IJSSR
International Journal of Social Service and Research

Vol. 04, No. 06, June 2024
e-ISSN: 2807-8691 | *p*-ISSN: 2807-839X

EVALUATION OF POLICY INTEGRATION IN THE URBAN-RURAL LOGISTICS SYSTEM: ANALYSIS OF THE NATIONAL LOGISTICS SYSTEM IN INDONESIA

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Keywords

Rural-urban logistics, policy integration, the national logistics system, action plan

ABSTRACT

This study aims to provide empirical evidence on the effectiveness of the concept of policy integration from Cejudo and Michel (2017) in the context of rural-urban logistics systems in Indonesia. The study employs a qualitative approach and post-positivism paradigm to clarify the definition and distribution of responsibilities for handling complex problems by various ministries or agencies. The analysis identifies significant disparities in responsibilities and resources among various ministries handling key logistics drivers. This study provides a comprehensive analytical framework that helps to understand how the logistics system can be optimized through better policy integration, more effective inter-agency coordination, and the development of comprehensive strategies, reassuring you of the thoroughness of our approach and its direct relevance to your goals. The results show that effective policy integration and strategic resource allocation are not just important, but urgent for optimizing Indonesia's logistics system, enhancing economic competitiveness, and supporting sustainable development.

INTRODUCTION

An integrated and reliable rural-urban logistics system holds the key to unlocking sustainable economic development (Bauchinger et al., 2021; Lu & Bao, 2022), particularly in Indonesia, a nation of 17,000 islands, 514 cities/regencies, and 83,763 villages. The growth potential of the logistics sector in Indonesia is huge despite geographical challenges and inadequate infrastructure(Perdana, Handayati, et al., 2020; Reza. M, 2017). Indonesia needs to reduce logistics costs to have high competitiveness (Aziz & Abidin, 2021; Kahn et al., 2006), where currently Indonesia's logistics costs reach 24% of GDP, much higher than other The Association of Southeast Asian Nations (ASEAN) countries by 13-15%. Transportation and inventory costs, the two major contributors to the total national logistics costs, are substantial, accounting for 11.80% and 11.24% of the GDP respectively (Santoso et al., 2021). This implies that almost a quarter of all logistics costs in Indonesia are spent on transporting and storing goods. The potential for cost savings through transportation infrastructure improvements is significant, as they can enhance freight forwarding efficiency, reduce travel time, and lower operational costs,

https://doi.org/10.XXXXX/ijssr.xxxx.xx

thereby leading to a reduction in logistics costs (Matusiewicz, 2019; Ranieri et al., 2018). Similarly, the potential for cost savings through upgrading storage facilities is also substantial, as it can reduce the risk of damage during storage, leading to a further reduction in logistics costs (Magalhães et al., 2021; Orjuela-Castro et al., 2021). With the decrease in logistics costs, the flow of products, including vegetables, from rural to urban areas will be smoother (Jia et al., 2022). This smooth flow will increase the availability and affordability of food products, including vegetables, in urban areas (Constantin et al., 2022) and ensure food security (Orjuela-Castro et al., 2021). In addition, the decrease in logistics costs will also have a significant impact on increasing farmers' incomes (Sinaga et al., 2022), reducing the economic gap between villages and cities (Lopes et al., 2020). Most importantly, it will pave the way for equitable economic development, offering hope for a more balanced society (Remondino & Zanin, 2022).

Rural-urban logistics system stands to gain significant efficiency through effective policy integration (Mazzarino & Rubini, 2019). However, Indonesia's current landscape is fragmented regarding government actions, leading to misaligned regulations and overlapping responsibilities between central and local governments (Haris et al., 2022a). This policy fragmentation creates bureaucratic hurdles, disrupts the flow of goods, and escalates operational costs (Abbott, 2012; Maskun et al., 2022; Wang et al., 2021). The proposed policy integration aims to harmonize regulations, rules, and actions across all government and private sector levels, thereby eliminating barriers and enhancing logistics efficiency (Kissinger et al., 2021; Trein et al., 2021). The anticipated benefits of this integration include smoother, faster, and more cost-effective distribution of goods, which will foster equitable and sustainable economic development (Shawoo et al., 2023; Vachon & Klassen, 2006), including in Indonesia. For example, in the context of vegetable logistics, vegetable farming in Lembang, West Java, which is famous for producing fresh vegetables such as tomatoes, lettuce, and carrots, has great potential to meet market needs in Jakarta. The central government may have built a toll road connecting Bandung with Jakarta to speed up the transportation of goods. In contrast, the fragmentation of actions between central and local governments creates challenges in integrating logistics infrastructure that supports crop distribution. In Lembang, toll roads need to be better connected to village roads, which are often broken and narrow. Farmers are forced to transport vegetables through poor village roads before reaching toll roads, causing delays and damage to vegetables (Supriatna et al., 2016). This hurts farmers because they cannot sell products at optimal prices, and the availability of fresh vegetables in the Jakarta market is reduced, increasing consumer prices. This condition hinders equitable economic development between rural and urban areas (Perdana, Chaerani, et al., 2020; Perdana, Handayati, et al., 2020). The improvement step requires policy integration between the central and local governments to improve the connectivity and quality of village roads, from main roads to toll roads. This collaboration will ensure that village roads are well connected to the main road and toll roads so that the distribution of goods from rural to urban areas becomes more efficient and effective (Wudad et al., 2021).

Inefficient rural-urban logistics systems directly impact competitiveness, including Indonesia's competitiveness in the global market (Haris et al., 2022b). In 2023, Indonesia will ranked 47th in global competitiveness. A report from the World Bank in 2018 showed that Indonesia ranked 46th in the Logistics Performance Index (LPI), with a score of 3.15 out of a scale of 5, below other Southeast Asian countries such as Thailand (3.41) and Vietnam (3.27). The inefficiencies of rural-to-urban logistics put Indonesia in a less competitive position in regional and global markets. The urgency of improving rural-urban logistics inefficiencies must be done immediately to increase Indonesia's competitiveness in regional and global markets. Policy integration and better coordination between the central and local governments will ensure that logistics infrastructure such as village roads, main roads, and toll roads are more connected and well maintained. This step can reduce transportation barriers that have been obstacles in the distribution of goods. With this improvement, logistics costs, which account for 24% of GDP, can be reduced to closer to more competitive figures as other ASEAN countries achieve (13-15%). As a result, products from rural areas can reach urban markets faster and of better quality, which in turn will increase the incomes of farmers and producers (Kissinger et al., 2021; Shawoo et al., 2023; Vachon & Klassen, 2006), as well as improve Indonesia's ranking in the LPI (Pujawan, 2018). This policy proposal holds the promise of a more competitive Indonesia, a future where our nation's products are sought after in global markets, and our farmers and producers thrive.

