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Japan's international cooperation on smart city development in Asia: International effort beneath the smart rhetoric in India and in Thailand☆

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ABSTRACT

This article examines smart cities as a locus for international power struggles, emerged at the gap between their discursive and materialised realities. While the body of research on smart cities is growing, most studies focus on their development within individual nation-states. However, the rapidly growing smart city-related market in Emerging Asia does not allow us to overlook its heavily invested nature. In this context, the article analyses smart city projects in India and Thailand, supported by Japanese international development cooperation. The comparison of these case studies reveal that negotiations occur in discursive terms, with neither party ultimately committed to materializing the agreed-upon socio-technical future. The article argues that, in Japanese international cooperation, the concept of smart cities is more of a showcase than a reality, masking the power struggle between donor and host countries to advance their national interests within the imagined geography of the Indo-Pacific. This international perspective adds new insights to existing research on domestic smart city efforts. Smart cities cannot be taken at face value; additionally, its ideological efficacy must be properly acknowledged. The article emphasises the importance of distinguishing between the imagined, technology-driven future and the real impact on local communities.

1. Introduction

This study seeks to answer the research question: what strategic roles does the smart city as a policy idea play in the different stages of international cooperation policy development? The 21st century has seen the rise of smart cities as a central element in urban redevelopment efforts across the globe. In Asia, early comers such as Japan, Singapore and South Korea already started to invest in smart city in the early 2000s. The following decade, not only countries like China and India but also but also other emerging Asian countires and economies started to invest heavily in this sector. According to the United Nation (UN)'s estimates, rapid urbanisation is still expected to be experienced throughout the region (United Nations, 2018). In response to shared concerns regarding sustainable urban development, such as urban congestion, sanitation, pollution, disaster resilience, and climate change, smart cities indeed hold significant potential. The global smart city market is projected to grow from approximately 1 trillion USD in 2020 to 2.5 trillion USD by 2025 (PwC 2019 in Matsumoto et al., 2019) and reach 50 trillion USD by 2050 (Future Cities Catapult 2017 in Alizadeh, 2021). Alizadeh (2021) expected that the largest smart city-related market, which is still found in North America today, would soon shift to Asia. In this trend, it is significant to remember that not all the countries can afford smart city projects independently and equally; some countries rely on international investment and cooperation to compensate their limitation in budgets and technical expertise (Crumpton et al., 2021). Today, public and private stakeholders, both domestic and international, are competing to mobilise, attract and allocate resources and support for these initiatives in Asia. Given the rapid ongoing and potential growth of smart city-related investments, we cannot overlook its heavily invested and international nature.

This article wishes to contribute to efforts in the field to identify a perspective to make sense of the abundance of the smartification of

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world cities through submitting a study on one of the most dynamic but underexplored aspects of global urban transformations: the international cooperation on smart city development in Asia. Taking two cases of Japanese smart city projects in India and Thailand as its empirical basis, this study explores how the smart city as a policy idea proliferates across national borders. The first section reviews the relevant research trends, followed by an introduction to the theoretical framework and the study's objectives. The empirical section traces Japan's international efforts in smart city development in India and Thailand respectively, in a thickly contextualised manner. On this basis, the study reveals that smart cities are important policy tools, serving to advance national interests on the global stage while securing political legitimacy at home through urban infrastructure projects. While these projects create win–win scenarios at the national level, there is little commitment to addressing urban challenges at the local level. It implies that local citizens often see little improvement in their living conditions and, in some cases, face risks of eviction and gentrification. From this perspective, the societal futures envisioned in smart city plans appear more like a showcase than a practical solution to real urban challenges.

2. Literature review

The popular image of a smart city is often portrayed as a city where its management as a whole is enhanced by networks of technologies such as Information and Communication Technologies (ICTs), the Internet of Things (IoT), artificial intelligence (AI), robotics and automated mobility. While much of the existing research is still dominated by technically-oriented and solution-driven studies in engineering, a significant amount of social scientific research has been conducted with a wide range of disciplinary approaches, research objectives, and perspectives since the mid-2000s (Visvizi et al., 2017; Visvizi & Lytras, 2019; Kim et al., 2020; Sanchez Gracias et al., 2023). These empirical efforts of social sciences support the view that the smart city is a *glocal* phenomenon (Dameri et al., 2019). The *actually existing* smart city develops endogenously with its unique set of missions, ethical considerations, areas of focus, technological components, risks and limitations, effectiveness and financial sources, at varying degrees of imagined holism. This means that there is no single, universal material feature that underscores the concept of a smart city.

Instead of rooting its conceptualisation in materiality, some studies have approached the smart city from a governance perspective. Already around 2010, scholars began critically examining smart cities through this lens, revealing the technocratic, profit-driven, and top-down nature of their policy processes (Hollands, 2008; Caragliu et al., 2011). Some studies suggest that this critical engagement has triggered a shift among smart city promoters and vendors in the 2010s, with an increased emphasis on participatory, user-centric, and bottom-up models (Trencher, 2019; Sakuma et al., 2021). However, this shift seemed to have largely remained discursive (Datta, 2015; Shin, 2016; De Waal & Dignum, 2017; Zappa, 2020, 2022, 2023; Sanada, 2023). Despite the rise of human-centric narratives, these studies commonly argued that the underlying technocratic structures of smart city policies continue to operate. This points to the ideological working of smart city.

Some of the recent studies on Asian smart cities, delivered from a governance perspective, investigate the policy architecture and power dynamics that shape the material reality of smart cities beyond the ideological veil. For instance, Thurbon et al. (2023) argued that the rapid green transition in the energy sector in China and South Korea is not genuinely motivated by their respective commitment to the mitigation of climate crisis; but instead, it is strongly characterised with what they call 'developmental environmentalism', which points to the strong initiative to boost economic development via investment in green technology at the national level. For Japanese smart city projects, it is also pointed out that achieving the future model of society is not the only motivation; Zappa (2020) identified the rise of a techno-nationalist narrative in Japan's public discourse on smart cities in the early 2000s and alarmed that this narrative is influencing recent foreign policy initiatives. Barrett et al. (2021) added that Japan's smart city initiatives are being used as tools to achieve broader institutional changes, particularly in light of Tokyo's commitment to the UN's Agenda 2030. Furthermore, Sanada (2023) highlighted the decentralised regional governance model, embedded in the policy procedures of national investment in smart city policy in Japan and the EU. Similarly, in Thailand, studies have linked the promotion of wellbeing to the enhancement of ICTs (Chimmanee & Jantavongso, 2021; Irvine et al., 2022). Tawaeesaengsakulthai et al. (2019) examined how smart urban development negotiated by the private sector and the state in Thailand yielded unsatisfactory results due to systemic dysfunctions such as poor governance and democracy. The interplay between deliberative processes and technocratic approaches in Thailand's smart city development has become a critical point of discussion (Sacramento & Boossabong, 2021). In India, Datta (2015) argued that new urban developments, often labelled as smart or eco-cities, are instrumental in states' efforts to attract capital and promote economic growth, echoing a historical trend toward utopian urbanism in postcolonial India. More recent studies have expanded this discussion to expose the limitations and ambiguities of India's smart city policies (Roy, 2016; Fromhold-Eisebith & Eisebith, 2019; Willis, 2019; Ghosh & Arora, 2022).

