THE COMPARATIVE ANALYSIS OF THE 3-IN-1 AND ODD-EVEN POLICIES IN EFFORTS TO CONTROL TRAFFIC CONGESTION IN JAKARTA

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ABSTRACT

This study examines a comparative analysis between the 3-in-1 and Odd-Even traffic policies implemented in Jakarta as efforts to control congestion in the city. The main problem addressed is the ineffectiveness and sustainability of these traffic restriction systems in reducing congestion over time. The purpose of this research is to identify the differences in regulation, implementation mechanisms, outcomes, and advantages-disadvantages between the two policies. Using a qualitative descriptive method supported by document analysis, literature review, and interview results, the study evaluates both policies through the theoretical framework of Dye (2013), Sabatier and Jenkins-Smith (1993), and Grindle (1980). The findings indicate that the Odd-Even policy is more effective and transparent due to the integration of electronic enforcement systems and measurable environmental benefits, while the 3-in-1 policy, though initially simple and cost-efficient, faced issues of misuse and low compliance. The study concludes that technological integration and public participation are key to improving the sustainability of traffic management policies in Jakarta.

INTRODUCTION

Jakarta, as the capital city of Indonesia, faces chronic traffic congestion problems resulting from the continuous increase in motor vehicle ownership each year. Recent data show that in 2024, the number of motor vehicles in DKI Jakarta reached 12.06 million units, consisting of approximately 2.33 million passenger cars and 9.17 million motorcycles (BPS DKI Jakarta, 2024). The growth of private vehicle ownership has significantly exceeded the capacity of the existing road network, leading to severe congestion on major thoroughfares. This condition directly reduces public productivity due to increased travel time and transportation costs. Furthermore, traffic congestion exacerbates environmental degradation, as vehicular emissions are among the main contributors to air pollution in Jakarta. To address these issues, the Provincial Government of DKI Jakarta has undertaken various efforts to mitigate congestion, including implementing policies that restrict private vehicle usage on key roads. One such policy previously enforced was the 3-in-1 system, which required private cars to carry a minimum of three passengers on designated roads during peak hours.

Recent studies present a nuanced perspective on the 3-in-1 policy, revealing both its effectiveness and inherent flaws in managing urban traffic. While empirical evidence from Hanna, Kreindler, and Olken (2017) demonstrates that the policy initially contributed to smoother traffic flow—reducing congestion and maintaining higher vehicle speeds during peak hours—its abolition exposed significant dependence on the regulation. The increase in travel time by nearly 46% in the morning and 87% in the evening, coupled with drastic drops in average speed, underscores the policy's substantial influence on traffic dynamics. However, the policy's sustainability and social fairness are questionable, as the emergence of "jockeys" or paid passengers distorted its intended purpose (Oktaviana & Wahyudi, 2018). This practice not only undermined the policy's integrity but also highlighted weaknesses in law enforcement and public compliance. Therefore, the 3-in-1 policy should not be viewed merely as a numerical restriction on passengers but as a reflection of broader governance issues in traffic management. Its potential success depends on systemic reform, including strict monitoring, digital verification systems, and behavioral interventions to ensure compliance without exploitation. Critically, this policy serves as a lesson that traffic solutions must balance efficiency, equity, and enforcement to achieve long-term urban mobility improvements.

In response to these limitations, the government subsequently replaced the 3-in-1 policy with the odd-even system, which began implementation in 2016. The legal basis for the enforcement of the odd-even policy is stipulated in the Jakarta Provincial Regulation (Pergub) No. 164 of 2016 concerning Traffic Restrictions under the Odd-Even System. This regulation serves as an essential legal instrument that obliges the public to comply with restrictions on vehicle usage based on license plate numbers on specific roads and during certain hours. Moreover, the policy aligns with Law No. 22 of 2009 on Road Traffic and Transportation, which emphasizes the importance of traffic management to ensure safety, order, and smooth mobility. The establishment of this regulation is expected to reduce traffic burden while encouraging the public to shift toward the use of public transportation. Meanwhile, evaluations of the odd-even policy indicate a reduction in vehicle volume by approximately 20–30% on several road segments during peak hours (Susilo et al., 2020). However, this impact is temporary and limited to the areas of implementation, while alternative routes have experienced increased congestion. This indicates that the odd-even policy has not yet fully addressed the root causes of transportation problems in Jakarta.

Furthermore, recent studies highlight that the success of the odd-even policy largely depends on its level of integration with the public transportation system. Although this policy has encouraged some citizens to shift toward using public transport, its implementation has also led to a surge in passenger numbers, potentially reducing comfort and service capacity. Some residents even opted to own more than one vehicle with different license plate numbers to circumvent the restrictions, thereby diminishing the primary objective of the traffic policy (Putra & Riyanto, 2021). Several studies indicate that the impact of the odd-even system tends to be short-term in nature, thereby creating the need for stronger support from more sustainable transportation policies.

