

Consumer Protection and Legal Uncertainty in Ride-Hailing Pick-Up Practices in Bandung

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ABSTRACT

Consumer protection challenges in ride-hailing services emerge during the pick-up stage, where passengers are exposed to spatial uncertainty, unsafe waiting environments, and unclear accountability among platforms, drivers, and local authorities. Although ride-hailing services have been formally legalized in Indonesia, legal recognition alone does not automatically ensure consumer protection during the pick-up stage, particularly in relation to passenger safety, spatial certainty, and legal accountability. Passengers are frequently directed to informal, prohibited, or potentially unsafe public spaces, raising concerns regarding safety, legal responsibility, and the right to clear and reliable service information. To address these concerns, this research examines how transportation regulations, platform systems, and spatial conditions shape ride-hailing pick-up practices in Bandung, Indonesia. Using a qualitative case study approach, this study combines regulatory analysis, field observations, and in-depth interview with drivers and passengers. The analysis was guided by the Staging Mobilities framework and material semiotics approach to understand how mobility practices are negotiated in everyday urban settings. The findings then show that the drivers and passengers continuously negotiate pick-up locations by adapting to traffic conditions, spatial constraints, and platform instructions. They often prioritizing practicality and accessibility over formal compliance. These negotiations frequently occur in legally ambiguous situations and potentially unsafe spaces, including roadside and no stopping areas. The findings indicate that consumers already rely on platforms before the ride formally begins, yet legal accountability for passenger safety among platforms, drivers, and local authorities remains unclear.

Keywords: consumer protection law, ride-hailing, platform regulation, passenger safety, legal uncertainty

ABSTRAK

Tantangan perlindungan konsumen dalam layanan transportasi daring muncul pada tahap penjemputan, di mana penumpang dihadapkan pada ketidakpastian spasial, lingkungan menunggu yang tidak aman, dan akuntabilitas yang tidak jelas antara platform, pengemudi, dan otoritas lokal. Meskipun layanan transportasi daring telah dilegalkan secara resmi di Indonesia, pengakuan hukum saja tidak secara otomatis menjamin perlindungan konsumen selama tahap penjemputan, khususnya terkait dengan keselamatan penumpang, kepastian spasial, dan akuntabilitas hukum. Penumpang sering diarahkan ke ruang publik informal, terlarang, atau berpotensi tidak aman, sehingga menimbulkan kekhawatiran mengenai keselamatan, tanggung jawab hukum, dan hak atas informasi layanan yang jelas dan dapat diandalkan. Untuk mengatasi kekhawatiran ini, penelitian ini mengkaji bagaimana peraturan transportasi, sistem platform, dan kondisi spasial membentuk praktik penjemputan transportasi daring di Bandung, Indonesia. Dengan menggunakan pendekatan studi kasus kualitatif, penelitian ini menggabungkan analisis regulasi, observasi lapangan, dan wawancara mendalam dengan pengemudi dan penumpang. Analisis ini dipandu oleh kerangka kerja Staging Mobilities dan pendekatan semiotika material untuk memahami bagaimana praktik mobilitas dinegosiasikan dalam lingkungan perkotaan sehari-hari. Temuan tersebut kemudian menunjukkan bahwa pengemudi dan penumpang terus-menerus menegosiasikan lokasi penjemputan dengan beradaptasi dengan kondisi lalu lintas, kendala spasial, dan instruksi platform. Mereka sering memprioritaskan kepraktisan dan aksesibilitas daripada kepatuhan formal. Negosiasi ini sering

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terjadi dalam situasi yang ambigu secara hukum dan ruang yang berpotensi tidak aman, termasuk pinggir jalan dan area larangan berhenti. Temuan tersebut menunjukkan bahwa konsumen sudah bergantung pada platform sebelum perjalanan resmi dimulai, namun pertanggungjawaban hukum atas keselamatan penumpang di antara platform, pengemudi, dan otoritas lokal masih belum jelas.

Kata kunci: hukum perlindungan konsumen, layanan transportasi daring, regulasi platform, keselamatan penumpang, ketidakpastian hukum

INTRODUCTION

The growth of ride-hailing services has changed how people access urban (Aritenang, 2024; Chalermpong et al., 2022). In Bandung, passengers and drivers frequently rely on digital applications to coordinate trips. Yet the pick-up process often takes place on roadsides, sidewalks, building entrances, and other public spaces that were not specifically designed for ride-hailing activities. As a result, questions emerge regarding safety, legality, and responsibility during this stage of the service. The pick-up stage often requires passengers and drivers to coordinate within complex urban environments that are not always designed to accommodate platform-mediated mobility services. These practices frequently occur under congested traffic conditions, limited stopping spaces, and inconsistent spatial arrangements, creating situations where passengers and drivers must continuously negotiate how and where pick-up activities can occur safely (Ding et al., 2024).

Although ride-hailing services have been formally legalized in Indonesia, the rapid expansion of platform-mediated mobilities also raises important questions regarding consumer protection. During the pick-up stage, passengers are often exposed to uncertain waiting locations, unsafe traffic conditions, and spatial arrangements that were not designed for ride-hailing. In many cases, consumers rely on platform instructions before the ride formally begins, yet existing regulations do not clearly determine responsibility for risks that may emerge during this stage (Mariyam et al., 2025). This reflects a broader challenge in Indonesia's digital legal framework, where technological development often advances faster than regulatory adaptation (Septiadi, 2022). As a result, existing transportation and platform regulations fail to adequately address concerns about passenger safety, legal accountability, and consumer rights. Ride-hailing consumers should be viewed not merely as app-based mobility users, but also as consumers entitled to legal protection.

In the Indonesian context, transportation law and regulations are dominated by a paradigm that considers orderliness, safety, and the efficiency of traffic flow. Law No. 22 of 2009, for example, defines traffic space as infrastructure for the movement of vehicles, people, and goods, implicitly restricting stopping activities within the road space. Minister of Transportation Regulation No. 13 of 2014 also positions traffic signs as an instrument for behavioral control through prohibitions and commands. At the local level, regulations such as Bandung City Regional Regulation No. 12 of 2024 organize urban space functionally and hierarchically. This regulatory framework reflects the state's efforts to stabilize mobility through formal rules and spatial design. However, in ride-hailing practices, particularly at the pick-up stage, mobility does not always follow this structure but rather occurs through situational adjustments that often fall outside the regulatory framework. In addition to transportation regulations, Indonesia's consumer protection is governed by Law Number 8 of 1999, which ensures consumers' rights to safety, comfort, security, and clear information. However, current regulations do not specify how these rights should be protected during ride-hailing pick-up activities. Transportation regulations primarily govern traffic flow and infrastructural operations, whereas consumer protection regulations have not explicitly addressed platform-mediated mobility and the risks that arise during the pick-up stage.

Existing studies on ride-hailing primarily focus on transportation efficiency, platform governance, labor issues, and travel behavior (Cen et al., 2025; Hall, 2026; I. O. Olayode et al., 2023a; Yu et al., 2023). Other studies examine digital platforms as new forms of urban government and mobility integration (Barns, 2019, 2020; Barns et al., 2017; Graham, 2020). Limited attention has been given to consumer protection during the pick-up stage, where passengers encounter safety risks, spatial uncertainty, and unclear accountability before the ride begins. This gap suggests the need to examine how transportation regulations, platform systems, and everyday mobility practices jointly shape consumer protection outcomes. In order to analyze this issue, this research implements the Staging Mobilities framework and the material semiotics approach as analytical tools to examine how regulations, digital platforms, infrastructures, and user practices interact to shape ride-hailing pickup activities.

This research formulates several questions: (1) how transportation and spatial regulations in Bandung City shape and constrain ride-hailing pick-up practices in public spaces, (2) how ride-hailing drivers and passengers situationally negotiate pick-up points within the context of urban space, (3) how the incongruence between formal regulations, digital platform instructions, and material spatial conditions is mediated in pick-up practices, and (4) what consumer protection risks emerge from the gap between formal regulations, platform instructions, and everyday pick-up practices. These questions specifically focus on answering how legal uncertainty during the pickup stage affects passenger safety, spatial certainty, and accountability in ride-hailing services. Thus, it will contribute to consumer protection law by illustrating that legal protection in platform-mediated mobility must extend beyond the formal ride and encompass the pick-up stage, where customers are already subject to safety, spatial, and accountability risk. This research argues that the legalization of ride-hailing services is insufficient without explicit consumer protection mechanism guiding the pick-up stage.

