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Integrating the Unstructured: Ridehailing as a Catalyst in Jakarta's Multimodal Transport System

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ABSTRACT: Jakarta's public transport system has undergone rapid expansion and integration, aiming to improve accessibility and user experience through initiatives like Jak Lingko. Despite these efforts, first and last mile challenges remain, increasingly addressed by ridehailing services such as Gojek and Grab. This study investigates the extent to which ridehailing supports Jakarta's multimodal public transport network. A qualitative descriptive approach was employed, using secondary data from BPS Jakarta, Kompas Research 2025, Wikipedia, and the Asian Transport Observatory. The analysis focused on ridehailing usage, ridership trends across MRT, LRT, KRL, and Transjakarta, and Jak Lingko's fare integration structure. Results reveal that 71.7% of public transport users rely on ridehailing, with 75% using it for first/last mile access. Ridership remains high: Transjakarta (~1M daily), KRL (~984K weekday), MRT (~111K), and LRT (~70K). Integration via Jak Lingko simplifies fare payment but gaps persist in physical connectivity and equity. The study concludes that ridehailing is essential in Jakarta's transport landscape. Formalizing its role through adaptive policy, public private cooperation, and inclusive governance can ensure more sustainable and accessible urban mobility.

Keywords: Multimodal Transport, Ridehailing, Jak Lingko, Jakarta, First Mile, Last Mile, Urban Mobility.

INTRODUCTION

Urban mobility in Asian megacities faces persistent challenges in integrating ridehailing with public transport. Key issues include fragmented regulatory frameworks, limited fare interoperability, and weak physical connectivity between modes (Wells et al., 2021). These barriers often discourage commuters from combining ridehailing with public transport, despite its potential to address first and last mile gaps. Cultural preferences also influence adoption, as some groups continue to perceive ridehailing as more convenient than mass transit (Dibaj et al., 2021).

Jakarta's Jak Lingko initiative offers a pertinent example of the fare integration model that has evolved within the city. Initially designed to enhance public transport by integrating various modes into a single fare system, the Jak Lingko model has seen an iterative evolution characterized by the incorporation of technology and stakeholder engagement. The system allows users to access multiple transit options such as buses, MRT, and ridehailing services under a unified fare scheme, contributing to reduced travel times and increased public transport usage (Chapleau et al., 2018). This innovative approach not only simplifies the payment process for passengers but also aims to foster a more reliable and efficient transport system within Jakarta.

Digital mobility, specifically through ridehailing, plays a significant role in enhancing public transport accessibility. By facilitating first last mile connectivity, ridehailing services offer a crucial link that alleviates the gap between public transport stations and users' final destinations (Pahlevi & Nahry, 2023). Furthermore, the convenience of requesting rides through mobile apps has helped enhance user engagement, particularly among individuals who previously relied on private vehicles or who may have shunned public transport options due to perceived inefficiencies (Ferraro et al., 2021). Research indicates that by increasing access to public transit, digital mobility options can reduce dependency on personal vehicles, ultimately encouraging a shift toward more sustainable transport networks (Kerk et al., 2020).

Despite increasing studies on ridehailing and public transport integration globally, limited research has explicitly examined Jakarta's case. Existing literature often highlights global best practices (Khedri et al., 2022). or user behavior shifts but does not address how ridehailing reshapes Jakarta's multimodal system under the Jak Lingko framework. This creates a research gap: the lack of context-specific analysis on how ridehailing supports, competes with, or transforms Jakarta's urban transport ecosystem (Ferraro et al., 2021).

The rise of ridehailing services significantly impacts urban mobility perceptions. Data suggest that as more individuals opt for ridehailing options, their trust and satisfaction with traditional public transport systems may be undermined, diminishing the overall perception of existing public transport infrastructure (Kerk et al., 2020). Consequently, the integration of ridehailing into the urban transport narrative not only changes travel behaviors but also promotes a re-evaluation of public policy regarding mobility management.

METHOD

This study applied a qualitative descriptive approach to analyze the role of ridehailing in Jakarta's multimodal transport system. The method was chosen for its ability to capture the intersection of user behavior, policy frameworks, and infrastructure development in complex urban contexts (Mathew, 2023).

The analysis relied on secondary data from key sources, including BPS Jakarta (official transport statistics), Kompas Research 2025 (ridehailing behavior), and the Asian Transport Observatory

(regional mobility trends). These data provided insights into three main aspects: (1) ridehailing usage patterns, (2) ridership levels across MRT, LRT, KRL, and Transjakarta, and (3) the structure and performance of the Jak Lingko integration scheme.In the Southeast Asian context, the use of household travel survey (HTS) data, smart card transactions, and GPS tracking from ridehailing platforms are standard practice (Boppana, 2023). Although this study relied solely on aggregate level secondary data, it recognizes the importance of secure, standardized, and privacy compliant data integration when evaluating multimodal systems.

