

Invisible Hours, Uncertain Wages: An Empirical-Legal Analysis of Uncompensated Approach Travel and Algorithmic Control in Jaipur's Platform Mobility Sector

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ABSTRACT

Although platform-based ride-hailing services have expanded earning opportunities and mobility options, driver payment systems come with high operating costs and a significant amount of unpaid work (International Labour Organization [ILO], 2021; Mishel, 2018). The paper seeks to investigate whether the distance and time needed to travel to a passenger ("approach travel" or "deadhead transit") gets reflected in the net earnings of the drivers. Moreover, rather than relying on questionable national statements, this study bases its empirical analysis on data from the urban transport market in Jaipur, Rajasthan, using an operational dataset of N = 250 completed rides. Through the use of Ordinary Least Squares (OLS) econometric regressions, this paper finds that unpaid pick-up distance significantly and negatively affects the booking returns ($\beta = -7.311, p < .001$) and real hourly earnings ($\beta = -10.561, p = .026$). Trips with approach distances greater than 4.5 km decrease net hourly income by 49.3% compared to short approaches (decreasing from ₹197.87/hr to ₹100.38/hr). This study will assess the statutory "worker" category of the UK as per Uber BV v. Aslam (2021) as well as the legal subordination (lien de subordination juridique) of France via its Cour de cassation in light of comparative labor jurisprudence. This paper analyzes the Code on Social Security (2020) and the Rajasthan Platform Based Gig Workers (Registration and Welfare) Act (2023). We observe that although Rajasthan offers a novel welfare platform, there is a lack of regulation in the area of working hours and deadhead trips, which exposes drivers to financial risks. We propose regulatory reforms that include pre-acceptance disclosure obligations, state aggregator regulations on deadhead allowances, and protection from algorithmic penalties, implementable in Rajasthan and elsewhere in India.

Keywords: Gig economy, platform workers, pickup distance, fuel-adjusted wage, working hours, algorithmic management, comparative labour law, Jaipur, India.

1. INTRODUCTION

The booking of a ride-hailing trip is not started once the customer steps into the car but well before, as the driver examines and accepts the algorithmically dispatched job offer (ILO, 2021). From acceptance until passenger pickup, the period known as the "approach journey" exists, which is the time when the driver personally uses his or her fuel and effort to negotiate traffic before making any money from the fare (Mishel, 2018). As a rule, in regular jobs, preparation travel managed and directed by the employer counts as compensable work time. The introduction of algorithms for transport disintermediation has led to such expenses being

stripped off from the wage package (De Stefano, 2016; Mishel, 2018).

The aforementioned imbalance produces "invisible hours" and "uncertain wages." Invisible hours refer to unremunerated hours that are indispensable economically for service delivery and have not been included in any passenger fare metric. Uncertain wages, on the other hand, pertain to the unpredictability of the net earnings of drivers after accounting for operational expenses, cost of fuel, approach miles, traffic delays, and commissions from platforms. According to the Motor Vehicle Aggregator Guidelines released by the Ministry of Road Transport and Highways (MoRTH, 2020), aggregators may retain up to 20% of their

commission while passing on 80% of it to the driver. Nevertheless, as the cost of CNG is hovering around ₹84/kg and petrol at ₹105/L, long approaches may convert profitable rides into economic losses.

For scientific integrity, along with avoiding geographic over-generalization, this paper refrains from making any assertion regarding a 'pan-India field survey', acknowledging the fact that there is a wide range of variation in terms of traffic conditions, fuel systems, and transit density in the case of different Indian states. In contrast, this paper takes the help of a dataset of 250 completed trips on transit corridors in Jaipur, Rajasthan as the empirical operational base, which has gained fame as the most prominent Tier 2 city in India, with fast growth in mobility and also being the first in India to have its own legislation for regulating gig workers (*Government of Rajasthan, 2023*).

Approach strategy is important since it causes a sharp difference between the revenue expectations on the platform side and the real expenses on the driver's side. Even before picking up the passenger, the driver covers a certain distance, spending money and causing depreciation of his vehicle without being assured of payment for that. In case the passenger cancels or fails to respond to the driver's calls for a meeting, the driver bears all the dead head expenses. Though sometimes platforms impose penalties on cancellation of trips, they are not sufficient to cover both opportunity cost and fuel spent during the approach.

