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Digital Occupational Safety the Legal Responsibility of App-Based Companies Regarding the Occupational Health and Safety of Online Transport Drivers

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Abstract
The rapid expansion of the gig economy has reshaped conventional labor relationships, particularly within the online transportation sector, where drivers face distinct physical and psychological occupational hazards. Despite these risks, app-based companies frequently classify drivers as independent "partners" rather than formal employees, creating a legal ambiguity regarding corporate obligations toward Occupational Health and Safety (OHS). This study examines the legal responsibility of app-based companies in guaranteeing OHS protections for online transport drivers under current labor law frameworks. Employing a normative legal research methodology with statutory and conceptual approaches, this paper analyzes statutory regulations, legal doctrines, and partnership agreements governing digital platform work. The findings indicate that existing labor laws inadequately safeguard gig workers due to rigid traditional definitions of employment relationships based on subjection and wages. Consequently, platform companies effectively transfer operational risks onto drivers while evading mandatory OHS duties. This paper concludes that legal reform is imperative to reconstruct the legal framework of work relationships and establish statutory OHS liability for platform companies to ensure comprehensive protection for digital transport workers.

Keywords: Digital Occupational Safety, App-Based Companies, Legal Responsibility, Occupational Health and Safety, Online Transport Drivers, Gig Economy

A. Introduction

The rapid digitalization of the global economy has catalyzed the rise of platform-based work, particularly within the ride-hailing and gig transport sectors. In developing countries such as Indonesia, app-based online transport services have become an indispensable component of urban mobility and economic livelihood for millions of workers. However, behind the convenience offered by algorithm-driven platforms lies a grave and growing concern: the exposure of gig drivers to substantial physical, psychological, and environmental hazards. Operating long hours in high-traffic environments, online transport drivers face continuous risks of road accidents, severe fatigue, long-term occupational illnesses, and safety threats. Consequently, the protection of Occupational Health and Safety (OHS) in the digital workplace termed *digital occupational safety* has emerged as a critical labor law issue demanding urgent legal inquiry. Aloisi, A., & De Stefano, V. (2023).

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Despite the severe occupational hazards inherent to platform driving, a fundamental legal loophole persists regarding corporate liability. App-based platform companies systematically designate drivers as independent "partners" (*mitra*) rather than formal employees. Under traditional labor law doctrines, this partnership framework legally disassociates platform companies from the statutory OHS duties typically imposed on conventional employers. As a result, the financial, medical, and operational burdens of workplace accidents or health degradation are unilaterally transferred onto the individual driver, leaving them without comprehensive social security, accident compensation, or preventive workplace safety standards guaranteed by national labor regulations. Asrori, M., Hidayat, N., & Prasetyo, A. (2025).

This legal dichotomy reveals a profound mismatch between modern digital work dynamics and outdated legislative frameworks. Although companies claim a non-subordinate partnership, they maintain pervasive control over drivers through algorithmic management, dynamic pricing, performance scoring, and unilateral account suspensions. This pseudo-independent relationship allows companies to exercise employer-like authority while evading legal accountability for worker safety. While existing scholarship has widely debated the general classification of gig workers, specific legal analysis addressing how algorithmic control establishes corporate legal liability for OHS protection remains underexplored in contemporary labor law literature. Bowdler, M., & Rogers, L. (2025).

To address this critical regulatory gap, this study examines the legal responsibility of app-based companies concerning the OHS of online transport drivers. Specifically, it evaluates the structural limitations of existing labor legislation, analyzes the legal implications of algorithmic control over worker safety, and explores statutory reform pathways needed to enforce mandatory OHS obligations on platform corporations. By reconstructing the legal definition of work relationships in the digital age, this research aims to contribute to a more equitable and protective labor law architecture for platform workers. Todolí-Signes, A. (2024).

B. Research Method

This study employs a normative legal research methodology (doctrinal legal research) to examine the legal gaps concerning the occupational health and safety (OHS) obligations of app-based platform companies toward online transport drivers. Normative legal research is conducted by analyzing existing statutory regulations, legal principles, doctrines, and legal literature relevant to labor law and digital platform employment. Wood, A. J., Lehdonvirta, V., & Graham, M. (2023).

