. "When Big Brother Is Your Boss." *The Nation*. 5 Jan. 2022 See also Zephyr Teachout, *Surveillance Wages: Private Governing Power and the Future of Work*, 19 U. St. Thomas L.J. 165 (2023).

21 Of the remaining 28% of drivers, 6.7% said it is now "easier," and 21.6% said in general, "it has not changed."

22 Reported hours spent working as an Uber driver include all time spent on the app: both giving rides and waiting for them.

23 A study released on June 19, 2025, of 1.5 million trips from 258 drivers in the United Kingdom found that after Uber introduced a variable pay model in which driver "fares are no longer a simple function of time and distance," "[driver] *pay has decreased*, Uber's cut has increased, job allocation and *[driver] pay is less predictable, inequality between drivers is increased*, and drivers spend more time waiting for jobs." See Binns, R., et al. "Not even nice work if you can get it: a longitudinal study of Uber's algorithmic pay and pricing." FAccT '25, June 23–26, 2025, Athens, Greece. (Italics added.)

24 Multiple studies have found that full-time drivers account for the bulk of the trips on app-based passenger platforms. A 2020 study on Seattle app-based drivers found that a third of all drivers worked more than 32 hours a week, but provided 55% of all trips. The same study found that nearly three-fourths of drivers relied on app-based driving as their sole source of income. Parrott, James, et al. "A Minimum Compensation Standard for Seattle TNC Drivers." *Center for New York City Affairs*, 2020, pp. 1–2; see also Sonnemaker, Tyler. "Uber and Lyft Say the battle over AB-5 is about preserving flexibility for part-time gig workers." *Business Insider*, 21 Aug. 2020. A 2024 study of New York City drivers found that drivers averaging 40 or more weekly hours of on-app time during 2023 accounted for 43.4 percent of all trips, and all drivers working more than 30 weekly session hours together accounted for 74 percent of all trips. Parrott, James. "Revised Expense Model for the NYC Taxi and Limousine Commission's High-Volume For-Hire Vehicle Minimum Pay

Standard." *The New School Center for New York City Affairs*, 2024, pp. 13–14. The same study found that eighty percent of surveyed drivers relied on app-based driving as their sole source of income. *Id*. at p. 1. Relatedly, a 2024 study of Minnesota drivers found that the 45 percent of app-based passenger drivers who work less than 10 hours a week provide only 11 percent of all trips. Parrot, James, et al. "The Economic Situation of Gig Passenger Drivers in Minnesota." *Institute for Research on Labor and Employment*, Working Paper #105-2024, Oct. 2024, p. 5. A forthcoming study concludes that "[w]hile the TNC industry attracted many part-time drivers, full-time drivers account for the bulk of trips," based on analysis of data from New York City, Seattle, and Minnesota. Parrot, James. "Taking stock of the first decade of regulating pay for gig passenger drivers." *Minimum Wage and Monopsony Power, Michael Reich Conference*, 6 Jun. 2025, p. 7.

25 Chaum, Miriam. "Understanding Upfront Fares." *Uber Under the Hood*, 28 Apr. 2023. ("Upfront Fares are not personalized — our fares algorithms do not use information on an individual driver's personal characteristics (like their gender, race, or ethnicity) or past behavior on our platform (like their rating, past trips, or acceptance behavior) in formulating a fare offer for that driver. Promotions may be offered only to certain groups of drivers, and past behavior may be used to determine eligibility").

26 Benjamin, Ruha. *Race After Technology*. Polity Press, 2019, p. 59.

27 McMillan Cottom, Tressie. "Where Platform Capitalism and Racial Capitalism Meet." *Sociology of Race and Ethnicity*, vol. 6, no. 4, pp. 441–49; Sheidlower, Noah. "Gig Work Is the New Ellis Island for Immigrants Looking for Work. But Many Drivers Feel Trapped in the Long Hours and Low Pay." *Business Insider*, 12 May 2024; Ongweso Jr. Edward, "Civil Rights Groups Say Uber Actively Hurts Black People," *Vice*, 23 Sept. 2020.

28 Glick, Molly, *supra;* Wells, Katie, et al., "Uber for Nursing," *supra*; Fair Work, "When AI Eats the Manager," *supra*; El Hajal, Georges, et al. "The Future of Hospitality Jobs." *Research in Hospitality Management*, 2021.

29 Dubal, Veena, and Wilneida Negrón. "How AI Uncouples Hard Work and Fair Pay." *Washington Center for Equitable Growth* (forthcoming).