Despite the rich body of research on local smart city experiences, how these experiences proliferate across national borders remains a largely unexplored area (Shin, 2016; Moser, 2018, 2020; Gonella, 2019; Visvizi & Lytras, 2019; Kim et al., 2020; Zappa, 2020; Alizadeh, 2021; Sanada & Kuwatsuka, 2024). In our view, this occurs because most of the existing smart city related social scientific research remains focused on studying smart cities in the domestic context of individual countries. There is no doubt that these are important contributions. However, it is also undeniable that the nexus of smart city development and international cooperation requires urgent scholarly attention from a governance perspective, especially in a context where smart city-related international investment is skyrocketing. This article will contribute to the field of study on smart cities in search of world cities. In addition, existing studies have largely focused on investigating the policy reality, structured via the policy architecture and the power dynamics of smart cities beyond its ideological veil. However, in order to address international policy circulation, this study argues that the ideological workings of promoting the narrative of the smart city must be properly acknowledged as a part of policy practice. Against this background, this study explores the international cooperation on smart city development in Asia, taking both the policy reality and the ideological veil of smart cities seriously.

3. Theoretical framework

The theory of *local globalness* explains policy circulation due to the multi-level effort of smart city development; it satisfies the strategic goals at the international level and the developmental needs at the local level at the same time (McCann, 2011). This theoretical lens guides this study to conceptualise a smart city project as a multi-level policy space where (a) state and non-state stakeholders simultaneously strive to advance their respective strategic interests, (b) while appealing to the ideological discourse to legitimise the investments in urban infrastructure development.

Firstly, hypothetically speaking, both state and non-state stakeholders are striving to advance and accommodate their strategic interests across the policy process of a given smart city project. In the international process to form an agreement on a smart city development plan, the negotiation between the donor and the recipient countries occurs rather to accommodate their respective strategic interests than the materialisation of the urban project itself. The hypothesis is developed based on the existing study of international cooperation. In the context of international climate finance, Brunner and Enting (2014) argued that the initiation of an international cooperation project does

not guarantee perfect alignment between the two parties. Donor countries seek to allocate international aid to pursue long-term geopolitical, geoeconomic and moral objectives (Alesina & Dollar, 2000), while recipient countries seek to attract international capital for domestic development, often by navigating competing international political and economic interests (Hartley, 2017). This hypothesis still requires a verification in the specific context of international smart city projects at the international level. In the domestic context, state and non-state stakeholders, further shape the dynamics of policy exchange within each state (Yoshimatsu, 2021; Tawaeesaengsakulthai et al., 2019); this point should be evident in the smart city specific context in the literature introduced in the previous section. Advancing from the planning phase to the implementation phase, the preferred method of Public-Private Partnerships (PPPs) breaks down the agreed development plan into various bankable projects and hands them over to non-state actors on a bidding basis. This stage involves a shift in moral responsibility for ensuring the materialisation of the urban and infrastructural development project from the public accountability to the private profitability (Pianezzi et al., 2023; Sanada, 2023; Sanada & Kuwatsuka, 2024). Finally, the local livelihood is, in itself, resilient. In their daily interaction with the city, the local citizens appropriate the city space in accord with their own needs and concerns (Shin, 2016; Moser, 2018, 2020).

The second hypothesis is that the appeals to the local need for urban and infrastructure development investment are sought discursively. This study explains the characteristics of the discursive construct according to the *socio-technical imaginary* (Jasanoff & Kim, 2015). It is considered socio-technical because they position social innovation and technical advancements in a mutually reinforcing relationship (Kim et al., 2020; Luque-Ayala, 2019). Promoters and vendors of smart cities promise to create a future society by addressing local challenges with technologically advanced, digitally driven solutions (De Waal & Dignum, 2017; Alizadeh, 2021; Kong & Woods, 2021). However, the connection between these societal challenges and the envisioned future is often arbitrary. As a result, efforts to realise such futures remain experimental, entrepreneurial and uncertain (Crivello, 2014; White, 2016; De Waal & Dignum, 2017; Tironi & Albornoz, 2021). Potentially, it leads to outcomes that are irrelevant to the originally envisioned societal future. Ultimately, these imagined societal futures may never materialise and thus remain imaginary. We call the socio-technically imagined appeal to the local developmental need *smart rhetoric*.

Smart rhetoric detaches societal challenges from their structural contexts and reinterprets the issues as if they derive from a lack of technological solutions and capital investment. In social realities, however, local issues, in fact, remain unsolved without structural changes. This enables the concept of 'smart' to be an inexhaustible rhetoric to justify endless investment in the infrastructural development for urban troubleshooting. Further, the rhetoric exerts what Foucault called *disciplinary power,* prescribing *smart citizens* that points to the ideal ontological essence of citizenry of smart cities (White, 2016). They are depicted as the passive embracer of the scientific and technological development (De Waal & Dignum, 2017), detached from the spatio-temporary specificity of their livelihood and thus from the democratic power to tailor city governance in accord with their own needs and concerns (Sanada & Kuwatsuka, 2024). From this perspective, the local effort to appropriate the city space appears to be resulting from the lack of socio-technical enthusiasm and understanding from the citizens' side. This point is empirically reported in past studies such as Granier and Kudo (2016) and Pianezzi et al. (2023). The employment of smart rhetoric and its impact must be properly acknowledged.

Finally, according to the theory of *local globalness,* the above-mentioned two aspects of smart cities must occur at the same time. This points to the need to interpret the working mechanism of these two aspects. On this basis, the study asks the research question: 'What strategic roles does the smart city, as a policy idea, play in the different stages of international cooperation policy development?' In turn, the answer is sought through the verification of two theoretically informed hypotheses introduced above: (1) both state and non-state stakeholders are striving to advance and accommodate their strategic interests in a given smart city project at the international level, and (2) the appeals to the local developmental needs are sought discursively in socio-technical terms and exerts impacts at the local community level, neglecting the real developmental issues at hand.

