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Policy Network in Greater Bandung Metropolitan Management to Deal with Congestion

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Abstract

This study aimed to determine the effectiveness of public policies in handling congestion in Metropolitan Bandung Raya. This study used an exploratory, descriptive method to analyze the phenomena, causes, and public policies for handling congestion in the Greater Bandung Metropolitan area. The study was conducted in 60 sub-districts, two cities, and three districts in the Greater Bandung Metropolitan Area: Bandung City, Cimahi City, Bandung Regency, West Bandung Regency, and Sumedang Regency. As a result, there were 168 congestion points, 149 causes of congestion, and 86 policy implementations in total. These results indicate that congestion handling in metropolitan Bandung Raya is effective. Furthermore, as many as four of the seven dimensions analyzed show: (1) the dimensions of the number and type of actors; (2) the dimension of function, namely dealing with congestion following the main tasks and functions; (3) the dimensions of the structure, namely dealing with traffic jams according to their authority; and (4) the institutionalization dimension, namely overcoming the institutional bottleneck between the actors involved, is considered effective.

In comparison, the other three dimensions show a reasonably practical assessment: (1) the rule-of-conduct dimension, namely, the proper handling of traffic jams through leadership decisions and non-formal actions according to the conditions that occur; (2) the dimension of power relations in handling traffic congestion according to the agreed system operational procedure; and (3) the dimension of the actors' strategy, namely, dealing with congestion through strategic actions that concern individual actors. The fewer bottlenecks and congestion management policies created, the more effective is the implementation. It can be seen from the results of the analysis where Sumedang Regency and West Bandung Regency have traffic management policies that are more effective than other regions.

Keywords: Public Policy, Dimensions of Policy Network, Metropolitan Bandung Raya, and Effectiveness.

I. INTRODUCTION

Implementing public policies in a given area frequently results in conflict paradoxes. On the one hand, public policy mediates disagreements over resource allocation to meet specific needs or values. However, on the other hand, public policy causes conflict due to its inability to manage an allocation process that satisfies all parties. (Miller, 2012). This paradox cannot be avoided because each actor has different interests, values, decisions, actions, and strategies. Therefore, the ability to manage these differences is something that actors must do to make effective public policy decisions, which is a challenge for public policy to manage conflicts that arise so that they are not destructive/disruptive/counterproductive but instead become more productive.

Public policies that manage congestion occur in Metropolitan Bandung Raya, which has a wide area consisting of 60 districts in two cities and three regencies: Bandung City, Cimahi City, Bandung Regency, West Bandung Regency, and Sumedang Regency. With the number of congestion points reaching 168 points, with 149 causes of congestion and 86 implemented policies, it can be ascertained that conflicts of interest, value conflicts, decision conflicts, action conflicts, and public policy implementation strategies between Districts/cities, organizations, or institutions that are members of the Bandung Raya metropolitan management can be ascertained. A network of public policies dealing with congestion in Metropolitan Bandung Raya will be easier to implement if policy implementation can effectively identify the existing key actors, the interests of the actors, the actors' support, and a joint organizational strategy that is structured to collaborate with the actors (Tarigan et al., 2016). The public policy network directs policies to reduce congestion in the Greater Bandung Metropolitan Area and achieve a truly effective public policy for the region's public interest. (Gunawan, Bressers, Mohlakoana, & Hoppe, 2017)

Table 1 describes the congestion points, causes of congestion, and public policies for handling congestion in each area of the Greater Bandung metropolitan area. As a metropolitan centre, the city of Bandung is the area with the most congestion points, with 89 points, and the implementation of public policies is also the largest, with 55 handling policies. On the other hand, Bandung Regency has the second-highest congestion points, with 41 congestion points and 13 public policies for handling congestion. Finally, Sumedang Regency had the smallest congestion points, with only eight points, and implemented public policies for handling only three policies.