30 A recent report describes how, in some instances, surveillance wages and prices may already be illegal under existing laws. *AI Now Institute*, "Prohibiting Surveillance Prices and Wages," *supra*, pp. 15–20.

31 In other words, under U.S. federal, state and local law, such practices may violate existing anti-discrimination, competition, consumer protection, or other laws, but are not explicitly addressed in any legal regime. See AI Now Institute, "Prohibiting Surveillance Prices and Wages," *supra*, pp. 15–20; Dubal, Veena. "Algorithmic wage discrimination requires policy solutions that enforce predictability and the U.S. spirit of equal pay for equal work," *supra* ("Notably, this is not a problem that U.S. employment law (in its current form) alone solves.").

32 Teilzeit- und Befristungsgesetz [TzBfG] [Part-Time and Fixed-Term Employment Act], Dec. 21, 2000, Bundesgesetzblatt [BGBl I S.] at 1966, as amended by Gesetz zur Weiterentwicklung des Teilzeitrechts – Einfuhrung einer Bruckenteilzeit [BrTzEG] [Law on the further development of part-time work law – introduction of a bridge part-time work scheme], Jan. 1, 2019, Bundesgesetzblatt [BGBl I p.] at 2384, § 12, para. 2 (Ger.)

33 Dubal, "On Algorithmic Wage Discrimination," *supra*, p. 1950, pp. 1963-64; Teachout, "Surveillance Wages: Private Governing Power and the Future of Work," *supra*, p. 170.

34 Hertel-Fernandez, Alexander. "Estimating the Prevalence of Automated Management and Surveillance Technologies at Work and Their Impact on Workers' Well-Being." *Washington Center for Equitable Growth*, 1 Oct. 2024. Accessed 25 May 2025. See also Dincer, Melodi. "Tell the White House to Limit AI-Driven Worker Surveillance." *Tech Policy Press*, 27 Jun. 2023.

35 Dubal, "On Algorithmic Wage Discrimination," *supra*, pp. 1933–34; Teachout, Zephyr. "When Big Brother Is Your Boss." *The Nation*. 5 Jan. 2022.

36 See *supra* note 7 describing how although these practices, may in some instances, violate existing laws, enforcement remains challenging due to these systems' lack of transparency, which makes it difficult to detect violations.

37 AI Now Institute, "Prohibiting Surveillance Prices and Wages," *supra*, p. 15.

38 Dubal, "On Algorithmic Wage Discrimination," *supra*, p. 1946 (describing how "[o]n-demand labor companies developed algorithmic wage discrimination … to solve a particular problem that accompanies the (mis)classification of their workers as independent contractors. Since drivers are not treated as employees … and the primary legal indicium of employment status is control…, firms often do not directly order the worker as to where they must go … which would be the simplest way to calibrate supply and demand. Instead, the firms use data … fed into automated tools … to incentivize … movement …. and to direct workers' behaviors without explicitly directing them.") See also Dubal, Veena. "Algorithmic wage discrimination requires policy solutions," *supra* (noting that "[g]ig workers are highly "incentivized" through pay structures to work at specific times. Not working at those times or in the ways that Uber and Lyft want their contract drivers to work can result in them losing money, instead of earning it"); id. ("Using data extracted from drivers' labor and then fed into machine-learning technologies, [gig work] companies can personalize base pay and the opportunities to raise base pay …. [B]ecause every gig driver is ostensibly an 'independent contractor,' the two companies can drive down individual pay while maximizing their own corporate profits"). For a discussion of Uber's and Lyft's opposition to having their drivers classified as employees see generally, Ocampo, Dan, "Fight Over Employment Status of Uber and Lyft Drivers Moves Through State Courts," *State Court Report*, 20 May 2024, updated 26 Jul. 2024; Dubal, Veena, "The New Racial Wage Code," 15 Harv. L. & Pol'y Rev. 511 (2021); Rainey, Rebecca, et al. "Uber, Lyft Are Winning the Gig Worker War in States, Courts." *Bloomberg Law*, 5 Aug. 2024. For a discussion of Uber's rising profits and drivers' falling wages since the adoption of so-called "Upfront Fares" in 2022, see Part II.A, *infra*

39 Dubal, "On Algorithmic Wage Discrimination," *supra*, p. 1941; Teachout, "Algorithmic Personalized Wages," *supra*, pp. 8-10.

