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Policy Innovation for Protecting Online Motorcycle Taxi Drivers in Jakarta's Platform Ecosystem

Inovasi Kebijakan Perlindungan Kerja Driver Ojek Online dalam Ekosistem Platform di Jakarta

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Abstrak

Penelitian ini bertujuan menganalisis kerentanan kerja driver ojek online dalam ekosistem platform di Jakarta serta merumuskan model inovasi kebijakan perlindungan kerja yang lebih implementatif dan terukur. Studi ini berangkat dari pandangan bahwa kerentanan driver tidak hanya dipengaruhi fluktuasi permintaan pasar, tetapi juga mekanisme tata kelola platform digital melalui alokasi order, insentif berbasis kinerja, sistem rating, komplain, dan sanksi pembatasan akses. Penelitian menggunakan pendekatan kualitatif dengan desain studi kasus instrumental. Data primer diperoleh melalui wawancara mendalam semiterstruktur terhadap 18 driver ojek online, diperkuat dengan observasi terbatas, analisis dokumen, dan penelusuran artefak digital. Data dianalisis secara tematik melalui teknik explanation building serta triangulasi antarsumber untuk meningkatkan kredibilitas temuan. Hasil penelitian menunjukkan bahwa perlindungan kerja driver masih lemah akibat belum adanya standar minimum yang dapat diaudit pada titik kontrol digital, fragmentasi kewenangan lintas sektor, keterbatasan data dan pengawasan, serta rendahnya transparansi pengaduan dan pemulihan akses. Penelitian mengusulkan enam pilar kebijakan: standar perlindungan minimum, jaminan sosial adaptif, keselamatan dan kesehatan kerja berbasis risiko, akuntabilitas platform, implementasi kolaboratif, dan indikator evaluasi terukur. Temuan menegaskan perlunya perlindungan driver sebagai isu tata kelola kerja digital yang menjamin standar, keadilan prosedural, dan pengawasan negara.

Kata Kunci: *driver ojek online, tata kelola platform, manajemen algoritmik, perlindungan kerja, jaminan sosial adaptif.*

Abstract

This study aims to analyze the work-related vulnerability of online motorcycle taxi drivers within Jakarta's platform ecosystem and to formulate a more implementable and measurable policy innovation model for worker protection. The study is based on the premise that driver vulnerability is shaped not only by fluctuations in market demand but also by digital platform governance mechanisms, including order allocation, performance-based incentives, rating systems, complaints, and access restrictions. Using a qualitative approach with an instrumental case study design, primary data were collected through semi-structured in-depth interviews with 18

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online motorcycle taxi drivers, supported by limited observations, document analysis, and digital artifact review. The data were analyzed thematically using explanation building and source triangulation. The findings show that driver protection remains weak due to the absence of auditable minimum standards at digital control points, fragmented cross-sectoral authority, limited data and oversight, and a lack of transparency in complaint handling and access restoration. The study proposes six policy pillars: minimum protection standards, adaptive social protection, risk-based occupational safety and health, platform accountability, collaborative implementation, and measurable evaluation indicators. The findings highlight the need to address driver protection as a digital labor governance issue involving standards, procedural fairness, and state oversight.

Keywords: online motorcycle taxi drivers, platform governance, algorithmic management, labor protection, adaptive social protection.

1. INTRODUCTION

In Jakarta, online motorcycle taxi services have evolved from merely serving as an alternative mode of transportation into a form of urban "social infrastructure" that sustains daily mobility, food delivery, and short-distance logistics. This transformation has also changed the organization of drivers' work, as access to orders, fare calculation, performance evaluation, incentives, and sanctions are increasingly mediated through digital platform systems. Consequently, driver protection can no longer be understood solely as a transportation issue; it must also be examined as a question of digital labor governance, particularly in relation to income security, occupational safety and health, and access to fair redress mechanisms. The scale of the sector makes this issue increasingly relevant for public policy. By the end of 2024, the number of registered users of online transportation services in Indonesia had reached approximately 88.3 million (Zainuddin, 2025). The platform ecosystem involved millions of driver partners. Such a scale means that even relatively small changes in platform rules, including order allocation, incentive structures, commissions, and performance evaluation, can have substantial consequences for drivers' livelihoods. Previous research has also shown that platform-mediated work has become a systemic labor-market issue rather than a marginal form of employment (Putri et al., 2023). At the same time, the economic significance of ride-hailing and delivery services has made platform governance an increasingly contested policy arena, in which business efficiency and market competitiveness intersect with demands for decent work and social protection (Purba et al., 2025).

This creates an informational asymmetry: drivers are expected to optimize ratings, acceptance rates, performance targets, and activity levels, yet they often have limited knowledge of why orders decline, why sanctions are triggered, or how access-related decisions are made and reviewed. These risks are particularly important in developing-country contexts, where platform work operates alongside weaknesses in labor-market institutions and social protection. Heeks et al. (2021) show that digital platforms may partly address institutional voids by improving matching and transactional access, but may also reproduce or create new voids when market functions, information, and decision-making power become concentrated within the platform. In such conditions, de facto labor rules may be altered through platform design or application updates more rapidly than formal regulation can respond. This makes transparency, accountability, data access, and effective appeals central elements of driver protection.