Table 1. *Number of Congestion Points, Causes of Congestion and Congestion Management Policies at Metropolitan Bandung Raya (MBR) in 2018*

NO	GREATER BANDUNG METROPOLITAN AREA	CONGESTION POINT	CAUSES OF CONGESTION	POLICIES IMPLEMENTATION
1	Kota Bandung	89	79	55
2	Kota Cimahi	11	13	9
3	Kab. Bandung	41	34	13
4	Bandung Barat	19	18	6
5	Sumedang	8	5	3
	MBR	168	149	86

Source: field survey results, 2018

The transportation system in the Greater Bandung metropolitan area has experienced high-intensity population movements. As a result, traffic congestion is a significant and acute problem throughout the year. Of the 168 congestion points, 89 result from community economic activities in Bandung City as the centre of the Greater Bandung Metropolitan. It is the final destination of human movement and the leading cause of congestion that always occurs: the existence of a market that uses the shoulder of the road as a place to trade, street vendors who carry out trading activities in various spaces irregularly, and shopping centres that use the shoulder of the road as a place to trade. (Rustiadi et al., 2021). These congestion points were heavier during peak times and holidays. The high level of congestion in the core centre of the Greater Bandung Metropolitan Area impacts the spread of congestion to the surrounding area, namely the supporting area of the Greater Bandung Metropolitan Area, which is located directly adjacent to the city of Bandung. Cimahi City, Bandung Regency, West Bandung Regency, and Sumedang Regency are entry and exit areas for residents to the centre of the Greater Bandung Metropolitan area. It is estimated that

the total movement of passengers in the Greater Bandung Metropolitan Area in 2012 was 3.57 million people/day; It is estimated that in the next 20 years in 2032, 5.75 million people/day and 2.46 million vehicles per day will operate or travel at Metropolitan Bandung Raya.

II. THEORETICAL BASIS

Policy Network

The policy-network approach investigates the relational and informational dimensions of policymaking. The term network has two meanings: first, it refers to establishing contacts for profit, and second, it refers to the language of interconnected computer technology. The second understanding motivated the policy community to correlate policy effects with the role of technology via the internet. This way of thinking gave rise to electronic government (E-gov), which the current government employs to create networks. As a social network, the online system will form a policy community association, or the effectiveness of the network and policy community, which is required in government reform.

According to Rod Rhodes, a leading proponent of network analysis, there is a need to investigate the structure of dependencies in policy networks; identify the main groups of networks at the central and local levels, including professionals, local governments, and network producers; and determine how they interact with these networks. In this case, the central government (Rhodes & Marsh, 1992), here, Rhodes, discusses the structural type of policy network in the case of Europe. Meanwhile, (Kassim, 1994) are more interested in the disaggregated and interpersonal dimensions where the strength of the policy network is different: five things that become the strengths of different policy networks: (1) the interests of network members, (2) membership, (3) dependence between members, (4) isolation from other networks, and (5) distribution of member resources. Networks with a high level of membership integration are characterized by (1) the stability of membership and relationships between members, (2) interdependence in policy networks, and (3) isolation from other networks. However, when the integration of the policy network becomes large, the network structure will loosen, and the links between members of the policy network will become weak.

The development of a network-based policy formulation process theory with the primary dimension of a policy network from the policy network perspective. The dimensions of the policy network can be used to view and analyze the policy formulation process based on the policy network. The following are the dimensions of the public policy network in question. (1) The number and type of actors that will determine the size of the network that will be built. Different types of actors influence the characteristics of a policy network. Individuals, groups, specific parties, and organizations can be actors in the policy network. (2) Purpose: This dimension denotes that the network is a communication medium with multiple functions. Their functions are determined by the actors' needs, intentions, resources, and strategies

The concept of “function” then forms a perspective link between structures and actors in the network. The primary function of the policy network is as a tool used to increase the intensity of the relationship between parties interested in public policy at both the formulation and implementation stages. (3) Structure: This dimension refers to the pattern of relationships between actors involved and their respective authorities. (4) Institutionalization refers to the formal nature of the network of actors from different institutions. The more formal the institutional form of the network, the more influential the policy network will be. (5) Rule of conduct: The policy network is formed by the habits and rules of the game (the rules of the game) in interacting both formally and non-formally with the network. This can be attributed to the perceptions of the role (role perception), attitudes (attitudes), interests (interest), and social and educational backgrounds (social and intellectual-individual background) of the actors

involved. (6) Power relations can be understood through the standard operating procedure (SOP) for distributing power from actors. This process distributes resources and needs among actors and between organizational structures when the organization is involved. (7) Actor strategies: This dimension describes the role of actors in implementing policies, using their networks to manage interdependence strategically, and achieve their interests and goals (Van Waarden, 1992)