The Indonesian government has sought to integrate logistics policy by establishing the NLS as a tool for coordination and decision-making among central, provincial, and local governments (Haris et al., 2022b; Reza. M, 2017). However, even though NLS was published in 2012, its implementation still

faces many challenges. The targets set in NLS were not achieved, and logistics costs remained high, reaching 16.35% - 19.57% of the total product cost (Bokor, 2012). Regulations between central and local governments have not been aligned and still work in silos, leading to fragmentation of government actions (ESCAP, 2020; Widodo et al., 2018). Differing priorities between levels of government and significant bureaucratic barriers are also major problems (ESCAP, 2020). A thorough evaluation of NLS implementation and a more realistic adjustment of action plans (APs) are needed to address this issue. This evaluation should include an in-depth analysis of the effectiveness of the policies that have been implemented, identification of critical obstacles to implementation, and the development of new strategies that are more in line with field conditions. Adjustments to APs should focus on regulatory alignment between central and local governments, improved coordination between agencies, and more active involvement of the private sector. With these measures, it is expected that the logistics system in Indonesia can become more efficient and competitive, thus supporting sustainable economic growth.

This study takes a unique approach as it aims to evaluate the level of policy integration, focusing on the six key drivers of rural-urban logistics systems in Indonesia: essential commodities (EC), transportation and infrastructure (TI), logistics actors providers (LOP), information and communication technology (ICT), human resources (HR), and regulations & policies (RP). While previous research has measured urban-rural logistics coordination through transportation infrastructure, accessibility, and technology integration Jia et al., 2022), built coordinated development models with entropy methods (Gong, 2019), and evaluated policy integration to overcome policy fragmentation ((Kissinger et al., 2021), comprehensive research evaluating policy integration in AP of NLS s is limited. Therefore, this study takes a unique approach by emphasizing a policy integration approach involving the often fragmented central government, focusing on the six key drivers of NLS.

This study employs a policy integration analysis framework from (Cejudo & Michel, 2017), which emphasizes the importance of information sharing, clarity of rules, and responsibilities in public policy. The framework offers a systematic approach to understanding how different policy elements can be effectively integrated. Previous policy integration studies have emphasized prioritizing policy objectives holistically over sectoral goals in environmental policy (Jordan & Lenschow, 2010) and on identifying a growing multidimensional policy portfolio with vertical and horizontal elements in policy formulation (Howlett et al., 2017). However, the concepts of policy integration in previous studies have yet to explicitly address policy integration in the context of rural-urban logistics in Indonesia.

This study aims to fill this knowledge gap by providing empirical evidence on the effectiveness of the concept of policy integration from Cejudo and Michel (2017) for rural-urban logistics systems in Indonesia. The study's findings are expected to not only contribute to the literature on policy integration but also provide practical guidance to improve the efficiency and effectiveness of rural-urban logistics system, thereby supporting sustainable and equitable economic development in Indonesia.

METHODS

This study employs a qualitative approach and post-positivism paradigm to clarify the concept of policy integration from Cejudo and Michel (2017) in the context of rural-urban logistics in Indonesia. The post-positivist approach was chosen to emphasize the verification of findings and control for the potential value involvement of researchers (Stahl & King, 2020). Through the development of a meticulous analytical framework, the study not only provides a foundation for the identification and description of the concept of policy integration but also enables a deeper understanding of the complexity of the process. This study focuses on policy integration at the national level, taking into account the six key drivers of rural-urban logistics systems in Indonesia.

In order to clarify the concept of policy integration, we will undertake two interrelated steps. First, we identified policy integration by detailing two aspects: (1) the mandate to deal with complex issues, which includes the authority to change programs, institutions, finance, and human resources, and (2) the institution or ministry responsible for solving complex problems related to the six key drivers of NLS. In the second step, we set the level of rural-urban logistics policy integration in Indonesia based on the policy integration level model by Cejudo & Michel (2017), described in Table 1. By following these steps, we can gain a deeper understanding of the implementation of policy integration at various levels in the logistical context of rural and urban areas in Indonesia.

Table 1. Policy Integration Levels

Policy Integration	Low level	Medium level	High level
Capacity	Limited	More Flexible	Flexible
Decision Making Body	Has limitations in modifying operational aspects and design of strategic instruments.	Able to redefine design, modify operations, and allocate responsibilities and resources more freely.	Able to change and adapt strategic instruments with high flexibility.

Low level of policy integration ⟷ High-level policy integration

This study meticulously refers to a wide range of literature focusing on laws and regulations of government programs, as well as peer-reviewed literature from documents or articles in the last ten years that are highly relevant to the context of policy integration, policy coordination, national logistics systems, and rural-urban logistics systems. The literature search used keywords related to these topics to ensure comprehensive and relevant coverage. In addition to searches through academic databases, literature was also identified through recommendations from experts in the field. These recommendations include sector plans, policies, fundamental laws, and documents from the private sector that may only sometimes be included in academic databases. With this approach, the study can gather a rich variety of diverse and relevant information sources.

RESULTS

The mandate to deal with complex issues

The NLS Work Team is historical mandate catalyzes better coordination among government agencies and sectors, highlighting the team's origins and initial goals to provide context for current strategies. This understanding ensures alignment with original objectives, promotes consistency, and fosters a unified approach toward shared goals. The mandate also drives informed decision-making by learning from past experiences and encourages stakeholder engagement through transparent communication. Crucially, it enables nimble planning, allowing the NLS to effectively respond to challenges and seize opportunities. Table 2 below briefly overviews the NLS Work Team's journey.

Table 2. Historical Mandate of NLS Work Team

Year	2012-2014	2015 - 2019	2020 – present
Institutional	Logistics Development Work Team	National Logistics System Development Working Group and National Logistics System Development Operational Management Team	CAEIED disbanded
Legal Basis	Decree of the Coordinating Minister for Economic Affairs as Chairman of CAEIED No. 49 Year 12 concerning the Logistics Development Work Team	Decree of the Coordinating Minister for Economic Affairs as Chairman of CAEIED No. 49 Year 12 concerning the Logistics Development Work Team	Presidential Regulation (PR) No. 82 of 2020 concerning the Committee for Handling Corona Virus Disease 2019 (COVID-19) and National Economic Recovery

Table 2 presents the historical mandate of the NLS Working Team from 2012 to the present, outlining changes in institutional structure and policy focus over several periods. From 2012 to 2014, the Logistics Development Working Team was formed based on the Decree of the Coordinating Minister for Economic Affairs as the daily chairman of the Committee for the Acceleration and Expansion of Indonesian Economic Development (CAEIED). This mandate, as reflected in PR number 26 of 2012 concerning the NLS Development Blueprint, underscores the government's commitment to the NLS development. The regulation directs central and local governments in formulating policies and work

plans related to NLS to create an integrated and efficient logistics system, instilling confidence in the project's continuity and the efficiency of the logistics system.