4. Methods

With these tasks in mind, a case study approach is particularly suited to our research, as it allows for a detailed exploration of interplay between international efforts to accommodate the heterogeneous strategic interests and employment of smart rhetoric. Our focus will be on smart city projects supported by Japanese ODA in Varanasi, India, and Bangkok, Thailand. Japanese cases will be studied because Japan has played a key role in circulating its smart urbanism models as one of the region's largest international donors and providers of technical cooperation in Asian smart city market. India and Thailand were selected as case countries because they are among Japan's most important international strategic partners in Asia, each demonstrating unique political and economic interests that shape their engagement with Japan and *vice versa*. The cases of Varanasi and Bangkok were chosen for their success in accommodating the strategic goals of both the donor and recipient countries, having been designated as pilot cities by their respective local governments. These cases will provide a comparative perspective on how Japan's ODA-driven smart city initiatives are designed and implemented within different geopolitical and local contexts.

Our research methodology is grounded in document analysis, which allows for a systematic examination of key texts to understand the policy space of a given smart city initiative. Within his theory of symbolic domination, Pierre Bourdieu explains that ideology becomes effective when members of a society *misrecognise* an unequally structured social reality as if it is free from its spatio-temporally specific structure of social hierarchy (Bourdieu, 1990). The historically constituted, and thus locally specific, structures of social hierarchy contextualise everyday practices and on this basis make the social experiences of individuals meaningful; ideology works to nullify such a context. To counteract the working of ideology, then, the social sciences must observe and describe the case to re-contextualise the social practices (Rehbein, 2015). This is a research method employed in the field of global and area studies, in which the mission of these fields is to understand global phenomenon based on the carefully contextualised observation as it is experienced at the locality. Following this methodological path, we analysed primary documents, including project reports from the Japan International Cooperation Agency (JICA) and official policy papers from the Indian, Japanese, and Thai governments. Other methods such as interviews and ethnographic methods would benefit our methodology further and we endeavour to employ these methods we would like to employ these methods in our future study. These primary sources were complemented by secondary documents, such as peer-reviewed scientific articles, and local media reports, which helped to contextualise the primary materials and offered insights into local perspectives. Further, this study consulted the research from the field of international development cooperation to examine and interpret the documents in a broader political and economic context, shaped by evolving international relationships. On this basis, this study submits a multi-level thick description of Japanese international efforts in smart city building in India and in Thailand to shed light on the international cooperation on smart city development in Asia.

5. Japanese smart city

Let us start our exploration by providing a brief historical overview of the development of Japanese smart city policy. Japanese smart city engagement has its original motivation in the country's enduring concerns about its limited raw materials and energy sources (Zappa, 2020).

Since the 1980s, the Government of Japan (GOJ) has identified nuclear energy as the primary solution to its chronic energy crises, driven by external political factors, and has invested heavily in related technologies (JAEC, 1988). The Fukushima nuclear disaster in March 2011 gave rise not only to the acute need to reconstruct the affected area but also to tone down the country's nuclear program. In response, the second Abe administration quickly appointed expert panels to formulate state-led initiatives aimed at fostering scientific research, technological innovation, and resilient community building. These efforts culminated in the introduction of *Society 5.0* in 2016, a new societal model that quickly became central to Tokyo's policies.

Smart rhetoric is prevalent in this concept. The GOJ defines Society 5.0 as "a human-centred society that balances economic advancement with the resolution of social problems through a system that highly integrates cyberspace and physical space" (CAO, n.d.). The envisioned future society, enabled by technologies like the IoT, AI, robotics and automated mobility, is one in which "people are hopeful, respectful across generations, comfortable, and vigorous" (CAO, 2016). Society 5.0 promises to address a range of social issues, including energy securities, disaster resilience, low birth rates, an aging society, economic disparity, and rural decline. Indeed, while the energy sector remains significant in Japan's smart city vision, its scope has expanded to encompass various sectors such as agriculture, health, mobility, public services and tourism. Following Abe's political departure in 2020, subsequent administrations have continued to prioritise smart city policies, broadening their scope even further. For instance, the Suga administration designated smart communities and cities as a key strategy for achieving national decarbonisation goals by 2030 and allocated approximately 828 million USD for smart city related financing schemes in the following fiscal year (Tokunaga & Shinobe, 2021). The following Kishida administration introduced *the Digital Garden City Nation plan* in 2022, integrating Society 5.0 into its vision of *new capitalism.* Through these initiatives, the Japanese government seeks to leverage past experiences and spur "bottom-up growth" via substantial public and private investments in the digital sector and infrastructure modernisation (PMO, 2022).

In 2019, the GOJ defined a smart city as a space to realise this envisioned future society (CAO, 2019). For its implementation, GOJ integrated the smart city concept to the policy of regional governance namely *the regional revitalisation policy*. This regional policy was launched by the second Abe administration in 2014, reinforcing the trend of politico-administrative decentralisation that began in the late 1990s. The process of decentralization gradually transferred the administrative responsibilities to local governments without adequately allocating financial resources; the subordinating relationship between the central government and the local governments has remained unaltered (Wirth et al., 2016; Chiavacci, 2010). At first glance, a revision to *the City Planning Act* in 2011 appeared to increase local administrative discretion. However, its degree remained controlled by the central government through subsidy program eligibility and availability (Matsui, 2017). The second Abe administration appointed central ministries to publish Basic Plans that outline city planning principles, goals, Key Performance Indicators (KPIs), and financial support. To access these national subsidies, local authorities must design their city plans in accordance with these Basic Plans. These subsidies are distributed on a competitive basis, incentivising local authorities to align with national policy directives (Zappa, 2023). Consequently, the adoption of Society 5.0 in the domain of regional governance triggered a rapid smartification of local city plans, with at least 468 smart city projects launched between 2017 and 2023 (Zappa & Sanada, forthcoming). To address the lack of expertise in digitally informed and technologically advanced solutions, local authorities are encouraged to form PPPs with private and academic partners. Most of the subsidised projects take advantage of local communities as sandboxes for demonstrative research for the purpose of Research and Development (R&D). A general lack of citizen involvement in these initiatives has been noted (Granier & Kudo, 2016; Zappa, 2020; Sakuma et al., 2021; Pianezzi et al., 2023).

