PARADIPLOMACY AND THE FUTURE OF SMART CITY: THE CASE OF SISTER CITY COOPERATION BETWEEN MAGELANG CITY-TULA CITY

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ABSTRACT

This research analyzes the sister city cooperation between Magelang City-Tula City using three layers of paradiplomacy. The layers determine the focus of cooperation and its potential for future smart city implementation in Magelang City. Paradiplomacy has become a promising instrument in the context of sister-city cooperation proposed by regional governments, mostly in forging relations with global cities. Although paradiplomacy is considered the practice of 'high politics', various sectors can be operated within the activity, including trades, education, culture, tourism, and technology. As qualitative research, the data was gathered through field and literature studies. Findings highlight that the cooperation has not been further performed by related regional offices beyond the agreement stage (Letter of Intent). Therefore, little can be measured about the impacts it has brought to Magelang City's development, particularly in the pursuit of smart city adoption. Regardless, improvement and programs related to the second layer of paradiplomacy through sister-city cooperation might benefit the Magelang City government in smart city implementation.

INTRODUCTION

In the era of globalization, the growing capacity of local/regional government has allowed non-state and sub-state actors, including local governments, multinational corporations (MNCs), international non-government organizations (NGOs), and individuals to actively participate in international activities. According to Wolff, the behavior and capacity of a 'sub-state', in this case, the local/regional government, to perform foreign relations to achieve their objectives is often referred to as paradiplomacy (Wolff 2007). The concept of paradiplomacy, although considered a 'high-politics' practice within the international relations field, may operate in various aspects beyond political cooperation, such as trade, education, culture, tourism, and technology.

Several local/regional governments in Indonesia, primarily in cities, have initiated diplomatic ties outside the state's domain in the form of sister-city cooperation. Ramasamy and Cremer explained that sister city relationships have shifted in recent years, from initially based on some form of similarity (as in similar name, economic

function, export structure, or geographical location) or individual contacts and private initiatives to being based more on the commerce and economic development (Ramasamy and Cremer 1998). In addition, the transformation of cities into smart cities, with the advancement of technology and the digitalization of government services, can be potentially achieved through sister-city cooperation as well. In Indonesia, the basis for the sub-regional government to participate in foreign relations is indicated in Regulation of the Minister of Home Affairs Number 1 of 1992 concerning the Implementation of Foreign Relations and Collaboration in the Department of Home Affairs (Tristofa and Tham 2022).

One of the latest partnerships was initiated by the Magelang City government in Central Java, Indonesia, which signed a Letter of Intent (LoI) for sister city cooperation with the Tula City government in Russia on 26 July 2023. Tula City is an industrial smart city chosen for cooperation based on its similarity in geographical location with Magelang City (Prokompim 2023). Tula City is located in the Oblast region, a western part of Russia, along the Upa River with highly developed farming (including wheat, rye, sugar beet, potato, and so on) and notable metallurgic industry (The Editors of Encyclopaedia Britannica 1998). Magelang City, in the same way, is positioned between Mount Merbabu and Mount Sumbing along the Progo and Elo Rivers and is well-known as the center for military academies.

While the perspective of paradiplomacy has been widely conducted in previous research on sister-city cooperation in Indonesia, the analysis of sister-city cooperation's implication towards smart city development in Indonesia has not been much examined, particularly in the case of Magelang City-Tula City (Hartati et al. 2024; Putri and Elvianti 2021). Considering the growing importance of global cooperation, analyzing the implication and the potential that the sister city has, if there is any, on the smart city development of Magelang City, particularly on the second layer of paradiplomacy, will be able to inform related stakeholders and to help facilitate the transition and development process of Magelang City as a smart city.