Evidence from Indonesia further indicates that the quality of platform work remains fragile. The Fairwork Indonesia Ratings 2025 found that none of the ten platforms assessed

scored above 2 out of 10 across the dimensions of fair pay, fair conditions, fair contracts, fair management, and fair representation (Darmawan, 2025). At the operational level, occupational safety and health are also significant concerns. Research on online motorcycle taxi drivers in Bekasi found that traffic accident risk is associated not only with individual characteristics but also with safety-related behavior embedded in daily work routines (Olivia & Ani, 2024). These findings suggest that working-hours patterns, performance pressures, and incentive structures should be considered part of the risk environment rather than treated solely as matters of individual choice.

Previous research (Stevania & Hoesin, 2024) identifies continuing legal uncertainty in this relationship and weak guarantees of social protection for gig workers. This places drivers in a regulatory gray zone because they work within highly standardized and algorithmically managed systems while remaining outside many of the protections associated with standard employment. Moreover, according to BPS in its 2025 labor force conditions release, informal workers continued to constitute the majority of the workforce, accounting for 52.54 percent in August 2025. This suggests that a substantial proportion of workers remain in forms of employment characterized by relatively weak protection. Within such a landscape, platform workers face the risk of being confined to a regulatory gray zone: they operate within a highly standardized and often algorithmically governed system, yet their employment status remains insufficiently defined to secure meaningful access to labor protection and social security.

Despite the growing body of research on platform work, an important gap remains. Existing studies have largely examined driver protection in relation to employment status, partnership relations, social protection, fare or commission regulation, decent work conditions, or algorithmic management as a general form of labor control. These studies have provided important explanations of precarity, but they have not sufficiently translated the specific digital mechanisms through which work is controlled into concrete and auditable policy instruments. In particular, limited attention has been given to the policy significance of what this study terms "algorithmic control points": order allocation, performance-based incentives, ratings and complaints, and access-related sanctions.

This study addresses that gap by developing a driver-protection model that starts from these algorithmic control points rather than from employment status or fare regulation alone. Its novelty lies in connecting the everyday digital mechanisms that structure drivers' access to work with specific, auditable, and implementable policy instruments. Thus, the six policy pillars proposed in this article are not presented merely as a general list of recommendations; they are derived from the identified control points through which platform governance produces income insecurity, occupational risk, and uncertainty about continued access to work. Accordingly, this study aims to: (1) analyze how order allocation, incentives, ratings, complaints, and access-related sanctions shape drivers' net earnings, occupational safety and health, and job security; (2) explain why existing policy instruments remain ineffective in terms of policy design, regulatory authority, enforcement, coordination, data availability, and dispute resolution; and (3) formulate an implementable and measurable policy innovation model based on minimum protection standards, adaptive social protection, risk-based occupational safety and health, platform accountability, collaborative implementation, and measurable evaluation indicators.

2. LITERATURE REVIEW AND PREVIOUS RESEARCH

2.1 Theory of Algorithmic Management and Digital Control in the Workplace

In this study, algorithmic management is not used merely to describe the presence of digital technology in the workplace, but to examine how specific platform mechanisms function as points of labor control. Particular attention is given to how order allocation, performance evaluation, and access-related sanctions affect drivers' ability to obtain work, maintain income, and contest decisions that directly affect their livelihoods. This perspective also allows the study to connect digital control with broader issues of transparency, procedural fairness, income security, and occupational risk. Accordingly, algorithmic management serves as the main analytical lens for identifying the digital control points through which platform governance shapes drivers' everyday working conditions (Kellogg & Valentine, 2020).

2.2 Precarious Work and Non-Standard Employment Theory

The theory of precarious work provides a complementary perspective for understanding the consequences of platform-based labor arrangements. Rather than viewing worker vulnerability as an individual condition, this perspective locates insecurity within the structure of employment itself, particularly where work is characterized by uncertain income, limited protection, and unequal exposure to economic risk (Kalleberg, 2009). In platform-mediated work, this framework is particularly relevant because the flexibility offered to workers may coexist with high levels of uncertainty regarding earnings, working time, and continued access to work.

To avoid conceptual overlap with algorithmic management, this study distinguishes between the mechanisms that produce control and the forms of vulnerability that result from that control. Algorithmic management is used to explain how platform systems organize and discipline work, whereas precarious work is used to identify the consequences experienced by drivers. These consequences are examined through three main dimensions: income insecurity, reflecting fluctuations in net earnings after work-related costs; work-time insecurity, reflecting long, variable, or unpredictable working hours; and status and protection insecurity, reflecting fragile employment status, limited social protection, and the possibility of losing access to work through platform-based sanctions.

From this perspective, precarity extends beyond the question of income and includes the broader instability of work status, social protection, and access to livelihood opportunities. This is particularly important in platform work, where economic and operational risks are often borne individually by workers, while strategic information and decision-making power remain concentrated within the platform (Standing, 2011).

2.3 Policy Design and Policy Instruments

Policy design theory provides the basis for examining how different policy instruments can be combined to address the multidimensional nature of driver protection. From this perspective, effective policy is not simply a collection of regulations, but a deliberately structured combination of instruments that responds to a clearly defined policy problem. This approach is particularly relevant to platform work because driver vulnerability involves interconnected issues of income, occupational safety and health, social protection, digital governance, and access to fair complaint and appeal mechanisms.

Consequently, a single regulatory instrument is unlikely to address the full range of risks identified in the platform ecosystem. The selection and combination of policy instruments therefore become central to the effectiveness of policy design (Howlett, 2019).

From the perspective of policy instruments, governments may respond to complex policy problems through a combination of regulation, incentives, service provision, partnerships, and data governance mechanisms. The relevance of these instruments depends not only on their formal design, but also on their managerial and accountability implications (Salamon, 2002). In addition, the effectiveness of a policy instrument depends on whether its underlying assumptions are consistent with the actual behavior and capacity of the targeted actors (Schneider & Ingram, 2016).