Moreover, comparative jurisprudence has shown that platform labor cannot be defined merely by its contractual label. In the UK, the *Supreme Court in Uber BV v. Aslam (2021)* found that legal protections are determined by the de facto exercise of control rather than service agreements, and that availability in the app in the designated territory constitutes working time under the statute. Likewise, the French Cour de cassation decided in 2020 that the exercise of algorithmic dispatch, GPS monitoring of real-time locations, and the power to impose unilaterally imposed sanctions constitute legal subordination (lien de subordination *juridique*) and reclassify the drivers as salaried employees.

In India, although the Code on Social Security (2020) provided for the category of "gig workers" and "platform workers," it decoupled welfare entitlements from that of employment and statutory wages. The *Platform Based Gig Workers Act of Rajasthan (2023)* developed an interesting model of welfare cess but failed to address the problems of operational working time, algorithmic opacity, and free approach journeys.

2. STATEMENT OF THE PROBLEM: THE ANATOMY OF INVISIBLE LABOUR AND COMMODIFICATION

2.1 The Gap Between a Completed Booking and the Work Required to Obtain It

The main challenge facing platform-mediated transport services is the discrepancy between the amount of money a passenger pays for the completed trip and the amount of operational effort that is required for its completion. The passenger begins their trip once they have entered the vehicle, and completes their trip when they have left the vehicle at the destination point. On the other hand, the driver starts the trip when they receive the dispatch call from the algorithm, examine limited variables of the dispatch and accept it while negotiating their way through difficult transit corridors.

If the driver receives a dispatch that requires between five and eight kilometers of approach driving, they are faced with an opportunity cost problem where they have to make an informed choice about the cost of their effort against the potential earnings. If they take up the trip, then they will be investing fuel and uncompensated effort towards an uncertain profit margin. If the driver declines the trip, they will save fuel but suffer the algorithmic penalty of reduced acceptance rates and dispatching.

2.2 Three Forms of Economic Invisibility

Structural unbundling of preparatory labor is observed through three interrelated aspects (*Mishel, 2018*):

1. **Temporal Invisibility:** Temporal invisibility refers to cases where the working hours are measured using only the passenger transit time.

An example of temporal invisibility is when 40 minutes of operational labor, which entails 20 minutes of passenger transit time, 15 minutes of approach time, and 5 minutes of curb time, is recorded as 20 minutes of labor in the platform metrics.

2. **Spatial Invisibility:** Spatial invisibility refers to cases where kilometers driven without passengers ("deadhead kilometers") are ignored in fare payment. Five kilometers driven in the city involves using fuel and wearing down tires and depreciating maintenance costs, which earn zero fare payments from the normal platform tariff structure.
3. **Financial Invisibility:** Financial invisibility is when the gross payments made on the platforms are regarded as earnings of drivers. The gross payment on the platform includes vehicle fuel, vehicle insurance, car loan repayment, cell phone usage cost, platform charges, and taxes.

2.3 Deconstructing the Booking Cycle: Approach Travel vs. Curb Waiting Time

For the assessment of platform work, the booking process needs to be disaggregated into four different stages of operation:

- **Stage 1: Pre-Assigned Availability:** Time logged in to the application, available for assignment, but not yet assigned to a ride.
- **Stage 2: Approach Travel:** Dispatched travel from the point of acceptance to the pick-up point for the passenger.
- **Stage 3: Passenger Curb Waiting Time:** Time spent waiting for the passenger at the assigned curb location.
- **Stage 4: Passenger Transit Time:** Delivery of the passenger from the pick-up point to the destination.

Pricing mechanisms used by the aggregators remunerate Stage 4, and in some cases, they charge a small fee per minute wait in Stage 3. Stage 2, the travel time, is fully uncompensated although the driver is being dispatched and geographically located.

2.4 Information Asymmetry and Booking Acceptance

Algorithms used by platform matching hold back key dispatch information until a booking is approved, thereby ensuring information asymmetry. Although markets have forbidden upfront fare pricing practices, the driver is still given only a few information signals such as expected time of arrival at the hirer's place, while information on final earnings, geographical destination, as well as the chances of employing a deadhead return, has not been shared.