Framework

A public policy product is created after a lengthy policy stage that includes agenda-setting, formulation, adoption, implementation, and evaluation. (Jann & Wegrich, 2007). The policy network was implemented primarily during the policy formulation stage. In this study, the initial stage of the actors representing the institution or organization conducting a policy analysis of public policy issues and problems handling congestion at Metropolitan Bandung Raya and the issues and problems that arise are first defined to obtain understanding and agreement. Then, in the identification stage, actors in their public policy network attempt to find, collect and record data and information on the congestion management plan for the Greater Bandung metropolitan area. The next stage involved the formulation of congestion-management policies in the Greater Bandung Metropolitan Area (Berrouk, Fazziki, & Boucetta, 2020).

The measuring instrument employs seven dimensions to analyze the formulation of congestion management policies in the Greater Bandung metropolitan area. Theory of policy networks (Gunawan et al., 2017). Researchers are interested in using this public policy network theory because they suspect that Frans Van Wardan's seven dimensions of policy networks are a complete analytical tool for analyzing the issues and problems faced by Metropolitan Bandung Raya in implementing congestion-handling policies. Therefore, the framework of this study is as follows:

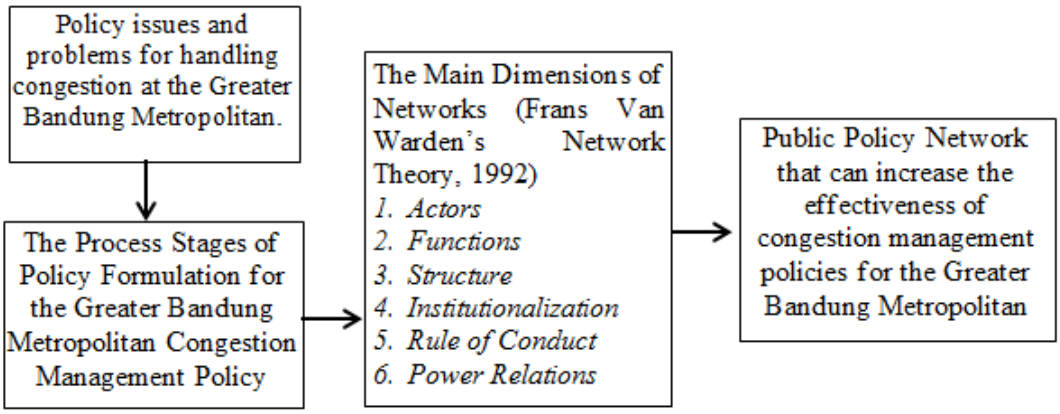

Figure 1 *Public Policy Network Mindset for the Greater Bandung Metropolitan Congestion Handling.*

III.METHODOLOGY

An exploratory, descriptive design was used in this study. Descriptive research examines existing phenomena and systematically presents data, whereas exploratory research seeks to discover something novel by grouping specific symptoms, facts, and events. The data used was Observational, interview, and documentation data, as well as primary and secondary data, were analyzed. Field observations and interviews were used to collect primary data from informants. Documentation was used to collect secondary data(Hancock, Algozzine, & Lim, 2021)

Data sources were obtained from informants interested and relevant parties in handling traffic jams at Metropolitan Bandung Raya, namely, Dinas Perhungan, West Java Province, City and Regency Transportation Service at

Metropolitan Bandung Raya, road traffic forums, and regional transport organizations. The analysis began with the formulation and explanation of the research problem, observations, interviews, documentation, and the results suggest three main components in the data analysis process in qualitative research: data reduction, data presentation, and conclusion drawing. These three data analysis processes play essential roles in the process, are interrelated, and determine the final analysis results (Amaratunga, Baldry, Sarshar, & Newton, 2002).