40 See generally, Petropoulus, Georgios. "The dark side of artificial intelligence." *Bruegel*, 22 Feb. 2022.

41 Sociologist Tracie McMillan Cottom describes how the terms and conditions of labor on app-based platforms becomes "predatory" when workers are nominally included on platforms that purport to offer opportunities for economic mobility, but instead procure labor on fundamentally extractive terms. McMillan, Tracie. "Where Platform Capitalism and Racial Capitalism Meet: The Sociology of Race and Racism in the Digital Society." *Sociology of Race and Ethnicity*, vol. 6, no. 4, Oct. 2020, pp. 443-444.

42 Rejouis, *supra*.

43 Teachout, "Algorithmic Personalized Wages," *supra*, p. 3.

44 Dubal, Veena and Wilneida Negrón. "How AI Uncouples Hard Work and Fair Pay." *Washington Center for Equitable Growth* (forthcoming). In addition, unions have long traditionally disfavored variable and bonus pay systems because of the ease with which corporations can use them to avoid pay raises, lower the wage floor, and exercise arbitrary control and favoritism over workers. Erickson, Christopher. "Lump Sum Bonuses in Union Contracts," *Center for International Studies, Massachusetts Institute for Technology*, 1989, pp. 6–7. See also Claburn, Thomas. "Algorithmic Wage Discrimination: Not Just for Gig Workers." *The Register*, 6 Jul. 2024.

45 For a discussion of the harms of algorithmic wage discrimination, see Dubal, Veena, "On Algorithmic Wage Discrimination," p. 1950 ("Uber primarily addresses the situation of the number of workers exceeding the number of customers by keeping workers waiting and unpaid while offering tantalizing bonuses and offers that keep them on the road with the possibility of receiving a larger fare in the near future."), p. 1976 ("Together with low wages, the unfairness, gamblification, and trickery create an untenable bundle of harms that run afoul of moral ideals of formal labor embedded in longstanding social and legal norms around work."). See also Human Rights Watch,"The Gig Trap," *supra*, pp. 50–54 (opacity); pp. 54–58 (incentivization); pp. 58–59 (dispatching); pp. 64–66 (rewards programs); AI Now Institute, "Prohibiting Surveillance Prices and Wages," *supra*, pp. 9–14 (describing harms of surveillance wages).

46 See Veena Dubal, *Data Laws at Work*, 134 Yale L.J. 405, p. 443 (2025) (noting Uber's use of a trade secret defense against drivers seeking to access the logic of Uber's rider-passenger matching system and driver pay systems under the European Union's General Data Protection Act); see "The Gig Trap," *supra*, fn. 124 (describing Uber's declining to provide requested information regarding the company's pay algorithm calculations to Human Rights Watch in October 2022).

47 In their recent book, *The AI Con*, Bender and Hanna emphasize the importance of ensuring that "the main story about AI is the human one, not the technical one." Bender, Emily, and Alex Hanna. *The AI Con*. Harper Collins Publishers, 2025, p. 170.

48 Guinier and Torres, *supra*.

49 See "black box," Merriam-Webster. Last accessed 14 Jun. 2025.

50 The following are the number of non-respondents for each category: (1) Demographics = 8; (2) Race and/or Ethnicity = 8; (3) Survey Language = 0; (4) Geographic Region = 8; (5) Gender = 2; (6) Age = 77; (7) Number of Years Driving for Uber = 0; (8) Part-Time, Full-Time, and Overtime Drivers = 0; (9) Source of Income = 0.

51 See Dubal, "On Algorithmic Wage Discrimination," *supra*, p. 1936 (referring to computational "[s]ystems that make it nearly impossible for workers to predict or understand their constantly changing, and frequently declining, compensation").

52 "The Gig Trap," *supra, p. 55*.

53 Merchant, Brian. "If you work for Uber or Amazon, you may be a victim of algorithmic wage discrimination." *L.A. Times*, 11 Apr. 2023.

54 Teachout, "When Big Brother Is Your Boss," *supra*.

55 Dubal, "On Algorithmic Wage Discrimination," *supra*, pp. 1943, 1949–50. See also Anderson, Monica. "How gig platform workers view their jobs," *Pew Research Center*, 8 Dec. 2021 (reporting polling findings of U.S. workers finding that "[f]ewer than half of gig platform workers say they understand how the companies that run these platforms determine how much they got paid.")

56 Teachout, Zephyr. "Algorithmic Personalized Wages." *Policy & Society*, vol. 51, 2023, p. 15.

57 McMillan Cottom, Tressie. "The Hustle Economy." *Dissent*, Fall 2020. See also "The Gig Trap," *supra*, pp. 50–51, 58–59.

58 Rejouis, *supra*; "A Crisis of Safety and Fair Work in a Racialised Platform Economy," FairWork, 2023; Ongweso Jr., Edward, "The Gig Economy's Business Model is a Racial Justice Issue," *Vice*, 25 May 2021.