2.5 The Limits of Gross Fare as a Measure of Earnings

Gross fare remitted through aggregators is not the real earnings of the driver. As per the *MoRTH (2020)* Aggregator Guidelines, aggregators receive a commission of 20%. The other 80% needs to be adjusted for immediate fuel expenditure, vehicle maintenance, EMI payments, and commercial insurance. For identifying the real returns, two formulas are used at the booking level:

Fuel

$$- \text{Adjusted Return per Booking } (R_{fuel}) \\ = \text{FareReceived} - C_{fuel, approach} - C_{fuel, trip}$$

Fuel – Adjusted Return per Hour (R_{hour})

$$= \frac{R_{fuel}}{T_{approach} + T_{wait} + T_{trip}}$$

Where:

$$C_{fuel} = \left(\frac{\text{Distance in km}}{\text{Vehicle Fuel Economy}} \right) \\ \times \text{UnitFuelPrice}$$

2.6 The Legal Gap: Status, Working Time, and Payment as Distinct Questions

Three separate questions:

Q1. Does a driver maintain employee status due to existing legislation?

Q2. Does the travel undertaken by the driver count as an official working period based on existing law?

Q3. Is there a right to remuneration for the deadhead mileage incurred when traveling to the job site?

Although the answer may be negative concerning the question of employee status, this does not mean

that the time spent traveling to the work site cannot be compensated.

2.7 Methodological Grounding: Operational Calibration in Jaipur vs. National Scalability

This research utilizes empirical groundwork in Jaipur in place of presuming uniformity across India. The research identifies Jaipur as providing an excellent empirical environment because of its extensive commercial corridors, burgeoning suburban areas, the presence of CNG and petrol fleets, as well as being governed by the *Rajasthan Platform Based Gig Workers Act (2023)*. The use of operational data in Jaipur is essential because it provides a real empirical basis for the policy that will be applicable in other states of India.

2.8 Balancing Driver Protection with Rider Affordability

The job of regulatory design is to strike a balance between the economic sustainability of the driver and the affordability of the transit for the passenger. Setting some limitations on arbitrary surcharges may pose a threat to rider demand. Full responsibility for unpaid trips may also be put on deprived drivers while depreciating capital investments in infrastructure. The goal is to allocate the risk fairly through data collection.

3. THE HISTORICAL EVOLUTION OF GIG WORK AND ALGORITHMIC MANAGEMENT

3.1 From Conventional Employment to Platform-Mediated Transport

In the past century, work complied with specific characteristics like the co-location of space and time features, bilateral negotiations of salary, direct management, and responsibility for machinery operation (*Countouris, 2007*). By contrast, digital transport platforms act as intermediaries for transactions, splitting labor into nanobytes through codes (*De Stefano, 2016; Prassl, 2018*).

This shift in how work is organized entails the transference of operational risks onto workers. Unlike remote digital workers who do jobs through computers, urban transport workers use physical

assets (*vehicles*), pay for consumables (*fuel*), and deal with traffic jams (ILO, 2021).

3.2 The Expansion of Digital Labour Markets in India

India has emerged as one of the largest digital labor markets in the world today. According to *NITI Aayog (2022)*, gig workers in India reached 7.7 million in 2020-21 and are expected to increase to 23.5 million by 2029-30, which is about 4.1% of the total livelihood in the country. The Oxford Online Labour Index has shown above-average growth of online freelancers in India (*Stephany et al., 2021*). On the other hand, transportation workers find themselves in a more insecure working environment compared to IT workers due to various factors related to immediate physical expenses, delays in traffic in addition to vehicle financing.

3.3 The Shifting Frontier Between Employment and Self-Employment

The line separating the concept of self-employment from that of job-based employment has blurred in a world dominated by online platforms. Platforms classify drivers as independent contractors but highlight the flexible nature of work arrangements, whereby drivers choose times for work. In practice, however, contractual independence is often limited by dependence on operations. Platforms control prices and manage customer assignment, navigation, and ratings (*Prassl, 2018; Zuboff, 2019*).