LITERATURE REVIEW

The Ride-Hailing Phenomenon in an Urban Context

Ride-hailing services have transformed consumer access to transportation services in urban areas through platform-mediated systems. Online transportation services operate through flexible and situational coordination between passengers and drivers. This differs from conventional transportation modes, which rely on designated stop infrastructure. As a result, passengers often face uncertainty about where to wait, how to identify the driver, and whether the selected pickup location is safe or legally permitted. Considering customers' growing reliance on digital platforms prior to their trip, this circumstance poses significant issues for consumer protection. Due to exposure to unsafe waiting conditions, ambiguous stopping areas, and fragmented legal accountability, consumer vulnerabilities may therefore emerge during the pickup phase.

The massive use of ride-hailing is one of the transformations that has occurred in urban transportation, driven by the advances in digital technology. Ride-hailing has emerged as a platform-based service that connects drivers and passengers through an app, enabling real-time and flexible trip bookings. Streets, sidewalks, and building entrances are used as temporary stopping, waiting, and negotiating spaces for ride-hailing pick-up points. Despite lacking the material, legal, and signage element of conventional transport infrastructures like terminals, stations, or airports, these places serve as *de facto* mobility pick-up points. As a result, the city is rearranged where social interactions and physical limitations meet digital instructions. Urban space is therefore constantly created through platforms rather than being influenced

by planners and engineers. In addition to changing how people move, ride-hailing is also changing how urban space is controlled, negotiated, and structured.

Technical and policy literature highlights issues of pick-up/drop-off and curb management: flexible pick-up and drop-off strategies are seen as potentially reducing congestion and environmental impacts but require spatial design and policies that are responsive to user behavior (Ding et al., 2024). Although ride-hailing has become an important part of urban mobility, most research still focuses on macro-level aspects such as system efficiency, travel demand, and economic impact (I. Olayode et al., 2023; I. O. Olayode et al., 2023b). Other studies focus more on user behavior in the form of preferences and satisfaction but neglect actual practices in the field (Shah & Hisashi, 2022). As a result, operational aspects such as the pick-up process are often treated as technical aspects that are not analyzed in depth. However, the pick-up stage is a crucial part of ride-hailing services because it is the initial point of interaction between drivers and passengers in urban spaces. In this practice, various factors such as regulations, spatial conditions, and traffic conditions influence how the pick-up process occurs.

Ride-Hailing Regulations and Their Implementation Challenges

The widespread use of ride-hailing has resulted in many regulations being adjusted and created. These regulations aim to regulate the economic, social, and spatial impacts of this system. Transportation regulations play a crucial role in regulating mobility but in the context of ride-hailing but often face challenges in accommodating the dynamics that occur on the implementation. Regulation has become a crucial instrument in guiding how this system functions and interacts with other transportation modes. As Hall (2026) points out, ride-hailing raises unresolved policy questions, particularly regarding externalities, integration with public transportation, taxation, and labour rights. This suggests that regulations that regulate ride-hailing must be understood as part of broader urban mobility governance, not simply as a sectoral intervention.

Rahman and Thelen (2019) show that platforms not only operate within existing regulatory frameworks but also actively shape them. Platforms like Uber and Amazon act as regulators through data and algorithms that can “regulate” interactions between market actors and calculate user actions (Kenney & Zysman, 2016; Zysman & Kenney, 2018). In practice, platforms also utilize regulatory entrepreneurship strategies, entering ambiguous legal areas or even breaking rules to then drive regulatory change. The concept is described by Elizabeth Pollman and Jordan Barry as a business strategy in which challenging the law becomes part of the business model itself (Barry & Pollman, 2016). This strategy is reinforced by the “grey zones” in regulation that arise from new technological developments and gaps in employment and economic law. Regulation becomes reactive to platform innovation, rather than acting as a framework that precedes and directs the market.

Public policy literature emphasizes that regulation related to ride-hailing must consider broader interactions within the transportation system. Ride-hailing impacts on cities occur through three main mechanisms: changes in mode substitution, changes in vehicle supply, and spatial adjustments in urban structure (Hall, 2026). Therefore, policy designs related to platform cannot be implemented in isolation. For example, trip- or location-based taxes can influence user behavior, but their impact is highly dependent on the availability of transportation alternatives and local conditions. This emphasizes that ride-hailing regulation is contextual and requires a deep understanding of each city's mobility system

While numerous studies demonstrate the potential of regulation to increase efficiency and mitigate negative impacts, implementation challenges remain significant. One key challenge is the tension between economic efficiency and social equity. Policies such as ride-hailing taxes or service restrictions can have

unequal distributional impacts, particularly for groups with limited access to transportation alternatives (Huang et al., 2026). The dynamic nature of ride-hailing systems means that policy interventions often produce indirect effects through feedback mechanisms, such as changes in mode choice or the spatial distribution of activity. Empirical uncertainty regarding the impact of ride-hailing on congestion further complicates this issue.

Platform Dynamics and Regulatory Adaptation in Bandung's Urban Mobility

Platforms, such as ride-hailing, have evolved as powerful agents that shape the character and operation of cities. In ride-hailing case, we show the change of how people mobile. These platforms have become ubiquitous and are characterized as frameworks that support and limit various aspects of agency, whether economic, social, or political (Barns, 2019; Gillespie, 2010). Platforms permeate a wide range of technological devices, resulting in an equally diverse spectrum of user experiences (Barns, 2019, 2020; Barns et al., 2017), that have been shown to perform better in urban areas due to their broad role and reach (Artioli, 2018). Policymakers around the world are struggling to keep up with the rapid growth of these technologies and the institutions they enable, which frequently creates barriers to creating and executing policies that are effective (Hemphill, 2020; Marchant, 2011).

Ride-hailing operation in Bandung City offers an illuminating example of how digital platforms actively influence cities governance, legal frameworks, and daily mobility behaviors in addition to operating within cities. Since ride-hailing first appeared in the middle of the 2010s, it has frequently challenged current transportation laws and forced local governments to reevaluate their role in overseeing urban mobility. This regulatory pattern reflects a broader platform urbanism dynamic that platforms are recognized as legitimate mobility actors, yet the spatial consequences of their operations are treated as secondary or assumed to self-organize. As a result, everyday mobility in Bandung is increasingly governed through a combination of formal regulations, platform algorithms, and informal negotiations on the street.

Bandung's experience with ride-hailing shows that platforms exert influence not only by moving people but by reshaping how the city governs mobility itself. Regulatory shifts reveal the city as a mutable assemblage that responds to platform logics, rather than a stable authority imposing fixed rules (Detik News, 2020). This has direct implications for how mobility is staged in practice. While ride-hailing is formally legalized, the spatial infrastructures that support it, such as pick-up points, remain unofficial, improvised, and unevenly distributed. In this sense, the Bandung case underscores the central argument of this research that ride-hailing platforms actively participate in reshaping urban mobility and regulation, positioning the city itself as a co-evolving actor within a platform-mediated mobility.

Consumer Protection in Platform-Mediated Mobilities

The development of ride-hailing services has transformed the relationship between consumers and transportation services in urban areas. In platform-mediated mobility, passengers increasingly rely on digital applications, algorithmic coordination, and real-time communication to access mobility services. Unlike conventional transportation systems, which typically rely on fixed infrastructure such as terminals, stations, or designated stopping points, ride-hailing services operate through flexible and situational coordination between passengers and drivers in everyday urban spaces. Pick-up and drop-off activities often occur in informal spaces not specifically designed to support platform-based mobility. As a result, consumers often experience uncertainty about where to wait, how mobility should be coordinated, and whether the pickup location is safe and compliant with the law.

From a consumer protection law perspective, passengers using ride-hailing services should be understood not only as application users but also as consumers entitled to legal protection. In Indonesia, Law Number 8 of 1999 concerning Consumer Protection guarantees consumers' rights to safety, comfort, security, and clear information when accessing goods and services. The law also requires businesses to provide services that do not endanger consumers and to ensure that consumers receive adequate information about the services offered. In ride-hailing systems, these principles become even more important because passengers rely heavily on digital platforms to determine routes, identify drivers, coordinate pickup points, and access transportation in real time. This dependency creates an asymmetrical relationship in which consumers have limited control over the technological systems, spatial conditions, and algorithms that shape the service process.

