

Analyzing Motor Vehicle Restriction Policies: A Comparative Study of Indonesia and Japan

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Abstract: The rapid increase in motorized vehicles in developing countries, particularly in Asia and Latin America, poses significant challenges, including congestion, pollution, and road accidents. In Indonesia, the high growth rate of motorized vehicles, especially in Jakarta, exacerbates these issues, prompting the implementation of policies such as odd-even restrictions. In contrast, Japan has adopted a comprehensive approach with strict regulations on vehicle ownership, high taxes, and expensive parking fees.

Purpose: This research aims to conduct a comparative analysis of motor vehicle restriction policies in Japan and Indonesia. By examining the policy formulation process, the study seeks to identify the determinants, key actors, and impacts of these policies. The purpose is to provide insights into how different factors influence government actions in responding to the challenges posed by the growing ownership of motorized vehicles.

Design/Methodology/Approach: The research employs a comparative public policy approach, systematically analyzing political processes in both countries. The study focuses on the stages of policy formulation, specifically from agenda setting to policy evaluation. Through this conceptual framework, the research identifies external and internal factors, goals, and key actors shaping online transportation policies in Japan and Indonesia.

Findings: In Japan, the central government, through the Ministry of Land, Infrastructure, and Transport, implements strict regulations on vehicle ownership, including high taxes, mandatory testing, and expensive parking fees. This centralized approach effectively controls

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private vehicle ownership. In Indonesia, the DKI Jakarta Provincial Government's odd-even policy faces criticism for being partial and lacking preventive measures, resulting in potential violations and congestion shifts. The lack of synchronization between central and local governments also hampers policy effectiveness.

Originality/value: This research contributes to understanding the effectiveness of motor vehicle restriction policies by comparing the approaches taken in Japan and Indonesia. The findings provide valuable insights for policymakers, highlighting the importance of a holistic and preventive approach involving both upstream and downstream measures to address challenges related to massive vehicle ownership.

Keywords: Public Policy; Motorised Vehicle Restriction; Odd-Even; Japan; Indonesia

Paper Type: Article-Research

Introduction

Along with economic development and population growth, many developing countries are experiencing a rapid increase in the number of cars and motorbikes. According to research on the sustainable mobility project (World Business Council for Sustainable Development, 2004) projects a fivefold increase in the number of vehicles in Asia and Latin America by 2050 (Nadai et al. 2003). In Indonesia alone, data from the Central Statistics Agency (BPS) in 2014 noted that the number of motorized vehicles had reached 114,209,266 units consisting of 12,599,138 passenger cars, 2,398,846 buses, 6,235,136 freight cars, and 92,976,240 motorcycles. The average annual increase in the number of motorized vehicles in Indonesia is 14.55%, which is a very high increase compared to the average increase in population between 2010-2016 of 1.36%. If the population of Indonesia in 2014 was recorded at 252,164 million people, then the ownership of motorized vehicles in Indonesia reached more than 453 vehicles per 1,000 people, and specifically for motorbikes, it reached 369 vehicles per 1,000 people. This number of vehicles and their

growth are problems for a country with a developing economy (Badan Pusat Statistik 2022).

The growth ratio between motorized vehicles and road length in Indonesia is also unbalanced (Lazuardi 2021). Jakarta, for example, is a concrete example of the massive number of vehicles that must also be accompanied by the availability of adequate road infrastructure in terms of road volume. Jakarta's road length is moving very slowly, averaging 0.01% per year. Meanwhile, the number of motorized vehicles runs faster, at around 10-15% per year. There are currently at least 12 million motorized vehicles in Jakarta. Motorbikes dominate the majority of these vehicles. Meanwhile, the number of vehicles increases by 5,500-6,000 units per day. Of these, motorbikes reached 4,000-4,500 per day. By the end of 2014, the number of vehicles in the region reached around 17.5 million units. Of the total motorized vehicles, motorcycles accounted for about 75%, which is equivalent to about 13 million units².

High levels of motorized vehicle ownership result in major impacts such as congestion, pollution, and road accidents. To respond to this problem, several countries have made efforts to limit motorized vehicles by issuing strict rules and regulations with various models. Whether in the form of regulations limiting the age of certain vehicles, such as in China, Singapore, and the UK, or imposing expensive tax rates, such as in Japan, to the odd-even policy carried out by the DKI Jakarta Provincial Government.