For regional governments, forming partnerships with foreign institutions that possess advanced technology and superior social media utilization is crucial. These collaborations help overcome challenges and optimize potential in implementing smart city and e-government initiatives. Disseminating information via social media can familiarize communities with new systems, facilitating smoother integration of services (Ardiyati 2021). A significant obstacle to automated systems is the lack of competent human resources. Bringing expertise from experienced individuals abroad can significantly advance system-based public services (Rahmi and Najamudin 2022). Subsequently, the significance of efficacious e-government will facilitate sustainable development and enhance access to information and services (Syarifah, Muksin, and Fadlan 2023).

The involvement of regional governments in forging international relations has redefined institutional sovereignty and how the government proceeds with its foreign affairs. Paradiplomacy has often been used as an analytical framework, particularly in practices such as the implementation of sister-city cooperation around the world.

Paradiplomacy arose initially from economic growth but then escalated by globalization and the dynamics of transnational regimes. Paquin and Lachapelle state three variables contributed to the spread of paradiplomacy, including the nation-state's crisis and globalization, nationalism and nation-building, and internalization processes (Ackrén 2019).

Utomo explores Indonesia's paradiplomacy by highlighting the positive influence of democratization in strengthening regional autonomy involvement in international affairs from decentralization and internationalization aspects (Utomo 2022). Indonesia is in a strategic geographical area that enables the state to be part of many regional cooperatives. Therefore, paradiplomacy has huge potential for regional governments to promote their regions. However, Novialdi et al., argue that the state actors, particularly in Indo-Pacific regions (Novialdi, Rassanjani, and Ramadani 2022). still dominate international activities, and many practices of paradiplomacy still have not reached implementation stages beyond formal agreement. We took the liberty to assume that Indonesia, as part of the Indo-Pacific region, experiences a similar challenge.

Paradiplomacy presents a growing role for local and regional governments in international relations facilitated by globalization. It enables sub-state actors to engage in foreign affairs beyond traditional state actors, covering trade, education, culture, tourism, and technology sectors. The capacity of local governments to forge international ties, especially through sister city agreements, exemplifies this trend. The evolution of paradiplomacy reflects a shift from traditional political diplomacy to more inclusive and diverse forms of cooperation, underscoring its multidimensional potential.

The sub-state government might have used different approaches in employing paradiplomacy, but generally, there have been three layers to distinguish (Ackrén 2019; Lecours 2008):

a) The first layer of paradiplomacy focuses on cooperation from economic sectors, attempting to promote regional image on the international stage to attract foreign investment and export.

b) The second layer of paradiplomacy is multidimensional and corresponds with various areas, such as culture, education, technology, and even environmental concerns; thus, it expands beyond economic gains.

c) The third layer relates to political issues, such as the region's political autonomy and legal competency to express distinctive images from the parent state and venture into an international agreement.

Literature on the layers of paradiplomacy has been widely utilized to review the practice of paradiplomacy in Indonesia. Hermini et al., for instance, delve into the first layer of cooperation from Semarang City through "*SemBiz*", an annual expo in trade and investment to attract various foreign markets and investment (Hermini et al. 2018). Offering a similar perspective, Nuryananda et al. investigate the paradiplomacy in the Liverpool-Surabaya sister city cooperation as a means for the UK government to survive post-Brexit (British Exit) through economic profit from the Asian market (Nuryananda, Firdaus, and Elifansyah 2018). Indeed, economic sectors can be a powerful drive for regional cooperation.

On the second layer, multidimensional sectors motivate regional cooperation, especially between cities. Surabaya (Indonesia)–Kitakyushu (Japan) sister city cooperation, for example, focuses on environmental issues as the core of the cooperation, resulting in successful organic waste management (Francinni, Wibisono, and Matsunami 2023). For instance, Jakarta-East Jerusalem's sister city cooperation in the education sector highlights partnership in broader aspects, such as disaster control and crisis, education and training, and social and culture (Susilowati and Adila 2021).

Issundari et al. elaborate on the third layer of paradiplomacy by examining the strategies used by Yogyakarta's government to assert its regional cultural identity internationally (Issundari et al. 2021). The strategies involve visiting foreign regions, participating in international events, forging global networks, and representing the central government. Although the regional-central government relationship in Indonesia mostly does not contravene due to decentralization, Karim et al. illustrate how local government affirms political autonomy amidst a tense local-central government relationship from the case of Bintan Island, Indonesia (Karim et al. 2023). The engagement of local stakeholders as proxies has enabled the regional government to achieve its paradiplomacy's interest despite being imposed by the central government.