Platform studies demonstrate that digital platforms actively shape urban activities and social practices through algorithms, data systems, and digital infrastructure (Barns, 2019, 2020; Kenney & Zysman, 2016). In ride-hailing services, platforms not only mediate interactions between drivers and passengers but also coordinate mobility practices by directing where passengers and drivers meet and how trips are organized. This suggests that platform-based mobility is regulated not only through formal regulations but also through algorithmic systems that direct movement. However, digital coordination systems often interact with spatially complex, dense, and disorderly urban conditions. As a result, passengers may be directed to locations that are difficult to access, unsafe to wait in, or not compliant with transportation regulations and urban infrastructure.

High levels of dependency can create consumer vulnerabilities in ride-hailing services. These vulnerabilities arise because passengers rely on systems and settings they cannot fully control, while the flexibility promoted by ride-hailing platforms often shifts practical risks to users (both passengers and driver-partners). Studies on passenger safety in ride-sharing services highlight concerns about harassment, robbery, weak security mechanisms, and the lack of clear accountability within platform transportation systems (Chaudhry et al., 2018). While much safety discussion focuses on risks occurring during the trip itself, the pickup phase, a critical moment before the trip officially begins, remains under-recognized. During this phase, consumers may wait in crowded roadside environments, poorly lit public spaces, or areas with unclear stopping arrangements while simultaneously negotiating a location with the driver in dynamic traffic conditions.

The concept of human security provides an important perspective for understanding these everyday vulnerabilities. Human security perspectives emphasize the protection of individuals from insecurities encountered in everyday life rather than focusing solely on state-centered security concerns (UNDP, 1994). In urban mobility contexts, insecurity may emerge through ordinary activities such as waiting, navigating public space, and accessing transportation services. Within ride-hailing systems, passengers are exposed to situational vulnerabilities related to unsafe waiting environments, traffic exposure, and uncertainty during pick-up coordination. Passengers may experience insecurity related to traffic exposure, unsafe waiting environments, uncertainty about the driver's location, or confusion in crowded urban areas. This insecurity is exacerbated by the absence of formal infrastructure specifically designed to support ride-hailing pick-up activities. As a result, safety during the ride-hailing process becomes a situational negotiation between passengers, drivers, digital systems, and urban conditions, rather than being institutionally guaranteed through clear spatial arrangements and regulations.

This emerging vulnerability also raises important questions about platform accountability and legal responsibility in ride-hailing services. Digital platforms actively shape mobility practices through algorithmic coordination systems, yet responsibility for risks occurring during the ride-hailing stage

remains fragmented among multiple actors. It is often unclear whether responsibility lies with the platform providing the digital coordination system, the driver negotiating the pickup location, the building manager, or the local government responsible for regulating public spaces and transportation infrastructure. This fragmented accountability reflects a broader form of legal uncertainty in platform-mediated transportation systems, where technological innovation advances faster than regulatory adaptation. Therefore, consumer protection in online transportation services cannot be limited to the formal transportation process itself but must also encompass the spatial, technological, and situational conditions under which consumers access and negotiate mobility services.

RESEARCH METHOD

Research Design

This research employs a qualitative case study approach to examine how consumer protection risks, legal uncertainty, and spatial negotiation emerge during ride-hailing pick-up practices in Bandung. The study focuses on how regulations, platform systems, urban infrastructures, and everyday practices interact in shaping passenger experiences and mobility coordination during the pick-up stage. This research also takes a socio-legal perspective, examining how formal transportation regulations are perceived, negotiated, and implemented in everyday mobility practices. This perspective sees laws and regulations as dynamically interacting with digital platforms, urban infrastructures, and user practices.

The analytical framework employed integrates Staging Mobilities Framework (Jensen, 2013) and Material Semiotics (Akrich, 1992). The integration of these two frameworks offers a novel analytical approach that bridges the gap between regulation, infrastructure, and practice. Thus, this research design allows for an in-depth analysis of mobility practices as socio-material processes that are not stable but are continually negotiated within the context of urban space. The case study approach was chosen because it provides the flexibility to empirically explore practices within the local context of Bandung, that has its own unique spatial and mobility characteristics.

The Staging Mobilities framework conceptualizes mobility as produced through the interaction between staging from above (planning, design, regulations, and institution) and staging from below (embodied performance and social interaction) (Jensen, 2013). This framework highlights how mobility is both structured and performed, emphasizing the interplay between staging from above and below in shaping movement (See figure1). However, while Staging Mobilities effectively captures spatial and performative dimensions, it does not fully account for the role of digital technologies as active mediators in mobility systems.

Material semiotics, on the other hand, provides a lens for analyzing socio-technical systems by examining how agency is distributed across human-nonhuman (Akrich, 1992; Akrich & Latour, 1992). It introduces key concepts such as inscription, prescription, de-inscription, and antiprogram, which describe how technological scripts are embedded, enacted, resisted, and transformed in practice (see the vocabulary in the table 1). This approach allows for a deeper understanding of how regulation, infrastructure, and digital technology intertwine in practice. The integration of these two frameworks offers a novel analytical approach that bridges the gap between regulational, spatial, digital, and interactional dimensions of mobility.



Figure 1. The Staging Mobilities Framework

Table 1. Vocabulary for The Semiotics of Human Nonhuman Assembly Used in this Research

Term	Definition
Inscription	The process where designers embed their hypotheses and visions of the world into the technical content of an object.
De-scription	The analyst's task of retrieving the "text" of what various actors in a setting are doing to one another.
Transcription	The translation of a script from one repertoire to a more durable one, such as moving from signs to things.
Antiprograms	The programs of action of actants that are in conflict with the chosen program of analysis.
Prescription	What a device allows or forbids anticipated human and nonhuman actors to do (the "morality" of a setting).
De-inscription	The reaction where actants extract themselves from prescribed behavior or adjust the setting.

Data Collection

This research involved 7 ride-hailing drivers and 6 passengers directly involved in pick-up practices in Bandung City as informants. Subject selection was purposive, considering active involvement in pick-up activities, ensuring that the informants had direct experience negotiating pick-up points in public spaces. Data was collected between 2024-2025 through semi-structured interviews. Drivers were chosen as they act as actors who directly interact with regulations and spatial conditions, while passengers were chosen

because they are also involved in the coordination and location adjustment process. Interview questions also explored participants' perceptions regarding safety, responsibility, legality of stopping locations, and experiences of negotiating pick-up points under uncertain urban conditions. Field observations were conducted at shopping centres, campuses, bus stop, and several roadside areas, focussing on areas with high ride-hailing pick-up activities. The observations focused on mobility coordination, spatial interaction, and conditions relating to passenger safety, visibility, waiting surroundings, traffic exposure, and the presence of transportation regulations or stopping restrictions around pick-up locations. Observation were carried out over 5 weeks at different times of day (morning, afternoon, evening) to capture variation.

Additionally, regulatory documents were used as data sources to understand the staging from above that shapes mobility

Table 2. Law and Regulations Relevant to Ride-Hailing Pick-Up Practices

Regulation	Article	Article Excerpt	Description
Law No. 8 of 1999 concerning Consumer Protection	Article 4	"Consumers have the right to comfort, security, and safety in consuming goods and/or services."	Establishes consumers' rights to safety, security, and comfort when accessing services, including transportation services.
	Article 4	"Consumers have the right to correct, clear, and honest information regarding the condition and guarantee of goods and/or services."	Guarantees consumers' rights to obtain clear and accurate information in service transactions and coordination processes.
	Article 7	"Business actors are obligated to provide correct, clear, and honest information regarding the condition and guarantee of goods and/or services..."	Establishes the obligation of service providers to ensure transparency and proper service information.
	Article 7	"Business actors are obligated to guarantee the quality of goods and/or services produced and/or traded..."	Requires service providers to ensure service quality and consumer safety standards.
Law No. 22 of 2009 on Road Traffic and Transportation	Article 19	"Business actors are responsible for providing compensation for damage, pollution, and/or losses suffered by consumers due to the consumption of goods and/or services produced or traded."	Establishes business actors' responsibility for consumer losses arising from service provision.
	Article 1	"Road Traffic Space is infrastructure designated for the movement of vehicles, people, and/or goods...", and "Stopping is a condition in which a vehicle is temporarily stationary and not abandoned by the driver."	Defines road traffic space and the concept of stopping as the basis for mobility regulation.