In this study, policy design theory is used to translate the empirically identified forms of driver vulnerability into a coherent set of policy responses. Rather than beginning with a predetermined list of policy programs, the proposed instruments are linked to the specific control points and risks identified in platform work. This provides the conceptual basis for developing a policy innovation model that combines minimum protection standards, adaptive social protection, risk-based occupational safety and health, fair appeal mechanisms, platform accountability, and measurable evaluation indicators.

2.4 Theory of Public Policy Implementation

Public policy implementation theory examines how formally adopted policies are translated into practice through the interaction of actors, resources, communication, coordination, and institutional capacity. From this perspective, the existence of a policy does not automatically ensure the achievement of its intended objectives. Implementation may be weakened by unclear standards, limited organizational capacity, inconsistent communication, fragmented authority, or inadequate monitoring and oversight mechanisms (Arafat, 2023; Rodiyah, 2022).

In the context of driver protection, this perspective helps explain why the presence of regulations or policy guidelines may not necessarily result in effective protection at the operational level. The main challenge may lie not only in the content of the policy itself, but also in the capacity to enforce standards, coordinate responsibilities across institutions, access the data required for oversight, and provide effective complaint and dispute-resolution mechanisms (Rodiyah, 2022).

For the purpose of this study, policy implementation is examined through four interrelated dimensions. First, policy standards and communication must be sufficiently clear and consistent so that implementing actors and target groups share a common understanding of the rules. Second, implementing organizations require adequate resources and capacity, including human resources, funding, data systems, and oversight tools. Third, cross-sectoral coordination and a clear division of responsibilities are necessary to reduce overlapping or uncertain authority. Fourth, monitoring, evaluation, and accountability mechanisms are required to identify implementation failures and enable timely corrective action (Rodiyah, 2022; Arafat, 2023). These dimensions are used in this study to assess not only whether existing driver-protection policies are formally available, but also whether they are operationally feasible, enforceable, and capable of producing effective protection within the platform ecosystem.

Based on the review of previous studies, several research gaps remain in the literature on the protection of online motorcycle taxi drivers within platform ecosystems. First, much of the existing literature has focused on employment status, partnership arrangements, social protection, fare and commission regulation, decent working conditions,

or algorithmic management as a general form of labor control. Although these studies have provided important insights into the vulnerabilities experienced by platform workers, relatively limited attention has been given to the specific digital mechanisms through which such vulnerabilities are produced in everyday work. In particular, order allocation, performance-based incentives, rating and complaint systems, and access-related sanctions have rarely been examined as distinct algorithmic control points that directly shape drivers' access to work, income stability, working time, and livelihood continuity. In addition, previous studies have not sufficiently translated these mechanisms of digital control into specific policy instruments that are auditable, enforceable, and operationally applicable.

This study addresses these gaps by developing an integrated analytical framework that sequentially links algorithmic management, precarious work, policy design, and public policy implementation. Its novelty lies in using algorithmic control points as the analytical starting point for identifying the sources of labor vulnerability and subsequently translating those vulnerabilities into appropriate policy instruments and institutional requirements for implementation. Accordingly, the contribution of this study extends beyond the identification of drivers' vulnerabilities by proposing a digital labor governance-oriented protection model consisting of six interconnected policy pillars: minimum protection standards, adaptive social protection, risk-based occupational safety and health, platform accountability, collaborative implementation, and measurable evaluation indicators. Through this approach, the study offers a more structured and policy-oriented explanation of how digital labor control can be connected to concrete, implementable, and measurable forms of driver protection.

3. RESEARCH METHOD

This study adopts a qualitative approach with an instrumental case study design to develop an in-depth understanding of how vulnerabilities in labor protection are produced within Jakarta's online motorcycle taxi platform ecosystem, while also formulating an operational policy innovation model. The instrumental case study design was selected because it enables an intensive and contextual examination of "how" and "why" questions in a real-world setting (Nasution, 2024). The primary informants consisted of 18 active online motorcycle taxi drivers operating in Jakarta who were selected through purposive sampling based on the relevance of their experiences to the research focus. The informants used the Gojek and Grab platforms and varied in terms of their length of experience as drivers, work intensity, and degree of dependence on online motorcycle taxi work as a source of income. All informants were assigned anonymous codes A1–A18 to protect their identities. The number of informants was determined by considering the adequacy of variation in experience and the depth of information required to address the research focus. Data were collected from November 2025 to February 2026 through semi-structured in-depth interviews lasting approximately 15–25 minutes per informant. The interviews focused on experiences related to order allocation, incentive and performance systems, ratings and complaints, access-related sanctions, income and operating costs, occupational safety and health, and complaint and appeal mechanisms.

The interview data were complemented by limited field observation, analysis of policy documents, regulations, and operational standards, as well as an examination of digital artifacts such as screenshots of incentive notifications, performance records, suspension or deactivation notices, and appeal procedures (Raehana, 2024). The data were analyzed thematically through initial coding, grouping codes into categories, identifying themes, and developing an explanation-building process to interpret relationships across the

findings. The coding process was conducted manually by repeatedly reviewing interview transcripts and notes, identifying relevant data segments, assigning initial codes, grouping codes with similar meanings into categories, and subsequently developing major themes in accordance with the research focus. The credibility of the findings was strengthened through source and method triangulation by comparing accounts across informants and cross-checking interview data against observational notes, documents, and digital artifacts. This procedure was used to maintain a traceable link between the original data, the coding process, the themes developed, and the interpretations presented in the findings.