The focus was not only on describing usage rates but also on interpreting how ridehailing interacts with public transport ridership and integration mechanisms. This interpretive emphasis allowed the study to go beyond descriptive statistics and draw implications for policy and planning.

This study also references emerging standards for ridehailing integration, including metrics such as average access time to public transport, waiting time for rides, comparative cost efficiency, and user satisfaction. Additionally, broader indicators like environmental impact and influence on modal shifts were considered vital for evaluating sustainability and urban livability (Kerk et al., 2020).

As with most qualitative research, this study has limitations. The reliance on secondary data restricts the depth of commuter-level perspectives and may introduce bias due to variations in data reporting. Moreover, the absence of primary survey or GPS-based tracking data limits generalizability. These limitations, however, highlight the need for future mixed-method studies combining qualitative insights with quantitative data sources to strengthen the analysis of urban mobility integration.

RESULT AND DISCUSSION

Modal Interconnectivity

Jakarta's Jak Lingko integration presents a comprehensive approach, continuously improving in terms of fare policies and embedding technology to elevate user experience. The initiative has succeeded in unifying various transit modes into a single fare model, which has expanded coverage across the Greater Jakarta area. The integration aims to ensure that fare structures not only attract riders but also encourage habitual usage to elevate the overall share of public transport (Pahlevi & Nahry, 2023). However, gaps persist in areas of lesser regulated transport providers that may impede full operational interoperability with ridehailing services.

Successful multimodal integration in urban transport planning is defined by several metrics, notably user convenience, efficiency in transfers, and overall travel time reductions. These metrics often correlate with user wide satisfaction, which has been shown to significantly increase when transit systems utilize platform technologies that facilitate real time information sharing and planned interconnections (Khedri et al., 2022). Such frameworks enhance user engagement and potentially foster an ongoing relationship with public transport services.

Monitoring intermodal passenger flow is critical, particularly in major Asian cities, to understand commuter behaviors and make informed directives regarding infrastructure investments. Key methodologies employed in monitoring include RFID tracking, mobile phone data triangulation, and the integration of smart ticketing systems (Chapleau et al., 2018). These data driven approaches aid transit authorities in addressing congestion hotspots and planning future capacity adjustments to meet evolving demand.

Lessons drawn from other cities, particularly Singapore and Seoul, reveal that an interlinked transportation ecosystem, supported by infrastructure that accommodates ridehailing and public transport integration, is vital (Mathew, 2023). These cities have succeeded in using a mix of policies and infrastructure improvements to shape user behaviors toward more sustainable transport options. The use of shared mobility options, supported by robust mobile applications, enables efficient trip planning and real time updates that cater to urban commuter needs.

Ridehailing Penetration

In Jakarta, demographic patterns expose that younger, tech savvy groups are predominantly reliant on ridehailing services for transit access. This demographic is characterized by a lower likelihood of owning personal vehicles and a greater willingness to embrace digital solutions, further underscoring the necessity for transport planners to target their strategies towards these emerging user groups (Kerk et al., 2020). Efforts to retain this audience could include frequent promotional activities and services that align with their specific mobility needs.

Since 2020, ridehailing usage has reshaped commuting patterns within Jakarta. The integration of flexible ride options, particularly in response to the COVID 19 pandemic, shifted many commuters from fixed schedules to on demand transportation, transforming travel dynamics across the city. This shift has been driven by fears surrounding traditional public transport, perceived as less safe during health crises (Mathew, 2023). As a result, city planners must consider the long term implications of changes in commuter habits when developing transit policies.

Increased ridehailing usage has raised significant environmental and congestion concerns. Studies indicate that while ridehailing can decrease individual vehicle use, it can also contribute to traffic congestion if not adequately managed, as vehicles may be in service without passengers during peak periods (Khedri et al., 2022). This impact necessitates an integrated approach to urban mobility planning that balances the convenience of ridehailing against its socio environmental consequences.

Public private frameworks aimed at regulating ridehailing integration often hinge on cooperative partnerships that stipulate operational standards, fare structures, and data sharing agreements between ridehailing companies and government agencies. Regulations need to adapt dynamically to the evolving landscape of urban mobility while ensuring user safety and service reliability (Mathew, 2023). Such frameworks provide a foundation for achieving sustainable transport objectives in densely populated urban settings.