	Article 3	“The implementation of road traffic and transportation aims to achieve traffic and transportation that are safe, secure, orderly, smooth, and integrated with other modes of transportation.”	Establishes the objectives of road traffic and transportation governance.
Minister of Transportation Regulation No. 13 of 2014	Article 1	“Traffic signs are road equipment consisting of symbols, letters, numbers, sentences, and/or combinations thereof that function as warnings, prohibitions, commands, or instructions for road users.”	Defines traffic signs as instruments for regulating user behavior.
Minister of Transportation Regulation No. 12 of 2019	Article 3	“The use of motorcycles for public purposes must fulfill aspects of safety, security, comfort, affordability, and orderliness.”	Establishes standards for the use of motorcycles for public purposes.
Bandung City Regional Regulation No. 12 of 2024	Article 8	“The local government plans the city road network system to support the smooth distribution of transportation.”	Regulates the planning of road networks to support transportation distribution.
	Article 9	“The road network system consists of primary and secondary road networks, each having functions in supporting the distribution of goods and services.”	Explains the structure of the road network based on function.
	Article 15	“Every road used for public traffic must be equipped with road facilities such as traffic signs, road markings, and traffic signaling devices.”	Regulates the obligation of road equipment provision.
	Article 20	“Traffic support facilities include sidewalks, bicycle lanes, crossings, and bus stops.”	Defines types of traffic support infrastructure.
	Article 21	“Passenger terminals are used for boarding and alighting passengers.”	Specifies the function of terminals as designated pick-up and drop-off locations.
	Article 42	“Traffic safety is the condition of preventing individuals from the risk of accidents during travel.”	Defines traffic safety.
	Article 44	“Traffic order is a condition in which traffic occurs in an orderly manner in accordance with the rights and obligations of road users.”	Defines traffic order.

Table 2 presents the law and regulation analyzed in this research, focusing on national and local transportation policies governing urban mobility practices in Bandung. The selected articles illustrate how regulations serve to establish normative infrastructure use, define road functions, regulate user behavior,

and establish safety and order as primary objectives. These provisions serve as formal guidelines aimed at stabilizing mobility practices.

Data Analysis

Data were analyzed thematically to identify recurring patterns related to legal uncertainty, spatial negotiation, consumer vulnerability, safety practices, and platform coordination during ride-hailing pick-up activities. The analysis was conducted by categorizing the data into three main dimensions: regulation and physical infrastructure as staging from above, driver and passenger experience as staging from below, and identifies semiotic processes such as inscription, de-inscription, antiprogram, and circumscription to understand how mobility is negotiated. The integrated framework of the structural and performative insights from Staging Mobilities with the relational and socio-technical perspective from material semiotics enables a multi-layered analysis of ride-hailing pick-up practices, capturing how regulation, digital scripts, spatial constraints, and user practices intersect and co-constitute mobility (See table 3). Data from interviews, observations, and documents were analysed simultaneously to identify patterns of interaction between regulation and practice. This analysis aims to understand how regulations are translated into practice. Thus, the analysis focuses on the negotiation processes that enable mobility despite inconsistencies between various systems.

Table 3. The Integration of Staging Mobilities and Material Semiotics

Staging Mobilities (Jensen, 2013)	Material Semiotics (Akrich & Latour, 1992)
Staging from Above	Inscription / Script
Staging from Below	De-inscription
Mobile Situation	Setting (Setup)
Negotiation in Motion	Antiprograms

RESULTS AND DISCUSSION

Result

We analyse pick-up practices in ride-hailing services through an integration of the Staging Mobilities and Material Semiotics frameworks. The analysis focuses on how mobility is shaped not only by staging from above, but also by staging from below, and how the two interact through semiotic processes such as inscription, antiprogram, and especially de-inscription. Using regulatory documents, interview excerpts, and observational notes, the analysis demonstrates that mobility is not the result of a stable system implementation, but rather the result of ongoing negotiations between formal structures, digital technologies, material conditions, and actor practices. The data shows three patterns: how actors negotiate with public infrastructure, potential regulatory violations, and concerns about safety and security.

The analysis shows that ride-hailing mobility is the result of negotiations between formal structures and situational practices that are not always aligned. Regulations and digital systems function as staging from above, attempting to regulate mobility through various forms of inscription and prescription. However, practice in the field shows that mobility is more shaped by staging from below, where actors actively adapt to existing conditions. In this context, the concept of de-inscription becomes the primary mechanism enabling mobility. Furthermore, concepts such as antiprogram, transcription, and material adjustment also demonstrate that mobility is a complex and dynamic process.

Negotiating Public Infrastructure: Between Formal Structures and Situated Mobility Practices

Staging from Above: Infrastructure as Spatial Script

Transportation regulations in Indonesia systematically shape public infrastructure as spaces with specific, normatively defined functions, which, within the Staging Mobilities framework, constitutes a form of staging from above. Article 1 of Law Number 22 of 2009 states that

"Road Traffic Space is infrastructure designated for the movement of vehicles, people, and/or goods, consisting of roads and supporting facilities,"

indicating that roads are primarily designed for movement, not for stopping or waiting. Furthermore, Article 8 of Bandung City Regional Regulation Number 12 of 2024 states that

"The City Government plans a city road network system to support the smooth distribution of transportation,"

emphasizing the system's orientation toward efficiency and smooth mobility. Furthermore, Article 9 states that

"The city road network system consists of primary and secondary road networks, each with its own function in supporting the distribution of goods and services,"

indicating a hierarchical structure in the use of road space. Furthermore, Article 20 states that

"Traffic support facilities include sidewalks, bicycle lanes, crossings, and bus stops,"

which defines sidewalks as dedicated spaces for pedestrians. From a Material Semiotics perspective, all of these provisions constitute inscriptions that impart specific meaning to the space, as well as prescriptions that direct the behaviour of road users. Thus, space is positioned as a stable, structured entity that can be controlled through design and formal rules. This regulation assumes that mobility will follow a systematically designed structure. However, this assumption does not always align with the reality of app-based mobility practices.

Staging from Below: Practice as a Reconfiguration of Space

In everyday practice, the use of public infrastructure in ride-hailing pickup activities demonstrates that space is not always used according to the functions defined by regulations. Drivers and passengers actively adapt to existing spatial conditions, which, within the Staging Mobilities framework, is referred to as staging from below. One clear example is the experience of a passenger who had to cross a street without using a pedestrian crossing. He stated,

"Sometimes I have to cross first so I can be picked up."

This passenger crossed to facilitate pickup using a ride-hailing app. The selected or recommended point may be more difficult to access, so the passenger or driver moves to a more accessible area.

This demonstrates that coordination does not occur at a point determined by the app's system, but through considerations that take into account spatial conditions and body movements. Furthermore, drivers also adapt their use of space, as expressed by one driver who stated,

"Drivers usually stop at the side of the road, causing traffic jams."

This suggests that the side or shoulder of the road is used as a temporary stopping space. Field observations also show that sidewalks are often used as waiting areas and pick-up points for passengers and drivers, thus blurring their formal function as pedestrian spaces. Ride-hailing users often prefer to consider pick-up operations rather than the regulations or formal functions of infrastructure. The use of sidewalks and streets as pick-up points demonstrates de-inscription, where the function of space is stripped of its formal meaning. In this context, urban infrastructure no longer has a singular meaning but becomes the result of interactions between various actors. Thus, in this context, infrastructure is no longer understood as a fixed entity, but as something that is continuously reconstructed through practice. This suggests that mobility is not solely controlled by regulation, but also by user practices. Therefore, staging from below becomes a crucial element in understanding mobility.

