The Diffusion of Smart Cities in ASEAN Countries: An Analysis

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Policy diffusion happens when one government decides to adopt a policy because another country also implemented the said policy. The spread of a particular policy internationally or globally is caused by the policy adoption and implementation of one government that influences another government to do the same. This study analyzes the policy diffusion of smart city development program in the member states/governments of the Association of Southeast Asian Nations (ASEAN). The smart cities diffused in the ASEAN countries because of the mechanisms of coercion, competition, learning, and emulation. Coercion diffused smart cities because of the manipulation of economic benefits, monopolization of information and expertise on the part of the powerful countries and big corporations. Competition diffused smart cities because ASEAN leaders view it to achieve competitive economy, an inclusive and sustainable development and economic growth in the region and improve the quality of life of ASEAN citizens. Learning diffused smart cities because the promotion of mutual learning through the exchange of ideas, experiences and views on policy, governance, best practices, business solutions and joint research and innovation will contribute a lot to the realization of the smart cities program. Lastly, emulate diffused smart cities because of the successes of Singapore. Singapore is the only ASEAN city that is focused on improving productivity and designing new types of citizen experiences. It is also the most advanced smart cities in the ASEAN region and one the advanced smart cities globally. Almost all ASEAN countries wanted to be like Singapore in terms of economy, education, technological innovation, and government service.

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This study is an analysis of the policy diffusion of smart cities development programs in the member states/governments of the Association of Southeast Asian Nations (ASEAN). Policy diffusion occurs when "government policy decisions in a given country are systematically conditioned by a prior policy choice made in other countries"[1] (Simmons et al, 2006: 787). In other words, policy diffusion happens when one government decides to adopt a policy because the said policy was also implemented by another country. The spread of a particular policy internationally or globally is caused by the policy adoption and implementation of one government that influences another government to do the same. The author decided to conduct a study on the policy diffusion of smart cities in ASEAN countries because there are already twenty-six (26) cities in the ASEAN region who embarked on the smart cities development program. Recently, smart cities have become one of the buzzwords in governance or e-governance. Smart city as a concept and practice in local governance and urban development in the ASEAN is new. Few studies have been conducted on ASEAN smart cities. These studies pointed out the challenges and issues related to the adoption of smart cities. There is no study yet on the diffusion of smart cities in the ASEAN region.

This study is divided into three (3) main parts. The first part is a discussion of the studies on ASEAN smart cities. The second part is a discussion of the establishment, development, and activities of the ASEAN Smart Cities Network (ASCN). The third part is an analysis of the policy diffusion of smart cities in the ASEAN region.

[1] Beth A. Simmons et al., "Introduction: The International Diffusion of Liberalism" in *International Organization* 60, Fall, 2006, 787.

Studies on Asean Smart Cities

Smart cities development program in ASEAN is in its infancy stage. It started in 2018 upon the initiative of the government of Singapore. The study, therefore, on the ASEAN smart cities is still wanting. There are only two well-researched articles about ASEAN smart cities that were published within the five-year period. These are the articles of Crumpton et al [2] and Yu-Min Joo.[3] These articles pointed to the challenges of implementing smart cities in Asia and the ASEAN region as well as the critics of smart cities as a "corporate market-creation strategy." Crumpton et al focused their analysis on the challenges of the project to the ASEAN cities. These challenges are summarized as the widening gap between the rich and the poor, the inadequate financial capacity, the scarce national resources, and the expensive digital requirements. Many of the ASEAN cities are struggling to meet basic urban service requirements due to a lack of financial capacity and other resources.[4] Because of this, these cities may not have sufficient resources to acquire the expensive digital requirements of smart cities technologies.[5] Due to lack of financial capacity and other resources, ASEAN cities may have other service priorities particularly the services needed by the poorest sectors. These are the services needed to address the gap between the rich and the poor. The cities' lack of financial capability plus their desire to employ technology solutions will make these cities dependent on foreign assistance and aid. Crumpton et al proposed in their study that smart cities must be presented as "subordinate to and supportive

[2] Charles David Crumpton, et al, "Assessing the ASEAN Smart Network (ASCN) via the Quintuple Helix Innovation Framework, with Special Regard to Smart City Discourse, Civil Participation, and Environmental Performance" in *International Journal of Urban Sustainable Development*, Vol. 13, No. 1, 2021, 97-116.
[3] Yu-Min Joo, "Developmentalist smart cities? The cases of Singapore and Seoul" in International Journal of Urban Sciences, Vol. 27, No. 51, 2023, 164-182.
[4] Crumpton, 101.
[5] Crumpton, 102.

of these more important priorities for ASEAN's urban settings."[6] They further argue that ASCN "must exist within a sustainable development planning context that clearly meets global sustainable development goals, i.e., one which involves an urban governance framework where sufficient operations and services, the means to improve quality of life, and ways of cultivating environment sustainability are important in centralized planning."[7]