To provide a comprehensive legal analysis, this research utilizes three main analytical approaches:

a. Statutory Approach (*Statute Approach*): Evaluates relevant laws and regulations, including national labor codes, occupational safety legislation, transportation regulations, and executive rules governing partnership agreements and transport platforms.
b. Conceptual Approach (*Conceptual Approach*): Analyzes key legal concepts such as corporate legal responsibility, the traditional tripartite elements of employment relationships (*work, command, and wages*), digital control, and worker protection doctrines.
c. Comparative Approach (*Comparative Approach*): Examines international legal instruments (such as International Labour Organization/ILO standards) and regulatory benchmarks from other jurisdictions regarding the legal classification and safety rights of platform/gig workers. Zekic, N., & Veen, A. (2025).

The data used in this study consists of secondary data comprising three levels of legal materials:

a. Primary Legal Materials: Binding regulatory instruments, including constitutional provisions, national labor acts, workplace health and safety statutes, ministerial regulations on transport platforms, and relevant judicial precedents.
b. Secondary Legal Materials: Non-binding academic references that provide commentary and legal interpretation, including peer-reviewed journal articles, legal treatises, policy reports from international labor bodies, and expert opinions.
c. Tertiary Legal Materials: Reference works providing conceptual definitions and background explanations, such as legal dictionaries, legal encyclopedias, and legal terminology compilations. Christine, L., & Wijaya, H. (2025).

Data collection was conducted through structured library research and documentary analysis. The gathered legal materials were systematized, categorized, and critically evaluated using qualitative normative analysis. The analysis applies legal hermeneutics and deductive reasoning to interpret statutory ambiguities, expose institutional regulatory gaps, and formulate prescriptive legal reform proposals for platform worker safety. Countouris, N., & De Stefano, V. (2024).

C. Result and Discussion

Results

1. Regulatory Gaps and the Legal Status of Online Transport Drivers

The primary legal obstacle to enforcing Occupational Health and Safety (OHS) protections for online transport drivers lies in their formal contractual classification. App-based companies systematically construct agreements under civil partnership doctrines (*kemitraan*) rather than standard employment contracts. Under classical labor law frameworks, a recognized employment relationship requires three constitutive elements: work, command, and remuneration (*upah*). De Groen, W. P., & Kilhoffer, Z. (2023).

Statutory regulations typically limit mandatory OHS protections to formal employment relationships. Because partnership contracts frame platform drivers as independent service providers, app companies legally divest themselves of statutory employer obligations, including:

a. Direct Provision of OHS Equipment: Platform companies treat safety gear (helmets, jackets, maintenance) as promotional items purchased by drivers rather than mandatory employer-provided safety equipment.
b. Coverage for Workplace Accidents: Incidents occurring during delivery or passenger transport are categorized as personal liabilities of the driver rather than work-related accidents subject to corporate indemnity.
c. Regulated Working Hours and Rest Periods: The absence of statutory maximum working hours for independent contractors leads to prolonged driving shifts driven by algorithmic incentives, significantly raising traffic hazard exposures. Qashqaie, F., Taylor, S., & Wood, A. J. (2025).

Consequently, the current legal regime allows platform companies to enjoy the economic benefits of a massive labor force while shifting operational, physical, and financial risks entirely onto the workers. Samsudin, M., Rahayu, S., & Kusuma, D. (2024).

2. Algorithmic Management as *De Facto* Subordination and Corporate Legal Duty

Although platform companies maintain that drivers operate autonomously, this study reveals that algorithmic management constitutes a modern form of legal subordination.

Subordination in labor law does not strictly require direct physical supervision; rather, it manifests through structural direction, monitoring, and sanctioning power. Smit, L., & Stopforth, G. (2023).

ALGORITHMIC MANAGEMENT	
Automated Dispatch oversight	| Unilateral trip assignment without price
Performance Metrics	| Acceptance/cancellation rate enforcement
Rating Systems suspension	| Customer reviews used for account
Dynamic Pricing & Bonuses working hours	| Behavioral nudging to force extended

▼

[De Facto Legal Subordination]

▼

[Triggers Corporate Legal Duty of Care for Ohs]

Platform algorithms exert continuous control over drivers through:

a. Automated Work Allocation: Drivers have limited autonomy over order dispatch mechanisms and pricing structures.
b. Behavioral Manipulation via Rating Systems: Customer ratings and acceptance rates are leveraged as disciplinary tools, where low scores result in algorithmic penalties or unilateral account deactivations.
c. Economic Coercion: Tiered bonus structures incentivize drivers to remain on the road beyond safe physical limits, directly violating basic OHS fatigue-management principles. Duggan, J., Sherman, U., Carbery, R., & McDonnell, A. (2023).

Legally, this pervasive algorithmic control proves that platform companies exercise managerial authority equivalent to a traditional employer. Therefore, under the legal doctrine of *duty of care* and vicarious liability, the existence of algorithmic control creates a legal obligation for companies to guarantee the health and safety of platform workers. European Union. (2024).