The interaction between regulation, digital systems, and user practices in the use of public infrastructure can be understood through the concept of de-inscription in Material Semiotics. Regulation and digital systems attempt to stably inscribe the function of space, but practice shows that this function is often released and renegotiated. De-inscription is not a form of failure, but rather a mechanism that enables mobility to occur under less-than-ideal conditions. Thus, urban mobility analysis needs to consider regulatory, material, social, and technological dimensions simultaneously. Transportation infrastructure is not merely a stable object of regulation but is continuously reinterpreted through everyday mobility practices. Sidewalks, roadsides, and building entrances that are formally designated for specific functions are informally transformed into temporary pick-up infrastructure through platform-mediated coordination. This transformation creates ambiguity regarding the lawful use of public space and highlights the absence of clear regulatory arrangements governing ride-hailing pick-up activities.

From a consumer protection perspective, these practices create uncertainty regarding whether passengers are waiting in locations that are safe, lawful, and officially recognized for transportation services. Such uncertainty affects consumers' rights to safety, comfort, and clear service information as guaranteed under Law No. 8 of 1999 concerning Consumer Protection. As passengers increasingly rely on platform instructions to access transportation services, the absence of clear and legally recognized pick-up locations may expose consumers to risks that are not adequately addressed within existing transportation regulations.

Potential Violations: Between Rules and Situational Practices

Staging from Above: Regulation as Behavioral Control

Transportation regulations are explicitly designed to control road user behavior through various formal and symbolic rules, which, within the Staging Mobilities framework, constitute a form of staging from above. Minister of Transportation Regulation Number 13 of 2014, Article 1, states that

"Traffic signs are road equipment consisting of symbols, letters, numbers, sentences, and/or combinations thereof that function as warnings, prohibitions, commands, or instructions for road users."

This indicates that signs have a normative function in regulating behavior. Furthermore, Law Number 22 of 2009, Article 1, defines

"Stopping" as a state in which a vehicle is temporarily stationary and not abandoned by the driver,"

which provides a conceptual definition for vehicle activity. Bandung City Regional Regulation Number 12 of 2024, Article 15, also states that

"Every road used for public traffic must be equipped with road equipment in the form of traffic signs, road markings, and traffic signaling devices."

Furthermore, Article 21 states that

"Passenger terminals are used to pick up and drop off passengers,"

indicating that passenger boarding and disembarkation activities should occur in formal spaces. From a Material Semiotics perspective, this regulation constitutes a powerful form of inscription because the meaning of the rules is not only written but also materialized in the form of infrastructure. Furthermore, this regulation also functions as a prescription that directs the behavior of road users. Thus, the transportation system is designed to create order through clear and firm rules. However, in practice, this control does not always operate as expected.

The tension between formal rules and mobility practices becomes increasingly apparent when rigid regulations are confronted with the needs of flexible mobility in the context of ride-hailing. Regulations assume that road users will consistently follow the rules, but in practice, adjustments are often required that cannot be accommodated by these rules. This demonstrates that staging from above has limitations in anticipating the situational dynamics of mobility. Furthermore, regulations tend to be static and do not consider the real-time interactions that occur between drivers and passengers. In this context, formal rules may be perceived as less relevant by ride-hailing users when faced with the need for fast and flexible coordination.

Staging from Below: Reinterpretation and Negotiation of Practice

In ride-hailing practices, rule violations are not always intentional but often result from coordination needs that cannot be met by formal systems. One clear example is the use of traffic signs as reference points for pickups. One driver stated,

"No parking and no stopping signs are often used as a reference, even though you are not actually allowed to stop."

And

"Once, a passenger asked to be picked up on the side of the road, near the pick-up point, but not at the exact spot. He texted me, 'Sir, please stop under the sign, I'll pick you up there. There are other motorcycle taxi drivers waiting there, not just me.' I had to hurry, afraid there would be officers there."

indicating that the meaning of the sign is not always followed according to its original function. Furthermore, another driver stated,

"I have to stop quickly because the security guard or police officer often tells me to move forward",

indicating pressure from authorities influencing practices. Passengers are also involved in this process, as one ride-hailing user expressed when she frequently requested to be picked up at prohibited locations. She said,

"I am often asked to walk a little (by the driver) from the pick-up point so that the driver doesn't get reprimanded (by the security guard),"

These practices demonstrate that mobility is situationally negotiated through interactions between actors. Within the Staging Mobilities framework, this demonstrates the dominance of staging from below,

where user practices reshape the rules. Thus, mobility does not rigidly follow rules but adapts to existing conditions.

The practice of stopping briefly in prohibited areas demonstrates that violations are not absolute, but rather temporally negotiated. Drivers often stop only briefly to avoid sanctions, indicating a strategy for dealing with rules. This suggests that actors do not completely ignore rules but rather use them selectively. Violations become part of normal mobility practices.

These findings show that legal compliance in ride-hailing mobility is situational rather than strictly adhering to formal transportation rules and regulations. Drivers and passengers selectively interpret traffic signs, stop signs, and public infrastructure in order to guarantee practical accessibility. From a consumer protection standpoint, this raises questions about which pick-up procedures are legally permissible and whether consumers are adequately protected when coordination occurs in forbidden or informal settings

From a Material Semiotics perspective, the practice of violations in ride-hailing can be understood through the concept of antiprogram, where actors use system elements in ways that differ from or contradict their original purpose. Traffic signs that should prohibit stopping are instead used as coordination points due to their high visibility. Furthermore, the practice of stopping briefly demonstrates de-inscription, where formal rules are not strictly followed but adapted to situational needs. In some cases, transcription also occurs, where physical signs are translated into communication instructions, such as when a passenger requests to be picked up via chat by saying

"I said 'under the stop sign,' because it was the easiest to explain... Drivers usually understand, even if it's not the right place. As long as there are no police, it's safe."

The transcripts demonstrates that the meaning of traffic signs are not fixed but can be changed according to the context of use. The interaction between rules, symbols, and practices creates complex dynamics in urban mobility. Therefore, violations cannot be understood simply as deviations, but as part of the mobility production process. Mobility cannot be understood as a direct implementation of the system, but as the result of ongoing negotiations. In this context, antiprogram is not a form of failure, but a mechanism that enables mobility to occur. The antiprogram also highlights the inadequacies of current transportation regulations in regulating platform-mediated mobility. Although ride-hailing services actively coordinate movement using digital technologies, the responsibility for risks encountered during informal or unlawful pick-up procedures is still disputed. As a result, the legal responsibility for passenger safety is ambiguously distributed among drivers, platforms, and governmental agencies. These practices also generate ambiguity regarding legal responsibility when consumers are exposed to risks at prohibited or informal pick-up locations

Safety and Security: Norms vs Conveniences

Staging from Above: Safety as a Normative Ideal

Transportation regulations consistently prioritize safety as the primary objective in implementing mobility systems. Within the Staging Mobilities framework, this is a form of staging from above, oriented toward ideal conditions. Law Number 22 of 2009, Article 3, states that

"The objective of implementing road traffic and transportation is to realize safe, secure, orderly, smooth, and integrated traffic and transportation services with other modes of transportation."

Minister of Transportation Regulation Number 12 of 2019, Article 3, states that

"The use of motorcycles for public purposes must meet the aspects of safety, security, comfort, affordability, and orderliness."

Bandung City Regional Regulation Number 12 of 2024, Article 42, also states that

"Traffic safety is the state of preventing everyone from the risk of accidents while traveling."

Furthermore, Article 44 states that

"Traffic order is a state in which traffic occurs in an orderly manner in accordance with the rights and obligations of road users."

From a Material Semiotics perspective, these regulations constitute normative prescriptions that direct road user behavior toward ideal conditions. Thus, the transportation system is designed to minimize risk through strict rules. However, practice in the field demonstrates that these ideal conditions are not always achievable.

Regulations tend to assume that safety can be achieved through compliance with established rules. However, in the context of app-based mobility, conditions on the ground often do not align with this assumption. This demonstrates that staging from above has limitations in accommodating the complexities of dynamic mobility. Although regulations attempt to create ideal conditions, practice in the field demonstrates discrepancies.

Staging from Below: Practices Under Risky Conditions

In ride-hailing pickup practices, safety is often compromised for the sake of smooth coordination between drivers and passengers. One driver stated,

"The sidewalk near the exit (building) is dangerous, lots of vehicles are coming and going"

And this indicates that pickups often occur in high-risk locations. Furthermore, passengers often have to adjust to less-than-ideal conditions, such as crossing streets or walking to certain locations. Under certain conditions, users also utilize technology adaptively, as drivers stated,

"I've picked up passengers at night. The road is quiet, with lots of trees. I tell the passenger to stand under the headlights"

and

"It's often scary when I pick up a passenger at night. I often can't see the passenger, and I'm afraid it's not a real person. When it's dark, I see passengers holding their phones on the side of the road; they usually have their screens on brightly."