Based on the explanation above, the author chose Indonesia and Japan as comparative examples in terms of vehicle restriction policies. The selection is based on the difference in policy output, which is expected that one subject can become a benchmark for

² The dataset pertains to information sourced from the Directorate of Traffic (Ditlantas) of the Jakarta Metropolitan Regional Police (Polda Metro Jaya), encompassing the regions of Jakarta, Depok, Tangerang, and Bekasi (collectively known as Jadetabek)

other subjects to make better policies. The Japanese government makes strict regulations in the implementation of vehicle restrictions; the policy is aimed at prevention by imposing various regulations from the external side, namely, expensive parking fees, toll fees, and high fuel prices, as well as burdensome penalties and fines for private vehicle drivers who commit violations.

Meanwhile, in Indonesia, represented by the DKI Jakarta Provincial Government, the policy of limiting vehicles through DKI Jakarta Governor Regulation No. 164 of 2016 concerning odd-even on private cars. The differences in these policies certainly provide different outputs for the community; in Japan, for example, this policy is able to reduce the number of private vehicles and run quite effectively. Whereas in Indonesia, this policy has received a negative response from some parties because it is considered a form of discrimination and the number of violations by trying to circumvent the regulation until the rampant congestion in DKI Jakarta. So that the policy can be said to be not effective enough in its implementation.

Therefore, the author will further examine how the policy formulation process between the two countries using a comparative method entitled "Comparative Analysis of Motor Vehicle Restriction Policies in Japan and Indonesia". Comparative analysis is a powerful and versatile tool for describing and understanding political processes and political change in various countries. The comparative approach is also a derivative of Political Science, which forms a general theory of political relations. Hence, it has the capability to test a political theory by confronting a subject with the experiences of many institutions and arrangements in other countries (Powell Jr, Dalton, and Strom 2015). In this case, the role of the state in formulating the policy and its impact on social change in both countries can also be seen. This paper can provide constructive input regarding the

formulation of a government's policy. It can broaden insights into what different factors can influence the actions of a country's government in formulating policies in response to the phenomenon of massive vehicle ownership in several countries due to improved economic development.

Methods

Comparative public policy involves a systematic analysis aimed at developing and testing explanations for the dynamics of the political process. This method employs comparative approaches to describe political events and institutions across different societies, identifying their causes and consequences. The primary goal of comparative public policy is to explore the determinants influencing public policy. Through this conceptual framework, the author intends to scrutinize the determinants associated with the government's response and the formulation process of online transportation policies in different locations. The objective is to identify similarities and differences, considering external and internal factors, goals, and the key actors playing significant roles in the decision-making process.

Discussion and Findings

Theoretical Review

Public policy is a very important concept in interpreting a decision made by the government. From the various existing definitions of the concept of public policy, it can be concluded that public policy is an action that has a purpose determined by an actor or some actors in addressing a public problem or issue (Winarno 2014). The public policy process has five stages called the policy cycle. The stages of public policy consist of agenda-setting or policy planning, policy formulation, decision-making, policy implementation, and policy evaluation (Fischer, Miller, and Sidney 2007). In this research, the author will focus on the policy stages, which include the agenda-setting stage to the evaluation of policies related to limiting private vehicles, to make then a

comparison between the processes that occur in the two countries through the concept of comparative public policy.

Comparative public policy is a comparative analysis activity that helps develop and test explanations of how the dynamics of the political process work. Comparative methods can be used to describe political events and institutions found in different societies to identify their causes and consequences. The search for the determinants of public policy drives the logic of comparative public policy (Fischer, Miller, and Sidney 2007). Through this concept, the author will examine the determinants related to the government's response and the process of formulating online transportation policies in both places to then look for points of similarity and difference, be it external factors, internal factors, goals or actors who play a significant role in decision making.

The author wants to see how this theory is able to become an analytical knife for the formulation of private vehicle restriction policies carried out at the executive elite level, namely the DKI Jakarta Provincial Government and the Japanese Government, and how the policy outputs that the two governments have issued are able to accommodate the interests of various parties, especially the community.