In a broader context, traffic congestion in Jakarta is not merely a matter of crowded roads, but rather a reflection of the complexities of urban life. This issue is influenced by multiple factors, ranging from urban planning and socioeconomic conditions to the capacity of governmental management. Rapid population growth and increasing economic centralization in Jakarta have created an imbalance between transportation demand and infrastructure availability. The concentration of economic activities in the city center also results in high volumes of daily commuting from surrounding suburban areas to the urban

core. In addition, public transportation services remain limited in both coverage and comfort, prompting the public to rely heavily on private vehicles. Governance challenges, such as a lack of coordination among government agencies and inconsistencies in law enforcement, further complicate the situation. To address these interrelated problems, not only regulatory measures but also innovative and adaptive policy approaches are required. All these circumstances make traffic congestion in Jakarta demand an integrated perspective that combines infrastructure improvement, urban design, and behavioral intervention of the community.

Despite the numerous efforts made, there remains a significant research gap in the comprehensive comparison of the 3-in-1 and odd-even policies. Most existing studies have only evaluated one of these systems in isolation, focusing on either its short-term traffic impact or public perception. Few have examined how both policies evolved over time or how they interact with broader social and economic dynamics in the city. A comparative analysis that includes dimensions such as traffic efficiency, social behavior, environmental effects, and legal implementation would provide a more holistic understanding. Moreover, the absence of integrated data on policy outcomes across multiple sectors limits the development of more sustainable urban transportation strategies. This research aims to fill that gap by presenting a multidimensional comparison that highlights each policy's strengths and weaknesses. Therefore, a deeper study of these two policies is essential for constructing future transportation frameworks that are adaptive and sustainable in Jakarta.

From a theoretical standpoint, analyzing these policy transitions can be effectively framed through the Public Policy Theory. This theory examines how government institutions formulate, implement, and evaluate policies to address public problems, including urban congestion (Dye, 2017). Within this framework, the 3-in-1 and odd-even systems can be viewed as public interventions aimed at modifying individual behavior to achieve collective mobility benefits. Evaluating these policies involves assessing the policy stages from formulation to implementation and evaluation along with their outcomes on society. Furthermore, the Policy Change Theory by Sabatier and Jenkins-Smith (1993) provides valuable insights into how and why governments adjust their strategies in response to shifting contexts and public reactions. This theory explains the transition from the 3-in-1 to the odd-even system as part of a learning process within the policy cycle. Thus, these theoretical frameworks enable a deeper understanding of how Jakarta's traffic management has evolved through adaptive policy mechanisms.

Additionally, this study adopts Grindle's Implementation Theory, which emphasizes that policy success depends on the interaction between policy content and its implementation context (Grindle, 1980). This perspective highlights that even well-designed policies may fail if the implementing institutions lack capacity or if social resistance is strong. In the context of Jakarta, the effectiveness of the 3-in-1 and odd-even policies depends on enforcement mechanisms, administrative readiness, and public compliance. Therefore, this study not only evaluates the legal and administrative structures of these policies but also explores how actors such as traffic authorities, citizens, and policymakers shape their outcomes. The Grindle framework allows researchers to identify where implementation gaps occur and how contextual factors influence results. Integrating this with Public Policy and Policy Change theories provides a comprehensive analytical foundation for evaluating both policies. Based on the background above, this study will utilize Public Policy Theory, Policy Change Theory, and Grindle's Implementation

Theory as its main theoretical frameworks to analyze the evolution and effectiveness of Jakarta's 3-in-1 and odd-even traffic control systems.

From this overview, it is clear that there remains a research gap in directly comparing the effectiveness of the 3-in-1 and odd-even policies. Most previous studies have only focused on evaluating one of the two policies, without providing a comprehensive comparison that considers traffic, social, economic, and environmental aspects simultaneously. Yet, such a comparison is crucial as a basis for formulating more effective and sustainable transportation policies in a metropolitan city like Jakarta. Therefore, this study aims to examine the 3-in-1 and odd-even policies in their efforts to control traffic congestion in the capital city of Jakarta.

METHOD

This research employs a qualitative method with a descriptive approach to explore the comparative analysis of the 3-in-1 and odd-even policies in Jakarta. The study was conducted in Jakarta during 2025, with the primary research object being traffic regulation policies and their impact on congestion management. The research subjects consisted of policy implementers, transportation experts, and road users affected by the policy. Data were collected using primary sources through in-depth interviews to obtain comprehensive insights from the participants.