And one passenger also said,

"When it's dark, I'm also afraid of waiting too long on the sidewalk. Bandung is starting to have a lot of motorcycle gangs."

This also implies that some public spaces lack adequate lighting. This not only poses the potential for criminal activity but also threatens driving safety. The app directs pickup points to these areas, without considering the safety of the surrounding area. Passengers can change pickup points via the app or move to safer locations.

From this case, we see that regulatory safety considerations are often overlooked. Actors develop various strategies to address existing risks. These include moving to brighter locations, using additional lighting via smartphone, or providing visual cues to facilitate pickups during crowded conditions, as drivers said

"If the pickup area is really busy (many drivers and passengers waiting for each other), I tell passengers to find a quieter spot. It's during rush hour, when everyone is wearing the same uniform (school or factory)."

And,

"Other drivers also wait there, so it's hard to find passengers."

And the passenger also stated

"Sometimes I change places because there are too many other drivers. I'm afraid I'll pick up the wrong driver. My friend once got the wrong driver."

Other passengers share her strategy to find her driver.

"I look at the license plates one by one because there are so many similar motorcycles."

This demonstrates that visual perception are important coordination tools for passenger and driver recognition. Furthermore, actors relocate pickup points when conditions become too crowded to avoid potential risks. Thus, ride-hailing mobility relies not only on the interpretation of regulations and digital technology systems, but also on the actors' ability to adapt.

From a Material Semiotics perspective, safety practices in ride-hailing demonstrate de-inscription, where safety rules are not fully followed in practice. Furthermore, there is material adjustment, where actors adjust their behavior based on environmental conditions, such as lighting and crowding. Furthermore, this phenomenon demonstrates that safety cannot be understood as the result of compliance with rules, but rather as the result of adaptation to existing conditions.

From a human security standpoint, these findings show that passengers confront vulnerabilities when employing ride-hailing services. Waiting in dark surroundings, navigating crowded venues, and negotiating uncertain pick-up locations subject consumers to situational risks that are not adequately handled by current transportation regulations. Consequently, passenger safety depends largely on individual adaptation rather than institutionally guaranteed protection. As a result, consumer safety during the pick-up stage is mainly reliant on informal coordination and individual adaptation, rather than institutionally assured protection.

Discussions

The findings show that ride-hailing pick-up activities are more than just operational mobility activities; they also raise significant consumer protection issues related to platform-mediated mobilities. Although ride-hailing services have been technically legalized and integrated into urban transportation systems, the pick-up stage is usually conducted in spatially unclear, informal, and potentially risky situations. As a result, passengers are exposed to dangers associated with traffic exposure, visibility, unsafe waiting circumstances, and ambiguous legal liability before the service is even begins. These findings indicate that the key issue in ride-hailing governance is not just a mismatch between policy and practice, but also the lack of explicit consumer protection mechanisms within the platform-mediated mobility systems. The discussion below is summarized in Table 4, which outlines the relationship between the research findings, theoretical interpretations, and the legal and consumer protection implications identified in this research.

Table 4. Summary of Findings, Analytical Interpretation, and Consumer Protection Implications in Ride-Hailing Pick-Up Practices

Research Question	Key Findings	Discussion	Legal / Consumer Protection Implications
RQ1. How do transportation and spatial regulations in Bandung City shape and constrain ride-hailing pick-up practices in public spaces?	Transportation regulations and spatial planning regulations function as inscriptions embedded within infrastructure that shape where stopping, waiting, and pick-up activities may occur. Roads, sidewalks, entrances, and traffic signs are scripted through formal legal arrangements. However, users continue to use prohibited or ambiguous spaces for pick-up activities.	Regulations do not operate as deterministic systems but as partial and contingent scripts that are continuously reinterpreted through everyday mobility practices. Staging from above emerges through regulations, infrastructures, and spatial controls, but these arrangements remain negotiable in practice.	Existing transportation regulations prioritize traffic order, operational legality, and infrastructure functions, but do not adequately address consumer protection during the pick-up stage. Consequently, passengers access transportation services within spaces whose legal status and safety conditions remain ambiguous.
RQ2. How do ride-hailing drivers and passengers situationally negotiate pick-up points within urban space?	Drivers and passengers negotiate pick-up locations based on traffic density, road accessibility, visibility, police presence, time pressure, and surrounding spatial conditions. Pick-up locations are continuously adjusted rather than rigidly following platform-designated points.	Pick-up practices emerge through staging from below, where mobility is produced through embodied interaction, situational adaptation, and negotiations between human and non-human actants. Mobility coordination becomes flexible and context-dependent rather than fully governed by regulations or platform systems.	Passenger safety during the pick-up stage depends heavily on informal coordination and individual adaptation rather than institutionally guaranteed protection. Consumers must negotiate visibility, accessibility, and safety within uncertain urban environments.

RQ3. How is the incongruence between formal regulations, digital platform instructions, and material spatial conditions mediated in pick-up practices?	Ride-hailing pick-up practices are shaped through competing logics between regulations, platform algorithms, and material urban conditions. Platform-designated pick-up points may conflict with stopping restrictions, unsafe roadside conditions, or inaccessible spatial environments.	Regulations operate through the logic of order and legality, platforms through efficiency and optimization, while material space imposes physical constraints that cannot always be digitally represented. Users mediate these incongruences by balancing legality, practicality, accessibility, and efficiency through situational negotiation.	Legal certainty regarding safe and lawful pick-up practices becomes unstable and negotiated. Existing transportation governance frameworks struggle to regulate platform-mediated mobility because digital coordination systems and physical urban conditions are not fully integrated into formal regulations.
RQ4. What consumer protection risks emerge from the gap between formal regulations, platform instructions, and everyday pick-up practices?	Consumers experience unsafe waiting environments, roadside exposure, poor visibility, informal stopping arrangements, and unclear coordination processes during the pick-up stage. Platforms shape coordination but responsibility for safety remains fragmented among platforms, drivers, passengers, and public authorities.	Consumer vulnerability emerges through the interaction between regulations, digital platforms, infrastructures, and situational mobility practices. The pick-up stage becomes a socio-legal space where legality, safety, and accountability are continuously negotiated.	Existing transportation governance frameworks do not adequately protect consumers during pre-ride coordination. Under Law Number 8 of 1999 concerning Consumer Protection, passengers are entitled to safety, security, comfort, and clear information, yet these protections remain weak during the pick-up stage. This creates fragmented accountability and legal uncertainty regarding who is responsible for passenger safety before the ride formally begins.

Regulatory Inscriptions and the Structuring of Pick-Up Practice

This research argues that transportation and spatial regulations in Bandung City operated not merely as constraints, but as inscriptions embedded within public infrastructure. From a material semiotic perspective, infrastructure is not a neutral physical object, but a technological artifact embedded with scripts that configure possible actions and behavioral constraints. In this context, city planners and the

government act as "designers" who reinforce these scripts through formal regulations, such as stopping prohibitions, traffic flow controls, and the designation of street functions. These regulations not only restrict mobility, the actively configure how infrastructure is used in everyday practice.

Empirically, regulations such as Law No. 22 of 2009 and Bandung City Regional Regulation No. 12 of 2024 establish a normative spatial order, where roads are designated for movement and sidewalks for pedestrians. These regulatory inscriptions shape and constrain ride-hailing pick-up practice by determining where vehicles may stop, how long spaces may be used, and what spatial functions are considered legitimate. Thus, regulations are not merely prohibitive but also function as spatial script mechanisms that regulate the conditions of possibility for mobility. However, the findings of this research challenge the assumption that regulatory scripts are deterministic. While regulations shape actions, they do not fully control practices on the ground (RQ1). Examples include the practice of picking up passengers in prohibited or ambiguous spaces, such as stopping at the curb and using sidewalks for extended waiting periods, suggesting that the inscription of these regulations is partial, contingent, and never fully hegemonic.