Indonesian Government Policy on Private Vehicles

Indonesia is at a stage of high urbanization as a result of the rapid economic growth in the city need for people to move from one place to another will also increase. In the mobility movement, private cars are very favourable vehicles. In addition, the number of people living in urban areas will increase year by year due to this high level of urbanization. The challenge for the government of a developing country like Indonesia is the problem of congestion as a result of the massive ownership of private vehicles in urban areas and DKI Jakarta is no exception.

As a capital city and business centre, DKI Jakarta experiences an increase in population every year, both those who

work and live in Jakarta and those who only work in Jakarta (in the sense of living in areas around Jakarta such as Bekasi, Depok, and Tangerang). Population growth due to urbanization has become a reality as the number of Indonesians living in urban areas is increasing, and it is predicted that by 2025, around 60% of people will live in urban areas. If Indonesia's population in 2025 is 240 million, then there will be around 144 million people living in urban areas (Tamin 1999)³.

Jakarta, as the capital of the country, bears various social problems such as high population. According to data from BPS, in 2017, the total population of Jakarta was 10,374,200 people, and in the morning/evening can exceed 11 million people. The difference in population of DKI Jakarta during the day and night can be different because of the large number of local migration of residents from agglomeration cities around Jakarta, such as Bogor, Depok, Tangerang, and Bekasi (BODETABEK). Migration activities are carried out by residents who live in the BODETABEK area, such as working, going to school, traveling, and others. With the influx of workers, students, and residents from the BODETABEK area, the volume of vehicles crossing Jakarta's roads has increased. Based on data obtained from the DKI Jakarta Transportation and Transportation Agency, the total number of vehicles entering DKI Jakarta in 2011 was 9,895,419 vehicles, and in 2017, it increased to 11,704,432 vehicles. From the data obtained, it is natural that DKI Jakarta is one of the most congested cities in Indonesia and even in the world⁴.

This problem has an impact on the volume of motorized vehicles on Jakarta's roads, which leads to congestion. Jakarta is

³ This is subsequently articulated in one of his publications titled "Perencanaan dan Pemodelan Transportasi, Edisi I," published by ITB Press in Bandung.

⁴ According to the population projection data for the DKI Jakarta area in 2017, the population of DKI Jakarta was reported to be 10,374,200 individuals (Badan Pusat Statistik 2017)

the largest market for motorized vehicles in Indonesia (Mu'allimah and Mashpufah 2021). The increase in the number of cars and motorbikes is not proportional to the development of road infrastructure. Based on a survey by the Ministry of Public Works and Housing in 2015, the road ratio in Jakarta has reached 2,077 vehicles per kilometer of road. Meanwhile, data from the Indonesian National Police states that DKI Jakarta is the region with the highest number of motorized vehicles in 2015, with 13.9 million motorbikes, 3.5 million cars, 983.9 thousand freight cars, 537.6 thousand buses (Kresna 2017). Losses due to traffic congestion continue to increase every year. Data from the National Planning and Development Agency shows that in 2019, losses in Jabodetabek reached Rp 100 trillion, while in Jakarta, they were Rp 67.5 trillion⁵.

The government has made many efforts to solve this problem. Increasing the capacity of the existing road network as well as the construction of a new road network, the addition of traffic engineering and management, especially the regulation of public transport efficiency, and the addition of fleets are examples of efforts that the central government and the local government of DKI Jakarta Province have made. In addition to the development of public transport facilities, the policy implemented is the odd-even policy. This rule categorizes odd and even number plates based on date. If an odd-numbered vehicle crosses a road that applies the rule while the date on that day is even, then the vehicle commits an offence and will be sanctioned.