In the study of Yu-Min Joo, the author argues that the key driving actors of smart cities are corporations, citizens, and governments. The author explains that the concept of smart city is a product of "corporate storytelling."[8] It is constructed by "international high-tech companies and business consulting firms that begun searching for a new market and business model amid steep competition in their conventional markets."[9] Hence, smart cities "as a corporate market-creation strategy" is criticized by some for these may only "aggravate social problems and increase the digital divide."[10] Smart cities are citizen-centric in the sense that the people can take an "active role in co-designing and co-creating solutions for their cities, working together with other stakeholders of private companies and governments, often in the form of living labs."[11] Lastly, smart cities are characterized by digital democracy because it is enabled by e-governance. E-governance enhanced people's participation in governing because of the citizens' increased access to data, improved communication channels, and effective engagement platforms using technology. The author suggests that smart cities in the ASEAN region must be examined within the context of developmentalism. Under developmentalism, "the state actively led and guided national economic development with a plan-rational approach of mobilizing capital and disciplining labor."[12] Due to the significant transformation of developmental states in Asia, the author clarifies that smart cities must be assessed within the ambit of developmentalism and neoliberalism.[13] The author also reminds local government leaders that they must not only be concerned with global competitiveness as they implement smart cities; but, they must also meet their local citizens' demands.[14]

The Asean Smart Cities Network

The Association of Southeast Asian Nations (ASEAN) journey to Smart Cities started in 2018 when Singapore presented a *Concept Note on ASEAN Smart Cities Network*. The *Concept Note* contains a proposal to establish an ASEAN Smart Cities Network (ASCN) which will serve as a "collaborative platform" of at least three (3) cities from each ASEAN Member State (AMS) to work toward achieving the common goal of smart and sustainable urban development.[15] The ASCN also includes National Representatives to "synergize development efforts across all levels."[16] The *Concept Note* also lays down the goal of the ASCN and that is to "improve the lives of the ASEAN citizens, using technology as an enabler."[17] Specifically, the ASCN aims to "facilitate cooperation on smart cities development." Through the ASCN member cities and the National Representatives work potentially together, share best practices, develop action plans, and craft a framework for smart cities development that is unique to

6 Crumpton, 111.
7 Crumpton.
8 Joo, 166.
9 Joo.
10 Joo.
11 Joo.
12 Joo, 168.
13 Joo.
14 Joo, 168-169.
15 *Concept Note on ASEAN Smart Cities Network*, 2018, 1.
16 *Concept Note on ASEAN Smart Cities Network*
17 *Concept Note on ASEAN Smart Cities Network*

ASEAN.[18] Secondly, it also aims to "catalyse bankable projects with the private sector." It espouses a partnership between the member cities and private solutions to "kick-start practical and commercially viable projects with tangible outcomes."[19] Lastly, it aims to "secure funding and support from ASEAN's external partners." It will facilitate the partnership of member cities "with specific external partners" to form a "mutually beneficial partnership to drive smart cities development while promoting better understanding between ASEAN and its external partners at the cities level." It also plans to approach multilateral financial institutions, such as the World Bank (WB) and Asian Development Bank (ADB).[20] The sectors or areas of smart cities development are also identified in the *Concept Note*. These are transport, water quality, energy, health care, education, public services, data, and information and communications technology (ICT).

To further deepen the member cities' understanding of smart cities development, Singapore commissioned the McKinsey Global Institute in 2018 to write a discussion paper. One of the salient points taken up in the discussion paper entitled *Smart Cities in Southeast Asia* is the notion of smart cities as well as the archetypes of smart cities in Southeast Asia. Echoing Singapore's *Concept Note*, McKinsey Global Institute (MGI) defines smart city as "a smart city incorporates data and digital technologies into infrastructure and services – all with an eye to solving specific public problems and making the urban environment more liveable, sustainable, and productive.[21] It further explains smart city as "city solutions as the practical use of data and digital technologies to deliver infrastructure or services in the urban setting, all with the goal of improving outcomes that relate to livability, sustainability, productivity."[22] In short, smart city is all about "putting technology at work so that urban residents can have a better quality of life."[23] The discussion paper clarifies that becoming a smart city is "not a goal in and of itself."[24] Smartness, the paper explains, is "simply a tool to help cities better serve the people who live and work in them.[25] At the end of the day, what is important is to "understand how it (smartness) can improve the quality of life in tangible ways."