The research procedure included several stages, starting from planning, data collection, data reduction, and data presentation, followed by drawing conclusions. The main instrument used in this study was the researcher as the key instrument, assisted with interview guidelines to maintain consistency. Data analysis techniques were carried out using the Miles and Huberman model, which includes data reduction, data display, and conclusion drawing/verification. This method was chosen to provide a deeper understanding of the implementation and impacts of traffic restriction policies in Jakarta, while also allowing the researcher to capture the perspectives of multiple stakeholders involved.

RESULTS AND DISCUSSION

The implementation of traffic management policies in Jakarta, such as the 3-in-1 and odd-even systems, reflects the government's ongoing effort to address chronic congestion in one of the most densely populated cities in Southeast Asia. Both policies aim to regulate vehicle flow during peak hours, yet they differ fundamentally in mechanism and social impact. The 3-in-1 system requires vehicles to carry a minimum number of passengers to enter certain major roads, thereby promoting carpooling and reducing the number of single-occupancy vehicles. In contrast, the odd-even policy restricts vehicle usage based on license plate numbers, alternating daily between odd and even digits. This study compares the two approaches by examining their effectiveness, public response, and sustainability in shaping long-term commuting behavior. The findings reveal that while both systems contribute to traffic reduction, the 3-in-1 policy demonstrates greater social and behavioral influence by encouraging collaboration, shared mobility, and voluntary compliance among drivers.

The implementation of 3-in-1 policies to control traffic congestion in Jakarta

The "3-in-1" policy in Jakarta was a traffic restriction system that required private cars traveling on specific main roads during peak hours to carry at least three occupants. The main goal of this policy was to reduce vehicle volume and alleviate traffic congestion.

The implementation of the 3-in-1 policy influenced household travel behavior, as families made joint decisions on travel modes to comply with the occupancy requirement. Empirical findings showed that this policy encouraged drivers, particularly from low-income households, to shift from private cars to alternative modes of transportation (Putra, 2019).

The implementation of the 3-in-1 policy in Jakarta was first introduced to reduce the high volume of private vehicles on main roads such as Jalan Jenderal Sudirman, MH Thamrin, and Gatot Subroto. The regulation required every private car to carry at least three passengers during specific hours, generally from 07:00 to 10:00 in the morning and from 16:30 to 19:00 in the evening, corresponding to rush hours. This policy aimed to encourage carpooling and reduce single-occupancy vehicle usage, which had been a major contributor to traffic congestion. According to data from the Jakarta Transportation Agency (Dinas Perhubungan DKI Jakarta), during the peak implementation period between 2003 and 2016, the policy successfully reduced traffic density on these main roads by around 20% during operational hours. This indicates that the 3-in-1 system was effective in controlling vehicle flow and promoting shared vehicle use in the city's busiest areas.

In terms of effectiveness, the Transportation Agency reported that the 3-in-1 policy led to a more stable decrease in congestion compared to the odd-even policy. Based on official traffic monitoring data, major roads such as Sudirman and Thamrin experienced a consistent reduction in vehicle volume during the 3-in-1 implementation period. This occurred because the policy directly targeted cars with low occupancy, discouraging unnecessary trips and encouraging drivers to share rides. Meanwhile, during the implementation of the odd-even policy, the reduction in congestion was limited to certain hours and often resulted in traffic shifts to alternative routes. Therefore, the data suggests that the 3-in-1 system created a more balanced distribution of traffic across Jakarta's central roads.

However, the 3-in-1 policy also brought about significant social impacts, particularly the emergence of "3-in-1 policy" paid passengers who helped drivers meet the minimum passenger requirement. This phenomenon became widespread in areas such as Semanggi and Blok M, where individuals offered themselves as temporary passengers for a small fee. While this practice fulfilled the numerical aspect of the policy, it undermined its social and environmental goals. According to the Jakarta Transportation Agency, this challenge was one of the main reasons behind the eventual replacement of the 3-in-1 system with the odd-even policy. To counter this issue, the agency recommended stronger supervision, stricter penalties for misuse, and improvements to public transportation networks to reduce dependency on private vehicles.

Despite its challenges, interviews with the Jakarta Transportation Agency (Dishub, 2025), highlighted that the 3-in-1 policy holds several advantages over the odd-even system in both social and economic terms. Socially, it fosters cooperation among road users by promoting shared rides, while economically, it does not impose additional burdens on citizens who only own one car unlike the odd-even system that restricts vehicle use based on license plate numbers. Furthermore, the 3-in-1 system is viewed as more sustainable in the long term, as it encourages behavioral change by fostering a carpooling culture rather than merely restricting usage. When integrated with effective public transport development, this approach could serve as a participatory and educational model that combines traffic efficiency with social awareness, offering a more holistic solution to Jakarta's congestion problem. The problems is have 3 in 1 jokeys it was relevant with (Hasanah, 2012) One of the most notable social impacts of the 3-in-1 policy in Jakarta was the emergence of "jockeys," or paid passengers, who offered their services to drivers

needing to meet the required number of passengers. This informal practice created a new, albeit temporary, source of income for many unemployed individuals, particularly from lower-income communities. However, it also led to safety, ethical, and regulatory concerns, as the system was exploited rather than fostering genuine carpooling behavior. The phenomenon highlighted how socioeconomic disparities influenced policy implementation, showing that while the 3-in-1 policy aimed to reduce traffic congestion, it also unintentionally fostered a sub-economy that reflected broader issues of urban inequality in Jakarta (Ong et al., 2023)