Furthermore, globalization has altered the way of living in the economy, technology, transportation, communication, and so on. The demand for the three T's (Time, Transportation, and Technology) also increased, which urged the government to seek technology to build smart cities through international cooperation done by regional governments. The smart city covers six aspects: smart governance, smart people, smart mobility, smart environment, smart economy, and smart living (Albino et al. in (Mursitama and Lee 2018). For instance, the case of Bandung-Seoul's sister city partnership aims to develop a Smart LBEG project that includes smart living, smart branding, smart environment, and smart government. This paper will then try to investigate the progress of the Magelang City-Tula City sister city partnership and its implication on smart city development as part of its main objectives.

The research underscores the limited exploration of the impact of sister city cooperation on smart city development in Indonesia, particularly for Magelang City. The study seeks to fill this gap by analyzing such international partnerships' potential benefits and challenges. The aim is to provide insights into how local governments can harness global cooperation to achieve smart city objectives.

The specific case of Magelang City in Indonesia and Tula City in Russia is highlighted as a contemporary example of paradiplomacy. This partnership formalized through a Letter of Intent in 2023, is based on geographical similarities and mutual interests in fostering economic, educational, cultural, and technological exchanges. The cooperation aims to leverage Tula City's advanced industrial and smart city initiatives to enhance Magelang City's development.

Indonesia's regulatory support for paradiplomacy is highlighted in the Regulation of the Minister of Home Affairs Number 1 of 1992. This regulation empowers sub-regional governments to engage in foreign relations, facilitating initiatives like the

Magelang-Tula cooperation. The legal framework ensures that such international engagements are aligned with national interests and regulatory standards.

The transformation into smart cities is emphasized as a crucial goal for local governments, driven by technological advancements and the need for efficient urban management. Sister city partnerships are presented as strategic avenues to acquire the necessary expertise and technology for smart city development. The Magelang-Tula partnership aims to harness Tula's expertise in areas like urban planning, technology integration, and public service management to enhance Magelang's smart city initiatives.

METHOD

This research employs an explanatory-qualitative analysis to determine the implementation of Magelang City-Tula City sister city cooperation and the potential for smart city adoption by using three layers of paradiplomacy. A qualitative approach is akin to an 'interpretative paradigm' of social reality that is suitable for empirical case studies from different fields of network research (Hollstein 2014). The data collection relies on primary data from the interviews with the regional apparatus organizations of Magelang City, consisting of the Regional Secretariat, the Department of Industry and Trade, the Department of Education and Culture, and the Agency of Regional Development Planning. Interviews were undertaken using a semi-structured approach regarding their paradiplomatic activities related to the sister city program. Semi-structured interviews were chosen to give the flexibility that structured interviews would not allow but to prevent them from being too flexible as in unstructured interviews (Bowen, Rose, and Pilkington 2017).

This article sets out three sections of data analysis. The first part defines the three-layer paradiplomacy analysis of the Magelang City-Tula City sister city relationship. It explains how the government of Magelang City elaborates on cooperation in each layer of paradiplomacy (the economic, multidimensional, and political considerations). Then, the current practices of Magelang City's smart city are explained to find out the determinant factors and supports needed to enhance its implementation and accessibility. Further, the role of sister cities in developing smart cities is also present to explore the potential of the sister city and areas of its cooperation that still need to be improved in developing Magelang City as a smart city.

RESULTS AND DISCUSSION

The Magelang City-Tula City sister city cooperation was first initiated by the Government Section of the Regional Autonomy and Cooperation Sub-Section of the Magelang City Regional Secretariat and the Tula City Government which was assisted by the Indonesian Embassy in Russia in Moscow as a cooperation intermediary.