The policy network dimension was used to assess the efficacy of implementing a policy network to alleviate traffic congestion in metropolitan areas. Developed a network-based policy-formulation process theory in a policy network with 7 (seven) main dimensions. (1) actors, (2) functions, (3) structures, (4) institutionalization, (5) rules of conduct, (6) power relationships, and (7) actor strategies (Van Waarden, 1992)

IV. ANALYSIS AND DISCUSSION

Congestion handling policy at Metropolitan Bandung Raya

The policies for handling congestion that occurs at every point in the sub-district and district areas in the two cities and three regencies in the Greater Bandung Metropolitan area are illustrated in Table 2.

Table 2. *Greater Bandung Metropolitan Core City, Bandung*

No	Main Congestion Points	Handling Policies
1	Bandung Kulon District Sub-district: (1) Cigonewah; (2) Caringin; (3) Cijerah; (4) Gempolsari	1. Provision of parking spaces and road widening 2. Control of street vendors (Gempolsari) 3. Diversion of road traffic (Caringin, Cijerah)
2	Babakan Ciparay District Sub-district (5) Babakan Ciparay	4. Construction of the Leuwipanjang-Kopo. flyover 5. Call for vehicle diversion
3	Bojongloa District Sub-district (6) Kopo	6. Construction of the Leuwipanjang-Kopo. flyover 7. Built a pass between Kopo-Cibaduyut
4	Bojong Kidul District Sub-district (7) Cibaduyut	8. Built a pass between Kopo-Cibaduyut along 1.3 Km and 19 m wide
5	Astana Anyar District Sub-district (8) Cibadak; (9) Panjunan; (10) Nyengseret; (11) Pelindung Hewan	9. Control of street vendors 10. Vehicle diversion notice 11. Improve road infrastructure
6	Regol District Sub-district (12) Cigereleng;(13) Pungkur	12. Control of street vendors 13. Widening the road at the intersection
7	Lengkong District Sub-district (14) Cikawao; (15) Cijagra; (16) Malabar; (17) Lingkar Selatan	14. Traffic engineering (Cikawao, South Circle) 15. Road infrastructure improvement (Cijagra) 16. Relocation and control of street vendors
8	Bandung Kidul District Sub-district (18) Batununggal	17. Implementing traffic rules (Parents do not take their children to the school gate)
9	Buah Batu District Sub-district (19) Cijawura; (20) Seke jati; (21) Jatisari; (22) Margasari	18. Road widening 19. Vehicle diversion
10	Rancasari District Sub-district (23) Darwati; (24) Cisaranten	20. Road widening 21. Vehicle diversion
11	Gede Bage District Sub-district (25) Rancabolang; (26)	22. Appeal for diversion of road traffic 23. Improvement of flood-prone areas

No	Main Congestion Points	Handling Policies
	Cisaran ten; (27) Cimenerang; (28) Rancanumpang	
12	Cibiru District Sub-district (29) Cisurupan; (30) Palasari; (31) Pasibiru	24. Repairing culverts and patching damaged roads.
13	Panyileukan District Sub-district (32). Mekarmulya	25. Traffic diversion
14	Ujung Berung District Sub-district (33) Cigending	26. Sterilizing the Market Front of the traders 27. Bringing order to careless drivers
15	Cinambo District Sub-district (34) Sukamulya (35) Babakan Penghulu	28. Improve road facilities, such as culverts
16	Arcamanik District Sub-district (36) Sukamiskin	29. Traffic engineering with a traffic cone
17	Antapani District Sub-district (37) Antapani Kidul; (38) Antapa ni Tengah	30. Traffic engineering 31. Placement of officers in the field (police and Dishub) 32. Use of public transport
18	Mandalajati District Sub-district (39) Pasir Impun; (40) Sindang Jaya; (41) Jatihandap	33. Applying traffic engineering
19	Kiara Condong District Sub-district (42) Cicaheum; (43) Babakan Sari (44) Kebun Jayanti; (45) Sukapura; (46) Kebon Kangkung	34. Appeal for the use of public transport 35. Traffic engineering
20	Batununggal District Sub-district (47) Kebonwaru; (48) Maleer; (49) Binong; (50) Cibangkong	36. Appeal for the use of public transport
21	Sumur Bandung District Sub-district 51. Braga 52. Merdeka	37. Operation of the Traffic Order Area (KTL) along Jalan Merdeka, Bandung. 38. Installing a road divider in a Traffic Order Area
22	Andir District Sub-district (53) Ciroyom; (54) Garuda; (55) Maleber; (56) Campaka; (57) Kebon Jeruk; (58) Dungus Cariang	39. Controlling street vendors 40. Provision of parking facilities 41. Waste management
23	Cicendo District Sub-district (59) Arjuna; (60) Husen Sastrane gara; (61) Pajajaran; (62) Pamoyanan; (63) Pasir Kaliki; (64) Sukaraja	42. Traffic flow engineering
24	Bandung Wetan District Sub-district (65). Cihapit; (66) Citarum; (67) Tamansari	43. Traffic flow engineering 44. Control of street vendors and illegal parking
25	Cibeunying Kidul District Sub-district (68) Cicadas; (69) Cikutra; (70) Padasuka; (71) Pasirlayung; (72) Sukamaju; (73) Sukapada	45. Diversion of traffic flow. 46. Relocation of street vendors. 47. Control of wild archers
26	Cibeunying Kaler District Sub-district (74) Neglasari; (75) Cigadung; (76) Sukaluyu; (77) Cihaur	48. Traffic diversion 49. Control of street vendors