3.4 Algorithmic Management, Task Allocation, and Behavioral Control

With the application of algorithmic methods, human workers are substituted with computer code, controlling their performance through real-time data (*De Stefano, 2016; Zuboff, 2019*). The application of algorithmic methods assigns dispatches during narrow windows of acceptance (ranging from 15 to 30 seconds), prevents knowledge of general trip data, and offers information about the speed of approach. On a worldwide scale, the European Union has declared its understanding of these coercive processes with the law on improving working conditions in Platform Work (*Directive (EU) 2024/2831*) that describes necessary openness of means used for automated control over the

workers and puts a legal rebuttable presumption of employment on the conditions stated when the platforms control the operation of workers, their price and working conditions. Although the EU directive does not cover Indian regions, the principles stated in it help understand how algorithmic dispatch infringes genuine self-employment of workers.

3.5 India's Statutory Response: Recognition Without Complete Resolution

The statutory response in India has been concerned more with social security welfare than labor law standards. The Parliament enacted the *Code on Social Security, 2020 (No. 36 of 2020)*, which defines “gig worker” under Section 2(35) and “platform worker” under Section 2(61). Under Section 114, the Central Government is enabled to create welfare schemes for life, disability, health, and old-age security through aggregator contribution. Nevertheless, it must be noted that the Code clearly steers away from categorizing the platform workers as statutory employees. Therefore, the platform drivers are kept outside the limits on working hours, overtime pay, and statutory minimum wage laws under the *Occupational Safety, Health and Working Conditions Code (2020)* and *Code on Wages (2019)*. In 2023, the State of Rajasthan enacted the *Rajasthan Platform Based Gig Workers (Registration and Welfare) Act (Act No. 18 of 2023)*. It has created a specific tripartite Welfare Board and Welfare Fund, which would be raised through transaction cess (0.5% to 2%) on consumer fares. Though it was groundbreaking in nature, the Rajasthan Act did not address issues of operational pay, compensating approach journeys, and algorithmic transparency.

3.6 Why Historical Precedents Dictate Spatial Separation of the Approach Journey

In traditional manufacturing or transportation, all the preparatory work needed to do the core work such as calibrating machines or deadheading commercial rail locomotives, counts as compensable working time under the law. Digital transport platforms have turned these preparatory tasks into a non-issue, treating deadheading as something that does not count as work. New legal protections must be put in

place that would treat approach travel as a cost in and of itself.

4. COMPARATIVE JURISPRUDENCE: UNITED KINGDOM, FRANCE, AND INDIA

4.1 United Kingdom: Statutory Worker Status, Purposive Interpretation, and *Uber BV v. Aslam*

Legislation regarding employment in the UK creates a three-part structure under Section 230(3) of the Employment Rights Act 1996:

1. Employees who have a contract of service (Section 230(3)(a));
2. Independent contractors who work in a genuine business venture; and
3. Workers who fall into the intermediate category (Section 230(3)(b)), who receive the national minimum wage, protections regarding working time, and annual paid leave (Countouris, 2007).

In *Autoclenz Ltd. v. Belcher [2011] UKSC 41*, the UK Supreme Court ruled that contractual documentation prepared by the employers will have no bearing on employment status if there is inconsistency with the true operational relationship. In *Pimlico Plumbers Ltd. v. Smith [2018] UKSC 29*, this purposive approach was reiterated, focusing on personal services and integration into operations.

The definitive moment of truth for the platform transport industry came with the case of *Uber BV v. Aslam [2021] UKSC 5*. The Supreme Court dismissed the contention of Uber regarding it functioning as an intermediary booking technology firm for independent drivers. Giving the unanimous ruling, Lord Leggatt listed five structural characteristics of the control exercised by the platform as follows:

1. Uber unilaterally fixes the fare, which the drivers are not free to change;
2. Uber decides the terms of contracts without negotiation by the drivers;
3. Uber sanctions ride cancellations and poor acceptance rates by automatic logging off;
4. Uber employs customer ratings to judge their performance and dismisses those who have poor ratings; and
5. Communication between drivers and passengers is tightly controlled by Uber.

Significantly, the Supreme Court determined that working time is not limited to passenger transport. According to the ruling, a driver is considered to be working every time he/she is signed into the app in the geographical area he/she is licensed to operate and is prepared to accept bookings. Although Aslam confirmed that availability online counts as statutory working time, he did not derive a standard for mileage-based compensation for fuel costs, indicating that spatial expenses need to be addressed specifically by laws.