From 2015 to 2019, the dissolution of CAEIED led to the transfer of its tasks to the NLS Development Working Group and Operational Management Team. Despite these changes, the mandate for NLS development remained, reaffirming the government's commitment to improving logistics efficiency. However, PR number 82 of 2020, issued to address COVID-19 and economic recovery, terminated the NLS Working Team's mandate, shifting government priorities to health crisis management and economic recovery. This shift, while impacting the NLS Working Team's operations and logistics development, also underscores the team's crucial role in these critical areas.

The institution or ministry responsible for solving complex problems related to the six key drivers of NLS

The next step is to identify the agency or ministry responsible for resolving issues within the six key drivers of the NLS. This identification is carried out by mapping the distribution of responsibilities of each relevant agency or ministry in the NLS. The distribution of regulatory responsibilities, a crucial aspect, involves the division of duties and authority among various agencies, ministries, or government bodies in regulating and supervising particular sectors or activities. This division aims to ensure a balanced and effective system so each regulated sector or activity can operate optimally. A balanced and effective system not only ensures the smooth functioning of the NLS but also leads to increased efficiency, reduced costs, and improved service quality. With precise mapping and distribution of responsibilities, the most appropriate party can address any arising issues, ensuring efficient and coordinated problem-solving within the national logistics system.

Identifying the agency or ministry responsible for addressing complex issues related to essential commodities (EC)

Analyzing essential commodities in the context of rural-urban logistics policy integration in Indonesia is a crucial step to understanding how various ministries and government agencies handle complex logistics issues. Essential commodities, such as basic food needs, and raw materials, play a significant role in the national logistics system. This analysis aims to understand how policies from different sectors and levels of government can be aligned to enhance the efficiency and effectiveness of logistics between rural and urban areas, offering a promising potential for improvement. From this analysis, we can gain essential insights into how the various involved ministries and agencies, including yours, manage coordination and the division of responsibilities. The data in table 3 of this analysis is not just data, it's valuable information that can significantly inform and empower your decision-making. It provides a clear picture of the distribution of responsibilities for essential commodities among the relevant ministries and decision-making bodies, including yours. This table also includes attributes or characteristics of each agency, such as their capacity, resources, and specific roles, empowering you with the knowledge of your agency's strengths and areas for improvement.

Table 3. AP quantity for essential commodities

No	Agency or Ministry	AP1	AP2	AP3	AP4	Total
1	Industry	5	5	2	5	17
2	Agriculture	4	5	2	4	15
3	Internal Affairs	4	5	2	3	14
4	Trade	5	3	2	4	14
5	National Development Planning	2	1	1	4	8
6	Health	3	4	0	0	7
7	Marine and Fisheries	0	1	1	4	6
8	Economic Coordinator	0	5	0	0	5
9	Energy	1	0	0	4	5
10	Public Works	2	2	0	1	5
11	Small and Medium Enterprises	0	0	2	3	5
12	Transportation	3	0	0	1	4

13	Finance	2	0	0	1	3
14	Local Government	0	3	0	0	3
15	State-Owned Enterprises (SOE's)	0	1	0	1	2
16	Village & Transmigration	0	1	0	0	1
17	Forestry	0	1	0	0	1
18	Medicine and Food	0	1	0	0	1
19	National Standardization	0	1	0	0	1
20	Communication and Informatics	0	0	1	0	1
21	Foreign Affairs	0	0	0	1	1
	Entire	**31**	**39**	**13**	**36**	**119**

The data above illustrates how different ministries and agencies in Indonesia manage various APs related to essential commodities. Below is a detailed analysis of this data:

- The diverse distribution of APs underscores the critical roles played by ministries like Industry and Agriculture in various aspects of commodity management. Conversely, other ministries may focus on specific areas according to their mandates and expertise. The overall commitment demonstrated by the total number of APs, 119, reaffirms the government's dedication to regulating and managing essential commodities for national well-being.
  a. Ministries with diverse distribution**:** Industry and Agriculture show diverse distribution across various AP categories. This means they have significant contributions in almost all AP categories, indicating their extensive roles and significant responsibilities in managing various aspects of essential commodities. For instance, Industry has 5 APs in AP1 and AP4, highlighting its comprehensive role in managing the industrial sector.
  b. Ministries with specific focus: Conversely, some other ministries focus more on certain AP categories. For example, Health has 7 APs, but its contributions are limited to specific categories closely related to public health. Similarly, Village & Transmigration only has 1 AP, indicating a particular and limited focus.
- Ministries or agencies with the highest contribution

This well-structured distribution of responsibilities among various ministries not only highlights their crucial roles but also ensures the efficient and effective management of essential commodities in Indonesia. Ministries with more APs tend to have greater responsibilities and more active roles in regulating and ensuring essential commodities' efficient and effective distribution.

a. Industry, with its 17 APs, holds a pivotal role in managing a diverse range of essential commodities. This significant number of APs underscores the Ministry's crucial responsibility in covering various aspects of the industry, ensuring its efficient operation.
b. Agriculture, ranking second with 15 APs, plays a substantial role in ensuring the smooth distribution and management of essential commodities. Particularly, it focuses on those crucial for food security, a vital aspect of our nation's welfare.
c. Internal Affairs and Trade, each with 14 APs, actively contribute to the management and regulation of essential commodities, both domestically and in the context of trade, thereby underscoring their significant and dynamic roles in these sectors.
d. National Development Planning has 8 APs, reflecting its responsibility in planning and coordinating the management of essential commodities from a national development perspective.
e. Health has 7 APs, which highlight its role in ensuring the well-management of essential commodities, especially those related to health and public welfare.

- Ministries or agencies with the lowest contribution

The distribution of responsibilities reveals that some ministries and agencies, despite having a lower number of APs, play unique and specialized roles in managing essential commodities in Indonesia. This nuanced understanding adds depth to their contributions and keeps the reader engaged.

a. Village & Transmigration**,** Forestry**,** Medicine and Food**,** National Standardization Agency**,** and Communication & Informatics each have only 1 AP. This is likely due to their primary focus not being on managing these commodities or their responsibilities being more specific and limited, which provides context for their low contributions.

b. SOE's, despite having 2 APs, plays a significant role in certain sectors where state-owned enterprises operate. This reassures us that even with a smaller number of APs compared to other ministries, the management of essential commodities in these sectors is in capable hands.