From a legal perspective, these regulatory inscriptions also function as mechanisms intended to ensure order, safety, and the lawful use of public space. However, the findings indicate that the formal regulation of infrastructure does not automatically provide clear protection for ride-hailing consumers during the pick-up stage. Sidewalks, roadsides, and entrances formally regulated for specific purposes become temporarily transformed into informal pick-up infrastructures through platform-mediated coordination. Consequently, consumers access transportation services within spaces whose legal status and safety conditions remain ambiguous.

Rather than simply aligning with the existing literature, this research shows that platforms operate within, and often tension with, regulatory frameworks that are not fully aligned with new technology (Barry & Pollman, 2016). Elizabeth Pollman and Jordan Barry's concept of regulatory entrepreneurship explains how ride-hailing platforms operate within ambiguous legal conditions, sometimes even contradicting existing regulations, as part of their business strategy (Barns, 2019, 2020; Gillespie, 2010). Platforms thus function not only as coordination tools but also as sources of competing normativities that shape user action. From a material semiotic perspective, this phenomenon also indicates that artifacts such as traffic signs do not have fixed meanings but can be reinterpreted by actors in practice (Akrich, 1992; Akrich & Latour, 1992). Literature on the platform economy emphasizes that platforms have the capacity to create new forms of governance through systems and algorithms (Kenney & Zysman, 2016; Rahman & Thelen, 2019; Zysman & Kenney, 2018). However, the findings of this research indicate that in practice, this power still has to negotiate with existing physical infrastructure and formal regulations. In other words, staging originates not only from the state through regulation, but also from infrastructure that govern user behavior that will be negotiated with staging from below (social interaction, embodied performances, and user interaction with platforms). This also adds ambiguity to platform accountability in ride-hailing services. Platforms actively impact where passengers wait and how mobility is coordinated, but they do not have complete control over the spatial and safety conditions in which pick-up activities take place. As a result, responsibility for passenger safety during the pick-up stage is split between platforms, drivers, and governmental agencies.

Platforms exert significant influence over user mobility, even when their instruction conflict with formal regulations. Users frequently prioritize the convenience and certainty offered by platforms system over strict adherence to traffic regulations, for example, by using sidewalks as waiting and meeting places. Regulations and spatial planning serve as initial scripts that direct how mobility should occur, but they do

not always determine how mobility actually occurs in practice. These show that legal compliance in ride-hailing mobility is situational rather than strictly adhering to transportation regulations. To ensure practical accessibility, consumers and drivers continually reinterpret stopping restrictions, traffic signs, and public infrastructure. As a result, legal certainty on authorized and safe pick-up practices is negotiated rather than institutionally established.

Situational Negotiations and the Reconfiguration of Pick-Up Point

The previous section discussed how regulations establish the formal script of infrastructure, and how ride-hailing practices situationally reinterpret (de-inscribe) that infrastructure. In this section, we discuss how actual pick-ups are not solely determined by platform instructions and regulations but are also produced through social interactions between passengers and drivers. The findings demonstrate how drivers and passengers situationally negotiated pick-up locations (RQ2) through situational-dependent decision-making. This negotiation is highly situational. Drivers and passengers adjust pickup locations based on traffic conditions, road accessibility, visibility, the presence of surveillance (police or security guards), and time pressures (other vehicles). Rather than adhering rigidly to platform-designated pick-up point, users actively adjust pick-up locations based on safety, accessibility, and traffic conditions.

Findings related to negotiations between drivers and passengers indicate that pick-up practices do not strictly follow formal or digital instructions, but rather are the result of contextual, situational interactions. This finding supports and extends mobility studies that mobility is negotiated social practice (Adey et al., 2014; Sheller & Urry, 2006, 2016), by showing pick-up practice are not fixed outcomes but emergent result of ongoing negotiation. Drivers and passengers do not simply follow points determined by the app but actively adjust their pick-up locations based on road conditions, traffic density, and the possibility of stopping. Users adjust their pick-up locations by considering surrounding materials, traffic conditions, and the presence of supervision. Minister of Transportation Regulation No. 13 of 2014, Article 1, stipulates signs as a means of controlling behavior, but in practice, signs also function as location markers. Furthermore, Bandung City Regional Regulation No. 12 of 2024, Article 21, directs passenger pick-up and drop-off activities to the terminal, but in practice, locations are situationally selected based on accessibility.

This reflects staging from below, where mobility emerges through embodied performance and social interaction, not solely through top-down design. Furthermore, this negotiation is not simply a deviation from regulations but a constitutive mechanism of mobility itself. The practice of pick-up is not a failure to comply with regulations and the logic of the app, but a practical response to the discrepancy between formal scripts and real-world conditions. From a material semiotic perspective (Akrich, 1992; Akrich & Latour, 1992), this negotiation involves not only human actors but also a network of non-human actants such as roads, traffic signs, digital applications, and vehicles. Each element is interconnected and contributes to shaping the action. Negotiation must be understood as a distributed process, where no single element has sole influence on the action. It demonstrates that the scripts prescribed by the platform are not always followed literally but are instead reinterpreted enacted according to the practical condition. Thus, pick-up negotiations demonstrate the flexibility and adaptability of mobility, which cannot be fully explained by regulation or system design alone. These negotiations demonstrate that passenger safety during the pick-up stage is strongly reliant on informal coordination and situational response. Rather than depending on formally established infrastructures or defined legal systems, passengers have to constantly negotiate visibility, accessibility, and safety in uncertain urban settings. The findings also show that transportation regulations are not permanent and stable legal frameworks but are constantly loosened

and reinterpreted through everyday mobility activities. Traffic signs momentarily transformed into practical coordinating instruments that allow ride-hailing practice to operate within physical constraints. As a result, legality in platform-mediated mobility is constantly contested in practice.

Mediating Incongruences Between Regulations, Platforms, and Material Conditions

This research demonstrates that ride-hailing pick-up practices are shaped through the mediation of three competing logics: regulation, platform, and material space (RQ3). Regulations convey the logic of order, safety, and function. Platforms, on the other hand, operate through the logic of efficiency, optimization, and user convenience. Digital platforms establish GPS-based pickup points, often assuming ideal spatial accessibility. Meanwhile, the conditions of the setting present constraints that cannot always be represented digitally, such as congestion, narrow streets, or informal use of space. These three logics are mutually incompatible, producing friction in everyday practices. Pickup points designated by the platform may be in locations that are legally prohibited or in unsafe environments. Regulations can also establish spatial functions that are incompatible with the temporal and practical needs of ride-hailing, often leading to violations or inconsistencies in the infrastructure's function as prescribed. The material conditions of the setting often render both regulations and app instructions inoperable. Safety and order regulations in Law Number 22 of 2009, Article 3, and Minister of Transportation Regulation Number 12 of 2019, Article 3, establish the ideal conditions for safe and orderly mobility. However, pick-up practices often occur in locations with particular risks, such as roadsides or areas with limited visibility. From a legal perspective, these competing logics create uncertainty regarding which standards should govern consumer protection during the pick-up stage. Transportation regulations prioritize order and safety, platforms prioritize efficiency and coordination, while users prioritize accessibility and practical feasibility. As a result, passengers frequently navigate spaces where legal protection, operational legitimacy, and safety arrangements remain unclear.

This incongruity did not resolve but actively mediated through practice, where users balance legality, efficiency, and spatial feasibility, often prioritizing practicality over formal compliance. In this process, users act as active mediators, interpreting and adapting conflicting logics. This research challenges the dominant perspective in platform studies that emphasizes algorithmic control as the primary force. Such control is always partial, negotiated, and dependent on spatial conditions. Platforms do not completely override regulations, and regulations do not completely discipline platform use; both are constantly reconfigured in practice. Similarly, users do not always comply with platforms. This extends arguments from the platform literature, which tends to emphasize the power of algorithmic control (Kenney & Zysman, 2016; Rahman & Thelen, 2019; Zysman & Kenney, 2018) by demonstrating that in the context of urban space, such control is always partial. From a material semiotic perspective, this incongruity can be understood as the result of the interaction of various actants, each with its own logic (Akrich & Latour, 1992).