59 Teachout, "Surveillance Wages: Private Governing Power and the Future of Work," *supra*, pp. 174–75; Teachout, "Algorithmic Personalized Wages," *supra*, pp. 19–23; "Prohibiting Surveillance Prices and Wages," *supra*, pp. 13–14. See also Salil Mehra, Price Discrimination-Driven Algorithmic Collusion, 26 Stan. J.L. Bus. & Fin. 171, pp. 171–73.

60 Teachout, "Surveillance Wages: Private Governing Power and the Future of Work," *supra*, p. 170.

61 Dubal, "On Algorithmic Wage Discrimination," *supra*, p. 1939; Teachout, "Algorithmic Personalized Wages," *supra*, p. 17; Teachout, "Surveillance Wages: Private Governing Power and the Future of Work," *supra*, p. 179.

62 Dubal, "On Algorithmic Wage Discrimination," *supra*, pp. 1943, 1969.

63 Teachout, "Surveillance Wages: Private Governing Power and the Future of Work," *supra*, p. 170.

64 Cerullo, Megan. "How companies get inside gig workers' heads with 'algorithmic wage discrimination.'" *CBS News*, 18 Apr. 2023; Gardner, Eric. "Here's What Happened When We Put 7 Uber Drivers in the Same Room," *More Perfect Union*, 20 Sep. 2024; Teachout, "When Big Brother Is Your Boss," *supra*; Dubal, "On Algorithmic Wage Discrimination," *supra*; Merchant, *supra*.

65 "Drive When You Want, Make What You Need," *Uber*, uber.com/us/en/drive, last accessed 28 May 2025.

66 Malin, Brenton, and Curry Chandler. "Free to Work Anxiously: Splintering Precarity Among Drivers for Uber and Lyft." *Communication, Culture, & Critique*, vol. 10, no. 2, 2017, pp. 382–400; Ravenelle, Alexandrea. *Hustle and Gig: Struggling and Surviving in the Sharing Economy*. University of California Press, 2019; Dubal, "On Algorithmic Wage Discrimination," *supra*, p. 1971 ("For many drivers … their inability to make as much as they once did, or as others claim that they can, becomes a source of inner conflict — producing feelings not only of unfairness but also of personal failure and hopelessness.")

67 Gebrial, Dalia. "Racial Platform Capitalism," *EPA: Economy and Space*, vol. 56, no. 4, 2022, p. 1173. See also Veena Dubal, *Economic Security & the regulation of gig work in California*, 13 Eur. Lab. L.J. 51, 57 (2022); Christopher Peterson, et al., Coercive Rideshare Practices, 90 U. Chi. L. Rev. 623, 646 (2023).

68 Sriam, Akash. "Uber, Lyft Drivers strike across US, demanding fairer pay." *Reuters*, 14 Feb. 2024; Walk-Morris, Tatiana, "Rideshare Drivers Demand End to 'Firing by App,'" *The American Prospect*, 5 Jul. 2024.

69 Dubal, "On Algorithmic Wage Discrimination," *supra*, pp. 1946, 1948–51.

70 Sherman, Len. "The Inconvenient Truths Uber's CEO Doesn't Want You to Know," *Medium*, 12 Aug. 2024; Companies Like Uber and Amazon Use AI to Pay Different People Different Wages for the Same Work, a New Study Finds, *Business Insider*, 13 Apr. 2023; Sherman, Len. "Will 2024 Be A Year of Reckoning for Uber's Driver Relations?" *Forbes*, 16 Jan. 2024.

71 "Uber Technologies (UBER) Q4 2023 Earnings Call Transcript." *Motley Fool Transcribing*, 7 Feb. 2024.

72 *Id*.

73 *Id*.

74 Khosrowshahi, "Only on Uber: more flexibility, choice, and support," *supra*; "Upfront Fares," *Uber Help*, last checked 27 May 2025; Kerr, Dara. "Secretive Algorithm Will Now Determine Uber Driver Pay in Many Cities," *The Markup*, 1 Mar. 2022; Sherman, "Uber's CEO Hides Driver Pay Cuts to Boost Profits," *supra*; Toh, "Gig workers think they work for themselves. They don't," *supra*.

75 Dubal, "On Algorithmic Wage Discrimination," *supra*, p. 1946, fn. 62; Sherman, "Uber's CEO Hides Driver Pay Cuts to Boost Profits," *supra*.

76 *Id*.