It was relevant with tha result of interviews with two informants, HD (53 years old) and MRK (29 years old), both express that the 3-in-1 policy has shown notable effectiveness in reducing traffic congestion, particularly along Jakarta's main roads such as Sudirman, Thamrin, and Gatot Subroto. Their responses suggest that the policy successfully minimizes the number of under-occupied private vehicles and encourages behavioral changes such as carpooling and time management among commuters. This aligns with the purpose of the 3-in-1 system to promote vehicle occupancy efficiency and optimize road usage during peak hours. From both informants, it is evident that information dissemination regarding the 3-in-1 policy including operational hours and designated routes was perceived as clear and accessible. They mentioned that government channels, such as the Jakarta Transportation Agency's social media and road signage, were effective in educating the public.

This indicates that public communication and socialization efforts were adequate, leading to higher compliance levels compared to earlier traffic control initiatives.In terms of daily impact, both respondents shared that the 3-in-1 system influenced commuting habits positively. HD mentioned that the policy motivated people to depart earlier and better plan their trips, which helped distribute traffic volume more evenly throughout the day. Rafly reinforced this by highlighting how 3-in-1 encouraged collaborative mobility, such as coordinating carpooling with colleagues to save fuel and reduce emissions. Both statements demonstrate that the policy fostered not only environmental benefits but also social cooperation and community-minded behavior among urban commuters.

The Implementation of Odd-Even Policies to Control Traffic Congestion in Jakarta

The odd-even policy in Jakarta was introduced as a traffic control measure that limits vehicle movement based on the last digit of license plate numbers. Under this regulation, cars with odd-numbered plates are allowed to operate on certain major roads on odd dates, while even-numbered plates are permitted on even dates. The policy applies primarily to main routes such as Jalan Sudirman, Thamrin, Gatot Subroto, and parts of the Jakarta Inner Ring Road, typically during peak hours from 06:00–10:00 in the morning and 16:00–21:00 in the evening (Mu'allimah & Mashpufah, 2021). The technical implementation is supported by visible traffic signs, road markings, and digital boards that indicate active enforcement times. This system aims to directly reduce the number of vehicles on the road by about 50% during regulated hours, helping to ease congestion in the city's most traffic-prone areas.When compared to the 3-in-1 policy, the odd-even system presents a more straight forward method of traffic reduction. While the 3-in-1 policy encourages behavioral change through shared vehicle use, the odd-even approach immediately limits vehicle volume by restricting certain cars from operating. Data from the Jakarta Transportation Agency (Dishub DKI Jakarta, 2025) shows that the odd-even policy can significantly reduce traffic density during its active hours, particularly on major thoroughfares. However, unlike the 3-in-1 system, which fosters carpooling and social

collaboration, the odd-even policy has a more mechanical and restrictive nature. Although effective in reducing the number of vehicles temporarily, it does not necessarily change long-term commuting habits or reduce private car dependency.

Public compliance with the odd-even policy has generally been high due to its simple and transparent rules. Most motorists understand when and where the restrictions apply, thanks to clear socialization efforts through mass media, online platforms, and street signage (Sucahyo et al., 2021). Nevertheless, some respondents expressed that while the system is easy to follow, it can be inconvenient for individuals who rely heavily on private cars and lack flexible travel schedules. In response, many people have adapted by either adjusting their departure times, switching to public transport, or using alternative routes outside the restricted zones. Despite occasional violations, the overall level of adherence remains strong, indicating that public awareness and enforcement mechanisms are functioning effectively (Nugroho et al., 2022).

Based on the interviews, public perceptions toward the policy reveal a mixture of practicality and skepticism. According to SR (2025), although he was familiar with the odd–even regulation, he personally felt little impact since he primarily used a motorcycle. From his observation, congestion in Jakarta persisted despite the policy, indicating that its effectiveness in reducing traffic was still limited. He further mentioned that wealthier residents were often unaffected, as they owned two vehicles with different plate numbers, allowing them to bypass the regulation. Sosa also acknowledged that enforcement was generally consistent, particularly due to the ETLE system, but suggested that rather than merely restricting private vehicle use, the government should focus on improving public transportation services such as TransJakarta and MRT to provide comfortable and affordable alternatives. This insight highlights a key limitation of the policy its inability to equally impact all socioeconomic groups and to drive behavioral change toward public transport adoption.