Three Layers Paradiplomacy of Sister City, Magelang City-Tula City

In analyzing sister city cooperation, this research used a three-layer approach to identify the areas of cooperation conducted by the local government of Magelang City and which layer corresponds with implementing a smart city. The three layers of

paradiplomacy comprise the economic, multidimensional, and political consideration sectors. The relevant regional offices include These layers in each stage of the cooperation (from planning and technical implementation to reporting).

The sister city cooperation is also well supported by Minister of Home Affairs Regulation Number 25 of 2020 concerning Procedures for Regional Cooperation with Regional Governments Abroad and Regional Cooperation with Institutions Abroad that has allowed sister city cooperation to no longer be hampered by the absolute division of affairs, in this case, foreign policy, which was previously the sole domain of the central government. Now, regions can establish foreign relations through sister-city cooperation.

In the case of Magelang City-Tula City sister city cooperation, various regional offices were involved from the planning to reporting stage, such as the Regional Development Planning Agency (*Bappeda*) and the Regional Financial and Asset Management Agency (*BPKAD*) for budget planning, the Government Sub-Section of the Regional Secretariat (*Setda*) for domestic and foreign cooperation implementation, and the Education and Culture Office (*Disdikbud*), the Youth, Sports and Tourism Office (*Disporapar*), the Communication, Information and Statistics Office (*Diskominsta*), the Industry and Trade Office (*Disperindag*), and the Library and Archives Office (*Disperpusip*) for related scope and technical authority and function.

Currently, more than a year has passed since the sister city cooperation was agreed with the signing of a LoI. The ideal distance between signing the LoI and the next level of agreement, which is the Memorandum of Understanding (MoU), is 1 (one) year, and an assistance stage with various relevant ministries/institutions is needed during the transition. Due to communication obstacles and conflicting agendas from related parties, cooperation has not yet reached the intended output, as in signing the MoU. These conditions and constraints also mean that currently, there is no target for implementation from the Magelang City Government. The term of cooperation stated in the LoI remains valid for 5 (five) years and can be extended or terminated due to the agreement of both parties.

As for the first layer of paradiplomacy, sub-state governments aim to develop an international presence to attract foreign investment, lure international companies to the region, and target new export markets (Lecours 2008). The economic and business aspects are covered through various projects. In the case of Magelang City-Tula City cooperation, the projects include establishing official relations in the form of a community and chamber of commerce with people in business, contractors, exporters, and importers from Tula City. They will work together to promote products from Magelang City and Tula City, especially the potentially high-selling value products. Each government has its role and function in ensuring that cooperation in the economic sector can occur. The city that wants to promote its products must curate and sort for the eminent products by their potential to give a high selling price. Meanwhile, their partner or designated city is obligated to gather the business actors to decide the products offered.

In addition, the government can facilitate trade by bringing in the product directly or indirectly, especially for small and medium enterprises (SMEs). For example, a trade exhibition could be held to increase exports between the two cities. The trade fair is not only expected to introduce eminent products of their respective partner but also could invite potential buyers interested in the products by directly seeing and experiencing them. The local government can also give a list of eminent products through catalogs published and regularly updated by the Department of Industry and Trade. However, targeted projections currently cannot be measured because there is no data yet regarding the impact of cooperation itself. According to the Department of Industry and Trade, the economic potential of Magelang City-Tula City's sister city cooperation lies in the fashion and crafts SMEs as the potential contributing industries.

The second layer covers multidimensional sectors: education, culture, and technology. One of the ideas for this layer, which was stated in the Plan of Action of Magelang City-Tula City sister city cooperation called "Magelang-Tula Corner", is a portal to give information and knowledge about each city. The information ranges from introducing education and arts for primary and middle school to the student exchange opportunity for high school and university students. The establishment of Magelang-Tula Corner can also be developed into tourism and economic cooperation.