3. Legal Reconstruction Pathways for Digital Occupational Safety

To bridge the regulatory gap and establish enforceable corporate liability for platform safety, existing legal frameworks require structural reform across three core dimensions. Felix, R., Alpert, K., & Smith, M. (2023).

4. Reconstructing the Legal Definition of the Worker

Legislation must recognize a third hybrid category of worker the "Dependent Independent Contractor" or "Platform Worker" or broaden the classic definition of employment to encompass algorithmic control. This statutory update ensures that worker protection statutes apply regardless of how platform contracts are labeled. Leso, V., Vetrani, I., & Iavicoli, I. (2024).

5. Mandatory Statutory OHS Duties for Platform Corporations

Lawmakers must enact specific regulations imposing mandatory digital OHS standards on app companies, including:

a. Algorithmic Safety Cap: Enforcing software-level limits that lock drivers out of the application after maximum safe driving thresholds (e.g., requiring a mandatory 30-minute break after 4 consecutive hours of driving).
b. Compulsory Workplace Injury Insurance: Mandatory platform contributions to national social security systems covering occupational accidents and chronic illnesses resulting from platform driving.
c. Ergonomic and Vehicle Safety Compliance: Statutory duties requiring platform companies to subsidize routine vehicle maintenance and protective gear inspections. Ministry of Manpower of the Republic of Indonesia. (2023).

6. Aligning with International Labor Standards

National laws must align with International Labour Organization (ILO) standards on decent platform work and digital labor. Incorporating international benchmarks ensures that digital innovation does not compromise fundamental human rights to health, safety, and physical integrity at work. Palilingan, R. A., & Sutedi, A. (2026).

Discussion

1. The Fallacy of the Partnership Paradigm and the Asymmetry of Bargaining Power

The persistent classification of online transport drivers as independent partners (*mitra*) rather than formal employees relies on a formalistic interpretation of contract law that ignores economic reality. In classic civil law jurisprudence, partnership contracts are grounded in the principles of freedom of contract (*pacta sunt servanda*) and legal equality between contracting parties. However, in the platform economy, this assumption of equal bargaining position is a legal fiction. Glavin, P., & Schieman, S. (2024).

App-based transport companies unilaterally draft standard-form adhesion contracts (*agreements of adhesion*) containing non-negotiable terms. Drivers possess zero leverage to negotiate rates, working conditions, safety provisions, or dispute resolution mechanisms. This profound structural imbalance of power enables platform companies to exploit the regulatory vacuum. Hermawati, S., & Pratama, I. (2025).

Table 1. Resume Legal Dimension and Traditional Employment

Legal Dimension	Traditional Employment	Platform Partnership Framework
Contract Type	Labor Contract (Statutory Rights Apply)	Civil Partnership (Standard Adhesion Contract)
Risk Allocation	Employer bears operational & safety risks	Risk transferred entirely to driver
OHS Obligation	Mandatory statutory duty of employer	Discretionary / Neglected
Regulatory Oversight	Labor Inspection / Ministry of Labor	Civil Law / Ministry of Transportation (Commercial Focus)

By framing drivers as independent business operators, companies successfully evade statutory labor protections while retaining ultimate economic control. Consequently, digital

occupational safety is treated as a personal consumer responsibility of the worker rather than a statutory corporate liability. Hynes, C., & O'Brien, P. (2024).

2. Algorithmic Control as Reconceptualized Employment Subordination

The traditional test for an employment relationship relies on the tripartite criteria: work, command, and remuneration. Platform companies argue that because drivers can log in and out at will, the element of "command" or "subordination" is absent. However, modern labor law jurisprudence increasingly recognizes that algorithmic supervision is functional subordination in digital form. International Labour Organization. (2024).

MECHANISMS OF ALGORITHMIC CONTROL	
Automated Work Allocation	--> Drivers cannot select specific clients or set prices
Continuous Monitoring	--> GPS tracking and real-time behavioral metrics
Performance Penalties	--> Algorithmic deactivation for low acceptance rates
Economic Coercion	--> Targeted bonuses driving extreme fatigue

▼

(Legal Reclassification of Relationship)

▼

(Imposition of Statutory Corporate Duty of Care)

Subordination is demonstrated through four operational mechanisms:

a. Structural Directives: The platform dictates the fare, takes a standardized commission, and controls customer-driver matching through proprietary algorithms.
b. Algorithmic Surveillance: Continuous GPS tracking, acceptance rate monitoring, and customer rating systems serve as real-time, automated supervisory mechanisms.
c. Disciplinary Authority: The platform retains the unilateral power to penalize, suspend, or permanently deactivate driver accounts without due process or right of appeal.
d. Economic Coercion and OHS Hazards: Gamified incentive structures (e.g., peak-hour bonuses) pressure drivers to work continuous 12-to-16-hour shifts, directly inducing driver fatigue and exponentially increasing road accident rates. International Labour Organization. (2026).