The policy is a change from the 3 in 1 restriction policy that was previously implemented but failed. This is due to the social impact caused by the emergence of the jockey phenomenon

⁵ This dataset pertains to information sourced from the Directorate of Traffic (Ditlantas) of the Jakarta Metropolitan Regional Police (Polda Metro Jaya), encompassing the regions of Jakarta, Depok, Tangerang, and Bekasi (collectively known as Jadetabek).

around the area where the 3 in 1 policy is applied. The existence of this jockey is the cause of congestion because its existence is needed because it is needed by many private vehicle drivers in order to cross several areas where the 3 in 1 policy is applied. Based on the above problems, the DKI Jakarta Provincial Government in 2016 made changes to the 3 in 1 traffic vehicle restriction policy into odd-even 4-wheeled vehicle traffic restrictions along the Sisingamangaraja road-Jalan Jend. Sudirman-Jalan M.H Thamrin and Jalan Gatot Subroto. The policy change was made through Governor Regulation No. 164 on odd-even traffic restrictions, which the then governor of DKI Jakarta enacted, Basuki Tjahaja Purnama (Yori 2018).

Along the way, this policy has created pros and cons for both road users and transport observers. The Indonesian Transport Society believes that the odd-even system has failed to unravel traffic congestion because it only moves congestion from one road to another (Akbar 2016). In addition, there are attempts to circumvent the regulations made by car drivers by using fake number plates. The modus operandi is to change the last digit of the number plate with odd or even numbers. In contrast, the original number plate is only installed according to the operational date (Wibowo 2019).

The issue proves that the odd-even application is not yet fully effective. But no matter how much money is spent, congestion cannot be avoided. This is also related to the integration of regulations between the central and local governments on the issue. Suppose the implementation of this odd-even policy is not supported by strict regulation in the upstream sector of motor vehicle ownership. In that case, it will be impossible for the congestion problem to be resolved because motor vehicle ownership is growing rapidly while the provision of road facilities is growing, so slowly that it cannot keep up.

The lack of synchronization between the central and local governments is also reflected in several policies. The central government made a policy that seemed to be a stimulus for the massive use of private vehicles in Jakarta, namely planning to build 6 sections of toll road projects in the city. These six inner-city toll roads are National Strategic Projects (PSN), which are included in Presidential Regulation No. 3 of 2016 as well as in the amended Presidential Regulation (Perpres) No. 58 of 2017 (Komara 2018). Reflecting on these issues, it is fitting that the centre should take over the congestion problem in DKI Jakarta by issuing complex regulations that are preventive policies made are not partial which has an impact on the ineffective implementation of these policies.

Japanese Government Policy on Private Vehicles

Japan's government system is parliamentary and centralized. This is evidenced by the authority of national laws that always take precedence over local laws, another indicator is that local policies and regional budget programmes must be approved by the central government (McCargo 2004). Some examples include plans for additional public transport services such as buses and trains that are taken over by the central government, even some of these policies seem to limit the role of a regional head in Japan better known as the Prefectural Governor, in implementing his policy because it requires permission from the central government. The amount of central authority is also found in the process of determining fiscal finances, where the central government still controls regional financial matters, with the proportion of regional income being 60% of transfers from the centre. Japan also still uses a direct appointment mechanism for prefectural officials. This is in stark contrast to Indonesia, which has implemented liberal democracy with a direct election mechanism. The political-economic relationship in Japan forms an "iron triangle" pattern, which is a strong relationship between the

bureaucracy represented by the Ministry, the political party controlled by the Liberal Democratic Party (LDP) since 1955, and big businessmen who often work in the transportation sector, construction, and property companies (Heidenheimer, Hecllo, and Adams 1990).

The implementation of the centralized system also has an impact on the formulation of policies by the Japanese government, one of which is related to the vehicle restriction policy implemented in Japan. This policy is national and spread throughout Japan. This restriction is not an appeal to the public not to use private cars but rather the government's efforts to tighten the use of private cars with several policy strategies from upstream to downstream. It is authorized by the Ministry of Land, Infrastructure and Transport (MLIT), a central government agency. It was created on 6 January 2001 as part of bureaucratic reforms by reducing the number of bureaucracies from 23 to 13. MLIT was formed from the merger of many agencies, such as the Ministry of Transport, responsible for land, sea, and air transport, and the Ministry of Construction, concerned with the planning and construction of roads and expressways, as well as the Hokkaido Development Agency and the National Land Agency (McCargo 2004). It is also important to note that transport policy is handed over to a specialized agency that manages both development and operational matters.