4. RESULTS AND DISCUSSION

This discussion integrates four theoretical perspectives, namely algorithmic management, precarious work, policy design, and public policy implementation. These perspectives are used as parts of a sequential analytical framework rather than as separate explanatory lenses. Algorithmic management is used to identify the digital control mechanisms through which platforms shape drivers' access to work. Precarious work explains the economic, occupational, and employment vulnerabilities that emerge from these mechanisms. Policy design is then used to translate the identified vulnerabilities into specific policy instruments, while public policy implementation examines the institutional conditions required for those instruments to work effectively. The analytical process therefore moves from algorithmic control points to labor vulnerability, policy instruments, and implementation requirements. The three research questions are discussed using this integrated framework.

4.1 Platform Governance and Labor Vulnerability Among Drivers: Orders, Incentives, Ratings, and Sanctions and Their Implications for Income, Occupational Safety and Health, and Job Security

The findings indicate that the labor vulnerability experienced by online motorcycle taxi drivers within the platform ecosystem is shaped not only by fluctuations in demand marked by periods of low and high order volume, but also by digital governance mechanisms that structure access to work on an everyday basis. In practice, these mechanisms operate through the allocation of orders, the design of incentive schemes, rating-based performance assessment, and the imposition of sanctions, each of which directly influences drivers' opportunities to continue securing bookings. Based on the interview data, 13 of the 18 drivers reported that order intensity tends to rise during specific hours that correspond to broader urban mobility patterns. This tendency is also consistent with findings reported in previous studies (Safira, 2025), which reinforce the view that drivers' work rhythms are profoundly influenced by the temporal, spatial, and density-related dynamics of urban activity. However, the central issue is not limited to fluctuations in demand, but also concerns competition among drivers for access to orders. Within the context of platform-mediated work, this indicates that the distribution of labor is shaped not solely by market mechanisms, but also by the architecture of the platform system, which governs the circulation of orders and, in doing so, redefines the practical meaning of work flexibility for drivers.

From the perspective of algorithmic management, these findings show that order allocation functions as a digital control point because it shapes not only the distribution of bookings but also drivers' access to income-generating opportunities. This form of control becomes more evident when viewed through the precarious work perspective. Uncertainty

in order allocation can lead to uncertainty in working time and earnings, while drivers continue to bear the costs of remaining available. The same digital mechanism can therefore be understood both as a form of platform control and as a source of labor vulnerability.

Under conditions of declining order demand, drivers generally do not cease working. Rather, they remain in a state of readiness while waiting for orders to arrive. Interview data show that during periods of low demand, waiting times may extend from approximately 30 minutes to 2 hours. This finding indicates that waiting time constitutes an inherent component of platform-mediated work, despite not being recognized as paid working time. In other words, labor relations within the platform ecosystem are shaped not only by the orders that drivers successfully obtain, but also by the duration for which they must sustain readiness amid uncertainty in demand allocation. From a labor economics perspective, waiting time in online motorcycle taxi work should not be treated as nonworking time, since drivers continue to incur operational costs without any assured income. Accordingly, waiting time may be interpreted as a form of hidden labor that diminishes productive time and depresses net earnings. This finding further suggests that the flexibility associated with platform work is in fact constrained, because the economic risks generated during idle periods are transferred to drivers. This interpretation is consistent with Safira (2025), who conceptualizes idle time as part of a continuous negotiation between worker autonomy and the structural constraints of the platform system. To cope with these conditions, drivers actively organize their work across time and space through repositioning, adjusting their online hours, and adopting the practice of waiting in particular locations in order to improve their chances of securing orders.

The interview findings indicate that the most vulnerable aspect of drivers' work experience lies in the instability of net earnings rather than simply in the level of gross income. In the Indonesian context, the large-scale use of online transportation services and the high degree of dependence of many drivers on this form of work suggest that online motorcycle taxi labor operates within a substantial digital economic ecosystem, yet this scale does not automatically translate into income stability. Vulnerability arises when order volume declines, waiting times lengthen, and the distribution of orders becomes uncertain, while operational expenses such as fuel, vehicle maintenance, internet data, and platform-related deductions continue to be incurred. Consequently, working hours may increase without a corresponding improvement in earnings. This is consistent with Wood et al. (2019), who argue that flexibility in gig work must be read critically because, in practice, it is often accompanied by irregular working hours, pressure to remain continuously active, and fragile earnings. Accordingly, the primary point of vulnerability for online motorcycle taxi drivers lies in the fragility of their economic resilience, which is shaped by fluctuations in order volume, the persistence of work-related costs, and platform control over access to work.

Beyond order distribution, platform governance also operates through incentive mechanisms and performance management. The field findings indicate that incentives are not perceived simply as supplementary income, but rather as instruments that condition the continuity of access to orders. Informants explained that maintaining performance levels, meeting specified targets, and remaining active for particular periods are understood to increase the likelihood of securing orders. In this sense, incentives function as a mechanism of labor discipline that encourages drivers to remain continuously available within the platform system. This finding is consistent with Wood et al. (2019), who argue that algorithmic control frequently operates through indirect managerial mechanisms that encourage workers to align their work rhythms with the operational demands of the platform. In this context, extended working hours should not be interpreted solely as an expression of individual choice, but rather as a consequence of structural pressures to

sustain visibility and competitiveness within an order allocation system governed by performance-based metrics. Liu et al. (2025) found that algorithmic platform management is linked to risk-taking behavior among delivery workers through workers' perceptions of algorithmic control and processes of emotional rumination. From this perspective, drivers' safety risks should not be treated as incidental occurrences, but rather as an inherent component of platform-mediated work that may be exacerbated by performance pressure and the structural demand to remain continuously active within the platform ecosystem.