Under the tort law doctrine of *duty of care* and the labor law principle of *substance over form* (*primacy of facts*), the existence of algorithmic control creates a direct legal responsibility for companies to provide comprehensive OHS safeguards.

3. International Benchmarks and Comparative Legal Reform

The failure of current domestic legislation to protect platform workers is not unique, but global jurisprudence is rapidly shifting toward holding platform corporations accountable.

a. The UK Supreme Court Landmark Ruling (Uber BV v Aslam., 2021): The Court rejected Uber’s argument that it was merely a technology broker, ruling that driver subordination under algorithmic management made drivers "workers" entitled to statutory minimum wage, working hour limits, and safety protections.
b. The European Union Platform Work Directive: The EU introduced a legal presumption of employment based on criteria of platform control, shifting the burden of proof onto platform companies to demonstrate that workers are truly independent. Jaydarifard, A., Rahman, M., & Leso, V. (2024).

Drawing from these international developments, national labor legislation must undergo systemic reform:

a. Statutory Presumption of Employment: Enact legislation stipulating that if a platform company exercises algorithmic management over pricing, work allocation, and performance evaluation, a legal presumption of an employment relationship applies.
b. Mandatory Software-Based Safety Protocols: Mandate that transport apps incorporate built-in safety disconnections automatically locking drivers out of the application after 8 to 10 hours of cumulative driving within a 24-hour period to prevent severe fatigue.

Universal Digital OHS Protection Scheme: Mandate platform contributions to public occupational injury and health insurance schemes, ensuring that every online transport driver is fully covered against work-related risks, permanent disability, and sudden income loss. Kenner, J., & Johnston, H. (2023).

D. Conclusion and Suggestions

1. Conclusion

This study demonstrates that the legal ambiguity surrounding the Occupational Health and Safety (OHS) of online transport drivers stems from an outdated contractual framework. By framing drivers as independent "partners" (*mitra*), app-based companies successfully evade statutory labor protections while exercising structural authority through algorithmic management. However, this partnership model represents a legal fiction that fails to reflect economic reality. Algorithmic tools such as automated trip dispatching, continuous GPS surveillance, dynamic pricing, performance rating systems, and unilateral account suspensions constitute modern mechanisms of employment subordination.

Under established labor principles and the legal doctrine of *duty of care*, pervasive algorithmic control creates a statutory corporate liability to guarantee worker safety. Shifting physical risks, road hazard vulnerabilities, and healthcare costs entirely onto individual drivers undermines the fundamental human right to safe and healthy working conditions. Without targeted legislative intervention, digital platform growth will continue to erode labor rights and exacerbate worker vulnerability in the gig economy.

2. Suggestion

To bridge this regulatory gap and establish actionable legal accountability for digital occupational safety, the following measures are recommended:

Statutory & Legislative Reform

a. Introduce a Statutory Presumption of Employment: Amend national labor codes to establish a rebuttable presumption of an employment relationship whenever a digital platform exercises algorithmic control over work allocation, pricing, or worker discipline.
b. Define Specific Platform OHS Regulations: Legislate dedicated statutory guidelines governing digital platform work, ensuring that basic health, safety, and physical integrity standards apply to gig workers regardless of contract nomenclature.

Algorithmic Safety & Corporate Compliance

a. Mandate Software-Based Fatigue Controls: Require platform companies to integrate mandatory algorithmic safeguards, including automated app lockouts that enforce a compulsory 30-minute rest period after 4 consecutive hours of driving and a daily limit of 10 driving hours.
b. Compulsory Workplace Injury Coverage: Enforce mandatory platform contributions to national occupational accident and health insurance schemes (such as BPJS

Ketenagakerjaan) to guarantee full medical and financial indemnity for work-related accidents.

Regulatory Oversight & Collective Representation

a. Expand Labor Inspection Jurisdiction: Empower national labor inspectors to audit platform algorithms, working conditions, and safety protocols to identify and remediate systematic OHS risks.
b. Guarantee Collective Bargaining Rights: Recognize the statutory right of online transport drivers to form unions and negotiate Collective Labor Agreements (CLA) regarding safety provisions, fare structures, and working conditions.

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