Despite being the main regulator at the city level, the Education and Culture Office has not yet been deeply involved in this cooperation. Their involvement at this moment consists of coordinating meetings with other regional offices and introducing Magelang culture through arts performance. The domain of authority further complicates the cooperation in education as the education office at the city level authorizes the primary and middle school level, the provincial government authorizes the high school level, and the Ministry of Education authorizes higher education. The language barrier also becomes a challenge for interaction and communication with the Tula City delegation, particularly among primary and middle school students. Educational cooperation, however, has a higher impact on the higher education level through an MoU between Universitas Tidar and Tula State University on July 26, 2023, in Russia.

Another aspect of the second layer covers the use of technologies related to the development of smart cities. Tula City is also known as an industrial city that already applies the smart city, so Magelang City can potentially adopt a similar concept as well. For instance, the centralized and controlled CCTV monitors all over Tula City, spatial planning, and city parks that are well organized, disciplined, and clean, as well as the city management that is effective and efficient (Prokompim, 2022). Such aspects can be learned to help the Magelang City government to achieve its plan.

For the political layer, even though the level of cooperation is still in the LoI stage, the cooperation's philosophy, direction, and goal were quite clear. Regional Development Planning Agency stated that Tula City has become a potential partner because of the national discussion between the Magelang City Government and the Indonesian Embassy in Moscow. The cooperation is planned to have a follow-up at later stages, including the Plan of Action (PoA) and an MoU.

Table 1. Three Layers of Paradiplomacy in The Magelang City-Tula City Sister City Cooperation

Paradiplomacy Layers	Sister City Cooperation
Economic layer	(1) Marketing & SMEs: catalogs of eminent products
	(2) Promotional cooperation and investment
Multidimensional layer	(1) Magelang-Tula Corner
	(2) Universitas Tidar-Tula State University cooperation
	(3) Smart city development
Political layer	(1) Follow up LoI to become PoA and MoU by intensive communication of Magelang City government, MoFA, and the Indonesian Embassy in Russia
	(2) Strengthening partnerships based on philosophy; similar characteristics and development planning; increasing trade and service; military city

The collaboration between Magelang City and Tula City aims to stimulate economic growth by capitalizing on international relationships. The collaboration has primarily focused on establishing trade relations and promoting small and medium-sized enterprises (SMEs). Initiatives such as creating catalogs of eminent products and organizing trade fairs are designed to increase exports and attract foreign investment. Nevertheless, given the lack of data and the nascent stage of the collaboration (still at the Letter of Intent stage), it is not yet feasible to quantify the economic impact.

This layer encompasses a multitude of sectors, including education, culture, and technology. Establishing the "Magelang-Tula Corner" is intended to facilitate knowledge exchange and enhance cultural understanding between the two cities. Educational initiatives have encountered obstacles due to jurisdictional issues and language barriers. However, notable advancements have been observed at the post-secondary level through collaboration between Universitas Tidar and Tula State University. Technologically, Tula City's sophisticated smart city systems serve as a valuable reference for Magelang City. By examining Tula's implementation of centralized CCTV monitoring and efficient city management, Magelang can gain insights to inform its smart city development.

The collaboration's political dimension is paramount in establishing a robust framework for future agreements and implementations. The collaboration is guided by a clear philosophical direction to strengthen the relationship based on shared characteristics and developmental goals. Effective communication and coordination

with the Indonesian Ministry of Foreign Affairs and the Embassy in Russia are essential for progressing from the Letter of Intent to a Memorandum of Understanding (MoU) and subsequent action plans.

The three layers of paradiplomacy and its analysis of the Magelang City-Tula City sister city cooperation are beneficial to categorizing necessary programs and potential based on each aspect. This proves that paradiplomacy is a strategic approach and an essential initiative in fulfilling the spirit of decentralization and increasing the capacity of Magelang City to develop its smart city concept and achieve the goal of the sister city cooperation itself.

Smart City Development in Magelang City

The policy to develop a smart city emerges as one of the solutions to tackle city development issues. For example, urbanization and increasing population, the quality of the environment, poverty, regional capacity, and inequality in city development have become major issues in Indonesia. The development of a smart city is also supported by advanced technology, yet the 'smart' concept is not only in the context of the devices but in various systems or orders (Kurniasih and Wismaningtyas 2020).