The Japanese domestic smart city serves as a policy space where state and non-state stakeholders simultaneously strive to advance their respective interests, except for those of the local citizens, while seeking to legitimise investment in socio-technical terms within the policy sphere of regional policy. Society 5.0 is a flexible vision that can accommodate the national developmental goals of various cabinets, such as resilience, decarbonization, and digital transformation, as well as other societal concerns, including energy security, resource scarcity, an aging society, and economic stagnation. Its implementation takes advantage of the regional revitalization scheme, which ensures the nationwide adoption of Society 5.0 as a city planning model. This policy process characterises Japanese smart city initiatives as a policy of decentralised regional governance (Zappa & Sanada, forthcoming).

6. Japanese smart city export via ODA

Let us now turn our attention to clarifying how this policy became relevant to Japan's ODA programme and contributed to satisfying Japan's international strategic goals. The OECD (2023) instructs member states to promote sustainable economic and welfare development in emerging nations through international aid. Japan's ODA charter, initially adopted in 1992 and revised in June 2023, has supported these objectives. Yet, Japan's ODA not only serves the development needs of recipient nations but also advances Japan's broader national interests, such as economic expansion, political influence, and security objectives (Söderberg, 1998, 2018; Sudo, 2001; Yoshimatsu, 2017).

The existing study of Japanese ODA highlights the transition in Japan's strategic goals and its approaches to pursuing these goals. Japan's ODA program began in 1954 as a form of quasi-reparation for the destruction it caused during World War II in Southeast and East Asia. Beyond this moral obligation, Japan sought to stabilise markets for its exports and secure raw material sources (Sudo, 2001). After completing this phase in 1977, Japan announced to double its ODA contribution to neighbouring Asian countries, marking a shift in strategy. Japan began actively using ODA as a diplomatic tool to pursue its economic and political interests in the region (Söderberg, 1998, 2018). By 1992, the amount of aid had quadrupled. During the 1990s, Japan focused on bilateral, loan-based aid for large-scale infrastructure projects in sectors such as transportation, energy, water, and sanitation (Söderberg, 1998, 2018; Sudo, 2001; Yoshimatsu, 2017). Japan, then a leader in industrial technologies designed to mitigate environmental impact, encouraged recipient countries to adopt these technologies to reduce the environmental damage caused by rapid industrialisation, supported by ODA funding (Mori, 2011). This increase in aid reflected Japan's growing geopolitical security concerns, in the greater Mekong subregion and particularly in Vietnam, Laos and Cambodia, which had not yet joined ASEAN (Sudo, 2001). Since the 2000s, Japan's competitive edge in environmental technology has gradually declined due to cheaper and more convenient alternatives from countries like South Korea and China (Mori, 2019). In response, the Japanese government shifted its focus from infrastructure projects to the development of infrastructure management systems (PMO, 2013). In 2015, the second Abe administration launched *the Partnership for Quality Infrastructure (PQI)*, aimed not only at revitalizing Japan's economy but also at countering China's growing regional influence in Asia (Yoshimatsu, 2017, 2021). The following year, Japan expanded its ODA to include technical assistance for spatial planning, offering expertise in designing Eco-cities, Transit-Oriented Development (TOD) models, compact cities, resilient cities, and smart cities—all based on Japan's high-quality infrastructure and management systems. In 2022, the Kishida administration revised *the Export Strategy of Infrastructure System 2025*, first issued in 2013, to put a clear emphasis on geopolitical security in the Indo-Pacific region as the priority target. The updated ODA charter also emphasises "security" and "shared values" in fostering a "rule-based international community," focusing on quality growth in the "free and open Indo-Pacific" through digital and green transformation (MOFA, 2023). In this way, smart cities

have become central to Japan's ODA strategy in the Indo-Pacific.

The contents of Japan's ODA contributions have been clearly informed by its domestic experiences in the sphere of regional governance (MOFA, 2003, 2015, 2023); these ODA charters highlight that these strategies have shifted from infrastructure projects and urban planning to the current focus on smart city development. Through export of its domestic experience in the sphere of regional governance, Japan aims at contributing to global development while satisfying its own strategic goals. To promote its smart urbanism model internationally, the GOJ has selected specific cities as showcases. Since 2013, the government has organised study tours and presentations of these model cities for the international diplomatic community in Tokyo. In 2014, Japan adopted an all-Japan approach, coordinating with the private sector, local governments, and universities to accelerate the export of smart city solutions. Recently, the GOJ published a smart city catalogue for recipient countries, detailing the socio-technical future depicted in Society 5.0, flagship cities, available technologies, and cooperation mechanisms (JASCA, n.d.). This allows recipient countries to purchase Japanese smart city related technologies and appropriate its smart urbanism model. For example, Fujisawa Sustainable Smart Town in Kanagawa Prefecture was designated as a model for energy-efficient, self-reliant smart communities. With Panasonic as a private partner, Fujisawa developed energy-efficient buildings equipped with solar panels, energy storage systems, EV charging stations, and a Central Energy Management System (CEMS). Another example is Keihanna Smart City in Kyoto Prefecture, which, in collaboration with Mitsubishi Heavy Industry, implemented a smart grid, CEMS, and advanced technologies in the health and mobility sectors. Through these initiatives, Japan has successfully positioned smart cities as key examples of quality infrastructure development, with strong collaboration between the public and private sectors.

7. International cooperation on smart cities in India-Japan relationship

The above outlined Japan's strategic goals through ODA contributions must be further contextualised within the specific diplomatic relationship between Japan and India. This section unfolds that both Japan and India benefit from the policy idea of smart cities to accommodate their strategic goals, addressing local development needs as well as international objectives. On this basis, it identifies the strategic priorities of each country and shows how the smart city initiative is designed to foster a mutually beneficial, win–win situation for both Japan and India.

Since the 1990s, economic and security cooperation has been central to India-Japan relations. Scholars have highlighted how the partnership deepened after the Cold War, shaped by the US-Japan rapprochement with New Delhi, Japan's economic challenges, and China's growing influence in the global market (Brewster, 2010; Envall, 2014; Jaishankar, 2016; Choudhury, 2018; Basrur & Narayanan Kutty, 2022). By the early 2000s, Japanese leaders, including former PM Abe, sought to elevate bilateral ties to a "strategic and global partnership," with a focus on trade, investment, and defence cooperation. This culminated in the signing of a comprehensive economic partnership in 2011, following four years of negotiations initiated under Abe's first cabinet (Envall, 2014: 46). Under the Kishida administration, security ties have been further strengthened through offering military assistance and the supply of defence equipment. Meanwhile, Japan's ODA program in India now addresses broader goals, "such as fostering regional stability and unlocking economic potential", alongside its conventional focus on poverty reduction through infrastructure development (MOFA, 2023).