No	Main Congestion Points	Handling Policies
	Geulis	
27	Coblong District Sub-district (78) Cipaganti; (79) Dago; (80) Lebak Gede; (81) Lebak Siliwangi;(82) Sadang Serang; (83) Sekeloa	50. Call for diversion of traffic flow 51. Appeal for diversion of traffic flow, especially during peak hours.
28	Sukajadi District Sub-district (84) Pasteur; (85) Sukagalih	52. Relocation of the Pasteur toll gate entrance due to frequent congestion problems at the Pasteur intersection
29	Sukasari District Sub-district (86) Geger Kalong; (87) Sarijadi	53. Control and relocation of street vendors. 54. Appeal to divert traffic to plumbing and lembang, especially on weekends
30	Cidadap District Sub-district (88) Ciumbuleuit (89) Ledeng	55. Appeal to divert traffic to plumbing, Lembang and Ciumbuleuit, especially on weekends

Source: results of data compilation and observations 2019

For the 30 districts with 89 congestion points in each district of Bandung City, the core city of the Greater Bandung Metropolitan Area, a congestion management policy was implemented per district. Fifty-five policies were implemented in total. The policies for handling congestion in the supporting areas of the Greater Bandung metropolitan area are as follows.

Table 3. *Greater Bandung Metropolitan Supporting City, Cimahi City*

No	Main Congestion Points	Handling Policies
1	Cimahi Utara District Sub-district (1) Cibabat; (2) Cipageran; (3) Pasirkaliki	1. Notice for the use of public transport
2	Cimahi Selatan District Sub-district (4) Cibeureum; (5) Leuwigajah; (6) Melong; (7) Utama	2. Operational restrictions for large-tonnage trucks and buses, namely at 06.00-08.00 WIB and 16.00-18.00 WIB (Leuwigajah) 3. Cimahi City Government Waits for the Realization of Double Track Development from the West Java Provincial Government (Leuwigajah) 4. Make a drain that crosses the toll road, and the water flow must connect to the Citarum (Melong) 5. Road widening to 8.6 meters (Main) 6. Road widening (Baros)
3	Cimahi Tengah District Sub-district (8) Baros; (9) Cigugur Tengah; (10) Padasuka; (11) Setiamanah	7. Traffic flow engineering 8. Construction of the Padasuka fly over (Padasuka) 9. Placement of officers (Police or Dihub) on Jalan Warung Contong

Source: results of data compilation and observations 2019

Of the three districts with 11 congestion points in each urban village in Cimahi City, which is a supporting district for the Greater Bandung Metropolitan, the congestion management policies carried out per district, nine policies have been carried out.