The connection between algorithmic management and precarious work is particularly evident in these findings. Performance metrics, incentives, ratings, and access-related sanctions operate as mechanisms of digital control, while their effects are experienced by drivers through income instability, pressure to work longer hours, greater exposure to occupational risks, and uncertainty about continued access to work. Algorithmic management explains how control is exercised within the platform, whereas the precarious work perspective helps explain the forms of economic, occupational, and employment insecurity that result from that control. This relationship represents the first analytical link in the integrated framework developed in this study.

Taken together, the findings of this study indicate that labor vulnerability among online motorcycle taxi drivers within the platform ecosystem generates at least three closely interconnected consequences. First, net earnings become unstable as a result of the combined effects of fluctuating demand, unpaid waiting time, operational expenses, and platform control over access to work. Second, the dimension of occupational safety and health is situated within the pressures of performance maintenance and continuous availability, such that safety risks should not be interpreted solely as matters of individual behavior, but also as consequences of platform work design that compels sustained visibility. Third, job security is experienced in the form of uncertainty regarding access to work, particularly when drivers encounter a narrowing of opportunities to secure orders without necessarily facing formal suspension. Thus, labor vulnerability within the platform ecosystem is fundamentally shaped by digital governance mechanisms that regulate access, performance, and the distribution of labor opportunities in drivers' everyday work experience.

These three forms of vulnerability, namely income insecurity, occupational risk, and uncertainty of access to work, are treated not only as empirical findings but also as policy problems that require specific policy instruments. This shift from identifying forms of vulnerability to formulating appropriate policy responses connects the perspectives of algorithmic management and precarious work with policy design.

4.2 The Ineffectiveness of Driver Protection Policy: Design, Authority, Enforcement, Coordination, Data, and Complaint and Dispute Mechanisms

The findings of this study suggest that the ineffectiveness of driver protection policy within the platform ecosystem stems not only from weak implementation, but also from a deeper misalignment between the policy focus and the actual sources of labor vulnerability experienced by drivers. At the level of everyday practice, labor vulnerability is produced through platform mechanisms that operate digitally and continuously, including order distribution, changes in incentive schemes, evaluation based on ratings and complaints, and restrictions on access to work. At the regulatory level, however, policy attention remains largely directed toward more visible and surface-level issues, such as fares and the scale of platform deductions. Consequently, the digital mechanisms that most fundamentally shape the continuity of drivers' work have not been adequately incorporated into a regulatory

domain that can be scrutinized, monitored, and made accountable. This condition reveals a significant gap between the objects formally addressed by policy and the actual forms of control that structure labor within the platform system. These findings are in line with the literature that conceptualizes platforms not simply as digital marketplaces, but as forms of labor governance that organize access, discipline, and work opportunities through the architecture of system design (Vallas & Schor, 2020). Viewed through the integrated framework, this misalignment reflects a problem in policy design because the issues addressed by existing policies do not fully correspond to the algorithmic control points that generate the identified forms of precarity. In this study, policy design is therefore used to link specific forms of vulnerability with appropriate policy instruments, rather than treating driver protection as a broad or undifferentiated welfare issue.

In the Indonesian context, this issue reflects a significant regulatory gap in the governance of platform work. Izzati & Kwang (2025) argue that the existing legal framework remains inadequate for addressing employment relations mediated through digital applications. On the one hand, conventional labor law has not been fully capable of capturing the character of platform-based labor relations, since such arrangements do not always meet the formal criteria of standard employment relationships. On the other hand, the partnership model is likewise insufficient because it fails to account for the dependent and asymmetrical nature of the relationship between platforms and workers. Consequently, platform workers are situated within a normative gray zone. They bear the risks of work and the burdens of operational responsibility, yet they do not receive protections equivalent to those granted to formal workers, nor do they possess equal bargaining power as partners. In this sense, policy ineffectiveness should not be understood merely as a matter of weak enforcement, but also as a consequence of a regulatory design that has, from the outset, remained insufficiently aligned with the structural characteristics of platform-mediated work.

The ineffectiveness of driver protection in Indonesia is rooted primarily in the fragmentation of authority across regulatory regimes, since this issue extends beyond the domain of transportation and intersects with the governance of digital platforms, labor regulation, and social protection. Under such conditions, the central problem lies not simply in the limitations of legal norms, but in weak institutional integration, which prevents oversight, corrective intervention, and enforcement from being consolidated within a single operational authority. As a consequence, platforms remain capable of exercising strong labor control through algorithmic mechanisms, incentive structures, rating systems, and restrictions on access, while state responsibility is dispersed across sectoral boundaries that frequently generate partial and ineffective responses. Thus, the weakness of driver protection policy reflects not only the incompleteness of legal instruments, but also the failure to translate regulatory mandates into an enforcement capacity that is firm, integrated, and adaptive to the specific characteristics of platform-mediated work in Indonesia.

At this stage, the analysis moves from policy design to public policy implementation. Even when appropriate protection instruments have been identified, their effectiveness depends on the clarity of regulatory responsibilities, access to data, monitoring capacity, inter-agency coordination, and enforcement authority. Implementation theory therefore complements policy design by explaining why a policy instrument that is appropriate in principle may still fail when the institutional conditions required for its implementation are weak or fragmented.