The central government, through the National Development Planning Agency (*Badan Perencanaan Pembangunan Nasional/Bappenas*), also established the city development roadmap for 2015-2045 as a base for developing smart cities across the nation. The main concept of developing a smart city was quite simple. According to the Directorate General of Spatial Planning, Ministry of Public Works on the study of smart city development in Indonesia, the development of the smart city is how to manage a city using information and communication technology to connect, monitor, and control all kinds of resources effectively and efficiently to optimize public services contribute to the sustainable development (Direktorat Jenderal Penataan Ruang 2015).

The local government then generates a plan to develop its smart city concept based on that national roadmap. In the case of Magelang City, they conceptualized the 2020-2025 smart city concept into the latest Magelang City's medium-term development plans (*Rencana Pembangunan Jangka Menengah Daerah/RPJMD 2021-2026*) which implemented in six smart city development strategies in Magelang City as follows:

a) Smart Governance. The first strategy was implemented by upgrading the quality of public services as well as the quality of government apparatus supported by technology to create a government that is clean, effective, efficient, and friendly to the community. Two dimensions become the focus of this strategy: public policy and bureaucracy. In public policy, the government would create an integrated public service system from complaint reports, citizen services, licensing reports, tax services, and health services. The policy would also support it to upgrade the quality of human resources.

b) Smart Branding. Smart branding is carried out by increasing development in the modern tourism sector based on the regional culture and arts of Magelang City. The target of smart branding for the City of Magelang is directed to

increase the activity of the tourism sector by encouraging the synergy of tourism actors, creating product innovation to give competitiveness, and upgrading the promotional activities, as well as the infrastructure. Apart from being related to tourism, the target of smart branding for Magelang City is to create the image of the Magelang City by developing a smart branding application containing information to support building the image of Magelang City. One of the notable events was the refarming of the Magelang City's vision in 2016 to "*Magelang Sebagai Kota Jasa yang Modern dan Cerdas yang Dilandasi Masyarakat Sejahtera dan Religius*". This vision contained the concept of modern society and 'smart', which showed the government's seriousness by rebranding Magelang City in their vision.

c) Smart Economy. The third strategy is accelerating urban infrastructure development to even up the development and economy to create social welfare. Some targets are to be realized in this regard, such as economic equality, upgrading and leveling infrastructure development, and intensifying the creative economic sector. This can be achieved by focusing on the industry without disregarding the welfare aspect. It can be implemented in industrial aspects by upgrading customer-based production and service management support through better marketing management through e-commerce and the marketplace. In addition, people need to be introduced to creative economic activities and develop their entrepreneurship. The government also needs to look for the prospect of shifting its production process outside Magelang City whenever needed to accommodate the demand.

d) Smart Living. The smart living strategy is implemented by optimizing the management of basic service facilities in education, health, trade, and transportation to become more modern and environmentally friendly. This agenda also aligns with realizing consistency in using spatial and regional planning by adopting the Internet of Things and transportation.

e) Smart Society. This strategy is applied to realizing a safe and pleasant city in Magelang. To realize this, the Magelang City government increased awareness of community tolerance, campaigning wise technological usage, and enhancement of security, discipline, and regional conductivity.

f) Smart Environment. Developing a smart environment aims to enhance a healthy ecosystem, promote the sustainability of the environment, and achieve sustainable development goals.

The Magelang City government has already implemented some of the strategies by developing a system for their public services. Magelang Cerdas application, Bakul Pasar, and e-Retribusi are some examples of the innovation developed by the government to support the smart city policy. For Magelang City, the implementation of smart cities can be optimized by learning from the best practices of smart cities around the world and formulating the best strategies to realize it in their city. Tula City,

considered to have ideal smart city implementation and advanced technologies, can be adopted as a reference.