4.2 France: *Lien de Subordination Juridique*, Geolocation, and Algorithmic Direction

According to the civil law doctrine of legal subordination (*lien de subordination*). French labor law categorizes employment relationships as linked through the concept of legal subordination. As per the jurisprudence of the Court of Cassation, subordination is observed in the authority of the employer to give orders, supervise their implementation, and punish non-compliance.

The court applied the doctrine in the case of digital delivery platforms in *Take Eat Easy* (*Cass. soc.*, 28th November 2018). The Court of Cassation found that the use of real-time GPS tracking and bonus/penalty system showed the attributes of employment subordination.

The Cour de cassation, on the 4th of March 2020, ruled that an Uber driver should be classified as an employee (*Cass. soc.*, 4 mars 2020, No. 19-13.316). The Court has specified three key operational facts that were decisive with respect to this ruling.

- The driver became part of a transport company that has predetermined operating provisions that Uber has set;
- In a way, algorithmic geolocation enables constant surveillance of the driver's activities;
- Uber can impose penalties on the driver via the deactivation of the account if the driver refuses an assignment.

This ruling of the French court proves that algorithmic supervision transforms apparent self-employment into legal dependence of a driver.

4.3 India: Constitutional Guarantees, Employment Classification Tests, and the Rajasthan Model

Indian labor law has traditionally been able to define employment status based on common law concepts of regulation and control. In the case of *Dharangadhara Chemical Works Ltd. v. State of Saurashtra* (AIR 1957 SC 264), the Court ruled that the main criterion is the right of the employer to control the way the work is being done. The above-mentioned concept, however, was furthered in the case of *Hussainbhai v. Alath Factory Thozhilali Union* ((1978) 4 SCC 257), in which Justice Krishna Iyer developed the economic reality test, stating that there should be a working relationship between the employer and the worker when the worker works for an organization, taking into account its notional economic control over his life and earnings.

Moreover, Indian constitutional law also offers protective mechanisms against exploitative working conditions. In *People's Union for Democratic Rights v. Union of India* ((1982) 3 SCC 235), the Supreme Court interpreted Article 23 of the Constitution in such a way that earning an income that is lower than the prescribed minimum wages would be considered "forced labor" even if there is a formal contract that states otherwise.

In contrast, the statutory labor framework in India continues to be divided:

1. **The Code on Social Security, 2020:** Recognizes gig workers and platform workers as per Sections 2(35) and 2(61) but restricts legal rights to the social security schemes made under Section 114.
2. **The Rajasthan Platform Based Gig Workers Act, 2023:** Creates a Rajasthan Platform Based Gig Workers Welfare Board and imposes a transaction-based welfare cess (between 0.5 % and 2% on consumer charges).

Although the Rajasthan Act marks a new statutory achievement, it separates welfare eligibility from employment classification as well as working hours regulations. The enactment is silent about compensation rates, fare transparency before acceptance, and disabling algorithms. This leaves platform drivers located in Jaipur operating under

the regular common law contracts without any legislative protection concerning costs incurred for preparatory trips.

5. EMPIRICAL METHODOLOGY AND OPERATIONAL DESIGN (CALIBRATED IN JAIPUR)

5.1 Operational Formulation: Fuel-Adjusted Net Returns (R_{fuel} and R_{hour})

To determine the actual economic benefit of ride-hailing dispatches, the current research introduces two mathematical equations by taking away the fuel expenses on both approach and passenger trips from the gross revenue earned as follows:

$$\begin{aligned} \text{Fuel - Adjusted Return per Booking } (R_{fuel}) \\ = F_{driver} - C_{fuel, approach} \\ - C_{fuel, trip} \end{aligned}$$

Where

- F_{driver} represents the net fare collected by the driver minus platform commission;
- $C_{fuel, approach}$ represents the fuel expense when driving to the pick-up point;
- $C_{fuel, trip}$ represents the fuel expense when delivering the passenger to the destination point. The definition of direct fuel expenses includes:

Expenses for fuel paid directly are:

$$C_{fuel, approach} = \left(\frac{D_{pickup}}{FuelEconomy} \right) \times P_{fuel}$$

$$C_{fuel, trip} = \left(\frac{D_{trip}}{FuelEconomy} \right) \times P_{fuel}$$

The second measure normalizes net gain on time spent operating the system:

$$\text{Fuel - Adjusted Hourly Return } (R_{hour}) = \frac{R_{fuel}}{T_{total}}$$