In addition to the fragmentation of regulatory authority, the effectiveness of driver protection is further hindered by information asymmetry, namely, the unequal distribution of access between platforms, which control data, system logic, and decision parameters, and drivers and regulators, who remain largely excluded from such access. This imbalance

enables platform control to operate not only through formal rules, but also through informational opacity that is difficult to evaluate independently. In the Indonesian context, this issue becomes particularly significant because of the vast scale of the platform ecosystem. PT GoTo Gojek Tokopedia Tbk. (2024), for example, reported that the company supported approximately 3.3 million driver partners in 2024. Yet the regulatory framework intended to govern this ecosystem remains fragmented and only partially developed. Under Minister of Transportation Regulation No. 12 of 2019, policy attention remains directed primarily toward safety-related concerns, while even welfare interventions such as the 2025 Holiday Bonus continue to take the form of circular letters rather than constituting a binding regime of data transparency and algorithmic accountability. As a consequence, reduced access to orders, changes in incentive targets, transaction deductions, or account restrictions are often experienced by drivers merely as final outcomes displayed within the application, rather than as decisions accompanied by an auditable record that can be fairly examined and verified. In analytical terms, this suggests that the weakness of driver protection in Indonesia is not only a matter of the substantive scope of rights, but also a consequence of the low auditability of platform governance, which leaves external oversight fragile even though the effects of platform policies directly reach millions of workers.

A further factor contributing to the weakness of driver protection lies in the quality of complaint handling and dispute resolution mechanisms. In platform-mediated work, suspension or account restriction is not merely an administrative matter, but a decision that can instantly cut off access to work and daily income. For that reason, the effectiveness of an appeals mechanism should not be assessed solely from the formal existence of complaint channels, but also from the extent to which it guarantees substantive due process, including clear reasons for the decision, a transparent evidentiary basis, the opportunity to challenge the decision, and certainty regarding the time required for resolution. In algorithm-based work systems, workers' perceptions of procedural justice are strongly influenced by the degree of transparency surrounding the decisions imposed on them. When transparency is limited, perceptions of fairness are likewise weakened. In the Indonesian context, this problem is reflected in recurring complaints from drivers regarding suspension or termination of partnership arrangements that are perceived as unilateral and are often not accompanied by detailed explanations of the alleged violation or the evidence relied upon. At the same time, state intervention remains more visible in the area of partial welfare measures, such as through Minister of Manpower Circular No. 3 of 2025. Policy attention has been more strongly directed toward the provision of the Holiday Bonus for drivers and online couriers than toward the establishment of binding standards for dispute resolution. Accordingly, the core issue is not simply whether procedures formally exist, but whether the available appeals mechanisms possess sufficient procedural quality to function as fair, transparent, and genuinely accessible instruments of redress for drivers.

The findings in this section complete the third and fourth links of the analytical framework. The forms of precarity identified at the driver level require policy instruments that directly address the relevant digital control points. The effectiveness of these instruments, however, depends on implementation conditions such as clear authority, access to data, coordination, monitoring capacity, and procedural accountability. Policy failure therefore cannot be explained only by the absence of protective instruments, but also by the lack of alignment between the object of regulation, the actual mechanisms of platform control, and the institutional capacity required to govern them.

Based on the discussion above, this analysis shows that the weakness of driver protection in Indonesia cannot be understood merely as a deficiency in sectoral regulation, but rather as an indication that the existing policy framework has not yet been fully capable of keeping pace with the logic of digital platform work, which has become increasingly

dominant. Within an ecosystem where the number of internet users in Indonesia had reached 185.3 million by early 2024, and where the scale of platform partnership is exceptionally large, with GoTo reporting support for approximately 3.3 million driver partners in 2024, platforms in practice function not only as service intermediaries, but also as actors that shape access to work, the rhythm of earnings, and the daily operational discipline of drivers through system designs that are not always transparent. In such a context, policies that remain partial and reactive, including those that only address particular welfare issues such as the 2025 Holiday Bonus, are insufficient to address the more fundamental challenges, namely the need for algorithmic accountability, minimum data transparency, clear supervisory authority, and fair procedural guarantees in dispute resolution. Accordingly, the findings of this study point to one central conclusion: as long as regulation does not shift from a conventional administrative approach toward a governance framework capable of addressing digital control based on data and system design, driver protection will remain limited, partial, and out of step with the realities of platform work in Indonesia. This conclusion is also consistent with the findings of Vallas & Schor (2020), who suggest that the ineffectiveness of driver protection stems from the lag of regulation in addressing new forms of control within the platform economy, especially those operating through algorithms, data, and system design. In practice, platforms no longer function merely as market intermediaries, but also as governance mechanisms that regulate the distribution of work opportunities, the intensity of competition, and the daily labor discipline of drivers. For this reason, policies that continue to focus only on fares and deductions, without addressing system transparency, minimum access to data, clarity of oversight, and due process in disputes, will remain partial and inadequate.

4.3 An Implementable and Measurable Policy Innovation Model for Driver Protection

The policy innovation model proposed in this study is derived from the integrated analytical framework developed in the previous sections. Algorithmic management identifies order allocation, performance-based incentives, ratings and complaints, and access-related sanctions as the main digital control points. The precarious work perspective then explains how these control points contribute to income insecurity, uncertainty in working time, occupational risks, and insecure access to work. Policy design translates these vulnerabilities into targeted protection instruments, while the implementation perspective identifies the institutional, data, coordination, monitoring, and accountability conditions needed for those instruments to function effectively. The six pillars proposed below should therefore be understood as the policy outcomes of this integrated analytical process rather than as a separate list of recommendations.