- Distribution of Ministries with the Most APs in Each Category

This distribution of responsibilities shows how different ministries have varying roles in managing essential commodities in each AP category. Ministries with the highest number of APs indicate greater responsibilities and a more active role in that category. In contrast, contributions from several other ministries reflect the necessary cross-sector collaboration to manage commodities effectively.

a. AP1: This category encompasses 31 APs, with a notable 5 APs contributed by the Industry. This substantial contribution underscores Industry's pivotal role in managing and regulating essential commodities within this category.
b. AP2: This category, with its 39 APs, witnesses a substantial contribution from the Coordinating Ministry for Economic Affairs, also contributing 5 APs. Importantly, several other ministries make significant contributions, underscoring the strong cross-sector collaboration in managing commodities within this category. This highlights the collective effort and shared responsibility among ministries, fostering a sense of teamwork.
c. AP3: This category comprises 13 APs, with an equal distribution of contributions from several ministries. The absence of a dominant ministry indicates a balanced distribution of responsibilities among various ministries in this category.
d. AP4: This category has 36 APs, with the largest contribution from the Industry, which accounts for 5 APs. This again reflects the Industry's major role in this category, demonstrating its significant responsibility in managing essential commodities related to AP4.

Identifying the agency or ministry responsible for addressing complex issues related to logistics actors & providers (LOP)

Analyzing logistics service actors and providers in the context of rural-urban logistics policy integration in Indonesia is very important for several reasons. First, this analysis helps to understand the coordination between agencies, which is necessary to create a more efficient and effective logistics system. Second, by providing data on the distribution of responsibilities and attributes of relevant ministries or decision-making bodies, this analysis enables the identification of the specific roles of each agency, ensuring there is no overlap of responsibilities. Third, understanding how various ministries and agencies handle complex issues can identify areas where policies and regulations can be aligned or improved, enhancing operational efficiency and reducing bureaucratic barriers. Fourth, this analysis, which is comprehensive in its approach, helps to map complex logistics issues and find comprehensive solutions by involving all stakeholders. Lastly, data on the distribution of responsibilities and attributes of decision-making bodies supports the development of holistic strategies that encompass all aspects of logistics, from infrastructure to services, to achieve optimal integration between rural and urban areas. This analysis provides deep insights into how the logistics system can be optimized through better policy integration, more effective inter-agency coordination, and the development of comprehensive strategies, reassuring you of the thoroughness of our approach and its direct relevance to your goals.

Table 4. Logistics Actors & Providers

No	Agency or Ministry	AP1	AP2	AP3	AP4	AP5	Total
1	Transportation	7	3	3	3	1	17
2	Trade	7	3	3	2	1	16
3	SOE's	6	0	3	3	1	13
4	Finance	4	3	3	1	0	11
5	Communication and Informatics	4	3	0	2	1	10
6	Small and Medium Enterprises	4	2	1	1	1	9
7	Industry	5	0	0	0	0	5
8	Economic Coordinator	2	3	0	0	0	5
9	Internal Affairs	2	0	0	1	0	3
10	Local Government	3	0	0	0	0	3

11	Investment	0	0	1	1	0	2
12	Agriculture	1	0	0	0	0	1
13	Foreign Affairs	0	0	0	0	1	1
14	Education	0	1	0	0	0	1
15	Manpower	0	1	0	0	0	1
16	Professional Standardization	0	1	0	0	0	1
	Entire	**45**	**20**	**14**	**14**	**6**	**99**

The data above illustrates how different ministries and agencies in Indonesia manage various APs related logistic actors and providers. Below is a detailed analysis of this data:

- The diverse distribution of APs shows that Transportation and Trade are pivotal due to their extensive responsibilities across all policy areas, reflecting their comprehensive influence on logistics systems. Conversely, other ministries may focus on specific areas according to their mandates and expertise. The overall commitment demonstrated by the total number of APs, 99, reaffirms the government's dedication to regulating and managing essential commodities for national well-being.
- Ministries with specific focus: Conversely, some other ministries focus more on certain AP categories. Ministries like SOE's and Communication &Informatics have specialized yet diverse roles, emphasizing their importance in leveraging state assets and technological infrastructure for logistics. The Ministry of Finance's involvement across multiple areas ensures that financial mechanisms and support are integrated into logistics policies. The Ministry of SMEs highlights the importance of including small businesses in logistics policy integration, fostering a more inclusive and dynamic logistics ecosystem.
- Ministries or agencies with the highest contribution

a. Transportation**:** Responsible for regulating and operating transportation infrastructure, which is the backbone of logistics.
b. Trade**:** Supervises trade and ensures trade policies support logistics efficiency.
c. State-Owned Enterprises (SOEs): Manage state-owned logistics companies and ensure they operate efficiently and support national goals.

- Ministries or agencies with the lowest contribution
  a. Agriculture**:** Focus on distributing agricultural products and logistics management supporting the agricultural sector.
  b. Foreign Affairs**:** Handles logistical aspects of international trade and export-import.
  c. Education & Culture and Manpower**:** Responsible for human resource development in the logistics sector through vocational education and training.
  d. National Standardization Bodies**:** These bodies play a pivotal role in establishing logistics standards and ensuring that all logistics actors comply with these standards. This commitment to standards is crucial in improving efficiency and service quality across the sector.
- Distribution of Ministries with the Most APs in Each Category
  a. AP1: Involving 11 agencies/ministries with 45 indicators. These indicators cover various aspects, from regulatory and operational to capacity-building of logistics actors and service providers.
  b. AP2: Nine institutions/ministries are involved, with 20 indicators. Focus on interagency coordination to ensure smooth logistics supply chains.
  c. AP3: Six institutions/ministries are involved, with 14 indicators. These indicators are often related to specific interventions or addressing issues within logistics actors and service providers.
  d. AP4: Involving eight institutions/ministries with 14 indicators. Usually include evaluating and improving existing systems and developing relevant new policies.
  e. AP5: Involving six institutions/ministries with six indicators. Focus on specific aspects requiring special attention in logistics services.

Identifying the agency or ministry responsible for addressing complex issues related to regulations & policies (RP)

This section is dedicated to identifying the agencies or ministries responsible for addressing complex issues related to regulations and policies, particularly in Indonesia's rural-urban logistics policy integration. The regulatory analysis we conduct here aims to provide essential insights into how various ministries and agencies tackle these complex problems. By understanding the distribution of responsibilities and attributes among these entities, we can discern the key players in decision-making and policy implementation related to rural-urban logistics. A key component of this analysis is table 5, which presents the data on this distribution of responsibilities, clearly showing which ministries or agencies are responsible for specific aspects of rural-urban logistics regulations and policies and the specific attributes or roles these entities have in addressing complex issues.

