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Sustaining the Future City Hub

Startup Ecosystem Governance in Jakarta–Berlin Sister City Paradiplomacy

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Abstract: This study identifies the contribution of the Future City Hub (FCH) to the Jakarta–Berlin sister city partnership, evaluates its role in Jakarta's startup ecosystem, and proposes a model of sustainable governance. Using a descriptive qualitative design, we conducted a content analysis of primary, secondary, and tertiary sources. The findings suggest that globalization has shifted the dynamics of international relations, allowing local governments to act in the international arena through paradiplomacy. The Jakarta–Berlin partnership is one such arrangement, operating as an urban living lab that brings together academia, government, industry, and the public to foster innovation. Although the ecosystem surrounding the FCH has faced challenges since European Union funding ended, its host institution, the Jakarta Smart City Management Unit, has been designated a technical implementation unit operating under the regional public service agency financial management pattern, an arrangement that affords greater flexibility in financial management. The findings further indicate that the FCH has supported improvements in the quality of Jakarta's startups by facilitating knowledge and technology transfer from Berlin. Through this model of paradiplomacy, the FCH may offer a reference point for other cities pursuing international collaboration to drive innovation in support of sustainable regional development. The study is intended to contribute to the development of policies that sustain the startup ecosystem in Jakarta.

Keywords: Future City Hub; sister city; startup ecosystem; paradiplomacy.

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1. Introduction

Globalization has shifted the landscape of international relations from a formal state-to-state approach toward the active involvement of subnational actors. Local governments are no longer confined to domestic affairs; they now also play a role on the global stage through inter-city cooperation. In this context, the role of local governments can be examined through the lens of international relations, and specifically through the concept of paradiplomacy. According to Kedhaton and Adzmy (2024), paradiplomacy is a practice undertaken or established by subnational actors, principally local governments. This is consistent with Mukti's (2020) account, in which paradiplomacy involves the engagement of non-state actors in international relations under mandates issued by the central government. In Indonesia, the legal basis for paradiplomacy rests on Undang-Undang Republik Indonesia Nomor 37 Tahun 1999 tentang Hubungan Luar Negeri [Law of the Republic of Indonesia No. 37 of 1999 on Foreign Relations], Undang-Undang Republik Indonesia Nomor 24 Tahun 2000 tentang Perjanjian Internasional [Law of the Republic of Indonesia No. 24 of 2000 on International Treaties], and Undang-Undang Republik Indonesia Nomor 23 Tahun 2014 tentang Pemerintahan Daerah [Law of the Republic of Indonesia No. 23 of 2014 on Regional Government], which together support the conduct of local governments' foreign relations (Kuswantoro, 2016).

Within this framework, the sister city program serves as a bridge enabling local governments to collaborate internationally. Sister city partnerships in Indonesia have grown rapidly alongside decentralization, which granted broader autonomy to local governments. Approximately 47 cities across 33 of Indonesia's 38 provinces have participated in the sister city network (Nadya et al., 2023). The earliest governing instrument, Peraturan Menteri Dalam Negeri Nomor 1 Tahun 1992 tentang Penyelenggaraan Hubungan dan Kerja Sama Luar Negeri di Jajaran Departemen Dalam Negeri [Regulation of the Minister of Home Affairs No. 1 of 1992 on the Conduct of Foreign Relations and Cooperation within the Department of Home Affairs], defined a sister city partnership as a relationship between a local government—whether at the regency or administrative city level—and a government of equivalent status abroad (Situmeang et al., 2014). That regulation was revoked during the regional autonomy era. Regional cooperation with foreign parties is now governed by Peraturan Menteri Dalam Negeri Nomor 25 Tahun 2020 tentang Tata Cara Kerja Sama Daerah dengan Pemerintah Daerah di Luar Negeri dan Kerja Sama Daerah dengan Lembaga di Luar Negeri [Regulation of the Minister of Home Affairs No. 25 of 2020 on Procedures for Regional Cooperation with Local Governments Abroad and with Foreign Institutions], which defines a sister city arrangement as cooperation between domestic and foreign local governments in the conduct of governmental affairs to improve community welfare, entered into by the governor or regent acting on behalf of the region. Through these networks, subnational cooperation serves as a platform for championing local interests on the international stage. Furthermore, subnational cooperation also encourages a shift from symbolic city diplomacy to diplomatic engagement between local governments (Acuto et al., 2021).