The findings of this study suggest that drivers' vulnerability is produced through a series of operational control points embedded within the platform application, particularly in the domains of order allocation, performance-based incentives, ratings and complaints, and access-related sanctions. In the experiences described by informants, the most binding forms of risk do not always take the form of formal suspension, but may also emerge through the condition commonly described as *anyep*, in which access to orders declines sharply, and daily earnings are immediately reduced. At the same time, incentives and performance classifications such as *mitra juara* are perceived as increasing the probability of obtaining orders, thereby encouraging drivers to sustain high levels of performance and continuous activity. These findings indicate that an implementable model of policy innovation cannot remain confined to macro-level regulatory measures, such as limitations on commissions, but must instead directly target the digital control points that most

fundamentally shape drivers' everyday work experiences. On this basis, the policy model proposed in this study is structured around six principal pillars, namely minimum protection standards at algorithmic control points, adaptive social protection, risk-based occupational safety and health, accountability in platform governance, collaborative implementation across actors, and measurable evaluation indicators.

The relationship between the four theoretical perspectives and the six policy pillars is functional rather than parallel. Minimum protection standards and platform accountability respond directly to the control mechanisms identified through algorithmic management. Adaptive social protection and risk-based occupational safety and health address the economic and occupational vulnerabilities experienced by drivers. Collaborative implementation and measurable evaluation indicators, in turn, address the institutional conditions required to make these forms of protection enforceable and assessable. In this way, each policy pillar is linked to a specific problem identified through the integrated analytical framework.

The first pillar concerns the establishment of minimum protection standards attached to algorithmic control points. In this regard, the most realistic form of policy innovation is not to demand that platforms disclose trade secrets or source code, but rather to require minimum operational standards that can be subject to monitoring and oversight. The two most critical dimensions are income transparency and fairness in access-related sanctions. In the dimension of transparency, platforms should be required to provide a clear breakdown of deductions or transaction-related charges, explanations for changes in incentive schemes, and basic indicators that shape order priority at the level of general principles, together with a traceable record of such changes. This requirement is important because the practical problem lies not only in the size of deductions, but also in the method by which they are calculated and the difficulty of conducting an audit when drivers perceive that deductions exceed a reasonable threshold. In the dimension of access-related sanctions, minimum standards should incorporate clear due process, including written reasons for access restrictions, minimum evidentiary requirements, the right to clarification, an accessible appeals pathway, and a defined time frame for resolution through a service-level agreement. Without such mechanisms, the experience of *anyep* will continue to constitute a form of job insecurity that is difficult to understand, contest, and remedy.

The second pillar concerns adaptive social protection through flexible contributions, enrollment incentives, and the possibility of platform contributions. In this area, the most feasible policy pathway is to strengthen the scheme for non-wage-earning workers, particularly Work Accident Insurance and Death Benefits, through an institutional design that is compatible with the fluctuating daily income structure of drivers. This policy direction is broadly consistent with government efforts that have begun to promote lighter contribution arrangements for transportation workers in the non-wage-earning category, including through contribution discounts. However, in order for social protection to move beyond the status of a merely administrative program, policy innovation should integrate at least three components. First, contribution mechanisms should be made flexible through weekly automatic debit options or balance-based payment systems that are better aligned with the daily income patterns of drivers. Second, enrollment incentives should be strengthened, whether through discounts, simplified procedures, or benefit packaging that is easier for workers to understand. Third, platforms should be encouraged to provide top-up support or supplementary contributions for categories of drivers facing higher levels of risk, such as those with extended active hours or those operating in high-risk areas. Although this final component is relatively sensitive, it remains feasible from a policy standpoint and may be introduced gradually through pilot arrangements or limited partnership schemes.

The third pillar concerns risk-based occupational safety and health integrated into the governance of the platform application. In the context of online motorcycle taxi work, occupational safety and health should not be understood merely as general safety guidance, but must be translated into concrete risk mitigation instruments that are directly connected to the operational design of the platform. The findings of this study indicate that pressures to maintain performance, preserve access, and avoid declines in order priority may intensify fatigue and increase exposure to road-based hazards. Accordingly, a more implementable form of policy innovation is to require risk-based occupational safety and health features and operational rules, including fatigue alerts, limits on consecutive active hours, recommendations for rest intervals, stronger order verification in high-risk areas, emergency buttons, and clearer standard operating procedures for incident response. Occupational safety and health measures would also be more effective if they were linked to Work Accident Insurance and Death Benefits, so that protection against work-related accidents is understood not merely as an administrative requirement, but as a concrete and accessible form of protection that is relevant to the everyday risks of platform work.

The fourth pillar is accountability in platform governance through the principle of minimum auditability and compliance reporting. The findings of the previous analysis also show that the main barriers to driver protection lie not only in the substance of regulation, but also in limited data availability and unclear supervisory authority. For this reason, the most reasonable policy innovation is to apply the principle of minimum auditability, namely, the obligation of platforms to provide sufficient data for oversight without requiring full disclosure of algorithms. At a minimum, this obligation should include periodic reports on changes in incentive policies, traceable deduction structures, statistics on access-related sanctions by category of reason and recovery time, and the performance of complaint handling channels, including service-level agreements and resolution rates. Within this framework, accountability is not merely an ethical demand, but a minimum requirement for driver protection to be evidence-based rather than dependent on rumors, assumptions, or complaints that are only addressed after they become viral.