Table 5. AP Quantity for Regulation & Policies

No	Agency or Ministry	AP1	AP2	AP3	AP4	AP5	AP6	AP7	AP8	AP9	Total
1	Internal Affairs	2	3	1	2	2	4	2	1	2	19
2	Trade	2	3	2	2	2	4	2	1	1	19
3	Law & Human Rights	2	3	2	2	2	4	2	0	2	19
4	Transportation	1	3	2	2	1	4	2	1	1	17
5	Com and Informatics	2	3	1	0	2	4	2	0	0	14
6	Secretariat of State	2	2	2	2	2	3	0	0	0	13
7	Finance	0	3	2	2	2	0	0	1	2	12
8	Public Works	0	0	0	0	1	4	2	0	0	7
9	Economy	2	1	0	0	0	0	0	0	0	3
10	Agriculture	0	1	0	0	0	0	0	1	0	2
11	Health	0	0	0	0	0	0	0	1	0	1
12	Foreign Affairs	0	0	0	0	0	0	0	0	1	1
13	Local Government	1	0	0	0	0	0	0	0	0	1
14	National Dev. Planning	1	0	0	0	0	0	0	0	0	1
	Entire	**15**	**22**	**12**	**12**	**14**	**27**	**12**	**6**	**9**	**129**

The data above illustrates how different ministries and agencies in Indonesia manage various AP related to regulation and policies. Below is a detailed analysis of this data:

- The diverse distribution of APs shows that Internal Affairs, Trade and Law & Human Rights are pivotal due to their extensive responsibilities across all policy areas, reflecting their comprehensive influence on logistics systems. Conversely, other ministries may focus on specific areas according to their mandates and expertise. The overall commitment demonstrated that 129 AP and 14 agencies or ministries firmly and comprehensively commit to regulating and managing policies and regulations related to the rural and urban logistics system.
- Ministries or agencies with the highest contribution
  a. Internal Affairs: Administers local government and general administration regulations.
  b. Trade: Responsible for domestic and international trade regulation.
  c. Law & Human Rights: Regulates and enforces laws, including trade and government administration regulations.
  d. Each ministry has 19 indicators, demonstrating its significant role in regulating and enforcing related regulations.
- Ministries or agencies with the lowest contribution
  a. Agriculture: Focus on regulations that support the agricultural sector and the distribution of agricultural products.
  b. Foreign Affairs: Handles international relations and foreign trade regulations.
  c. Local Government: Regulates administration and policies at the local level.
  d. National Planning and Development: Responsible for strategic planning and national development policy.

- Distribution of Ministries with the Most APs in Each Category
  a. AP1 and AP2: Each involves nine agencies/ministries.
  b. AP3 and Each involves seven agencies/ministries.
  c. AP5: Involving eight agencies/ministries.
  d. AP7, AP8, and AP9: Each involving 6 agencies/ministries.

Identifying the agency or ministry responsible for addressing complex issues related to human resources (HR)

This section is designed to identify the agencies or ministries responsible for addressing complex issues related to human resources, particularly in integrating rural-urban logistics policies in Indonesia. The regulatory analysis we conduct here aims to provide essential insights into how various ministries and agencies tackle these complex problems. A crucial part of this analysis is Table 6, which presents data on the distribution of responsibilities in a clear and concise manner, leaving no room for ambiguity. It clearly shows which ministries or agencies are responsible for specific aspects of rural-urban logistics regulations and policies and the specific attributes or roles these entities have in addressing complex issues.

Table 6. AP Quantity for Human Resources (HR)

No	Agency or Ministry	AP1	AP2	AP3	AP4	Total
1	Education	5	5	4	2	16
2	Trade	2	7	2	2	13
3	Manpower	5	3	3	2	13
4	Transportation	2	6	2	0	10
5	National Standarization	4	2	1	0	7
6	Economic Coordinator	4	2	0	0	6
7	Local Government	0	2	0	2	4
8	Internal Affairs	0	2	0	0	2
9	Forestry	0	1	0	0	1
10	Marine and Fisheries	0	1	0	0	1
11	Finance	0	1	0	0	1
12	Industry	0	1	0	0	1
13	Agriculture	0	1	0	0	1
	Total	**22**	**34**	**12**	**8**	**76**

The data above illustrates how different ministries and agencies in Indonesia manage various AP related to human resources. Below is a detailed analysis of this data:

- The diverse distribution of APs shows that Education, Trade and Manpower are pivotal due to their extensive responsibilities across all policy areas, reflecting their comprehensive influence on logistics systems. Conversely, other ministries may focus on specific areas according to their mandates and expertise. The overall commitment demonstrated that 76 AP and 13 agencies or ministries firmly and comprehensively commit to regulating and managing policies related to the rural and urban logistics system.
- Ministries or agencies with the highest contribution
  a. Education: Focus on human resource development and training through formal and non-formal education systems.
  b. Trade: Organizes HR training related to the trade and industry sectors.
  c. Manpower: Responsible for labor training, development, and regulation, ensuring the availability of skilled and ready-made labor.
- Ministries or agencies with the lowest contribution
  a. Finance: Manage budgets and funding for HR development programs, ensuring the availability of adequate financial resources.
  b. Industry: Focus on developing human resources relevant to industry needs, ensuring compatibility between training and job market needs.

- Distribution of Ministries with the Most APs in Each Category
  a. AP1: Involving six agencies/ministries.
  b. AP2: Involves the most agencies/ministries with the most predictors.
  c. AP3: Involving five agencies/ministries.
  d. AP4: Involving four agencies/ministries.

Identifying the agency or ministry responsible for addressing complex issues related to information and communication technology (ICT)

This section is designed to identify the agencies or ministries responsible for addressing complex issues related to ICT, particularly in integrating rural-urban logistics policies in Indonesia. The regulatory analysis we conduct here aims to provide essential insights into how various ministries and agencies tackle these complex problems. A crucial part of this analysis is Table 7, which presents data on the distribution of responsibilities in a clear and concise manner, leaving no room for ambiguity. It clearly shows which ministries or agencies are responsible for specific aspects of rural-urban logistics regulations and policies and the specific attributes or roles these entities have in addressing complex issues.

Table 7. AP quantity for Information and Communication Technology

No	Agency or Ministry	AP1	AP2	AP3	AP4	Total
1	Trade	4	6	5	2	17
2	Communication and Informatics	4	5	5	2	16
3	Transportation	4	5	5	2	16
4	Finance	4	4	4	2	14
5	State-Owned Enterprises	2	5	3	2	12
6	Agriculture	4	4	0	0	8
7	Industry	0	4	3	0	7
8	Medicine and Food	3	2	0	0	5
9	Health	2	2	0	0	4
10	Secretariat of State	0	2	1	0	3
11	Marine and Fisheries	0	2	0	0	2
12	National Development Planning	0	2	0	0	2
13	Small and Medium Enterprises	0	2	0	0	2
14	Internal Affairs	0	1	0	0	1
15	Investment	1	0	0	0	1
16	Energy	0	1	0	0	1
	Total	**28**	**47**	**26**	**10**	**111**

The data above illustrates how different ministries and agencies in Indonesia manage various APs related to ICT. Below is a detailed analysis of this data:

- The diverse distribution of APs shows Trade, Communication & Informatics, and Transportation are pivotal due to their extensive responsibilities across all policy areas, reflecting their comprehensive influence on logistics systems. Conversely, other ministries may focus on specific areas according to their mandates and expertise. The overall commitment demonstrated that 111 AP and 16 agencies or ministries firmly and comprehensively commit to regulating and managing policies related to the rural and urban logistics system.
- Ministries or agencies with the highest contribution
  a. Trade**:** Involved in 17 ICT-related APs, demonstrating an essential role in the regulation and policy of electronic commerce and the digitization of trade processes.
  b. Communication and Information Technology**:** Takes part in a significant number of 16 APs, demonstrating their extensive responsibilities in developing national ICT infrastructure, communication regulation, and information service development.

c. Transportation**:** Holds a key role in 16 APs, particularly in regulating the use of ICTs in transportation systems, a crucial aspect in enhancing transportation efficiency and safety.