One of the most developed sister city partnerships is the Jakarta–Berlin collaboration, in place since 1994. The partnership is no longer a purely formal arrangement; it has evolved into technical cooperation centered on the entrepreneurial ecosystem and digital transformation (Rahayu, 2025). Berlin, with its world-class startup ecosystem, appears to offer a platform for connecting the global technology industry with human resource development in Jakarta. Berlin also holds a competitive advantage as one of Europe's leading technology and business hubs

and as a reference point for sustainable business practice in Europe (Senate Department for Economic Affairs Energy and Enterprises, 2022). Jakarta, meanwhile, serves as the national hub for digital economic growth and requires technology transfer and global management standards to strengthen local competitiveness.

A tangible expression of this commitment is the establishment of the Future City Hub (FCH), a collaborative forum spearheaded by the Berlin city government and Jakarta Smart City. The FCH is one of the principal programs under the smart economy pillar of Jakarta's technology-based, sustainable smart city agenda. The program aims to accelerate the startup and social innovation ecosystem through the development of digital entrepreneurship, the green economy, and the creative economy. Through the FCH, the Jakarta provincial government aims to create a creative, inclusive, and responsive digital economic ecosystem. The platform supports the integration of micro, small, and medium enterprises into the digital supply chain, strengthens the competitiveness of local industry, and improves public financial literacy in support of a collaborative, digitally based economic transformation (Ningrum et al., 2026). The collaboration also brings policymakers together to understand community needs and address urban challenges, functioning as an urban living lab. The FCH is designed as an open innovation ecosystem with quadruple helix integration among government, academia, industry, and the public, intended to bridge the skills gap in smart city implementation.

To advance the commitment between Jakarta and Berlin, the European Union provided a grant to the FCH. The grant was intended to support the establishment of the FCH and to improve quality of life while promoting economic sustainability in Jakarta (Jakarta Smart City, n.d.). At the end of 2023, however, European Union funding for the FCH's operations concluded, in line with the program's three-year term. Paradiplomatic cooperation often stagnates once international funding ends, a phenomenon commonly described as the sustainability gap. The end of the grant therefore raises questions about the institution's sustainability.

Challenges at the Future City Hub also arise in urban governance. Although the Future City Hub has systematic policies, this program differs from the governance of the startup ecosystem in Germany. The German startup ecosystem is managed by an independent legal entity and promotes decentralized startup development (AICEP, 2025). The conditions of this ecosystem stand in stark contrast to the governance structure of the Future City Hub. The Future City Hub lacks the equivalent legal autonomy of an independent entity as seen in Germany. This initiative is attached to the Jakarta Smart City institution, which holds the status of a Regional Public Service Agency (BLUD) under the DKI Jakarta Provincial Office of Communication, Information Technology, and Statistics. This indicates that the Future City Hub ecosystem remains tied to the local government's bureaucratic structure, which does not transparently publish evaluations of public policies. It is this situation that raises questions regarding the institutional sustainability of the ecosystem within the Future City Hub.

This study draws on the theoretical frameworks of platform governance (Kornberger et al., 2017) and sustainable city diplomacy (Acuto et al., 2021). From this perspective, a digital platform generated by paradiplomacy cannot be viewed merely as physical technological infrastructure; it is also a dynamic governance ecosystem whose sustainability is determined by the interaction of three pillars: institutional sustainability, ecosystem continuity for local actors, and systemic impact on macro-level policy, understood as a contribution to digital transformation.

This assumption guides the analysis of how the FCH navigates its post-grant transition without compromising its orchestration function.

Existing literature on paradiplomacy and city platform innovation has focused largely on the dynamics of local institutions in encouraging the startup ecosystem, as in Audretsch et al. (2021), along with the dynamics of city-led international networks (Acuto et al., 2021). This study addresses that gap by evaluating the sustainability of the FCH and its role in sustaining Jakarta's startup ecosystem and digital transformation. The central question is this: how can a sustainable model of paradiplomacy governance be implemented to ensure the long-term resilience of the Jakarta FCH platform?

2. Methods

This study uses a descriptive design with a qualitative approach. A qualitative approach helps researchers identify the processes and meanings that form the background to policy implementation (Creswell & Poth, 2017). Mulyana (2008) describes qualitative research as a method designed to explore a phenomenon by describing data through descriptive accounts of research subjects. Waruwu (2024) reinforces this view, characterizing qualitative research as an activity concerned with observing phenomena, examining a problem, and understanding context in natural settings.