Historically, car use in Japan has been low. In 1912, the number of cars was 535; in 1920, it was 7,952, and in 1930, it was 88,708. Car ownership in Japan began to increase during the 1950s due to the development of the automobile manufacturing industry caused by the supply of highly competitively priced cars in the domestic market, in addition to the increase in income resulting from high economic growth (McShane, Koshi, and Lundin 1984). Since then, the number of cars has steadily increased from 1.6

million in 1960 to 12.2 million in 1970, 23.6 million in 1980, 36.2 million in 1990, and 47.9 million in 2000.

In response to the rapid increase in the number of private vehicles in Japan, the government imposes very strict rules on the ownership of private vehicles by its citizens. Although the price of cars in Japan is relatively inexpensive, like second-hand cars, the post-ownership costs for the public are quite high. Starting from very expensive parking fees and expensive fuel to mandatory motor vehicle testing (KIR) every two years for petrol cars and once a year for diesel cars (Enoch and Nakamura 2008). For parking, urban areas have a price range of 40,000 yen to 50,000 yen per month or Rp4 million-Rp5 million. A one-hour parking fee in Ginza can reach 800 Yen or the equivalent of Rp105 thousand (Saputra 2019). These tests have an impact on Japanese people's preference for buying new cars. This is due to government regulations that require cars over three years old to carry out feasibility tests at a high cost (Saputra 2019). Japan's high taxes also contribute to the behaviour of its people who are reluctant to own private vehicles. The main point to note is that the car tax system in Japan is very complex, with limited revenue applications. In addition, there are high differences in tax rates, such as the rates between vehicles using petrol and diesel fuel. And perhaps most importantly, the ownership ratio and acquisition tax are higher than in other countries, which results in the cost of driving being relatively higher than it should be (Saputra 2019).

The Japanese government also implemented a policy of high parking fees. This policy came about as a response to the increasing congestion in urban areas from the late 1950s, which caused the volume of vehicular traffic to continue to increase faster than the supply of parking facilities. The main cause of urban road congestion in Japanese urban areas is illegal parking, and the main culprits are small lorries and commercial vehicles for

handling goods. As a result, street parking is prohibited in Japan except where there is a private car park. Even in some urban areas in Japan, people are required to obtain a permit from the police to prove that they own a parking space before they can buy a car (Saputra 2019).

This fact proves that the policy implemented by the Japanese government is quite effective in shaping the culture of Japanese people who are reluctant to own private vehicles. This approach also anticipates the rapid number of private car ownership in Japan compared to the disproportionate growth of roads. This is because infrastructure development in Japan is expensive due to the narrow and hilly natural contours. An adequate mass transport network also drives the lack of private vehicle ownership. This is evidenced by the various types of public transport available in Japan, both public and private networks. Public transport in Japan is known as the best transport system in the world due to its punctuality, safety, and convenience. Almost all Japanese people prefer to use public transport instead of private vehicles, thus automatically avoiding the congestion of vehicles on the streets. Even companies in Japan also make payments in the form of business trips via public transport such as trains.

Comparison of regulations between Indonesia and Japan.

In general, motorized vehicle restrictions in both countries stem from the problem of massive motorized vehicles causing congestion in urban areas. Japan's motorized vehicle restriction policy emerged as a response to increasing congestion in urban areas in the late 1950s, which caused the volume of vehicle traffic to continue to increase faster than the supply of parking facilities and road volume. In Indonesia, the motorized vehicle restriction policy is implemented through efforts to implement odd-gendap on car vehicles as a cause and effect of the massive congestion that has begun to occur in big cities, of course in Jakarta.

A significant difference between the policies in Japan and Indonesia is the implementation through existing political institutions. The Japanese government seeks to prevent this by implementing strict regulations on private vehicle ownership by the central government through the Ministry of Land, Infrastructure, and Transport. The Japanese government applies some tax rates on fuel purchases and motor vehicle acquisition taxes that are higher than in other countries, mandatory motor vehicle testing (KIR) every two years, and expensive parking fees. This is a form of state intervention in the market that is certainly effective in changing people's behaviour away from owning private vehicles. The central government distributes state revenues through taxes through policies to build public transport facilities and good roads. Thus, the policy implemented by the Japanese government is holistic from upstream to downstream. The impact is that the number of private vehicles is well controlled. The positive impact is that the implementation of this centralized policy will be simultaneous without showing inequality in its implementation.