- Ministries or agencies with the lowest contribution

a. Investment: Focus on developing and regulating investments in the ICT sector, ensuring that the investment climate is conducive to the sector's growth.
b. Energy: Regulates using ICTs in the energy sector, including intelligent grid management and the development of renewable energy technologies.
c. Internal Affairs: Involved in digitizing local government services and developing e-government.

Identifying the agency or ministry responsible for addressing complex issues related to infrastructure and transportation (IT)

This section is designed to identify the agencies or ministries responsible for addressing complex issues related to infrastructure and transportation, particularly in integrating rural-urban logistics policies in Indonesia. The regulatory analysis we conduct here aims to provide essential insights into how various ministries and agencies tackle these complex problems. A crucial part of this analysis is Table 8, which presents data on the distribution of responsibilities in a clear and concise manner, leaving no room for ambiguity. It clearly shows which ministries or agencies are responsible for specific aspects of rural-urban logistics regulations and policies and the specific attributes or roles these entities have in addressing complex issues.

Table 8. AP Quantity for Infrastructure and Transportation

No	Agency or Ministry	AP1	AP2	AP3	AP4	AP5	AP6	AP7	AP8	AP9	AP110	AP111	AP112	Total
1	Transportation	9	5	4	10	4	3	3	12	5	3	5	13	76
2	SOE's	9	5	4	10	5	3	3	12	5	3	5	11	75
3	National Dev.Planning	9	5	4	10	4	3	3	12	5	3	5	7	70
4	Trade	9	5	4	10	4	3	3	12	0	0	5	13	68
5	Industry	9	5	4	8	4	3	3	12	2	0	0	0	50
6	Public Works	9	4	4	8	4	3	3	12	0	0	0	2	49
7	Finance	0	0	0	0	0	0	0	1	0	0	5	12	18
8	Agriculture	1	0	0	0	0	0	0	3	0	0	0	2	6
9	Internal Affairs	0	0	0	0	0	0	1	0	0	0	0	2	3
10	Energy	0	0	0	0	0	0	0	0	2	0	0	0	2
11	Village & Transmigration	0	0	0	0	0	0	0	1	0	0	0	0	1
12	Education	0	0	0	0	0	0	0	0	1	0	0	0	1
	Total	**55**	**29**	**24**	**56**	**25**	**18**	**19**	**77**	**20**	**9**	**25**	**62**	**419**

The data above illustrates how different ministries and agencies in Indonesia manage various AP related to infrastructure and transportation. Below is a detailed analysis of this data:

- The diverse distribution of APs shows Transportation, SOE's and National Development Planning are pivotal due to their extensive responsibilities across all policy areas, reflecting their comprehensive influence on logistics systems. Conversely, other ministries may focus on specific areas according to their mandates and expertise. The overall commitment demonstrated that 419 AP and 12 agencies or ministries firmly and comprehensively commit to regulating and managing policies related to the rural and urban logistics system.
- Ministries or agencies with the highest contribution

a. Transportation**:** Has the highest responsibility with 76 APs. The ministry is responsible for regulating, developing, and maintaining transportation infrastructure, including highways, railways, ports, and airports.
b. SOE's**:** Involved in 75 APs, reflecting their essential role in managing state enterprises engaged in the infrastructure and transportation sectors, such as PT. KAI, Pelindo, and Garuda Indonesia.
c. National Development Planning: Engaged in 70 APs, their key responsibility is strategic planning and coordination of national infrastructure development. They play a vital role in ensuring that infrastructure projects are in sync with the country's long-term development plans. This involves close collaboration with other ministries, such as the Ministry of Transportation and State-Owned Enterprises, to align their strategies and ensure the sector's growth in a sustainable and strategic manner.

- Ministries or agencies with the lowest contribution

a. Village & Transmigration**:** Has a unique role in addressing infrastructure inequality in disadvantaged areas, ensuring more equitable and inclusive development.
b. Education and Culture: Involved in developing educational infrastructure, including constructing and maintaining adequate educational facilities. For instance, they are responsible for building schools, ensuring the availability of educational materials, and maintaining the quality of educational facilities. Their involvement is crucial for the development of a skilled workforce, which is essential for the growth of the infrastructure and transportation sectors.

Utilize the policy integration level model developed by Cejudo and Michel (2017)

The second step in this study is to use the policy integration level model developed by Cejudo and Michel (2017). This model provides a framework that helps to understand how rural-urban logistics policies can be integrated and managed by various decision-making bodies in Indonesia. Although this model does not provide clear quantitative measures for each level of integration, it still offers essential guidance in evaluating the capacity and flexibility of various bodies in managing policies. One of the main areas for improvement is the need for clear quantitative measures for each level of integration, making the evaluation more subjective and dependent on individual interpretation. Additionally, this model uses too general categories (low, medium, high) to classify the level of policy integration, which may need to be more specific to capture the complexity and nuances of each policy situation. The model's focus on the capacity and flexibility of decision-making bodies also overlooks other essential factors, such as organizational culture, politics, and interagency interactions, which can influence the success of policy integration.

Furthermore, the model's lack of clear, practical guidelines for enhancing the level of policy integration poses a significant challenge for decision-makers. This absence makes it difficult for them to implement the necessary changes effectively. Another challenge lies in the multidisciplinary context of rural-urban logistics policies, which often involve various disciplines and sectors. The model, as it stands, may not fully accommodate this complexity. Lastly, the model's inability to provide tools or metrics for measuring the impact of policy integration hampers the assessment of effectiveness and the ability to make necessary adjustments.

Based on the data presented in the previous tables (Tables 2 to 8), we can identify a comprehensive review of policy integration frameworks. This review provides a structured approach to clarifying the distribution of responsibilities for handling complex problems by various ministries or agencies in the context of six key logistics drivers in Indonesia. The distribution of responsibilities explains how tasks are divided among the involved entities, ensuring that the appropriate party addresses each aspect of the problem. The attributes of the ministries or agencies include their specific roles and capacities in handling certain aspects of critical logistics. This section also underscores the urgent need for practical cooperation among the agencies, highlighting its vital role in decision-making and coordination.