In contrast, GN (2025) expressed a more favorable view, perceiving the odd–even system as relatively effective in reducing congestion, especially during peak hours. He noted that compared to regions without similar traffic policies, such as Yogyakarta, Jakarta's streets appeared more orderly and less crowded during enforcement times. Gibran also demonstrated strong awareness of the operational zones and time schedules, which he attributed to effective socialization efforts through media and official government channels. He reported that the policy did not significantly disrupt his routine since he adjusted his commuting schedule and transportation mode using his odd-plated car on odd dates and switching to public transport on even dates. He also emphasized that the use of e-ticketing and ETLE technology enhanced transparency and consistency in enforcement. His recommendation focused on maintaining continuous public information dissemination to ensure ongoing awareness and compliance as policy adjustments occur.

Taken together, the interview results align with existing research that emphasizes both the strengths and limitations of the odd–even policy. On one hand, it succeeds in providing short-term traffic relief and demonstrates a high level of public understanding due to effective communication and enforcement mechanisms (Sucahyo et al., 2021; Nugroho et al., 2022). On the other hand, the insights from Sosa and Gibran underscore that its long-term sustainability depends on improving public transportation accessibility and ensuring that restrictions do not disproportionately affect middle- to lower-income commuters. Therefore, while the odd–even policy represents a measurable improvement in traffic management, its long-term success will require integration with broader urban mobility reforms that encourage public transport use and equitable access for all residents.

In conclusion, the implementation of the odd-even policy in Jakarta demonstrates measurable effectiveness in controlling traffic congestion, especially during peak hours, by reducing vehicle density on major roads such as Jalan Sudirman and Thamrin. The findings from this study, supported by interviews with road users, indicate that the policy's simplicity and transparency contribute to high public compliance levels, aided by technological enforcement through the ETLE system. However, as emphasized by respondents, the policy's impact remains largely short-term and uneven across social groups, with wealthier individuals finding ways to circumvent restrictions by owning multiple vehicles. This aligns with (Azni et al., 2024) who note that while the policy effectively decreases congestion intensity, it lacks structural influence on changing private vehicle dependency. Similarly, (Zulkarnain & Ghiffary, 2021) affirm that consistent public communication strengthens compliance but does not necessarily translate into sustainable commuting habits.

In line with broader research underscores the need for integrated transport reform to achieve lasting change. (Prasojo & Abdi Salam, 2022) highlight that policies like the odd-even system are most effective when coupled with reliable public transportation alternatives that encourage voluntary behavioral shifts. This conclusion resonates with public perceptions captured in the interviews where respondents advocated for better public transport options such as TransJakarta and MRT rather than restrictive measures alone. Therefore, while the odd-even policy serves as a practical short-term instrument for managing congestion, its long-term success in shaping urban mobility depends on combining regulatory strategies with systemic improvements in transportation infrastructure, equitable access, and sustained behavioral adaptation among Jakarta's commuters

The comparative betweens the 3-in-1 and odd-even policies in efforts to control traffic congestion in Jakarta

Based on the data description Jakarta, as Indonesia's capital city, has long faced severe traffic congestion due to rapid urbanization, population growth, and increasing private vehicle ownership. In response, the Jakarta Provincial Government has implemented several traffic control measures over the years, among which the 3-in-1 policy and the odd-even policy are the most notable. The 3-in-1 system, introduced in 2003, required private cars traveling along certain main roads during peak hours to carry at least three passengers, encouraging carpooling and reducing vehicle numbers. However, due to enforcement challenges and the emergence of "joki 3-in-1" (paid passengers), the policy was eventually replaced by the odd-even system in 2016. The odd-even policy restricts vehicles from entering specific routes based on the last digit of their license plate numbers odd plates on odd dates, and even plates on even dates. Both systems share the goal of mitigating congestion, yet they differ significantly in terms of regulatory approach, function, public acceptance, and long-term effectiveness. The comparative analysis described on the table 1. Below:

Table 1. The Comparative analysis betweens the 3-in-1 and odd-even policies in Jakarta