These strategies aim to address urban challenges through technological and systematic innovations, as outlined in the RPJMD (2016-2021) and RPJMD (2021-2026): (1) enhancing public service quality and bureaucratic efficiency through integrated systems, (2) promoting tourism and cultural identity through modern marketing strategies, (3) focusing on economic equality and infrastructure development to support the creative economy, (4) modernizing basic services and adopting environmentally friendly practices, (5) creating a safe and inclusive urban environment through community engagement and technological adoption, and (6) ensuring sustainable development and environmental preservation.

The Role of Sister City Cooperation in The Development of Smart City

Engaging in a sister city cooperation can be a city's approach to developing and implementing its smart city project. The advancement of smart cities, especially in developed countries, could become a model to adopt and implement in other cities. Apart from what is stated in the RPJMD policy, the design for Magelang City's smart city was also explained in the strategic plan for the implementation of the Electronic-Based Governance System (SPBE) for Magelang City 2021-2026, which is based on the National SPBE, the Bureaucratic Reform Law, and the Vision-Mission of Magelang City's Development.

Based on a multidimensional layer of paradiplomacy, especially in education, culture, and technological aspects, the smart city is one of the motives that underlies the reasons for forming sister city cooperation with Tula City. Through it, the government hopes to upgrade the human resources (HR) aspect involved in the smart city project, from the level of government to the citizen. Tula City's smart city also has a high level of implementation and is impactful due to its advanced infrastructure. According to Bappeda, Magelang City's infrastructure to support smart city implementation is ready, but the potential is not yet optimized, mainly because of the HR capacity.

The first aspect that Magelang City will refer to from the Tula City pilot project is the 119 emergency services that Tula City has fully implemented. Magelang City currently has the Magelang Smart City (Magesty) application launched in 2021, which allows Magelang City's residents to call emergency services via the application. It indicates that infrastructure readiness already exists, but integration between services and human resources (service providers and service users) needs to be improved. Also, the application needs to be disseminated and promoted to residents.

Another impressive smart city service from the Tula City government is electronic-based traffic monitoring security. Tula City is among cities in Russia that already utilize CCTV in public spaces, especially for security and public order. The CCTV system is integrated with other cities' planning services with less human involvement for its monitoring function. For this concept's adoption, the Magelang City Government plans to do budget planning made by related regional apparatus organizations. For example, to assist the Transportation Agency in controlling server infrastructure and

help the Communication, Information, and Statistics Agency provide artificial intelligence programs for CCTV. Thus, the city can duplicate Tula City's advancement while considering its local context. This smart city system can increase public trust in security and minimize criminal activities. Other smart city concepts to be studied include an early warning system for changes in environmental conditions, good governance implementation, planning innovation, public information, media for community aspirations, and educational information for the community.

Table 2. The Direction of Smart City Development through Sister City Cooperation

The Smart City Studied from Tula City	Services	The Magelang Smart City	The potential of Development through Paradiplomacy
(1) Public information system (2) Public security system (3) Governance System	(1) Emergency service 119 (2) Early warning system Smart CCTV	**Magesty** (Magelang Smart City)	HR readiness to implement smart city system **(layer 2)**
	Transparency and communication in policymaking and implementation		Increase technological capacities **(layer 2)** Institutional strengthening **(layer 3)**

The cooperation highlights the importance of the multidimensional and political layers of paradiplomacy in achieving technological and administrative advancements. Continuous engagement and structured follow-up activities are essential for maximizing the benefits of this partnership. Smart cities have emerged not only to show technological capabilities or devices but also to provide equal distribution of public services and increase public awareness of issues around them. The main obstacles still revolve around human resources and stagnation on the administrative level. However, from the prospect of cooperation regarding the Magelang Smart City project, many things can be learned and adopted from the implementation of the smart city in Tula City.

The sister city cooperation between Magelang City and Tula City exemplifies the potential of paradiplomacy to facilitate local development, international collaboration, and technological advancement. While the cooperation is still developing, it offers a promising framework for Magelang City to adopt and implement smart city concepts. Prioritizing the transition to a Memorandum of Understanding (MoU) and focusing on human resource development and political commitment will be instrumental in realizing the full potential of this partnership.