The work proceeds in several stages. The first is description, in which the information obtained from the sources is set out. We then reduce that information to align it with the research problem. In the final stage, we select and analyze the core issues so that the data can be transformed into validated knowledge. This approach was chosen to support a more detailed analysis of the policies and effectiveness of the FCH, an institution focused on Jakarta's digital transformation.

The concepts in this study are operationalized across three dimensions of analysis: institutional sustainability, ecosystem sustainability, and contribution to digital transformation. The institutional sustainability dimension measures the stability of the FCH's governance structure, the continuity and clarity of its authority, and the budgetary autonomy of the Jakarta–Berlin partnership; its measurement parameters concern how Jakarta and Berlin interpret long-term commitments and the benefits of the partnership, particularly for Jakarta. The ecosystem sustainability dimension measures the value the platform provides for the growth of local startups. The contribution to digital transformation dimension assesses the systemic impact of the FCH on Jakarta's smart city ecosystem and on the demand for competitive digital talent; its measurement parameters concern the effectiveness of cross-border knowledge and technology transfer between Jakarta and Berlin, particularly in converting investment in information and communication technology (ICT) into innovative, adaptive, and collaborative urban policy outcomes.

The analysis draws on three classes of validated source material. The first is secondary material: a literature review of journals, books, and other sources indexed in Sinta, Scopus, and Google Scholar. We searched these platforms to establish the credibility of the material, then collected and selected sources against criteria of informational quality and relevance to the research subject and problem. The second is tertiary material. Sulung and Muspawi (2024) describe tertiary sources as a complement to primary and secondary sources; such material is obtained from parties not directly involved with the research subject (Adiyanta, 2019). For this study, the tertiary source is a composite index, the East Ventures – Digital Competitiveness Index (EV-DCI) 2025 report (East Ventures, 2025). The third class

is primary material: policy documents, standard procedures, and official guidelines issued by the organizations under study. Here the study draws on Master Plan Buku 1: Potret Kota Jakarta Menuju Kota Cerdas Berskala Global [Master Plan Book 1: A Portrait of Jakarta Toward a Global-Scale Smart City] and Master Plan Buku 2: Rencana Pembangunan Jakarta sebagai Kota Cerdas Berskala Global 2025–2029 [Master Plan Book 2: Development Plan for Jakarta as a Global-Scale Smart City, 2025–2029], which set out Jakarta's long-term strategic action plan for 2025–2029 together with sectoral data (Jakarta Smart City, 2024a, 2024b).

The data analysis technique is content analysis, applied to media sources, textual data, reports, official documents, and scientific publications. Following Krippendorff (2019), content analysis attends not only to the frequency of words but also to the meaning of statements and the contextual meaning of documents. To secure the validity of sources, the documents used were restricted to journals indexed in Scopus and Sinta and to official documents and reports published by Jakarta Smart City or the DKI Jakarta provincial government. The procedure involved collecting official documents and reports, scientific publications, and textual data; analyzing them through close reading and noting key points; and interpreting the results by drawing conclusions and documenting the findings.

3. Results and Discussion

3.1. Institutional Sustainability of the Future City Hub

The FCH, as an initiative under the Jakarta–Berlin cooperation program, is a physical expression of paradiplomacy in practice. Our findings indicate that the FCH operates on an urban living lab model, an open innovation ecosystem that treats the city as a real-world laboratory. The master plan documents note that the FCH is strategically aligned with the mandate under which Jakarta is projected to become a global innovation hub (Jakarta Smart City, 2024a). In this framing, innovation does not originate top-down from government but is generated collaboratively through quadruple helix interaction among government, academia, industry, and the public.

As an orchestrator, the FCH's role centers on facilitating cross-border knowledge transfer between the two cities. Berlin's mature startup ecosystem and established standards offer a reference model that Jakarta can draw on, supporting the standardization of local startups and their capacity to compete in global markets. In theoretical terms, the significance of the FCH lies in its potential role as a catalyst for Jakarta's position within the constellation of global cities.

A key finding on institutional sustainability concerns the operational resilience of the FCH after the withdrawal of international funding. In 2023, the European Union ended its funding for the Smart Change project, which had supported cooperation between Jakarta and Berlin. A recurring difficulty in paradiplomacy at the local level is the sustainability gap: operational failure once grant funding ends. Our reading of the documentary record suggests that the viability of the Jakarta FCH was maintained in part through a decision by the provincial government to designate UP JSC as a technical implementation unit of the Office of Communication, Informatics and Statistics operating under the regional public service agency financial management pattern, under Keputusan Gubernur Provinsi Daerah Khusus Ibukota Jakarta Nomor 17 Tahun 2020 [Decree of the Governor of the Special Capital Region of Jakarta No. 17 of 2020].