77 See note 74, *supra*. For additional information on the terms in Uber's Driver Fare Addenda, see note 13, *supra*.

78 Sherman, "The Inconvenient Truths Uber's CEO Doesn't Want You to Know," *supra*.

79 *Id*. (noting that "[s]ince launching new business policies in the US in 2022, Uber's driver pay has sharply declined.")

80 "TNB Tech Minute: Uber Turns a Profit," *Wall Street Journal*, 7 Feb. 2024.

81 Uber Technologies, Inc., Common Stock (UBER) Historical Quotes, last accessed 19 Jun. 2025.

82 *Id*.

83 Sherman, "The Inconvenient Truths Uber's CEO Doesn't Want You to Know," *supra*.

84 *Id*.

85 Sherman, "Uber's CEO Hides Driver Pay Cuts to Boost Profits," *supra*.

86 Saul, Derek. "Uber Sets Profit Record as Lyft and DoorDash Keep Losing Money." *Forbes*, 7 Feb. 2024; Tan, Eli. "Uber Revenue Is Up 14%," *New York Times*, 7 May 2025; Hawkins, Andrew. "Uber ends the year in the black for the first time ever." *The Verge*, 8 Feb. 2024.

87 See, e.g., Dubal, "On Algorithmic Wage Discrimination," *supra*, p. 1941, fn. 39; Wells, Katie, and Funda Ustek Spilda. "Uber for Nursing." *Roosevelt Institute*, 17 Dec. 2024, pp. 5, 15; Claburn, Thomas. "Algorithmic Wage Discrimination: Not Just for Gig Workers." *The Register*, 6 Jul. 2024; Minlan Andrejic. "Different Approaches for Performance Appraisal and Bonus Calculation: The Case of Truck Drivers." *Journal of Intelligent Management Decision*, v. 1, no. 2, 2022, pp. 97–107 (describing algorithmic management and tracking in the trucking industry); Wise, David. "Temporary Restaurant Staffing Apps Solving Labor Shortages." *shiftNOW*, 24 Apr. 2024.

88 Dubal, Veena, and Wilneida Negrón. "How AI Uncouples Hard Work and Fair Pay." *Washington Center for Equitable Growth* (forthcoming).

89 Wells, *supra*, p. 5.

90 Wells, *supra*, pp. 17, 19, 21.

91 *Id*., p. 17.

92 Towers-Clark, Charles. "The Uberization of Work," *Forbes*, 8 Jul. 2019.

93 "Leadership: Dara Khosrowshahi," *Expedia Group*, last accessed 28 May 2025.

94 Chen, Nan, and Przemyslaw Jeziorski. "Consequences of dynamic pricing in competitive airline markets." *Available at SSRN 4285718*, 27 Jan. 2023, pp. 1, 5–6.

95 Campisi, Natalie. "Are Airlines Spying on You?" *Forbes*, 9 Dec. 2024.

96 Chandonnet, Henry. "The FTC is cracking down on surveillance pricing." *Fast Company*, 25 Jul. 2024; Sherman, Len. "Uber's New Math." *Forbes*, 16 Jan. 2023 (noting that "Uber is in an ideal

position to practice what economists call first-order price discrimination — that is, charging each customer prices based on their known willingness to pay"); Kloczko, Justin. "Surveillance Price Gouging." *Consumer Watchdog*, Dec. 2024; "Issue Spotlight: The Rise of Surveillance Pricing." *Federal Trade Commision*, 17 Jan. 2025, p. 10 (noting that "[e]arly studies of the surveillance pricing ecosystem have found that different consumers can be offered different prices for the same online product" and that [t]hese effects have been observed across industries, including transportation network companies").

97 Pandey, Akshat, and Aylin Caliskan. "Disparate Impact of Artificial Intelligence Bias in Ridehailing Economy's Price Discrimination Algorithms." *Proceedings of the 2021 AAAI/ACM Conference on AI, Ethics, and Society*, 2021 (using a dataset of over 100 million rides from the city of Chicago from November 2018 to September 2019); Rozsa, Matthew. "Uber, Lyft algorithms charged users more for trips to non-white neighborhoods: study," *Salon*, 21 Jun. 2020.

98 Sherman, "The Inconvenient Truths Uber's CEO Doesn't Want You to Know," *supra*.

99 "FTC Surveillance Pricing 6(b) Study: Research Summaries, A Staff Perspective." *Federal Trade Commission*, Jan. 2025, p. 7. In addition, a recent investigation by Consumer Reports found that grocery giant Kroger was collecting extensive customer data, and using it to make detailed inferences, such as by using an "income predictor" to estimate the customer's income level. "Consumer Reports investigation uncovers Kroger's widespread data collection of loyalty program members to create secret shopper profiles." *Consumer Reports*, 21 May 2025.