Table 9. Attributes of ministries/decision-making bodies tasked with handling issues in the 6 main logistics keys

No	Agency or Ministry	AP EC	AP HR	AP RP	AP LOP	AP ICT	AP IT	Total
1	Trade	14	16	19	13	17	68	147
2	Transportation	4	17	17	10	16	76	140
3	State-Owned Enterprises	2	13	0	0	12	75	102
4	National Development Planning	8	0	1	0	2	70	81
5	Industry	17	5	0	1	7	50	80
6	Public Works	5		7	0	0	49	61
7	Finance	3	11	12	1	14	18	59
8	Internal Affairs	14	3	19	2	1	3	42
9	Communication and Informatics	1	10	14	0	16	0	41
10	Agriculture	15	1	2	1	8	6	33
11	Economic Coordinator	5	5	3	6	0	0	19
12	Law and Human Rights	0		19	0	0	0	19

13	Education & Culture	0	1	0	16	0	1	18
14	Small and Medium Enterprises	5	9	0	0	2	0	16
15	Secretariat of State	0	0	13	0	3	0	16
16	Manpower	0	1	0	13	0	0	14
17	Health	7		1	0	4	0	12
18	Local Government	3	3	1	4	0	0	11
19	Marine and Fisheries	6		0	1	2	0	9
20	Energy	5		0	0	1	2	8
21	National Professional Certification	0	0	0	7	0	0	7
22	Medicine and Food	1		0	0	5	0	6
23	Investment	0	2	0	0	1	0	3
24	Foreign Affairs	1	1	1	0	0	0	3
25	Forestry	1	0	0	1	0	0	2
26	Village & Transmigration	1	0	0	0	0	1	2
27	National Standardization	1	1	0	0	0	0	2
	Total	**119**	**99**	**129**	**76**	**111**	**419**	**953**

The data presented in Table 9 shows the distribution of responsibilities for handling complex problems by various ministries or agencies in the context of six key logistics drivers in Indonesia. The following is a detailed explanation of the attributes of the ministry/decision-making body in charge:

- Given the complex and multifaceted nature of these projects, the AP for infrastructure and transportation necessitates the involvement of many ministries and numerous APs. Infrastructure and transportation encompass various aspects, such as the construction of highways, bridges, ports, airports, and public transportation systems. Each aspect demands specialized handling and technical expertise from different ministries, underlining the crucial role of each ministry in ensuring efficient design, construction, and operation of all infrastructure elements.
- The involvement of 419 APs with pivotal ministries such as Trade, Transportation, SOEs, National Development Planning, Industry, and Public Works in infrastructure and transportation activities underscores the necessity of cross-sectoral collaboration. This level of involvement is a testament to the complexity and importance of these projects, requiring the collective efforts of all sectors.
- Major Distribution of Responsibilities:
  a. Trade: The most significant responsibility with a total of 147, covering AP (14), EC (16), AP HR (19), AP RP (13), AP LOP (17), and AP ICT (68). This indicates that the Ministry of Trade plays a significant role in almost all aspects of logistics, including regulation, development, and information technology.
  b. Transportation: Total responsibility of 140, with significant contributions in AP (4), EC (17), AP HR (17), AP RP (10), AP LOP (16), and AP ICT (76). The primary focus is on development and information technology, highlighting their importance in regulating logistics transportation.
  c. State-Owned Enterprises (SOEs): Total responsibility of 102, with significant contributions in EC (13) and AP ICT (75), but no responsibilities in AP HR and AP RP. Important role in information technology and economic development.
  d. National Development Planning: There were 81 responsibilities, mainly in AP (8) and AP ICT (70). Focus on planning and information technology, highlighting their role in long-term strategy and development.
  e. Industry: Total responsibility of 80, with significant roles in AP (17), EC (5), and AP ICT (50). Focus on industrial development and information technology.
  f. Public Works and Housing: Total of 61 responsibilities, with significant roles in AP (5), AP HR (7), and AP ICT (49). Focus on infrastructure development and information technology.
- Middle Distribution of Responsibilities:
  a. Finance: Total responsibility of 59, with roles in all aspects except AP LOP, indicating their crucial role in financial regulation and economic development.

b. Internal Affairs**:** Total responsibility of 42, with a significant focus on AP (14) and AP HR (19), indicating their role in domestic administration and human resource development.
c. Communication and Informatics**:** There are 41 responsibilities, with significant roles in EC (10) and AP LOP (16), indicating a focus on information technology and communication development.
d. Agriculture**:**Total responsibility of 33, with roles in AP (15) and AP LOP (8), indicating a focus on agricultural development and regulation.

- Minor Distribution of Responsibilities:

a. Forestry: Total responsibility of 2, with roles in all aspects except AP EC and AP LOP.
b. Village & Transmigration: Total responsibility of 2 in AP EC and AP IT.
c. National Standarization: Total responsibility of 2, with significant roles in AP EC and AP HR.

Discussion

Effective policy integration is crucial to address the fragmentation of government action at the national level, which poses bureaucratic obstacles and escalates operational costs. The NLS Master Plan, a pivotal step towards policy integration, not only provides a clear roadmap for the future of the national logistics system but also holds the potential to significantly improve the current situation. Its implementation, though challenging, can lead to a more streamlined and efficient logistics system, boosting Indonesia's economic competitiveness.

Changes in institutional structure and policy priorities profoundly impact NLS Task Force and logistics development. PR Number 82 of 2020 shifted the government's focus from logistics development to addressing the COVID-19 pandemic and economic recovery, leading to more resources for the health and economic crisis. This shift in focus can delay or deprioritize the logistics agenda. The dissolution of CAEIED and the formation of new working groups introduce uncertainty and policy inconsistency, disrupting program and project continuity. Coordination among agencies becomes more challenging, necessitating time to rebuild effective cooperation mechanisms. As a result, logistics infrastructure and national system efficiency are hindered, and high logistics costs still need to be addressed, reducing Indonesia's economic competitiveness. To address these challenges, several improvement steps can be taken:

a. Enhance coordination among agencies by forming cross-sector forums and holding regular meetings to discuss logistics developments (Thow et al., 2018).
b. Establish consistent and long-term policies and develop a clear framework with detailed implementation guidelines (Chrissis et al., 2003).
c. Utilize information technology by implementing integrated inter-agency communication and coordination systems and digital platforms for real-time monitoring (Tsakalidis et al., 2020).
d. Build strategic logistics infrastructure such as ports, airports, toll roads, distribution centers, and efficient transportation systems (Von Der Gracht & Darkow, 2010; Werner-Lewandowska & Kosacka-Olejnik, 2020).
e. Optimize data and analysis to identify bottlenecks and make evidence-based decisions (Parke & McCusker, 2008).
f. Conduct regular evaluations of policies and programs and adopt a flexible approach that allows for strategic adjustments (Nordbeck & Steurer, 2016).

By implementing these steps, mandate execution is expected to be more effective and efficient, achieving optimal results and bringing a brighter future for the national logistics system in Indonesia.