On the Indian side, the Government of India (GOI) has maintained a strategy of strategic autonomy, which has been expanded under Prime Minister Modi. Modi has enhanced bilateral relations with key global powers, including Japan, focusing on national security, economic growth, and India's global standing (Basrur & Narayanan Kutty, 2022). China's growing regional influence, particularly since the border conflicts of the 1950s, remains a significant concern for Indian policymakers. In response, New Delhi seeks to build international trust and improve military and naval capabilities through multilateralism and minilateralism like the Quad. In this context, the GOI launched the ambitious *Smart Cities Mission*, aiming to develop 100 smart cities across the country. This 170 billion USD initiative, introduced under PM Modi's leadership, aims to achieve a decent quality of life and a sustainable environment, through providing core infrastructure (GOI MHUA, 2024a; GOI MHUA, 2024b). The mission's key objectives include retrofitting informal settlements, developing greenfield sites to meet housing demands, and implementing technology-driven infrastructure solutions in terms of sanitation, waste management and mobility (GOI Ministry of Urban Development, 2015). The socio-technologically imagined societal future is central to India's broader *New India* initiative, which aims to drive sustained economic growth, in accord with the UN Sustainable Development Goals (SDGs), and elevate India's global standing as an emerging economic powerhouse (NITI Aayog, 2018; Srinivas, 2018: 3). International donors, including Japan, the UK, the Asian Development Bank, and the World Bank, have offered to invest in India's smart city projects (Dash, 2016).

Japan's ODA, particularly during Abe's tenure, has played a critical role in supporting this initiative. Since the early 2010s, Japanese multinational companies have set up industrial operations in India, especially in sectors like automotive and pharmaceuticals (Embassy of Japan in India, 2017). Additionally, state-to-state cooperation has led to large-scale infrastructure projects. For instance, in 2013, JICA conducted a feasibility study for India's first High-Speed Railway (HSR) project, connecting the industrial hubs of Mumbai and Ahmedabad. This HSR project, expected to serve 40,000 passengers daily, has since grown into a 2 billion USD infrastructure development initiative, with further financial and technical support from Japan (JICA, 2023a, 2023b). In Ahmedabad, projects including the renewal and expansion of the local metro system and joint research projects promoting ICT-based mobility and decarbonisation have been implemented (MOFA, n.d.).

Soon later in 2014, Japanese investment in Indian smart city projects was extended to include Ahmedabad in the state of Gujarat and Varanasi in the state of Uttar Pradesh among others. Interestingly, Gujarat is where Modi was Chief Minister from 2001 to 2014; Varanasi, one of the largest cities in Uttar Pradesh and most celebrated destinations for Hindu believers, is where Modi has his constituency as a Lok Sabha member. In Gujarat, the local administration aims to create "Japanese industrial townships" offering subsidies, tax incentives, and familiar amenities for Japanese investors (METI, 2021). In Varanasi, the local administration signed a memorandum of understanding (MoU) with Kyoto to exchange urban planning expertise, with the goal of developing Varanasi into a tourist destination like Kyoto. However, despite these efforts, development gaps remain. In all areas elicited for smart city development, but most significantly in Uttar Pradesh, in fact, require foremost basic infrastructure improvements in sanitation, energy, and traffic. One JICA study (2018) adds that the lack of ICT infrastructure may be a further obstacle to realizing Varanasi's smart city vision. To date, the main project implemented in Varanasi is a convention hall with waste and wastewater management systems (JICA, 2020a). In June 2023, severe flooding in the region led to criticism of Modi and the Bharatiya Janata Party (BJP) for unmet promises regarding city development and river cleaning (Hindustan Times, 2023). Although such challenges remain, Modi's political standing remains strong, as evidenced by his third consecutive term as MP for Varanasi in the 2024 general elections (The Hindu, 2024).

In conclusion, these smart city investments serve dual purposes for both donor and recipient countries. For Japan, they contribute to expand the export of smart cities, enabled with Japanese infrastructures and planning capacities. Further, Japan also seeks to enhance its presence in the Indo-Pacific region via strengthen its ties with India, a key strategic partner (Bajpaee, 2024). For India, they support Modi's vision of a New

India, offering tangible improvements in urban infrastructure while enhancing his political stature, particularly in BJP strongholds like Gujarat and Varanasi. Further, through strengthening the strategic tie with Japan, it aims at enhancing national security, economic growth, and India's global standing serving both donor and recipient interests in the region. On the other hand, the local community is yet to witness improvement in terms of the basic infrastructure in sanitation, energy, traffic and ICTs.

8. International cooperation on smart cities in Thai-Japan relationship

This section presents a case study of Japan's international efforts in smart city development in Thailand. Similar to the Indian case, it examines how both Japan and Thailand benefit from the policy idea of smart cities to accommodate their strategic goals, addressing local development needs as well as international objectives. The section highlights the strategic priorities of each country and demonstrates how the smart city initiative creates a mutually beneficial, win–win outcome for both Japan and Thailand.

Japan has been the leading investor in Thailand since the 1970s. In the 1980s, Japan's manufacturing sector, particularly the automobile industry, heavily invested in offshoring production to Thailand. While Japanese ODA aimed to reduce poverty in the region, it also served the economic goal of improving the business environment for Japanese firms through infrastructure projects. Since then, Thailand's industrialisation and export-driven economy have advanced in accordance with the global strategy of Japanese corporations. Thailand's domestic economic development heavily relies on international investment, largely due to the deep penetration of Japan's economic strategy into the Thai economy (Söderberg, 1998). According to a 2023 report, Japan remains the largest investor by both project numbers and volume, with Japanese companies investing approximately 440 million USD across 63 projects in FY 2022. In comparison, Singapore invested about 177 million USD in 46 projects, and China contributed 320 million USD across 19 projects (The Nation, 2023).