100 For more information on the composition of these driver groups, see Appendix C.

101 For Overtime, Part-Time, and Full-Time drivers, reported hours spent working as an Uber driver include all time spent on the app: both giving rides and waiting for them.

102 Chaum, Miriam. "Understanding Upfront Fares." *Medium*, 28 Apr. 2023; Uber Under the Hood, "Why Drivers May See Slightly Different Fares for Similar Trips." *Medium*, 3 May 2025.

103 Even in systems designed with no personalization, researchers have found through simulation that small changes to the system can result in distributing "vastly different incomes to identically performing drivers." Bokányi, Eszter, and Anikó Hannák. "Understanding inequalities in ride-hailing services through simulations." *Scientific Reports*, vol. 10, no. 1, 2020, p. 6500.

104 For example, counterfactual methods could allow a system to make accurate individual-level predictions using group-level data from other similar drivers. See Johannson, Fredrik, et al. "Learning representations for counterfactual inference." *International Conference on Machine Learning*. PMLR, 2016.

105 For more on how a model might use data from a group of workers to make inferences about a new individual, and how those inferences might introduce bias or discrimination, see: Tschantz, Michael Carl. "What is proxy discrimination?." *Proceedings of the 2022 ACM Conference on Fairness, Accountability, and Transparency*. 2022.

106 Even in cases where engineers use systems designed to avoid bias, new techniques like synthetic data generating can exacerbate existing inequality. See Ganev, Georgi, et al. "Robin Hood and Matthew Effects: Differential privacy has disparate impact on synthetic data." *International Conference on Machine Learning*. PMLR, 2022.

107 Scheiber, Noam. "How Uber Uses Psychological Tricks to Push Its Drivers' Buttons." *The New York Times*, 2 Apr. 2017 (stating its reporting was based on "interviews with several dozen current and former Uber officials, drivers and social scientists, as well as a review of behavioral research"). See generally, "How Uber Leverages Applied Behavioral Science at Scale," *Uber*, 28 Jan. 2019 (describing Uber's applied behavioral science team).

108 Dubal, Veena. "The House Always Wins." L*aw & Political Economy Project*, 23 Jan. 2023.

109 Seymour, Richard. "The Machine Always Wins." *The Guardian*, 23 Aug. 2019; Morgans, Julian. "The Secret Ways Social Media Is Built for Addiction." *Vice*, 17 May 2017.

110 Haidt, Jonathan, et al. "AI Is About to Make Social Media (Much) More Toxic." *The Atlantic*, 5 May 2023.

111 "School District and Local Government Entities First Amended Master Complaint" at ¶¶ 111-114, "Multistate Attorneys General Complaint," at ¶¶ 156-165, In Re: Social Media Adolescent Addiction (MDL No. 3047), N. Dist. Cal., 27 Mar. 2024.

112 See generally Dubal, "On Algorithmic Wage Discrimination," *supra*, p. 1950 (on manipulation of waiting time between rides), p. 1968 (on slowing down rate of rides as approach Uber Quest or Pro status), p. 1976 (on comparison to gambling).

113 Michele Gilman, *Expanding Civil Rights to Combat Digital Discrimination on the Basis of Poverty*, 75 SMU L. Rev. 571, 573 (2022).

114 Of the remaining 28% of drivers, 6.7% said it is now "easier," and 21.6% said in general, "it has not changed."

115 "The 2025 Annual Gig Mobility Report," *supra*; Sherman, "Uber's CEO Hides Driver Pay Cuts to Boost Profits," *supra*.

116 "Drive." *Uber*, https://www.uber.com/us/en/drive/. Last accessed 28 May 2025.

117 Tefft, B.C. *Drowsy Driving in Fatal Crashes, United States*, 2017–2021 (Research Brief). Washington, D.C.: AAA Foundation for Traffic Safety, 2024, p. 1.

118 Shannon, Brett. "Work-related crashes in rideshare drivers in the United States." *Journal of Safety Research*, vol. 89, Jun. 2024. *See also* Dubal, Veena, and Vitor Araújo Filgueiras. *Digital Labor Platforms as Machines of Production*, 26 Yale J.L. & Tech. 560, pp. 589–590 (2023).

119 Atiyeh, Vaezipour, et al. "Impact of chronic pain on driving behavior: A systematic review." *PAIN*, vol. 163, no. 3, Mar. 2022.