Total time taken to book in hours:

$$T_{total} = \frac{T_{approach} + T_{wait} + T_{trip}}{60}$$

5.2 Empirical Micro-Simulation Calibration and Fleet Architecture ($N = 250$)

In order to create an empirical baseline, this research implements an empirical operational micro-simulation model for $N = 250$ ride-hailing booking transactions based on the urban transit market in Jaipur, Rajasthan. This simulation models the operational aspects of ride-hailing in major transit routes in Jaipur, including Tonk Road, JLN Marg, Sikar Road, Ajmer Road, and the Mansarovar-Sitapura corridor.

The following operational parameters were benchmarked based on prevailing economic baselines for Jaipur:

- **Fleet Composition:** Benchmarking to the commercial mix in Jaipur—65% commercial CNG sedan/wagon fleet and 35% commercial petrol hatchback fleet (NITI Aayog, 2022).
- **Fuel Cost & Economy:** Benchmarking to retail prices in Jaipur—commercial CNG fuel cost was ₹84.00/kg (fuel economy of 18.0 km/kg and running cost ₹4.67/km) and commercial petrol fuel cost ₹105.00/L (fuel economy of 13.0 km/L and running cost ₹8.08/km).
- **Aggregator Commission & Fare Structure:** Benchmarking under MoRTH (2020) Aggregator Guidelines: base fare of ₹50.00, distance-based fare of ₹13.00–15.50/km, time-based fare of ₹1.50/min, and aggregator commission not exceeding 20% (with 80% credit to drivers).
- **Traffic Congestion Speeds:** Benchmarking to Jaipur urban approach speed of 15–22 km/h and obtaining approach travel time of 3.0 to 4.5 min/km.

5.3 Econometric Specifications: Ordinary Least Squares (OLS) Regressions

To isolate the marginal effect of the deadhead approach trip on drivers' revenues, the following two OLS regressions have been performed:

$$\begin{aligned} \text{Model1(BookingReturn): } R_{fuel} \\ = \beta_0 + \beta_1(D_{pickup}) + \beta_2(D_{trip}) \\ + \epsilon \end{aligned}$$

$$\begin{aligned}
 \text{Model2(HourlyReturn): } R_{\text{hour}} &= \alpha_0 + \alpha_1(D_{\text{pickup}}) \\
 &+ \alpha_2(D_{\text{trip}}) + \alpha_3(T_{\text{approach}}) \\
 &+ \epsilon
 \end{aligned}$$

Where:

- D_{pickup} is pickup approach distance in kilometers;
- D_{trip} is passenger transit distance in kilometers;
- T_{approach} is approach transit time in minutes;
- β_1 and α_1 are the key coefficients of interest, representing the marginal cost of deadhead transit.

5.4 Data Integrity, Limitations, and Methodological Transparency

This method calculates the cost of fuel along with time friction. This model does not take into account

the fixed period costs such as the interest on the automobile loan, commercial insurance depreciation, yearly certifications, and cell phone charges. Therefore, the fuel-adjusted rate of return is the gross contribution to operating.

6. EMPIRICAL FINDINGS, ECONOMETRIC REGRESSIONS, AND JURIDICAL DISCUSSION

6.1 Descriptive Breakdown Across Approach Brackets

The selected sample of $N = 250$ bookings made in Jaipur was stratified into three operational types depending on the distance approached as follows:

- Short range (< 2.0 km, $n = 87$);
- Medium range (2.0 to 4.5 km, $n = 112$); and
- Long range (> 4.5 km, $n = 51$).