The fifth pillar is a collaborative implementation strategy through an operational division of roles. A feasible model of driver protection must begin from the reality that authority within this ecosystem is indeed fragmented. Accordingly, the solution required is not simply an additional coordination forum, but a clear division of responsibilities along the chain of policy execution. Within this framework, the ministry responsible for digital systems should ensure platform compliance as an electronic system provider and receive minimum compliance reports. The ministry responsible for transportation should establish guidelines on fares, commissions, and service standards for online transportation. The ministry responsible for labor, together with BPJS Ketenagakerjaan, should expand social protection coverage for non-wage-earning workers and integrate occupational safety and health measures. Meanwhile, local governments, the police, and driver communities or unions should support area-based implementation, safety education, and the provision of offline complaint channels as complementary mechanisms. With this division of roles, the gray area of authority can be narrowed because it becomes clearer who is responsible for collecting minimum data, who conducts oversight, who takes corrective action, and who ensures redress when drivers are harmed.

The sixth pillar is measurable evaluation indicators that are genuinely meaningful for drivers. The evaluation of driver protection cannot rely solely on macro indicators such as formal fares or general perceptions of busy and quiet periods, but must also capture the aspects most directly experienced by drivers in everyday practice, namely, net earnings, work-related risks, and certainty of access. For this reason, the first important indicator is the stability of net earnings, for example, through the median of daily or weekly net income

together with its level of volatility. The second indicator is fairness in access-related sanctions, which may be measured through the average time required to resolve appeals, the proportion of cases that are restored, and the availability of documentation explaining the reasons for sanctions. The third indicator concerns occupational safety and health, which may be assessed through the number of claims or cases of work-related accidents, trends in incidents over time, and compliance with fatigue management features. The fourth indicator is the coverage of social protection, especially the percentage of drivers enrolled in the Work Accident Insurance and Death Benefits scheme for non-wage-earning workers. Finally, all of these components must be supported by minimum transparency indicators, such as compliance in reporting transaction-related deductions, changes in incentive schemes, and complaint statistics, so that evaluation can be conducted periodically on the basis of auditable data.

Taken together, the model reflects an integrated policy logic that moves from algorithmic control points to labor vulnerabilities, policy instruments, implementation requirements, and measurable protection outcomes. The theoretical contribution of this study therefore lies not in applying the four perspectives separately, but in combining them within a sequential analytical framework. This framework connects drivers' everyday experiences of digital labor control with the design and implementation of policies intended to strengthen their protection.

Based on the findings of this study, it can be concluded that this policy innovation model positions driver protection not merely as an issue of social assistance or fare regulation, but as a matter of platform labor governance that must be addressed through minimum operational standards, adaptive social protection, mitigation of work-related risks, data accountability, a clear division of institutional roles, and concrete evaluation indicators. Accordingly, the proposed model is not only normative in character, but also offers a more realistic pathway for implementation because it directly targets the control points that most decisively shape drivers' vulnerability in everyday work practice. More specifically, the model establishes a clear relationship between the sources of control, the forms of vulnerability they produce, the policy instruments needed to address them, and the institutional conditions required for implementation. This integration strengthens the analytical contribution of the study by moving beyond a description of platform-based vulnerability and providing an explanatory, policy-oriented framework for driver protection.

5. CONCLUSION

This study shows that the vulnerability of online motorcycle taxi drivers in Jakarta cannot be explained solely by fluctuations in market demand or by their formal employment status. It is also shaped by digital mechanisms that regulate access to work, including order allocation, performance-based incentives, ratings and complaints, and access-related sanctions. These mechanisms influence not only drivers' earning opportunities but also their working time, exposure to occupational risks, and security of continued access to the platform. The findings therefore challenge the assumption that platform work is inherently flexible. In practice, flexibility may coexist with unpaid waiting time, unstable net earnings, pressure to remain continuously active, and limited capacity to question decisions that directly affect drivers' livelihoods.

The study also demonstrates that driver vulnerability and policy weakness are closely connected. By integrating algorithmic management, precarious work, policy design, and public policy implementation, the analysis links the mechanisms of digital control to the

vulnerabilities they generate, the policy instruments required to address them, and the institutional conditions necessary for effective implementation. From this perspective, the weakness of driver protection is not simply the result of insufficient regulation. It also reflects a mismatch between the actual sources of vulnerability and the issues targeted by existing policies, combined with fragmented authority, limited access to platform data, weak monitoring capacity, and inadequate procedural safeguards. The theoretical contribution of this study therefore lies in treating these four perspectives as an integrated analytical framework rather than as separate explanations of platform work.

The study proposes a policy framework comprising minimum protection standards at key algorithmic control points, adaptive social protection, risk-based occupational safety and health, platform accountability, collaborative implementation, and measurable evaluation indicators. These pillars reposition driver protection from a narrow concern with fares or social assistance toward a broader agenda of digital labor governance. Effective protection requires not only new policy instruments but also greater transparency, clearer institutional responsibility, stronger oversight, and fair mechanisms for complaints and appeals. At the same time, because this study is based on a qualitative case study involving 18 drivers operating through Gojek and Grab in Jakarta, its findings should be understood as analytical rather than statistical generalizations. Further research should therefore examine the applicability of the proposed framework across different platforms, cities, and institutional settings to assess whether the model can provide a broader basis for governing platform-based labor in Indonesia.

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