The move to the regional public service agency financial management pattern affords greater flexibility in financial management. Previously, UP JSC was subject to

the procedures of the regional budget, which were not always able to keep pace with the technology industry. The financial management pattern allows UP JSC to manage operational revenue with greater discretion and to recruit specialist staff who are not civil servants on terms closer to industry norms. Service tariffs nonetheless remain externally determined, under Peraturan Gubernur Provinsi Daerah Khusus Ibukota Jakarta Nomor 44 Tahun 2021 tentang Tarif Layanan Unit Pengelola Jakarta Smart City [Governor Regulation of the Special Capital Region of Jakarta No. 44 of 2021 on Jakarta Smart City Management Unit Service Tariffs], so the arrangement is better described as financial flexibility than as institutional autonomy. It may nevertheless help ensure that knowledge and technology transfer from Berlin is managed by staff with the relevant technical expertise, and it appears to allow the FCH to diversify funding through partnerships with the private sector, which would reduce dependence on the regional budget and support the institution's longer-term resilience.

3.2. Ecosystem Sustainability

In terms of ecosystem sustainability, the analysis focuses on the platform's leverage in generating value that affects the sustainability and growth of local startups. The FCH appears to fulfill this role through the urban living lab model, an ecosystem that positions Jakarta's urban infrastructure as a real-world testing ground for technology. The model also integrates the quadruple helix framework, a collaboration among government, academia, industry, and the public, to accelerate the development of technology-based urban solutions.

Table 1. Digital Competitiveness Index Sub-Index Scores for DKI Jakarta, 2025

Pillar	Sub-index	Score
Input	Human resources	69.3
	ICT usage	84.1
	ICT expenditure	90.1
Output	Economy	73.5
	Entrepreneurship and productivity	100
	Employment	58.3
Enablers	Infrastructure	95.8
	Finance	84.5
	Regulation and local government capacity	45.1

Source: *East Ventures – Digital Competitiveness Index 2025, data processed (2025).*

These findings are consistent with tertiary data from the EV-DCI 2025 report, in which DKI Jakarta records a maximum score of 100 on the entrepreneurship and productivity sub-index within the output pillar (East Ventures, 2025). The result indicates that DKI Jakarta has retained its leading position in national digital competitiveness. The score reflects economic activity, and it may also reflect efforts by the provincial government to advance the city's economy, among them the FCH, although a province-wide composite index cannot be attributed to any single program. Through its urban living lab, the FCH appears to have addressed operational barriers that have long constrained local startups, functioning as a regulatory sandbox that reduces the cost of experimentation and enables startups to validate products at scale on public infrastructure with limited financial exposure.

We find that the transfer of ecosystem standards from Berlin, through mentoring and acceleration programs at the FCH, is associated with improvements in the quality of Jakarta's startups. This integration appears to have helped convert the region's substantial ICT expenditure into productive digital economic outcomes. On

this reading, the FCH is not merely a physical facility but an orchestration platform that supports the continuity of the local innovation ecosystem after international funding ends.

3.3. Contribution to Digital Transformation

The final dimension considers the impact of the FCH on Jakarta's smart city ecosystem, focusing on the acceleration of urban digitalization and the demand for high-quality digital talent. The FCH integrates its facilities with the digital infrastructure managed by UP JSC, consistent with regional development policies that position Jakarta as a global hub for innovation.

Table 2. DKI Jakarta Digital Competitiveness Index Rank and Score, 2021–2025

Year	Rank	Score
2025	1	78.4
2024	1	77.6
2023	1	73.2
2022	1	75.6
2021	1	78.2

Source: *East Ventures – Digital Competitiveness Index 2025, data processed (2025).*

Tertiary data from the EV-DCI 2025 report record a total digital competitiveness index of 78.4 for DKI Jakarta, the highest among Indonesia's provinces (East Ventures, 2025). As Table 2 shows, the province has held first rank in each year from 2021 to 2025, although the underlying score has fluctuated: it fell from 78.2 in 2021 to 73.2 in 2023 before recovering to 78.4 in 2025. Consistency of rank should therefore not be read as consistency of score. The 2025 result is supported by strong input sub-indices, with ICT usage at 84.1 and ICT expenditure at 90.1, although the human resources sub-index is markedly lower at 69.3. The same data also reveal weaker results in two further areas: regulation and local government capacity, an enablers sub-index, at 45.1; and employment, an output sub-index, at 58.3 (see Table 1).