Table 4. *Main Congestion Points and Handling Policies in Bandung Regency*

No	Main Congestion Points	Handling Policies
1	Margaasih District Sub-district (1) Margaasih	1. Notice for diversion of traffic flow
2	Margahayu District Sub-district (2) Sayati	2. Flyover construction 3. Appeal to take another alternative route
3	Cileunyi District Sub-district (3) Cibiru Hilir; (4) Cibiru Wetan; (5) Cileunyi Kulon; (6) Cileunyi Wetan; (7) Cinunuk	4. The appeal of all motorized vehicle drivers to comply with traffic regulations
4	Bojongsoang District Sub-district (8) Bojongsari; (9) Bojongsoang; (10) Buahbatu; (11) Cipalago; (12) Lengkong; (13) Tegalluar	5. Notice for diversion of traffic flow
5	Dayeuhkolot District Sub-district (14) Cangkuang Kulon; (15) Dayeuhkolot; (16) Pasawahan	6. Call for diversion of traffic flow
6	Rancaekek District Sub-district (17) Rancaekek Kencana; (18) Rancaekek Wetan	7. Sliding the railroad doors to the left and right 8. Call for diversion of traffic flow
7	Pamenumpeuk District Sub-district (19) Bojongkunci; (20) Bojong manggu; (21) Langonsari; (22) Rancamulya	No policies implemented
8	Baleendah District Sub-district (23) Andir; (24) Malakasari; (25) Rancamanyar	No policies implemented
9	Ketapang District Sub-district (26) Katapang; (27) Gandasari	No policies implemented
10	Kutawaringin District Sub-district (28) Gajahmekar; (29) Jelegong	No policies implemented
11	Ciparay District Sub-district (30) Ciparay; (31) Bumiwangi	No policies implemented
12	Selokanjeruk District Sub-district (32) Solokanjeruk; (33) Cibodas	9. Himbauan pengalihan arus lalu lintas
13	Majalaya District Sub-district (34) Majalaya;	10. Notice for diversion of traffic flow
14	Banjaran District Sub-district (35) Banjaran Kulon; (36) Banjaran Wetan; (37) Tarajusari	11. Proposed ring road construction
15	Cimenyan District Sub-district (38) Ciburial	No policies implemented
16	Soreang District Sub-district (39) Soreang; (40) Cingcin	12. Road widening
17	Cilengkrang District	No policies implemented
18	Paseh District Sub-district (41) Cipaku	13. Notice for diversion of traffic flow

Source: results of data compilation and observations 2019

Of the 18 districts with 41 congestion points in each district in Bandung Regency, which are supporting districts for the Greater Bandung Metropolitan, the congestion management policies carried out per district, 13 policies have been implemented.

Tabel 5. *Greater Bandung Metropolitan Supporting District. West Bandung Regency*

No	Congestions Points (District & Sub-District)	Handling Policies
1	Parangpong District Sub-district (1) Ciwaruga; (2) Cihideung	1. Good parking management. 2. Imposition of fines for vehicles parked carelessly
2	Ngamprah District Sub-district (3) Ngamprah;(4) Cimareme	3. Re-enacted operating hours for heavy vehicles
3	Lembang District Sub-district (5) Lembang; (6) Cibodas	4. Notice for diversion of traffic flow
4	Batujajar District Sub-district (7) Batujajar Barat; (8) Batujajar Timur; (9) Cangkorah	5. Re-enacted operating hours for heavy vehicles
5	Padalarang District Sub-district (10) Cempakamekar; (11) Ciburuy; (12) Padalarang; (13) Tagogapu	6. Re-enacted operating hours for heavy vehicles
6	Cihampelas District Sub-district (14) Cihampelas; (15) Cipatik; (16) Citapen	No policies implemented
7	Cisarua District Sub-district (17) Padalarang-Cisarua; (18) Cikalong-Cipada	No policies implemented
8	Cikalong Wetan District Sub-district (19) Cikalong Wetan	No policies implemented

Source: results of data compilation and observations 2019

Of the eight districts with 11 congestion points in each district in West Bandung Regency, a supporting district for the Greater Bandung Metropolitan, the congestion management policies carried out per district, six policies have been implemented.