CONCLUSION

To conclude, this research highlights the sister city cooperation between Magelang City and Tula City and its implication to smart city adoption based on the multifaceted approach of the three layers of paradiplomacy. Facilitated by the Indonesian Embassy in Russia and supported by regulations that allow regional governments to participate in foreign relations, the sister city cooperation is currently at the agreement level with a signed Letter of Intent. It aims to enhance local sub-states presence and promote economic, multidimensional, and political exchanges.

In the economic layer, the proposed collaboration aims to enhance economic relations by fostering connections with business communities and promoting the export of high-value products. It is recommended that trade exhibitions and catalogs be employed as methods to introduce and market products from both cities. However, the impact of these activities remains unmeasured due to a lack of data on economic outcomes. This points to a significant gap in monitoring and evaluation mechanisms, which are crucial for assessing the effectiveness of such initiatives. The fashion and crafts sectors are identified as promising areas for economic cooperation. Nevertheless, there must be more active engagement and follow-through on planned activities to realize this potential fully.

The "Magelang-Tula Corner" initiative in the multidimensional layer promotes mutual understanding through educational and cultural exchanges. However, the involvement of the Education and Culture Office has been limited to coordination and cultural performances, indicating a need for more substantial engagement. Tula City's advanced smart city technologies, such as centralized CCTV systems and efficient urban management, offer a model for Magelang. However, these technologies' actual transfer and implementation require more robust planning and capacity-building efforts. Language barriers and jurisdictional complexities in the education sector pose significant challenges. Additionally, the limited involvement of key stakeholders hampers the progress of multidimensional cooperation.

The partnership's philosophical alignment and strategic goals are well-defined in the political layer, focusing on mutual development through shared characteristics and interests. The Indonesian Ministry of Home Affairs supports the cooperation, which allows for regional foreign relations. This regulatory backing is crucial for the sustainability of such partnerships. Despite clear goals, the cooperation has not advanced beyond the LoI stage. Continuous and intensive communication among stakeholders, including the Indonesian Embassy, is needed to elevate the agreement to an MoU and ensure its implementation. The partnership's philosophical alignment and strategic goals are well-defined, focusing on mutual development through shared characteristics and interests. The Indonesian Ministry of Home Affairs supports the cooperation, which allows for regional foreign relations. This regulatory backing is crucial for the sustainability of such partnerships. Despite clear goals, the cooperation has not advanced beyond the LoI stage. Continuous and intensive communication among

stakeholders, including the Indonesian Embassy, is needed to elevate the agreement to an MoU and ensure its implementation.

Magelang City's smart city strategies encompass a range of domains, including smart governance, branding, economy, living, society, and environment. These strategies are aligned with the national roadmap and aim to address urban challenges through technology. Programs such as "Magelang Cerdas," "Bakul Pasar," and "e-Retribusi" illustrate initial efforts to digitise public services. However, these initiatives require further integration and optimisation to realize their full potential. Tula City's advanced smart city initiatives provide a valuable reference for Magelang. The emphasis on 119 emergency services, CCTV integration, and efficient governance systems are areas where Magelang can benefit from Tula's experience. While the readiness of infrastructure in Magelang is acknowledged, there is a clear need for improvement in human resources capacity and administrative coordination. The practical implementation of smart city concepts requires skilled personnel and a clear operational framework.

To ensure the benefit of the sister city agreement, particularly in developing a smart city in Magelang City, the government needs to pay more attention to the second layer, which coincides with the technological aspect of developing a smart city. Further, they must improve the third layer to show a political willingness to further cooperation based on mutual agreement and advance their cooperation into follow-up activities within a higher cooperation framework. Overall, the sister city cooperation between Magelang-Tula has demonstrated the potential of paradiplomacy to foster local development, international collaboration, and technological advancement.

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