120 Caban-Martinez, Alberto. "Acute Musculoskeletal Pain Reported Among Rideshare Drivers." *Journal of Occupational and Environmental Medicine*, vol. 62, no. 5, May 2020.

121 "Driving Danger." *Strategic Organizing Center*, Apr. 2023, pp. 1, 7. In addition, a study of multiple sources in the public domain reported that in 2022, at least 31 app-based workers, including passenger drivers, were murdered while working. "Murdered Behind the Wheel." *Gig Workers Rising* et al, Spring 2023, p. 5. The U.S. Government Accountability Office has noted "growing concern about assaults on drivers and passengers" and issued a report, pursuant to Sami's Law, on the incidence of physical and sexual assaults against ridesourcing and taxi drivers and passengers in calendar years 2019 and 2020. See "Ridesharing and Taxi Safety." *U.S. Government Accountability Office*, GAO-24-106742, 22 Feb. 2024, https://www.gao.gov/products/gao-24-106742.

122 Survey Count = 2,541 (Eleven (11) individuals who said Don't Know/Refuse for all four categories of Serious Financial Hardship are omitted.)

123 Total survey count of drivers who report experiencing one or more serious financial hardships in the past year = 1,509.

124 Survey Count = 2,440 for all statistics reported in this section. One hundred twelve (112) "Don't Know/Refuse" respondents omitted.

125 Survey Count = 2,358 for all statistics reported in this section. One hundred ninety-four (194) "Don't Know/Refuse" respondents omitted.

126 Survey Count = 2,451 for all statistics reported in this section. One hundred one (101) "Don't Know/Refuse" respondents omitted.

127 Survey Count = 2,501 for all statistics reported in this section. Fifty-one (51) "Don't Know/Refuse" respondents omitted.

128 These measures are derived from items on the K6 Psychological Distress Scale.

129 Thomas, Robert, et al. "Assessing associations between insecure income and US workers' health," *Social Science & Medicine*, vol. 309, Sept. 2022.

130 Total survey count of drivers who report experiencing one or more measures of psychological distress "some," "most," or "all" of the time last month = 1,747.

131 Bartel, Emma, et al. "Stressful by Design: Exploring health risks of ride-share work." *Journal of Transport & Health*, vol. 14, 2019, pp. 1, 4–5.

132 Total count (2,432) is less than 2,552 because for race/ethnicity, it does not include 112 "Prefer Not to Answer" respondents and eight non-respondents.

133 For Serious Financial Hardship definitions, see Table 2, above.

134 Total count (2,432) is less than 2,552 because for race/ethnicity, it does not include 112 "Prefer Not to Answer" respondents and eight non-respondents.

135 Total count (1,433) includes all drivers who responded "Yes" to experiencing one or more serious financial hardships in the last year and drivers who answered the race/ethnicity question with a response other than "blank" or "Prefer Not to Answer."

136 A statistically similar percentage of white drivers (70%) attributed the hardship to unpredictable pay.

137 Total count (2,432) is less than 2,552 because for race/ethnicity, it does not include 112 "Prefer Not to Answer" respondents and 8 non-respondents.

138 Total count (803) includes all drivers who responded "Yes" to experiencing two or more serious financial hardships in the last year and drivers who answered the race/ethnicity question with a response other than "blank" or "Prefer Not to Answer."

139 A statistically similar percentage of white drivers (90%) attributed the hardship to unpredictable pay.

140 For Measures of Psychological Distress definitions, see Table 3, above.

141 Total count (2,432) is less than 2,552 because for race/ethnicity, it does not include 112 "Prefer Not to Answer" respondents and 8 non-respondents.

142 Total count (1,651) includes all drivers who responded "Yes" to experiencing one or more measures of psychological distress "some," "most" or "all" of the time in the last year and drivers who answered the race/ethnicity question with a response other than "blank" or "Prefer Not to Answer."

143 Total count (2,432) is less than 2,552 because for race/ethnicity, it does not include 112 "Prefer Not to Answer" respondents and 8 non-respondents.

144 Total count (1,169) includes all drivers who responded "Yes" to experiencing two or more measures of psychological distress in the last year and drivers who answered the race/ethnicity question with a response other than "blank" or "Prefer Not to Answer."

145 For a discussion of how Uber is "now protecting its sizable and growing operating cash flow with anti-competitive tactics that harm consumers, drivers, competitors, third parties, and the communities the company serves," *see* Sherman, "Why the FTC Needs to Investigate Uber's Anti-competitive Business Practices," *supra*.

146 "Uber Technologies (UBER) Q4 2023 Earnings Call Transcript." *Motley Fool Transcribing*, 7 Feb. 2024.