Table 6. *Greater Bandung Metropolitan Supporting District. Sumedang Regency*

No	Main Congestion Points	Handling Policies
1	Jatinangor District Sub-district (1) Cikuda; (2) Pertigaan Unpad; (3) Gerbang Unpad; (4) Depan Swalayan Jatinangor Town Square (Jatos); (5) Depan Swalayan Griya; (6) Jalan Dangder	1. Adding personnel at every congestion point 2. Directing to an alternative road, which is the Bandung-Garut highway

Source: interview results, data compilation and observations 2019

Of the two districts with eight congestion points in each district in Sumedang Regency, a supporting district for the Greater Bandung Metropolitan, the congestion management

policies carried out per district, three policies have been implemented.

Analysis of the dimensions of the Public policy network

The actor dimension refers to the role of designated actors in dealing with traffic jams that occur at congested points throughout the Greater Bandung Metropolitan Area. The apparatus of the district/city transportation service in the Greater Bandung Metropolitan Area has been organized and managed in stages, beginning with the staff level, the head of the traffic management and engineering section, to the head of the traffic sector, and the top leadership of the service has played a role in making public policy decisions dealing with traffic congestion.

The function dimension, maintaining relationships and communication with related parties and handling traffic jams, is also carried out every day according to the high level of congestion intensity. In dealing with congestion, the parties, especially the five transportation services in the metropolitan area, including the provincial government, continue to increase the intensity of their relationship so that the problems and impacts that arise due to congestion can be minimized. As a result, the policy-decision process is relatively faster with more specific information and communication levels. However, communication barriers remain when formulating congestion-handling policies when traffic jams occur at locations bordered by various areas.

The dimensional structure is the bureaucratic process of policymaking to deal with congestion in the Greater Bandung Metropolis, which involves two cities and three regencies whose authority is jointly decided in a joint forum. For the bureaucratic process at a broader level, the management of Metropolitan Bandung Raya works with relevant agencies, particularly the police, to formulate policies for handling congestion. The representative level of officials has the minimum position of section head, who can immediately make sudden and essential decisions.

Collective agreements within the management body determine the dimensions of institutionalization and the institutionalization of congestion-handling policies. However, it is still verbal, not officially a written policy, and decision making is still coordinated in a traffic and road transportation forum.

Dimensions of the Rule of Conduct: The procedure for acting in each city and regency in Metropolitan Bandung Raya is conducted informally because it is still verbal and coordinated. Responsibility is only accountable to regional personnel, and it has not evolved into an institutional decision.

In the power relations dimension, each city and regency in metropolitan Bandung Raya handles congestion by issuing the decisions of their respective regional heads and collaborating with bordering areas according to each region's development policies. Cimahi City directs its development to the trade and service sectors, creative and high-technology industries, and tourism; Cimahi City directs its development to the trade and service sectors, creative industries, high technology, and non-polluting industries; Bandung Regency towards the development of non-polluting industries, agro-industry, nature tourism, agriculture, and plantations; West Bandung Regency towards the development of non-polluting industries, agriculture, creative industries, and high technology; and Sumedang Regency towards the development of local activity centres, such as the Jatinangor Higher Education Center, agribusiness, and industry.

In the actor strategy dimension, congestion management policies are implemented between the service and police and regulated in a memorandum of understanding. Between cities and regencies in Metropolitan Bandung Raya, each actor, with various network strategies for dealing with traffic jams, is represented as a joint decision in one collaboration.

Effectiveness of Policy Formulation

The seven dimensions of the public policy network were analyzed based on the results of the interviews. Respondents were represented by the West Java Provincial Transportation

Agency, West Java Metropolitan Agency, and Growth Center (B-MP2JB); transportation services from two cities; and three regencies in Metropolitan Bandung Raya, a regional land transportation organization. Moreover, the community and results of the analysis of the effectiveness of the policy network dimensions from Frans Van Waardan for handling congestion in metropolitan Bandung have been running effectively.