Despite the continued flow of Japanese investment, the Thai economy has stagnated since the 2000s. The Asian Development Bank (2017) identified that Thailand has fallen into the middle-income trap, where the industrial structure reaches a saturation point in terms of capital accumulation and management efficiency. Entangled with Japan's economic strategies, the Government of Thailand (GOT) faced an urgent need to rethink its industrial strategy. As early as 1996, the GOT issued *the IT 2000 Vision*, emphasizing a shift towards a knowledge-based economy. This was followed by *the IT 2010 Vision*, which expanded the focus to include social development (Sontiwanich et al., 2022). In 2015, Thailand introduced *Thailand 4.0*, a strategy within *the Twenty-Year National Strategy 2018–2037*, which aims to transition from a manufacturing-centred economy to one driven by innovation and creativity by 2037. The GOT committed to investing in existing sectors like tourism, agriculture, food processing and manufacturing, while also nurturing future industries such as biotechnology, semiconductors, electric vehicles (EV), robotics, and aviation (NESDB, 2017). A key component of this transformation is a 37 billion USD investment in the Eastern Economic Corridor (EEC), which will include business centres, science hubs, industrial zones, and a smart city for residential purposes. Whether these industrial clusters can help Thailand escape from the middle-income trap remains to be seen.

Thailand's smart city initiatives took off against the backdrop of the broader industrial policies mentioned earlier. The first policy document directly addressing this vision is *Smart Thailand 2020*, which builds on the earlier *Second Thailand ICT Master Plan (2009–2013)* and the *Third Thailand ICT Master Plan (2014–2018)*, both of which were developed alongside Thailand's industrial strategy to enhance the IT sector (Sontiwanich et al., 2022). The GOT envisions smart cities as designed and business-oriented cities in which city management and resource usage are more efficient through modern technologies and innovation; it aims to provide residents with a higher quality of life in terms of healthcare and education, leading to sustainable happiness (DEPA, 2023). This approach also creates a favourable environment for business and industrial innovation (Thai Embassy in U.S., 2022). For example, the smart residential area in the EEC is designed to house 350,000 residents, incorporating infrastructure for decarbonisation, a circular society, and overall well-being. To attract international investment, the Board of Investment of Thailand (BOI) offers both short- and long-term tax incentives (BoI, 2023). Thailand's smart city initiatives have opened up new opportunities for international investment, with ASEAN playing a key role in this effort. In April 2018, Singapore put significant efforts into establishing the ASEAN Smart Cities Network (ASCN) to attract foreign investment in smart city projects across the region. The ASCN facilitates partnerships between ASEAN smart city projects and private or public investors, using Singapore as a working model (Crumpton et al., 2021). The network has proven successful, with companies like Alibaba Cloud and Hitachi, as well as nations such as China, Japan, the EU, and the U.S., competing to fund smart city developments in ASEAN member states. ASCN has designated 26 pilot smart cities in 10 ASEAN countries, with 77 ongoing projects (ASEAN, 2022).

Upon ASCN's launch, the GOJ has accelerated its cooperation in ASEAN's smart city initiatives. In 2019, Japan launched *the Japan Association for Smart Cities in ASEAN (JASCA)*, sharing its practical knowledge and experiences in smart city development. This knowhow was published as *ASEAN's smart city planning guidebook* in 2022. Additionally, Japan launched Smart City supported by *Japan ASEAN Mutual Partnership (Smart JAMP)*, a platform facilitating partnerships between ASEAN and Japanese stakeholders to support smart city projects. In Thailand, Japan's efforts have focused on developing a smart city in Bangkok, one of ASCN's 26 pilot cities. Specifically, Japan is assisting in developing the area around Bang Sue Grand Station into a smart city. This coincides with local Japanese business interests in improving Bangkok's transportation infrastructure (JCC, 2023). In 2017, JICA submitted a development concept for the area based on the TOD model, which was subsequently updated into a smart city master plan in 2020. It featured successful examples of Japanese smart cities, such as Toyota City's mobility concept and the decarbonisation efforts of Kashiwanoha Smart City, promoting the export of smart cities, enabled with Japanese infrastructures and planning capacities.

It is important to mention that the Japanese-drafted master plan overlooks the impact on local livelihoods. While it proposes a compensation plan for households affected by the development, JICA (2020b) estimates that approximately 7,000 residents from 1,931 households will be impacted based on official civic registration records. This estimate does not account for individuals in the urban informal sector, including undocumented migrant workers. Certainly, addressing this sector would require delving into domestic issues in Thailand and ASEAN, potentially overstepping JICA's legitimate role. While JICA (2020b) recognises citizens as vital to the Bang Sue smart city, they are treated merely as data points to be collected through surveillance technologies and security cameras in the JICA's plan. In March 2023, the planned development faced a temporary legal halt due to public authorities' failure to fulfil their obligation to conduct public hearings for the affected local communities (Bangkok Post, 2023).

In conclusion, these smart city investments serve a dual purpose for both Japan and Thailand. For Japan, they help expand the export of smart city technologies, supported by Japanese infrastructure and planning expertise, while also improving the business environment for Japanese firms in and around Thailand. For Thailand, these investments foster a favourable setting for business and industrial innovation, which is key to upgrading its industry and finally escaping the middle-income trap. Additionally, ASEAN has played a role in boosting international investment in Thai smart cities. Today, global donors are competing to invest in Thailand, and by balancing these multilateral investments, Thailand aims to strengthen its position in the global market. Local livelihoods are

addressed but ony on a formal basis; but only on the formal basis; the local citizens are acknowledged rather as providers of data to censoring and monitoring technologies.

9. Discussion

This article addressed a research question concerning the role of the smart city in Tokyo's international cooperation. To this end, it explored two empirical cases of smart cities in India and Thailand, both of which are supported with Japanese ODA. It verified two theoretically developed hypotheses regarding a smart city project as a policy space where (1) both state and non-state stakeholders are striving to advance and accommodate their strategic interests at the international level, and (2) appeals to the local developmental needs are sought in socio-technical terms. The table below summarised the key findings from the analysis (Table 1).

(1) In the cases studied, each country negotiated its historically rooted international strategic interests along with the policy structure of international cooperation. The contents of these interests became apparent by referring to the diplomatic relationship between the donor and the recipient countries.

Toward both partners, the GOJ sought to enhance the export of Japanese quality infrastructural systems and urban planning expertise. By showcasing domestic example cities and available smart city technologies to promote them to international partners, the GOJ facilitated recipient countries to purchase Japanese smart city-related technologies and, on this basis, appropriated its smart urbanism model through its ODA programme. Regarding India, the GOJ emphasised India's geopolitical importance as the largest democracy in the strategically significant Indo-Pacific region, particularly in countering China's influence. Pursuing these strategic interests, Japanese political leaders invested in smart cities in North-West India, PM Modi's electoral base, fostering a strategic partnership with a focus on collaboration with like-minded nations. Regarding Thailand, Japan had focused primarily on creating a favourable business environment for its firms, thereby boosting business opportunities in Thailand and its neighbouring countries.