In Indonesia, this vehicle restriction policy is implemented by institutions at the local government level. One of the most famous is the implementation of DKI Jakarta Governor Regulation No. 164 on odd-even traffic restrictions in DKI Jakarta Province. This policy is a solution to DKI Jakarta's congestion problem, which has been severe and unresolved for years. This policy is also a transformation of the previous vehicle restriction policy, 3 in 1, which was considered to have created a social phenomenon with the emergence of jockeys around the streets where the policy was implemented. The policy is partial because it is not supported by a regulation that can deter people from owning motorized vehicles, especially cars. Even on the sales side, the market provides relief to buy these vehicles with cheap instalments, which is a stimulus for the public to buy private vehicles. The

purchase of motorized vehicles seems to be thrown into the market mechanism, and there is no state effort in this case to intervene through a large tax policy for motorized vehicle owners.

Some parties have criticized the implementation of the policy for being discriminatory. This issue will also not solve Jakarta's congestion problems that have occurred for years and are considered very ineffective to implement because of the potential to be violated and only change the movement of traffic flow and movement of congestion hours. Some facts were found if people prepared two cars with different plates and used them alternately based on the application of the policy; the even-odd application also made the road lanes that were not affected by this policy very severely congested.

The different implementation practices of vehicle restriction policies in Japan and Indonesia can be used as an illustration to determine how the implementation should be carried out and see how effectively the policy is implemented. The authority of the central government in implementing this policy can be used as an illustration to determine the policy in Indonesia. The delegation of authority to the central government is intended to create strong regulations through laws that prevent private vehicle ownership. This includes the creation of a high tax policy on both motor vehicle purchases and fuel purchases, which is considered effective enough to minimize private vehicle ownership, as well as the use of these taxes for the development of adequate public transportation facilities. This reflects the implementation in Japan, which has been going well for decades. The authority of the DKI Jakarta Provincial Government in the odd-even policy is considered ineffective because it is not preventive like in Japan. In its implementation, it is often abused by circumventing the regulation.

The challenge ahead of the government is the political will of the political elite in formulating the policy. The implementation

of a motorized vehicle restriction policy similar to that of the Japanese government bears a huge risk, especially in terms of political and economic issues. Various interest groups will certainly reject the policy because it is considered detrimental. Motor vehicle associations such as the Indonesian Motor Vehicle Industry Association (GAIKINDO), for example, will certainly reject the implementation of motor vehicle restriction policies such as the model in Japan because it is considered detrimental to the course of the industry, which has an impact on the sluggish motor vehicle sales. This also risks disrupting the national car industry, both upstream and downstream, related to motorized vehicles. So that it will have a broad impact on the macro economy, such as reduced state revenue and mass layoffs of workers in the industry; however, suppose these vehicle restrictions are not implemented immediately. In that case, it will become a time bomb for the government to bear huge losses, such as congestion and pollution in several major cities in Indonesia.

Conclusion

This article discusses the policies of motor vehicle restriction in Indonesia and Japan as a comparative study. In Indonesia, the policy is implemented through regulations by the provincial government of DKI Jakarta, while in Japan, it originates from the central government through the Ministry of Land, Infrastructure, and Transport. Although the objectives of both policies are the same, which is to tackle congestion due to the increase in the number of motor vehicles, the approaches and implementations of the policies differ. The Japanese government enforces strict regulations on private vehicle ownership, including expensive parking fees, periodic vehicle testing, and high taxes. This approach is effective in altering the behavior of Japanese society to reduce private vehicle ownership. Additionally, the Japanese government invests tax revenues in developing adequate public transportation infrastructure.

In Indonesia, the motor vehicle restriction policy is more partial and not supported by sufficiently strong regulations to deter vehicle ownership. This renders the policy less effective in addressing congestion, often being violated by the public. Criticism has also been directed at the policy for being discriminatory. From the comparison, it can be concluded that the approach adopted by the Japanese government is more effective in tackling congestion compared to the approach taken by the Indonesian government. Stringent regulations and investment in public transportation are key to the success of Japan's policy. Conversely, Indonesia needs to improve coordination between the central and local governments and develop stronger regulations to address congestion more effectively.

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