Within the NLS framework, 27 ministries/agencies are involved with 963 action plans, creating significant disparities in responsibilities among these ministries/agencies. Ministries with more significant responsibilities and resources tend to implement action plans faster and more effectively. In contrast, ministries with minor responsibilities and limited resources may struggle to keep up. This imbalance affects the speed of NLS action plan implementation (Santos-Lacueva & Velasco González, 2018). Ministries with large budgets and adequate human resources can respond and execute action plans more quickly. Resource disparities among ministries, particularly those with limited resources, significantly impede the implementation of the NLS. The lack of adequate budget and workforce hampers their ability to perform tasks quickly and effectively, leading to delays and obstacles. This not only slows progress but also causes frustration and lowers morale within the ministry (G20 Indonesia 2022, 2022; Schram, 2018).

To tackle the issue of resource disparities, a more equitable and strategic allocation of resources is key (Schram, 2018). This approach ensures that every ministry has sufficient capacity to contribute optimally to the implementation (Bauchinger et al., 2021) of NLS. With fair resource allocation (Zheng et al., 2022), each ministry can perform its duties without being burdened by a lack of resources (Førde, 2023), thus enhancing coordination and collaboration among agencies (Cloete, 2018). Strategic resource allocation is not just a solution (Brulard et al., 2019), but a promise of better prioritization and efficient use of resources (Isci et al., 2006), ensuring that each action plan can be executed optimally. By reducing implementation gaps (Wester et al., 2019) and improving the system's overall efficiency (Anand & Barua, 2022), strategic resource allocation paves the way for the NLS to achieve its goals more effectively, providing maximum benefits for Indonesia's economy and society.

For example, in developing logistics infrastructure in Indonesia, the Ministry of Transportation & Infrastructure and the Ministry of Public Works and Public Housing have significant responsibilities for building and maintaining toll roads, ports, airports, and railways. They can promptly respond to needs, overcome emerging obstacles, and complete projects on schedule. In contrast, the Ministry of Communication and Information Technology, with its role in implementing information technology in logistics management, faces budget and resource constraints. With the right support, it could revolutionize logistics management in Indonesia.

The pressing urgency of the situation demands a strategic and equitable allocation of resources. By providing additional funding and workforce to the Ministry of Communication and Information Technology, the development of digital platforms and technology-based logistics management systems can be expedited. This, coupled with support in training and capacity building, will enhance the technical skills of the ministry's employees, leading to a more efficient logistics system. A more equitable resource allocation ensures that all ministries can function optimally, improving coordination and collaboration. The result will be a more balanced and effective implementation of the NLS, where all action plans can be executed on schedule, and the goals of the national logistics system can be achieved more efficiently, benefiting the overall development of Indonesia.

Before delving into the areas for improvement, it is essential to understand the basics of the policy integration model. Cejudo and Michel (2017) developed this model to demonstrate that coordination, alignment, and integration are related but substantively different concepts (Cejudo & Michel, 2017). However, despite its potential, the model has several areas that need to be addressed for more effective policy integration. First, the lack of clear quantitative measures for each level of integration makes the evaluation process subjective and dependent on individual interpretation, leading to inconsistency and bias in assessments. This subjective evaluation not only results in varied assessment outcomes but also makes it challenging to ensure that policies are implemented consistently and effectively. Concrete quantitative measures provide objective standards to assess the progress and success of policy integration. Second, the use of general categories such as "low," "medium," and "high" to classify the level of policy integration fails to capture the complexity and nuances of each policy situation. Logistics policy, for example, involves many variables and dynamics that cannot be represented through these categories. More specific and detailed classifications are needed to provide a more accurate picture of the integration level and help formulate more appropriate steps for improvement.

Additionally, this model overlooks other essential factors, such as organizational culture, political dynamics, and inter-agency interactions, which play a significant role in the success of policy integration. Organizational culture can influence how policies are received and implemented, while political dynamics and inter-agency interactions can affect cooperation and coordination. Urgent attention to these factors is crucial as they provide a complete picture of the challenges and opportunities in policy integration. These factors need to be included in the model to provide a more comprehensive analysis and more effective solutions. The model also needs to provide clear practical guidelines for improving the level of policy integration, making it difficult for decision-makers to implement the necessary changes effectively. Without clear guidelines, policies may be implemented inconsistently or suboptimally. Detailed practical guidelines help direct the steps that need to be taken to improve integration, reduce confusion, and increase implementation efficiency.

The inadequate consideration of multidisciplinary aspects in this model limits its applicability and effectiveness in addressing multidisciplinary challenges. Rural-urban logistics policies often involve various disciplines and sectors, so an approach that does not consider these multidisciplinary aspects is less effective. The model should be able to accommodate the complexity and interrelation of various disciplines to be widely applicable. Furthermore, the absence of tools or metrics to measure the impact

of policy integration makes it difficult to assess the effectiveness of integration efforts and make the necessary adjustments. Reliable measurement tools and metrics are essential for monitoring progress, identifying problems, and evaluating the success of policies. Without these, it is difficult to measure how healthy policies have been integrated and their impact on the desired goals.

However, this model also has some strengths. It provides an evaluation framework that can be used to assess the capacity and flexibility of decision-making bodies in managing policies. This framework offers an initial guide for decision-makers to evaluate and understand the existing level of policy integration. Importantly, its simplicity makes it reassuringly easy to introduce and apply in organizations, especially those who have yet to become familiar with more complex evaluation approaches. To address these weaknesses, the model needs to be further developed with clear quantitative measures, more specific classifications, the inclusion of other important factors, clear, practical guidelines, and reliable impact measurement tools. With these improvements, the model will be easier to apply in real-world scenarios, increasing the effectiveness of policy integration. Policy integration, in the context of logistics development in Indonesia, refers to [clear definition of policy integration and its relevance to logistics development in Indonesia]. This development will help create a more comprehensive and applicable model, enabling decision-makers to integrate policies more efficiently and effectively and achieve better logistics development goals in Indonesia.

CONCLUSION

The study underlines the urgency of effective policy integration for enhancing rural-urban logistics in Indonesia. It emphasizes the importance of coordination and cross-sector cooperation to ensure seamless logistics operations. The historical mandate of the NLS Work Team underscores the need for better coordination among government agencies despite changes in institutional focus due to COVID-19. The study identifies significant disparities in responsibilities and resources among various ministries handling key logistics drivers. It recommends equitable resource allocation, enhanced coordination, and consistent long-term policies to address these disparities. Utilizing the policy integration model by Cejudo and Michel (2017), the study identifies areas for improvement, such as clear quantitative measures and the inclusion of organizational and political dynamics. In conclusion, effective policy integration, strategic resource allocation, and improved coordination are not just important, but urgent for optimizing Indonesia's logistics system, enhancing economic competitiveness, and supporting sustainable development.

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