147 *Id.* (Italics added.)

148 *See* Dubal, On Algorithmic Wage Discrimination, *supra*, at pp. 1946, 1949. *See also supra* note 38.

149 Rejouis, *supra*.

150 *See supra* notes 20, 30, and 87.

151 *See supra* note 25.

152 *See supra* note 151.

153 See Binns, R., et al., *supra*; Dubal, Veena, "The House Always Wins," *supra*.

154 Benjamin, Ruha. *Viral Justice*. Princeton University Press, 2022.

155 A recent report describes how, in some instances, surveillance wages and prices may already be illegal under existing laws. *AI Now Institute*, "Prohibiting Surveillance Prices and Wages," *supra*, pp. 15–20.

156 Teachout, "When Big Brother Is Your Boss," *supra*.

157 Bernhardt, Annette, et al. "The Data-Driven Workplace and the Case for Worker Technology Rights," *ILR Review*, vol. 76, no. 1, pp. 3–29.

158 "Why do I feel like somebody's watching me?" *U.S. Government Accountability Office*, 29 Oct. 2024.

159 *See, e.g.*, "Prohibiting Surveillance Prices and Wages," *supra*, pp. 21–22; "Algorithmic Management: Restraining Workplace Surveillance," *AI Now Institute*, 11 Apr. 2023; Dubal, "Algorithmic wage discrimination requires policy solutions that enforce predictability and the U.S. spirit of equal pay for equal work," *supra*.

160 Enacting meaningful living wage floors for app-based workers can present unique challenges for regulators, as demonstrated by what reporters have described as a "loophole" that incentivizes app-based companies to prevent drivers from logging on in short-term lockouts, effectively denying them pay. See Lung, Natalie et al. "How Uber and Lyft Used a Loophole to Deny NYC Drivers Millions in Pay." *Bloomberg*, 10 Oct. 2024; Fadulu, Lola. "Uber and Lyft Found a Loophole in a Driver Pay Law. Drivers Pushed Back." *New York Times*, 13 Dec. 2024. Potential measures policymakers can consider include:

(1) protections against arbitrary, short-term lockouts; (2) requiring that incentives be paid out of, and not counted towards, minimum pay; (3) requiring payment occur on a per-trip basis rather than at the end of the pay period; and (4) compensating drivers for all time worked, including time waiting to be dispatched a ride.

161 *See e.g.* Bay Area Rapid Transit District Agreement with Division 1555 Amalgamated Transit Union, 1 Jul. 2021, pp. 171–73 (fixing annual pay rate per position); Collective bargaining agreement between Teamsters Local 710 and UPS, Inc., 1 Aug. 2023, pp. 6–9 (establishing a general wage progression framework, as well as a wage progression framework for full-time and part-time UPS warehouse workers); Agreement between the City of Tampa and Amalgamated Transit Union Local 1464, 7 Oct. 2022, pp. 45–46 (setting merit awards under performance incentive plans at a maximum amount of 4%); Working Agreement Between Communication Workers of America AFL-CIO and Frontier Telephone of Rochester, Inc., effective through 13 Jun. 2018, p. 80 ("the bonus pool available per year for each employee will be 6% of the gross annual base pay at the top rate for the employee's classification.").

162 For an example of such a provision in a fair scheduling law, see Or. Rev. Stat. § 653.455(2)(b).

163 TzBfG, *supra*.

164 To head off the possibility that companies would intentionally low-ball their guaranteed hours offers to workers, and then routinely offer workers a higher number of optional hours (which, given companies' greater bargaining power, workers may feel compelled to "voluntarily" accept), the provision could limit the number of hours above the minimum that companies can request workers to work. For example, the law might require companies to offer contracts with a minimum number of hours, and then cap at 25% of that minimum the additional hours assigned to a worker.

165 Dubal, *supra*, *On Algorithmic Wage Discrimination*, p. 1946.

166 The following are the number of non-respondents for each category: (1) Race and/or Ethnicity = 8; (2) Geographic Region = 8; (3) Survey Language = 0; (4) Gender = 2; (5) Age = 77; (6) Tenure on Uber app = 0; (8) Part-Time, Full-Time, and Overtime Drivers = 0; (9) Source of Income = 0; (10) Financial Vulnerability = 0

167 Total count (2,432) is less than 2,552 because for race/ethnicity, it does not include 112 "Prefer Not to Answer" respondents and eight non-respondents.

168 Total count (2,432) is less than 2,552 because for race/ethnicity, it does not include 112 "Prefer Not to Answer" respondents and 8 non-respondents.

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