Regulations convey a legal-formal logic, platforms convey a logic of efficiency and optimization, while material space conveys physical limitations that cannot be overcome digitally. The practice of pick-up becomes the intersection of these three logics, with users acting as mediators connecting and adjusting them. This indicates that the primary governance issue in ride-hailing services is not just regulatory mismatch, but also fragmented consumer protection. Consumers are already reliant on platform systems during the pick-up stage, but current regulations do not explicitly define responsibility for risks that arise before the ride formally begins. As a consequence, consumer protection in ride-hailing coordination is situational, adaptable, and legally unclear.

Ride-Hailing Pick-up as a Consumer Protection Problem

The results of this research show that consumer protection in ride-hailing services must extend beyond the official transportation process to encompass the pick-up stage, where consumers rely on platform-mediated coordination systems (RQ4). During this stage, consumers rely on digital platforms, GPS-based directions, and situational awareness to navigate unpredictable urban areas. However, unlike conventional transportation systems, which are supported by dedicated terminals or waiting infrastructures, ride-hailing pick-up activities are usually conducted in transitory, flexible, and informal public areas.

As a result, passengers are exposed to a variety of situational risks before the ride even begins. Consumers frequently wait in roadsides, crowded situation, poorly illuminated sites, or spaces with ambiguous stopping arrangements while simultaneously coordinating pick-up locations with drivers. In this situation, consumer safety during the pick-up stage is not institutionally guaranteed by formal infrastructures or regulatory assurance, but rather is significantly reliant on informal adaption, visibility strategies, and situational coordination among users.

The result also indicates accountability gaps in platform-mediated transportation systems. Digital platforms actively influence mobility coordination by directing where passengers and drivers meet, yet responsibility for safety circumstances during pick-up activities is unclear. Platforms, drivers, passengers, and governments all have some influence on mobility coordination, but none take full responsibility for the dangers that arise during the pre-ride stage. As a result, legal confusion remains over who should be responsible for maintaining passenger safety during pick-up activities

Therefore, simply legalizing ride-hailing services does not guarantee consumer protection. Existing transportation regulations are largely concerned with operational legality, traffic flow, and infrastructure management, whereas consumer protection during the pick-up stage is inadequately addressed. These findings show that ride-hailing pick-up practices should be viewed as socio-legal consumer protection issues arising from the interaction of digital platforms, urban infrastructures, regulations, and daily mobility practices. These consumer protection challenges therefore raise broader implications for transportation governance and urban policy.

The findings of this research have important implications for transportation policy and urban governance. The gap between formal regulations and actual practice indicates that existing regulatory frameworks tend to be reactive, positioning governments as followers of platform innovation rather than proactive governing actors. This situation also reflects broader challenges in public-sector digital transformation, where institutional readiness and governance capacity often lag behind rapidly evolving digital technologies (Afriyani, 2026; Septiadi & Ramdani, 2024). Consequently, existing regulatory frameworks continue to struggle to accommodate the flexible and dynamic nature of ride-hailing services. The absence of designated pick-up spaces forces users to rely on informal and negotiated practices, exposing both passengers and drivers to unsafe, uncertain, and informal pick-up environments that fall outside the scope of formal regulatory protection. At the same time, digital platforms actively shape mobility through algorithmic instructions, yet these forms of digital coordination remain insufficiently integrated into regulatory design, as existing transportation regulations are not equipped to govern algorithmic decision-making. This condition demonstrates that current transportation governance frameworks are not fully capable of accommodating the flexible and situational nature of platform-mediated mobility. Regulatory systems continue to prioritize traffic order and operational legality, while consumer protection during the pick-up stage remains weakly incorporated into transportation governance. Therefore, transportation policies need to be better integrated with digital platform

governance so that they can more effectively recognize the interaction between platform technologies, regulatory institutions, and everyday mobility practices in shaping urban mobility. This need is also consistent with broader evidence that effective e-governance can strengthen institutional coordination, improve public service delivery, and enhance government responsiveness in managing increasingly complex public services (Kurniawan et al., 2023). Transportation regulations should also be expanded to explicitly incorporate consumer protection principles, particularly with regard to passenger safety, accessibility, and the reduction of spatial uncertainty during the pick-up stage.

The lack of designated pick-up infrastructure encourages passengers and drivers to rely on informal and negotiated procedures in risky urban settings. As a result, consumers are exposed to safety risks, visibility issues, and ambiguous accountability throughout mobility coordinating activities. This highlights the necessity for transportation governance frameworks that include consumer protection concepts into platform-based transportation systems. Such alternatives may include designated pick-up facilities, safer waiting areas, increased visibility and lighting, explicit stopping arrangements, and explicit accountability systems for passenger safety throughout the pre-ride stage. Platforms should also be encouraged to incorporate safety-sensitive coordination systems, such as safer pick-up recommendations and visibility-based location assistance.

Legal Accountability and Consumer Protection in Ride-Hailing Pick-Up Practices

Responsibility during the pick-up stage is difficult to determine because the activity involves several actors simultaneously. Drivers and passengers negotiate the meeting location, platforms provide location recommendations through the application, and local authorities regulate the use of public space through transportation and traffic regulations. Although these actors collectively shape how pick-up activities occur, existing regulations do not clearly explain who should be responsible when passengers experience harm before entering the vehicle.

The findings show that passengers are often required to adjust to conditions that are not always safe or formally designated for pick-up activities. Some passengers reported crossing roads, waiting on sidewalks, or moving toward locations that were easier for drivers to access. In other cases, pick-up activities took place near no-stopping areas or in locations where drivers were asked to move by security officers. These situations indicate that passengers are already exposed to risk while accessing the service, even though the trip itself has not yet begun. It raises questions regarding the implementation of consumer protection principles in ride-hailing services. Law Number 8 of 1999 guarantees consumers' rights to safety, comfort, security, and clear information. However, the findings suggest that these rights are not always easy to realize during the pick-up stage. While passengers depend on application-based information and platform coordination to meet drivers, the legal responsibility for risks that arise during this process remains unclear. As a result, consumers may face uncertainty not only regarding where they should wait, but also regarding who is responsible if an incident occurs before the journey starts.

The pick-up stage should be understood as part of the service rather than as an activity occurring outside it. From the moment passengers follow platform instructions, select a pick-up point, or negotiate a meeting location with a driver, they have already entered the service process. Consequently, consumer protection in ride-hailing services should not be limited to the period after passengers enter the vehicle but should also encompass the conditions under which passengers' access and reach the service itself.

CONCLUSION

This study concludes that consumer protection in ride-hailing services extends beyond the ride itself and must encompass the pre-ride pick-up stage, where passengers are already dependent on digital coordination while navigating uncertain urban environments. The findings demonstrate that consumer vulnerability during pick-up arises from the interaction between transportation regulations, platform coordination systems, urban infrastructure, and everyday mobility practices. Although transportation regulations seek to maintain traffic order and safety, and digital platforms facilitate mobility through algorithmic coordination, actual pick-up activities remain governed by situational negotiations rather than standardized protection mechanisms. Consequently, passengers continue to face legal uncertainty regarding lawful stopping locations, safety during waiting and boarding, and the allocation of responsibility among platforms, drivers, passengers, and public authorities. The study therefore extends the Staging Mobilities Framework and material semiotics perspective by showing that digitally mediated mobility is simultaneously shaped through negotiations of legality, safety, accountability, and consumer protection, while also demonstrating that consumer vulnerability begins before the transportation service formally commences.

These findings underscore the need for transportation governance that explicitly integrates consumer protection into platform-mediated mobility systems. Rather than relying solely on operational compliance or creating exclusive infrastructures for ride-hailing services, policymakers should promote inclusive and shared mobility coordination spaces that enhance safety, accessibility, and spatial certainty for all urban mobility users. Such governance should be supported by stronger coordination between transportation authorities and ride-hailing platforms through safety-oriented platform design, including visibility-based pick-up guidance, congestion-sensitive routing, and automated detection of unsafe or legally restricted stopping locations. These measures are consistent with the objectives of Law Number 22 of 2009 on Road Traffic and Transportation, Law Number 8 of 1999 on Consumer Protection, and broader principles of inclusive urban governance. Ultimately, this study argues that ride-hailing pick-up activities should no longer be viewed merely as operational transportation procedures but as a socio-legal domain of consumer protection requiring integrated regulatory, technological, and urban governance responses.

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