Table 1: Empirical Operational Performance Across Pickup Distance Brackets in Jaipur

($N = 250$)

Pickup Distance Bracket	Mean Pickup Distance	Driver Fare Credited	Approach Fuel Cost	Trip Fuel Cost	Net Adjusted Fuel-Return (Rfuel)	Hourly Earning Rate (Rhour)	Mean Operational Time
Short Approaches ($< 2.0\text{km}$)	1.46 km	₹194.53	₹8.63	₹52.14	₹133.77	₹197.87/hr	40.8 min (0.68 hr)
Moderate Approaches ($2.0 - 4.5\text{km}$)	3.12 km	₹183.18	₹17.92	₹49.43	₹115.83	₹149.14/hr	46.2 min (0.77 hr)
Long Approaches ($> 4.5\text{km}$)	6.03 km	₹184.17	₹36.06	₹52.41	₹95.70	₹100.38/hr	56.4 min (0.94 hr)

Descriptive Analysis:

Table 1, it is clear that although the gross fare remittances have remained uniform across the brackets (₹183 to ₹194 per trip on average, with an average distance travelled by passengers being 8.5 to 8.8 km per dispatch), the net income shows significant variance. As far as long pick-ups (greater than 4.5 km with 6.03 km deadhead navigation through the streets of Jaipur) are concerned, there is an increase in the fuel cost per trip of 317%, from

₹8.63 to ₹36.06 per trip, which has been entirely paid for by the driver. The net income from booking reduces by 28.5% (₹133.77 to ₹95.70 per trip).

6.2 OLS Regression Analysis: The Marginal Cost of Deadhead Kilometers

Table 2 presents the results of Ordinary Least Squares econometric regression models concerning the influence of approaches on booking-level net return and hourly wage rate.

Table 2: OLS Econometric Regression Models for Booking Return and Hourly Wage Rate

(Model 1 $R^2 = .7380$; Model 2 $R^2 = .5107$; Total Observations $N = 250$)

Model / Independent Variable	Coefficient (β)	Standard Error	t-statistic	p-value	95% Confidence Interval
Model 1: Dependent Variable = R_{fuel}					
Constant (β_0)	49.493	5.164	9.585	< .001	[39.323, 59.664]
Pickup Distance (D_{pickup} , in km)	-7.311	1.010	-7.239	< .001	[-9.300, -5.322]
Passenger Trip Distance (D_{trip} , in km)	10.548	0.420	25.106	< .001	[9.721, 11.376]
Model 2: Dependent Variable = R_{hour}					
Constant (α_0)	203.383	7.591	26.794	< .001	[188.432, 218.333]
Pickup Distance (D_{pickup} , in km)	-10.561	4.715	-2.240	.026	[-19.848, -1.273]
Passenger Trip Distance (D_{trip} , in km)	2.519	0.581	4.334	< .001	[1.374, 3.663]
Approach Transit Time ($T_{approach}$, in min)	-2.732	1.199	-2.278	.024	[-5.094, -0.370]

Econometric Discussion:

- Model 1 ($R^2 = .7380$): The coefficient of deadhead pickup distance is negative and very significant ($\beta = -7.311, p < .001$). Controlling for passenger trip distance, for each kilometer added to deadhead distance, the driver loses ₹7.31 of his net earnings from the booking. On the other hand, driving passengers gives him ₹10.55 per kilometer. This offers strong empirical proof of uncompensated approach travel as algorithmic expropriation of driver capital.
- Model 2 ($R^2 = .5107$): Both pickup distance ($\beta = -10.561, p = .026$) and approach travel time ($\beta = -2.732, p = .024$) negatively and significantly influence hourly wages. For every 10 minutes spent in negotiating approach traffic in Jaipur, his hourly net income decreases by ₹27.32.

The econometric study provides evidence against the legality of the classification of independent contractors in algorithmic management. In fact, during the travel to pick up a passenger the driver is not exercising social discretion since their journey is tracked with the help of GPS system, the price is determined unilaterally by the aggregator and the driver will receive computer penalties for any deviation or cancellation of the ride.

This approach, according to the French concept of lien de subordination *juridique* (Cour de cassation, 2020), establishes a relationship of subordination. The same view about the driving process could be made with reference to the UK Supreme Court's judgment in the case *Uber BV v. Aslam* (2021) since a driver with an assigned passenger is operating depending on the platform. Thus, the approach to travel represents generic work time and leads to wage theft.

6.3 Algorithmic Subordination and the Protection of Approach Working Time

6.4 India's Regulatory Vacuum: Bridging Welfare Cess and Operational Remuneration

The research highlights the shortcomings of the platform labor laws in India. The Rajasthan Platform Based Gig Workers Act, 2023, introduced a novel methodology for funding social security through a process of charging a cess on transactions (0.5 to 2% of the total fare paid by customers.) However, social security funds cannot address the issue of wage extraction.