No	Aspects	3-in-1 Policy	Odd-even Policy
1	Regulation/Formal rule	Implemented through Governor Regulation No. 410/1994 and enforced mainly by traffic police. The rule required each car entering certain areas to carry at least three passengers during peak hours.	Enforced through Governor Regulation No. 164/2016 (and updated versions). This rule restricts vehicles based on license plate numbers (odd/even) on specific days, times, and roads.
2	Function/Process	Relied heavily on manual observation by police officers. Many violations occurred due to limited monitoring and the emergence of "jockey" services (paid passengers).	Implemented using electronic monitoring (CCTV and ETLE system). Enforcement is more systematic, with automatic fines and better compliance monitoring.
3	Effectivity / outcome	Initially reduced congestion but was ineffective in the long term due to misuse and lack of supervision. Traffic volume rebounded after adaptation by road users.	Significantly reduced traffic congestion during operational hours. Also decreased travel time and air pollution in regulated areas, though congestion shifted to surrounding roads
4	Advantages / disadvantages	Advantages: Simple and low-cost regulation. Encouraged carpooling culture. Disadvantages: Prone to abuse (jockeys), limited enforcement capability.	Advantages: More measurable impact, transparent enforcement, environmentally beneficial. Disadvantages: Limited road coverage, burden for certain vehicle owners, only temporary congestion solution.

Source: (Dishub Jakarta, 2025)

From the data presenterd by the Transportation agency of Jakarta, the 3-in-1 system and the odd-even regulation differ significantly in their legal foundations and formal mechanisms. The 3-in-1 policy, introduced through Governor Regulation No. 410/1994, relied on manual enforcement by traffic police, requiring each car entering main roads to carry at least three passengers during peak hours. Meanwhile, the odd-even system is based on Governor Regulation No. 164/2016 and its subsequent revisions, establishing a more structured and measurable framework by limiting vehicles according to license plate numbers on specific days and times. According to Dye (2013), policy substance refers to the content or intent of government action, which includes the legal norms underlying its enforcement. The interviews conducted with drivers in Jakarta revealed that while the 3-in-1 rule was perceived as less formal and inconsistently applied, the odd-even policy was considered clearer, more transparent, and backed by technological supervision. This shows that the shift in regulation represents an evolution from traditional enforcement to a more standardized governance model.

In terms of implementation, the 3-in-1 policy relied heavily on manual observation, making it vulnerable to manipulation. Respondents from the interviews noted that some drivers hired "jockeys" (paid passengers) to meet the three-passenger requirement, showing weak supervision and ineffective deterrence. Conversely, the odd-even policy operates under a systematic monitoring system supported by CCTV and the Electronic Traffic Law Enforcement (ETLE) mechanism, ensuring objective and automated regulation. This transition aligns with Dye's (2013) assertion that the policy process involves how decisions are implemented and enforced within administrative systems. Empirical research by Rinaldi & Aulia (2020) found that the implementation of the odd-even system reduced violations by nearly 40% compared to 3-in-1, reflecting stronger procedural control. Thus, the odd-even system demonstrates a more efficient and accountable implementation process than its predecessor.

Analyzing policy outcomes reveals that both systems had measurable but differing impacts on traffic conditions. The 3-in-1 policy initially decreased congestion in central Jakarta; however, over time, its effect diminished as drivers adapted and exploited loopholes. In contrast, the odd-even regulation achieved more sustained improvements, including reduced congestion, shorter travel times, and lower emissions within its operational zones. Interview data from local commuters indicated that the odd-even system effectively made rush-hour traffic smoother, though it also caused congestion to shift to non-regulated roads. According to Dye's (2013) model, policy evaluation focuses on outputs and outcomes that indicate whether the policy achieved its intended goals. Supporting this, Prasetyo & Nur (2021) concluded that the odd-even policy led to a 20–30% reduction in vehicle density during peak hours, showing higher long-term effectiveness compared to 3-in-1.

Each policy presents its own strengths and weaknesses. The 3-in-1 system had advantages in simplicity and low implementation cost, while promoting a carpooling culture among workers. Nevertheless, its disadvantages—particularly the rise of jockey practices and enforcement inconsistency—undermined its credibility. The odd-even system, on the other hand, has clear environmental and administrative benefits, offering transparent, technology-driven enforcement. However, it also limits mobility for certain vehicle owners and temporarily shifts congestion rather than eliminating it entirely. Based on Dye's (2013) evaluative framework, policies should be judged not only by intent but also by the trade-offs they generate in society. Interviewees expressed that although the odd-

even rule felt more restrictive, it was fairer and more consistent. Thus, it better aligns with the principle of equitable regulation under public policy management.

Overall, comparative analysis indicates that the odd-even policy represents a policy refinement rooted in lessons learned from the 3-in-1 system. The findings support Dye's (2013) concept that effective policy evolves through evaluation, feedback, and adjustment to social realities. The odd-even approach integrates stronger institutional control, technological advancement, and environmental awareness, making it a more holistic policy model. Interview results showed a consensus among respondents that the odd-even policy is not a perfect solution but remains more adaptive and enforceable compared to 3-in-1. Consistent with studies by Sutanto (2022) and Utami (2020), integrating the odd-even regulation with public transportation development is essential for long-term congestion management. Therefore, policymakers should view the odd-even system as an intermediate phase toward a sustainable urban mobility strategy, rather than a final solution.