Table 7. *Congestion Handling Effectiveness Score using seven dimensions from Frans Van Waarden*

Greater Bandung Metropolitan Area	Score 7 Dimensions of Frans Van Waarden							
	number and type actors	Fucntions	Struc ture	Institu tiona lization	Rule of Conduct	Power Relations	Actor Stategis	Total Score
Bandung City	48	37	15	14	17	24	23	178
Cimahi City	47	34	14	12	16	23	24	170
Bandung District	54	40	15	14	22	24	23	192
West Bandung	57	42	14	15	27	23	24	202
Sumedang City	57	43	15	15	28	23	22	203
MBR	52,6	39,2	14,6	14	22	23,4	23,2	

Source: analysis results 2020

Table 8. *Assessment of the Effectiveness of Congestion Handling in the Greater Bandung Metropolitan*

Greater Bandung Metropolitan Area	Effective 7 Dimensions of Frans Van Waarden							
	number and type actors	Fuc tions	Structure	Institutionalization	Rule of Conduct	Power Relations	Actor Strategies	Total
Bandung City	Quite Effective	Quite Effective	Effective	Effective	Less Effective	Quite Effective	Quite Effective	178
Cimahi City	Quite Effective	Quite Effective	Effective	Quite Effective	Less Effective	Quite Effective	Quite Effective	170
Bandung District	Effective	Effective	Effective	Effective	Quite Effective	Quite Effective	Quite Effective	192
West Bandung	Effective	Effective	Effective	Effective	Effective	Quite Effective	Quite Effective	202
Sumedang City	Effective	Effective	Effective	Effective	Effective	Quite Effective	Quite Effective	203
MBR	Effective	Effective	Effective	Effective	Quite Effective	Quite Effective	Quite Effective	

Source: analysis results 2020

Assessment of the effectiveness of congestion handling policies using the following assessments: effective, quite effective, less effective, and ineffective. The analysis results show that the effectiveness of congestion management policies in metropolitan Bandung Raya makes Sumedang Regency the highest total score, which means that the traffic congestion management policies that occur in Sumedang Regency, which borders the core area, are the most effective compared with other areas. The next level of effectiveness, with the

highest score, was West Bandung Regency, Bandung Regency, Bandung City, and Cimahi City.

V. CONCLUSION

Based on the results and discussion, it can be concluded that the policy network for handling congestion in the Greater Bandung Metropolitan Government is carried out by the West Java Government, including (1) together with the city/district transportation service at the Greater Bandung Metropolitan; (2) improve coordination between the department and the management actors of the Greater Bandung Metropolitan; (3) continue to carry out traffic engineering for provincial roads that experience congestion, especially in the border areas of cities/districts; (4) coordinating to overcome the high growth of vehicles in the Greater Bandung Metropolitan. Therefore, the overall effectiveness of the policy network implementation is based on the overall congestion management policy network.

An assessment of the seven dimensions of the policy network from Frans Van Warden in Greater Bandung, which is used to measure the effectiveness of the implementation of the policy network, is already effective. An assessment of the seven dimensions of Van Warden's policy network to deal with congestion in Bandung City for implementation of the policy network was effective. An assessment of the seven dimensions of Frans Van Warden's policy network to address traffic jams in Cimahi City regarding the implementation of the policy network is practical. An assessment of the seven dimensions of the policy network from Frans Van Warden to deal with the congestion that occurred in Bandung Regency during the implementation of the policy network was effective.

An assessment of the seven dimensions of the policy network from Frans Van Warden to deal with the congestion that occurred in the West Bandung Regency during the implementation of the policy network was effective. The assessment of the seven dimensions of the policy network from Frans Van Warden to deal with the congestion that occurred in the Sumedang Regency during the implementation of the policy network was effective.

VI. IMPLICATIONS

Several issues need to be addressed in the formulation of congestion management policies that occur in the Greater Bandung metropolitan area, as follows: (1) each city/regency must always pay attention to every decision issued by the province of West Java regarding the handling of congestion, which is the result of a joint decision; (2) each congestion management policy is an extension of the policy coordination result that has been decided together; (3) the traffic engineering policy is a policy that must still be implemented because it is the fastest and most effective traffic jam management policy; and (4) the policy of limiting the growth of vehicles in the City/Regency in the Greater Bandung metropolitan area should have begun to be formulated as a more effective solution for managing congestion.

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