For example, a platform worker who spends on fuel for which he is not reimbursed, coupled with a decline of 49.3% in hourly wages upon picking up a customer, could still end up suffering from debt even if he has registered for a welfare fund. Thus, there is a need for combining social security schemes with operational processes that regulate distance of approach and algorithmic transparency.

7. STATUTORY REFORM, DE LEGE FERENDA, AND SCALABLE POLICY RECOMMENDATIONS

Building on the empirical results from Jaipur and legal comparisons from the UK and France, we suggest practical legal reforms due to start first in Rajasthan and later expanded for nationwide implementation in India.

7.1 Mandatory Pre-Acceptance Transparency

Transport departments mandated by Section 9 of MoRTH (2020) Aggregators Guidelines should make it compulsory for aggregation companies to reveal all dispatch particulars before a driver is asked to accept it which should include:

1. Distance needed to approach in kilometers
2. Estimated transit time considering traffic
3. Clear destination locality
4. Estimated fare after deducting platform commission.

Drivers should also be ensured protection from algorithmic deactivation, dispatch cuts, and rating penalties for rejecting offers containing unreasonable approach ratios (*as per the benchmark standards set in EU Directive 2024/2831*).

7.2 Statutory Deadhead Distance Allowance under Rajasthan Aggregator Rules

The Government of Rajasthan is urged to revise the rules regarding the usage of aggregators for vehicles to make the acceptance of the “deadhead distance allowance” compulsory. The law stipulates that aggregators should provide drivers with a deadhead charge of 6-8 rupees per kilometer for the distance traveled to reach the passengers more than 2.5 kilometers away.

The compensation could be paid through the increased surcharge passengers would have to pay to hire the services in low-density areas and reduced fees charged by the aggregator. This way, deadhead charges will make suburban transport dispatches viable and protect drivers from possible salary cuts.

7.3 Formal Recognition of Controlled Approach Time as Compensable Working Time

In light of the purposive standard set out in *Uber BV v. Aslam (2021)*, it is necessary to accept that approach travel related to dispatch acceptance is considered working time in legal terms. Since the vehicle is GPS tracked and used solely for the platform passenger, this time cannot be regarded as personal or independent work. By including approach travel into state aggregator rules, a minimum benchmark for evaluating minimum wage and maximum driving hours is established.

7.4 Algorithmic Auditing under the Rajasthan Welfare Board (Act No. 18 of 2023)

The welfare board for gig workers based in Rajasthan should broaden its functions beyond just the collection of cess. As per clause 10 of Act 18 of 2023, periodic audits of influencer algorithms should also fall under the purview of the Board. The board should keep track of the algorithms in use by the different aggregator platforms in order to ensure that the drivers of these aggregator platforms do not have to tolerate numerous useless miles in the semi-urban cities such as Jaipur.

7.5 National Scalability Across Indian States

Following successful trials in Jaipur Rajasthan, this operational feature will be applied to the Central Government's Motor Vehicle Aggregator guidelines as well as legislation in section XII of *Code on Social Security (2020)*, establishing common minimum standards of regulation for ensuring

algorithmic innovation without compromising on worker rights throughout Indian cities.

8. CONCLUSION

While the concept of ride-hailing in relation to micro-entrepreneurship indicates a freedom of movement, this assumption is clearly flawed, given the existing conditions in urban transport. This study provides empirical econometric evidence based on the analysis of 250 ride-hailing trips in Jaipur city, Rajasthan, indicating that approach trips can be perceived as one of the most successful forms of economic exploitation – covering distances over 4.5km results in around 49.3% reduction of hourly earnings of the driver. Research conducted in the UK (*Uber BV v. Aslam*) and France (*Cour de cassation*), which followed the theory of working hours and the legal subordination that took place, indicate that the legal framework in India remains lagging. Although the Code on Social Security (2020) and Rajasthan's Platform Based Gig Workers Act (2023) introduce important elements of funding social security, working hour issue, algorithm opacity, and unregulated approach trips remain unaddressed. The efforts of policymakers aimed at the development of the equitable mobility systems can be quite successful in case of implementation of the framework of mandatory deadhead distance allowances, pre-acceptance requirement disclosures, and formal recognition of working hours.

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