Elaborated that both the 3-in-1 and odd-even policies have distinct advantages, yet the 3-in-1 system is perceived to be more effective and sustainable in addressing Jakarta's chronic traffic congestion. The agency emphasized that the 3-in-1 scheme not only reduces the number of vehicles during peak hours but also promotes a culture of carpooling and social collaboration among commuters. Data from Dinas Perhubungan indicates that during the 3-in-1 implementation, vehicle density on major roads such as Jalan Sudirman and Thamrin showed a more stable decrease compared to the fluctuating results of the odd-even policy, which often shifted congestion to alternative routes. Socially, the 3-in-1 system encourages interaction and cooperation among citizens, while economically, it avoids the financial burden on those who only own one car—unlike the odd-even policy, which indirectly pressures some residents to purchase additional vehicles. However, challenges such as the emergence of "joki 3-in-1" (paid passengers) required stricter monitoring and enforcement, prompting the agency to propose stronger sanctions and better public transportation integration. Overall, the Dinas Perhubungan views the 3-in-1 policy as more behaviorally transformative and sustainable in the long term, as it fosters shared responsibility and reduces dependency on private vehicles rather than merely restricting their use.

From the combined perspectives of road users and the Dinas Perhubungan, it can be concluded that while the odd-even policy provides a short-term and easily enforceable solution to reduce traffic congestion, it lacks the long-term behavioral impact achieved by the 3-in-1 system. The odd-even approach effectively limits vehicle volume but does not address the root causes of congestion or promote sustainable commuting habits. In contrast, the 3-in-1 system encourages collective travel behavior, social engagement, and public awareness about efficient road use. Therefore, integrating the behavioral strengths of the 3-in-1 policy with the regulatory clarity of the odd-even system, alongside improved public transportation infrastructure, could offer a more balanced and enduring solution to Jakarta's traffic challenges.

Comparatively, both participants view the odd-even policy as less flexible and more limiting for citizens, as it simply restricts vehicle use based on license plate numbers without addressing the root cause of congestion vehicle occupancy inefficiency. The 3-in-1 system, on the other hand, encourages behavioral change and long-term sustainability by fostering collaboration and reducing the total number of cars on the road through voluntary adjustments rather than strict prohibition. In summary, the interview data shows that the 3-in-1 policy remains an effective and socially constructive approach for

managing traffic congestion in Jakarta. Although issues such as the presence of "jockeys" and inconsistent monitoring need refinement, the general perception among road users is positive. The 3-in-1 program not only reduces congestion but also promotes shared responsibility, energy efficiency, and social cooperation, making it a more dynamic and community-centered alternative compared to the odd-even system.

The comparison between the 3-in-1 and odd-even policies in Jakarta can be understood through the perspective of Sabatier and Jenkins-Smith's (1993) Advocacy Coalition Framework (ACF). This theory explains that policy success depends on the interaction between various advocacy coalitions composed of actors who share similar beliefs and resources within a policy subsystem. In the case of Jakarta, the implementation of both policies involved multiple stakeholders, such as the government, transportation agencies, and the public, each holding different interests and values about mobility and fairness. The 3-in-1 policy, although initially effective in promoting carpooling behavior, faced resistance and adaptation from the public, resulting in unintended practices such as the emergence of "jockeys." This indicates that without shared belief systems or consistent coordination among coalitions, the policy's sustainability becomes limited, reflecting the challenges of maintaining alignment between policy goals and societal behavior.

According to Grindle's (1980) theory of policy implementation, the success of a policy is determined by two key dimensions: the content of the policy itself and the context in which it is implemented. The 3-in-1 policy's failure can be attributed to weak institutional control and the absence of consistent monitoring mechanisms, whereas the odd-even policy demonstrated a stronger structural foundation supported by clear regulations, electronic monitoring, and effective enforcement through the ETLE system. These contextual advantages contributed to better compliance and measurable traffic reduction outcomes. However, Grindle's framework also highlights that even technically sound policies must adapt to social realities and public acceptance to sustain their long-term impact. In this sense, the odd-even system represents a more contextually adaptive approach, balancing regulatory clarity with technological innovation, while the 3-in-1 policy struggled to maintain effectiveness in a socially dynamic environment.

Comparative Analysis and Evaluation of the Effectiveness of the 3-in-1 and Odd-Even Traffic Policies

Based on various studies, the 3-in-1 traffic policy was proven to have a significant positive impact on traffic flow in Jakarta, particularly during peak hours. Hanna, Kreindler, and Olken (2017) recorded that after the 3-in-1 scheme was abolished, travel time increased sharply. During the morning rush hour, the average travel time rose by 0.98 minutes per kilometer (equivalent to a 46% increase), while the average speed dropped from 28 km/h to 19 km/h. The situation worsened during the evening rush hour, when travel time increased by 2.5 minutes per kilometer (87%), and average speed fell to just 11 km/h. These data suggest that the 3-in-1 policy played a crucial role in controlling traffic congestion in Indonesia's capital city.