The gap between the ICT expenditure score (90.1) and the lower regulation and local government capacity score (45.1) may indicate a lag between technological and administrative capacity within the city bureaucracy. The pace of technological innovation and the demand for data generated by local startups appear to outstrip the regulatory capacity and adaptability of the local government bureaucracy. On this evidence, the FCH plays a part as a digital bridge and regulatory sandbox: through the Jakarta–Berlin paradiplomacy framework, it supports knowledge and technology transfer intended to reduce bureaucratic barriers, offering a space in which new regulatory approaches can be tested on a limited scale before wider application in city policy.

The FCH's contribution is reinforced by its integration with the Jakarta master plan for 2025–2029. This suggests that the FCH may serve as one foundation for Jakarta's goal of becoming a global smart city. The platform-based model of paradiplomacy implemented in Jakarta may also offer a reference point for other cities in Asia seeking to use international collaboration to drive inclusive and sustainable digital transformation (Prastita et al., 2025).

4. Conclusion

The Future City Hub (FCH), within the Jakarta–Berlin sister city partnership, serves as a strategic instrument of paradiplomacy. The designation of the Unit Pengelola

Jakarta Smart City [Jakarta Smart City Management Unit] (UP JSC) as a technical implementation unit operating under the Badan Layanan Umum Daerah [regional public service agency] (BLUD) financial management pattern, under Governor Decree No. 17 of 2020, appears to have helped address the sustainability gap following the conclusion of European Union funding. The arrangement offers operational and financial flexibility, including scope to recruit specialist staff who are not civil servants, which supports institutional resilience against the procedural constraints of the regional budget, though it stops short of full institutional autonomy. The FCH has also functioned as an urban living lab and as a facilitator of the quadruple helix ecosystem, addressing operational obstacles and reducing the cost of experimentation for local startups. DKI Jakarta records a maximum score of 100 on the entrepreneurship and productivity sub-index in the East Ventures – Digital Competitiveness Index (EV-DCI) 2025 report, although that province-wide indicator cannot be attributed to the FCH alone. At the macro level, the FCH acts as a digital bridge and regulatory sandbox between the pace of technological innovation and the slower pace of bureaucratic adaptation, with the potential to address weaknesses in the regulation and local government capacity (45.1) and employment (58.3) sub-indices in support of Jakarta's development vision for 2025–2029.

This study has methodological limitations. It relies primarily on secondary and tertiary material, including policy documents, performance reports, and the EV-DCI 2025 index, which does not fully capture the contested dynamics of implementation, resistance within the bureaucracy, or the perspectives of startup founders and institutional managers. Limited access to stakeholders in Berlin also means that this account of the paradiplomatic relationship is stronger from the Jakarta side.

To sustain the FCH's longer-term impact, the DKI Jakarta provincial government could strengthen its private-sector partnership framework through regulations that facilitate public–private partnerships and the commercialization of independent research, and could extend the FCH's legal authority as a regulatory sandbox so that startup innovations can be integrated into official regulation more quickly. For future research, we recommend a quantitative evaluation of the socioeconomic return on investment and of the survival rates of local startups following incubation at the FCH. Incorporating primary data from interviews would also allow future work to reach the perspectives that documentary sources cannot.

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DECLARATIONS

AI Use Statement

Artificial intelligence (AI) tools were used as supplementary writing aids during the preparation of this manuscript. Their use was limited to assisting with paragraph coherence and flow, improving sentence construction, and textual and language accuracy checking accuracy. AI tools were not used to independently conduct the research, determine the research design, analyze or interpret the data, formulate the findings, or draw the conclusions. The authors remained responsible for the development and content of the manuscript, and all AI-assisted text was reviewed, revised, and verified by the authors to ensure its accuracy, relevance, and consistency with the research.

Author Contributions

The authors contributed to the development of this manuscript through the conduct of the research, data collection and processing, analysis and interpretation of findings, manuscript preparation, and revision. The Advisor/Supervisor provided academic and methodological guidance and contributed to the refinement of the research and interpretation of the findings. All authors reviewed and approved the final version of the manuscript and accept responsibility for the integrity and accuracy of the work.

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Competing Interests

The authors declare that there are no conflicts of interest or competing interests associated with this research, its preparation, or publication. No financial, personal, or institutional interests are considered to have influenced the research process, analysis, interpretation, or preparation of the manuscript.

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