Public Transit Ridership

The COVID 19 pandemic significantly affected public transit ridership trends in Jakarta, with reports illustrating an initial steep decline followed by a gradual recovery as restrictions were lifted (Kerk et al., 2020). Commuters often remained hesitant to return to public transport due to

lingering health concerns, which necessitated a reevaluation of service provision and partnership with ridehailing services to fill the transport gap.

Service frequency and coverage play a critical role in defining transit ridership elasticity, particularly in a sprawling city like Jakarta. Empirical studies highlight a direct correlation between improved frequency of services and ridership increases, where users gravitate towards transportation options that minimize their perceived wait times and travel times (Pahlevi & Nahry, 2023). Future transport strategies should therefore aim to offer frequent, reliable, and extensively networked transit routes.

Station accessibility presents an essential factor influencing ridership levels across Jakarta's transit modes. Research confirms that stations with enhanced accessibility including proximity to key urban areas and complementary services experience higher ridership. Conversely, areas with limited access may deter prospective users from engaging with public transport options (Dibaj et al., 2021). Urban planners should prioritize accessibility improvements to create a more user friendly transit environment.

Usage patterns, both during peak and non-peak hours, reveal noticeable variations across the various modes of transport in Jakarta, including Transjakarta, MRT, LRT, and KRL. Peak hour ridership demands considerable attention, highlighting the necessity for additional service capacity during rush hours, thus ensuring that public transport can adequately accommodate passenger needs throughout the day (Chapleau et al., 2018). This understanding can inform tactical response strategies that enhance operational efficiency and rider satisfaction across available modes.

Policy models that effectively formalize ridehailing as a component of national urban transport systems reflect a growing recognition of the blurring lines between public and private mobility. These models advocate for structured partnerships, ensuring that ridehailing services complement rather than compete directly with established public transport systems (Dibaj et al., 2021). Progressive regulations that facilitate this cooperation can significantly enhance mobility options, thus enabling urban environments that prioritize accessibility and sustainability.

In the long term, the integration of informal ridehailing activities with formal transport systems presents unique challenges for infrastructure planning. Research highlights that unmanaged informal operators can impede the operational excellence of scheduled transport services, creating a fragmented user experience across the mobility landscape (Kerk et al., 2020). Thus, formalizing these operations is essential to mitigate congestion and guarantee equitable access for all commuters.

Equity concerns emerge as critical aspects of mobility systems increasingly dominated by digital services. The potential for exclusion of marginalized populations must be addressed through inclusive policy frameworks and technology access initiatives that ensure all segments of society can benefit from enhanced mobility options (Schowalter et al., 2016). Collaborations that bridge the digital divide can facilitate a more equitable mobility future.

Data governance frameworks supporting collaboration between ridehailing firms and public agencies are essential for fostering transparency and enhancing user trust. Effective governance structures safeguard user privacy while promoting data sharing that informs the planning of integrated urban transport strategies. Establishing clear data sharing agreements and responsibilities can lead to improved service delivery and a more cohesive understanding of urban mobility patterns.

Furthermore, environmental and congestion challenges associated with ridehailing require adaptive regulation. Jakarta can learn from Singapore's cap on ridehailing fleet sizes and Seoul's congestion pricing policies, adapting them to local conditions. If left unmanaged, ridehailing growth could undermine sustainability goals, but with the right governance, it can complement public transport by reducing private car dependency.

Finally, effective governance depends on public–private cooperation. Unlike Singapore, Jakarta has yet to implement binding data-sharing agreements with ridehailing companies. This limits the ability of policymakers to optimize capacity planning and service allocation. Establishing transparent data governance while safeguarding user privacy would allow the city to better anticipate demand, reduce inefficiencies, and align ridehailing with long-term sustainable mobility strategies.

CONCLUSION

This study has shown that ridehailing plays an indispensable role in Jakarta's multimodal transport integration. Despite the existence of a unified fare system through Jak Lingko and a continually expanding transit network, first and last mile challenges persist challenges that are effectively bridged by ridehailing services. These platforms not only facilitate access but also influence commuting habits, particularly among younger and tech oriented populations.

The findings emphasize the importance of formalizing the role of ridehailing in public transit planning. Regulatory frameworks must evolve to reflect the blurred boundaries between public and private transport services. Through collaborative governance, data sharing, and adaptive policy models, cities like Jakarta can support greater mobility equity, operational efficiency, and sustainability.

This research contributes to the discourse on digital mobility by highlighting how informal transport modes when strategically managed can serve as essential components of the urban mobility ecosystem. Future studies should explore integrated data approaches and policy impact assessments to quantify the long term benefits of formal ridehailing inclusion in metropolitan transport frameworks.

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