On its part, India aimed to enhance its strategic autonomy and self-reliance by strengthening bilateral relations with Japan, focusing on national security, economic attractiveness, and its status as an emerging regional power. India aspired to transform into *New India*, modernising and developing to rival China in Asia and other Global South nations. Meanwhile, Thailand sought to escape the middle-income trap by transitioning from a manufacturing-driven economy to an innovation-driven one under its *Thailand 4.0* vision. To achieve this, Thailand opened its urban development sector to international investment, inviting foreign capital. Consequently, international donors, including Japan, competed to allocate investments to smart cities in Thailand, leveraging less stringent regulations in technical sandboxes for R&D.

(2) In both cases studied, smart rhetoric was prevalent. The central governments of India, Thailand, and Japan sought to legitimise investments in smart city by referring to the need of digitally informed and technologically advanced infrastructure development; the goals of investment were thereby achieving social innovation. The analysis showed each country's unique smart rhetoric.

Japan situated smart cities as a policy scheme in the sphere of regional governance. Technologically upgrading and digitalising the existing urban infrastructure in policy areas such as energy, transportation, security, tourism etc were to be carried out in the politico-administrative governing responsibility of the municipalities; the goal is to bring resolutions to a wide range of societal challenges including energy scarcity, resilience, decarbonisation, ageing society, rural decline, and economic stagnation. Its socio-technical vision was summarised under the new societal model, namely Society 5.0. As the leading aid donor in Asia, Japan played a crucial role in proliferating its own urbanism model while supporting the case countries' smart city initiatives, particularly through urban and infrastructure development aimed at poverty eradication.

India, meanwhile, launched *Smart Cities Mission,* appealing to the needs of core infrastructure including retrofitting informal settlements, developing greenfield sites to meet housing demands, and implementing technology-driven infrastructure solutions in terms of sanitation, waste management and mobility. In the case of Varanasi, a convention hall with waste and wastewater management systems was implemented. The smart city vision of Varanasi was to develop a tourist destination like Kyoto. The wider goal of India's smart city mission was to achieve a decent quality of life, and a sustainable environment and on this basis drive sustained economic growth, in accord with the UN's SDGs.

On the other hand, Thailand situated smart cities as a policy scheme in the sphere of industrial policy. It is defined as designed and business-oriented cities in which city management and resource usage are more efficient through modern technologies and innovation. The Bangkok case focused on a technical upgrade of transportation infrastructure, which coincided with local Japanese business interests. Through its overall smart city engagements, GOT aims to provide residents with a higher quality of life in terms of healthcare and education, leading to sustainable happiness, at the same time creating a favourable environment for business and industrial innovation.

Despite the nuanced differences, the envisioned futures are not mutually exclusive; the smart futures can coexist as a discursive totality. This is possible because these visions are, in fact, empty. They are empty in the sense that smart rhetoric exerts ideological efficacy to nullify the spatio-temporally specific social context. Also, the causal relationship

Table 1
Features of smart city projects in Japan, India and Thailand (created by authors).

	Japan (International via ODA)	Japan (Domestic)	India	Thailand
Socio-technical discourse	Smart city building for achieving sustainable development of economy and welfare in the developing countries −MOFA (2023)	Realisation of Society 5.0, where cyber and physical spaces are integrated to tackle various social issues. −CAO (2019)	Urban enhancement of QoL and environmental sustainability through provision of core infrastructures and services which utilise smart technologies. −GOI Ministry of Urban Development (2015)	Enhancement of QoL and sustainability of happiness in designed and business-oriented city, in which city management and resource usage are more efficient through modern technologies and innovation. −DEPA (2023)
Underlining motivation	Enhance economic, political, or security-related national interests	Energy self-sufficiency, Resilience, Decarbonisation and Digitalisation	Core infrastructure provision such as sanitation, security and connectivity	Upgrade of industrial structure to escape from middle-income trap
Strategies	Showcasing of model cities	Smartification of local city plans in urban and rural areas	Urban (re)development	Urban (re)development
Governing style	State-designed; local implementation based on PPPs	Politico-administrative decentralisation with the centralised subsidies	Japanese ODA: State-designed; local implementation based on PPPs	Japanese ODA: State-designed; local implementation based on PPPs
Rationale	Export promotion Geostrategic posture	Local governance based on self-support	Self-reliance enhancement Rivalry with PRC	Foreign capital attraction Balancing Japan and PRC

between social innovation and a given urban technological investment remains arbitrary. In fact, no party is genuinely committed to realising the technically envisioned social future advanced by the smart city. Instead, the degree of implementation of these initiatives was largely delegated to the decentralised model of PPPs. The internationally agreed plan was divided into bankable projects and technical experiments, which were contracted out to private firms through a competitive bidding process. Japan's ODA projects must remain sensitive to the legitimacy of local ruling elites, while JICA must avoid excessive interference in domestic affairs. This situation highlights the structural vacuum for ensuring the materialisation of the envisioned societal future, privacy protection, and democratic participation in the case studied. As a result, in both cases, the lack of real improvement in local livelihoods was reported. At the stage of international negotiation, the lack of citizen perspective was apparent; what was consulted instead was *smart citizens,* the ideal citizenry presupposed in the smart city design. They are passive embracers of science and technology, consulted in a form of data, collected through technologies such as IoT and CCTV cameras.

What strategic roles does the smart city, as a policy idea, play in the process of international cooperation in the cases studied? The theoretical framework of *local globalness*, explains that policy circulation occurs due to the multi-level efforts of smart city development. It must satisfy the strategic goals at the international level and the developmental needs at the local level at the same time. Within this framework, the answer to this question is drawn through extracting findings, which pierce through the policy process at the international and the national levels. Firstly, the smart city project opens a shared policy space for both donor and recipient countries to strive to create a win–win situation in accommodating their national interests. Secondly, with what we call smart rhetoric, smart city projects legitimise investment in urban infrastructural development *vis-à-vis* the causal relationship constructed between social innovation and technologically advanced and digitally informed solutions. This rhetoric is socio-technically imagined, thus empty. Certainly, the projects have implemented urban infrastructures such as a convention hall in Varanasi and a grand station in Bang Sue. However, no one seems to be ultimately committed to the materialisation of the smart city in its entirety. In this sense, what appears to be more important in the smart city project is its function as a policy space of smart rhetoric, rather than its materiality. As far as the cases studied are concerned, the smart city project plays a role as a political tool to open up a space to allow both parties to advance their agendas while obscuring the real intentions behind the policy via the smart rhetoric.