Nevertheless, the effectiveness of the 3-in-1 policy declined due to the emergence of "jockeys". paid passengers hired to meet the three-passenger minimum requirement. This phenomenon reflected weaknesses not in the policy's conceptual foundation, but rather in its enforcement and monitoring mechanisms. Studies by Oktaviana and Wahyudi (2018) argue that if the implementation of the 3-in-1 policy had been accompanied by stricter supervision and technology-based law enforcement systems, it could have achieved greater efficiency and long-term sustainability in reducing congestion.

In response to these challenges, the government replaced 3-in-1 with the odd-even traffic restriction system in 2016 through Jakarta Governor Regulation No. 164/2016. This new policy restricts vehicle access based on license plate numbers and designated days, supported by modern monitoring technologies such as Electronic Traffic Law Enforcement (ETLE) and CCTV surveillance. Operationally, the odd-even policy is more systematic, easier to enforce, and technologically advanced. Research by Rinaldi and Aulia (2020) found that the odd-even system successfully reduced traffic violations by up to 40% and lowered vehicle volumes by 20–30% on several major roads during peak hours.

However, when comparing the quantitative impact, the 3-in-1 policy demonstrated a greater reduction in congestion levels than the odd-even system. The increase in travel time after the 3-in-1 policy was lifted ranging between 46% and 87% shows that it had a stronger influence on traffic control. This indicates that the main weakness of the 3-in-1 policy was not its conceptual design, but the absence of effective supervision and technological infrastructure to prevent misuse.

From a contemporary perspective, integrating the behavioral foundation of the 3-in-1 system with the technological enforcement mechanisms of the odd-even policy could create a more comprehensive solution. The use of ETLE, AI-based CCTV, and consistent digital law enforcement could allow a reimplementation of the 3-in-1 scheme without the recurrence of the "jockey" problem. Such integration would combine the behavioral change objectives of 3-in-1 encouraging carpooling and shared responsibility with the administrative efficiency and accountability strengths of odd-even.

Therefore, this analysis concludes that the 3-in-1 policy holds greater substantive potential than the odd-even system when supported by modern technology and robust supervision. While the odd-even policy offers quick, enforceable results in reducing congestion, its impact remains temporary and fails to address the root cause: the public's dependence on private vehicles. In contrast, 3-in-1 promotes a long-term shift toward collective behavioral change, reducing the number of vehicles on the road without creating new economic burdens such as dual car ownership. This critical comparison highlights that future traffic management strategies must not only focus on efficiency but also on sustainability and behavioral transformation to achieve meaningful congestion reduction in urban environments.

CONCLUSION

The comparative analysis between the 3-in-1 and odd-even policies in Jakarta reveals that both strategies were designed with the same ultimate goal to reduce severe traffic congestion in the capital city but they differ significantly in structure, implementation, and sustainability. The 3-in-1 policy, which relied on carpooling behavior, represented an early attempt by the government to foster collective responsibility in urban mobility. Initially, it succeeded in lowering traffic volume during peak hours, but due to its manual enforcement and lack of technological support, it soon became prone to misuse, particularly with the rise of paid "jockeys." From the perspective of Sabatier and Jenkins-Smith's (1993) Advocacy Coalition Framework, this reflects weak alignment among policy actors and insufficient shared belief systems in promoting compliance. Without consistent cooperation between the public and authorities, the policy's intended behavioral transformation could not be sustained. In contrast, the odd-even system introduced a more structured and enforceable approach, supported by Governor Regulation No. 164/2016 and advanced technology such as CCTV and ETLE, allowing for greater transparency and public compliance.

From an implementation standpoint, as emphasized by Grindle (1980), the effectiveness of a policy depends on its content and the context of its application. The odd-even policy demonstrated stronger institutional support, better monitoring mechanisms, and broader public acceptance due to its simple and predictable design. Although it effectively reduced traffic density during operational hours and improved air quality, it also caused a redistribution of congestion to alternative routes and imposed restrictions on certain vehicle owners. Despite these drawbacks, its measurable outcomes indicate a more contextually adaptive and institutionally supported approach compared to the 3-in-1 system. Therefore, in conclusion, the odd-even policy emerges as a more efficient short-term solution to manage traffic congestion, while the 3-in-1 policy serves as a social experiment that emphasized behavioral change but lacked structural endurance. For future urban transport policy, the integration of regulatory clarity, technological innovation, and public engagement will be essential to ensure long-term sustainability and equity in mobility management.

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