10. Conclusion

As urbanisation accelerates in emerging economies, the realisation of sustainable urban governance has become increasingly critical. In this context, smart cities hold great potential. The volume of smart city related international investment has been increasing at a dramatic pace, particularly in emerging Asia (Alizadeh, 2021). Yet, most existing studies on smart cities have remained focused on their materiality. Even social scientific research, which examines smart cities as a matter of governance, has largely studied them within the domestic contexts of individual countries. Against this backdrop, this article set out to explore international cooperation on smart city development in Asia. Using the theoretical lens of *local globalness* (McCann, 2011), the article conceptualised smart cities as policy spaces that simultaneously address strategic goals at the international level and developmental needs at the local level, *misrecognised* (Bourdieu, 1990) beneath the layer of *smart rhetoric*, justifications for investment in urban infrastructural development constructed with *socio-technical imaginary* (Jasanoff & Kim, 2015). The investigation was guided by the key research question: What strategic roles does the smart city, as a policy idea, play in the processes of international cooperation? To answer this question, the article conducted two case studies of smart city projects in India and Thailand, both supported by Japan's ODA programme. The study tested two theoretically informed hypotheses: (1) both state and non-state stakeholders strive to advance and accommodate their strategic interests in each smart city project at the international level, and (2) appeals to local developmental needs are framed discursively in socio-technical terms, impacting local communities while neglecting the real developmental issues at hand. In the case studied, the policy processes behind international smart city development were marked by a lack of genuine commitment from both donors and recipients to ensure the full materialisation of the agreed smart city plans. Against this background, the socio-technical promises of smart cities appeared more imaginary than real. The findings lead this study to argue that smart city projects serve as political tools, creating spaces where both donors and recipients can advance their agendas while obscuring their real intentions through smart rhetoric.

From the perspective of governance, the promotion of smart cities is tied to policy structures anchored in financial flows that drive urban and infrastructure development. International cooperation in smart city development serves to legitimise local elites in both donor and recipient countries, turning smart city concepts into rhetorical tools for advancing economic and political agendas (Yoshimatsu, 2021; Tawaeesaengsakulthai et al., 2019). At the international level, these narratives often conceal deeper geopolitical, economic, and moral motivations, as well as power struggles between the nations involved (Söderberg, 1998, 2018; Alesina & Dollar, 2000; Brunner & Enting, 2014; Hartley, 2017; Yoshimatsu, 2017). As such, the discursive layer of smart city development acts as a global policy arena for reconciling diverging local political interests to create win–win situations. The findings show that smart cities are loci where countries seek to expand their influence. Japan's focus on the Indo-Pacific region aligns with its geopolitical goals, India views these projects through the lens of security concerns regarding China, and Thailand, while still economically tied to Japan, remains aware of China's growing potential in the region.

This article sought to contribute to the overarching goals of the special issue by addressing diverse topics and fostering multidisciplinary discussions on smart cities, highlighting several key implications for the field of smart city research. Despite the growing body of literature, most studies remain focused on the domestic implications of smart cities within individual countries. However, in emerging Asia, smart city projects are deeply entangled with international capital flows. The international smart city development projects should attract more scientific attention. In this effort, it is crucial to situate smart city initiatives within their historical context, considering both domestic and international strategies for regional governance. The diffusion of smart cities as a governing policy in Asia and beyond is often driven by statecraft (Zappa, 2020; Sanada, 2023). While policy narratives frame smart cities as solutions to societal challenges, its policy processes are highly localised and historically specific. Our findings suggest that smart city projects are best understood as outcomes of negotiation and contestation, rather than straightforward solutions to urban issues. The power struggles embedded in these negotiations underscore the importance of incorporating historical and socio-political perspectives into the analysis of urban development. As long as there are residents, smart cities are inherently public initivatives. They must be examined through careful contextualisation, relying on area-specific knowledge and expertise in the statecraft of the relevant countries. Given Asia's vast diversity and the complexities of its smart city initiatives, addressing these challenges exceeds the capacity of just the two of us. We therefore call for broader scientific engagement, urging researchers and area specialists to explore the international cooperation involved in smart city development in Asia. Such collaborative efforts are essential for fostering a deeper and more nuanced understanding of smart cities and their broader implications.

The increasing international capital investment in Asian smart cities is expected to continue growing. This study hopes that smart cities will fulfil their promise of leading to sustainable urban development as hubs of innovation, resilience, and social progress, genuinely reflecting the

aspirations of the communities they aim to serve, rather than acting as instruments for the strategic objectives of states. It is strongly recommended that policymakers place local livelihoods at the centre of smart city initiatives, integrating more equitable and participatory approaches into policy architecture. To begin with reimagining urban development in this way, however, the ideological workings of smart rhetoric must be properly acknowledged. The rhetorical emptiness and structural lack of commitment to project materialisation remain key driving forces behind skyrocketing international capital investment. It enables countries to advance their respective national interests while benefiting from the inexhaustible legitimisation. This study does not aim to undermine the significance of existing research on the material aspects and policy realities of smart cities beyond this ideological layer. Rather, it contends that the role of smart rhetoric must be properly recognised as an integral part of policy practice to address the dynamics of international policy circulation. The "smartness" of the city is constructed as a discursive totality and cannot be taken at face value. By failing to critically address the ideological workings of smart rhetoric, the social sciences risk reinforcing the current empty state of the issue. This perspective is particularly useful for navigating the overwhelming array of topics and issues related to smart cities today.

Finally, this study must communicate limitations that should be addressed in future research. One notable limitation is that this study only examined the cases of Varanasi, India, and Bangkok, Thailand, to draw conclusions about international cooperation on smart city development in Asia. Future studies should address more cases, particularly involving a variety of donor and recipient country combinations. Topics such as the strategic interests of Asian smart city giants like China, Singapore, and South Korea, their interplay with Japanese interests, and their relationships with other recipient countries await further investigation. Additionally, future studies could explore local community perspectives more deeply, examining how these projects affect communities on the ground and how local stakeholders negotiate or resist the top-down impositions of such initiatives. Furthermore, this study primarily focused on the planning phase of international smart city cooperation; incorporating data from later policy stages, such as implementation and evaluation, would be desirable. Finally, comparative studies with other areas of the globe, for instance in Europe and in North America will strengthen our understanding of international cooperation in smart city development beyond the Asian context.

CRediT authorship contribution statement

Kie Sanada: Writing – review & editing, Writing – original draft, Validation, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Marco Zappa:** Writing – review & editing, Writing – original draft, Validation, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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