The discussion paper also identifies four (4) archetypes of smart cities in Southeast Asia. These are smart city sandboxes, prime movers, emerging champions, and agile seedbeds. The first archetype, smart city sandboxes, is "focused on improving productivity and designing new types of citizen experiences."[26] At this point, Singapore is the only ASEAN city that fits the category of smart city sandboxes. Singapore is the most advanced smart city in the ASEAN region and one of the most advanced smart cities globally. Singapore has installed an "ultra-high-speed communication network and implemented dozens of smart applications covering every domain of urban life."[27] The second archetype, the prime mover, is characterized by the implementation of "major physical and social infrastructure." The biggest priority under this archetype is the expansion of systems and services to serve more people particularly those who do not have access to government services.[28] One of the challenges of the cities under this archetype is limited resources. Bangkok, Ho Chi Minh, Jakarta, Kuala Lumpur, and Manila are

[18] *Concept Note on ASEAN Smart Cities Network*, 2.
[19] *Concept Note on ASEAN Smart Cities Network*.
[20] *Concept Note on ASEAN Smart Cities Network,* 1.
[21] McKinsey Global Institute, *Smart Cities in Southeast Asia: Discussion Paper*, 2018, 2.
[22] McKinsey Global Institute, 10.
[23] McKinsey Global Institute.
[24] McKinsey Global Institute, 15.
[25] McKinsey Global Institute, 15.
[26] McKinsey Global Institute, 17.
[27] McKinsey Global Institute.
[28] McKinsey Global Institute.

the cities that fall under the second archetype. The third archetype, emerging champions, is characterized by "integrating infrastructure, hardware, and software to deliver high-value cost-effective impact."[29] The midsize cities of Cebu, Davao, Hanoi, Phnom Penh, and Yangon) are part of this archetype. Their focus is on the expansion of access to government services and reaching out to the public, particularly to the marginalized. Financial resources are a great challenge for these cities. Hence, they need large-scale investment and attract private-sector partners.[30] The last archetype, agile seedbeds, is composed of cities that are transitioning to rapid growth. These cities need smart planning to scale up smart city applications.[31] Cities that belong to this archetype are Bandar Seri Begawan, Banyuwangi, Da Nang, Luang Prabang, Phuket, Siem Reap, and Vientiane.

The *ASEAN Smart Cities Framework* was developed and endorsed by the ASCN on July 8, 2018. The Framework "envisions a smart city in ASEAN as one that strives to balance three independent strategic outcomes: (1) a high quality of life, (2) a competitive economy, and (3) a sustainable environment.[32] These outcomes are underpinned by two key urban systems, Integrated Master Planning and Development as well as Dynamic and Adaptive Urban Governance.[33] The framework also identifies six (6) focus areas, namely: Civic and Social, Health and Well-being, Public Safety and Security, Quality Environment, Built Infrastructure, and Industry and Innovation. The members of the ASCN can focus on any of these areas based on the needs of the city and the people. Furthermore, the framework also recommends that Digital Infrastructure and Applications, as well as Partnership and Funding, are the key enablers in the planning and management of smart and sustainable urbanization.[34]

In the *East Asia Summit Leaders' Statement on ASEAN Smart Cities*, the Heads of State/ Government of the Member State of the Association of Southeast Asian Nations (ASEAN) formally declared the need for the creation of smart cities and the establishment of ASCN. In the said document, which was released during the 13th East Asia Summit (EAS) in Singapore on November 15, 2018, the ASEAN leaders recognized the challenges of rapid urbanization and the importance of collaboration to address these challenges through technological and other solutions. They also recognized the "potential benefits of developing a regional smart cities ecosystem which will strengthen the region's capacity to harvest the opportunities associated with the ongoing digital and 4th industrial revolution, and achieve wide-ranging and beneficial, economic, social and environmental outcomes." Further, they reaffirmed the ASCN's primary goal of "improving the lives of ASEAN citizens, using technology and digital infrastructure as enablers." Lastly, they acclaimed the need to "promote mutual learning through the exchange of ideas, experiences and views on policy, governance, best practices, business solutions and joint research and innovation opportunities in smart city development, which will contribute to the realization of inclusive and sustainable development and economic growth in the region."

To promote mutual learning, the ASCN conducted the first ASEAN Smart Cities Governance Workshop organized by Singapore's Ministry of Foreign Affairs and the Center for

[29] McKinsey Global Institute, 19.
[30] McKinsey Global Institute, 19.
[31] McKinsey Global Institute.
[32] *ASEAN Smart Cities Framework*, 2018, 3.
[33] *ASEAN Smart Cities Framework.*
[34] *ASEAN Smart Cities Framework.*

Liveable Cities on May 22 – 25, 2018. Through the Governance Workshop, members of the ASCN had an opportunity to meet, exchange ideas, and learn from the experiences of other cities and from industry experts about the successful implementation of smart cities.[35] The Governance Workshop also provided the members of the ASCN the venue to establish partnerships with funders, solution providers, consultants, and experts.[36] One of the outputs of the Governance Workshop was the development of the Smart City Action Plan by each member of the ASCN. They developed it with the assistance of industry experts. Another output is the draft of the ASEAN Smart Cities Framework. Lastly, the network established by the ASCN members with their "prospective partners from the public and private sectors across the world to explore potential collaboration on commercially viable points."[37]

Another activity organized by the ASCN to promote mutual learning was the ASCN Meetings. The Inaugural ASCN Meeting was held in Singapore on July 8, 2018. In the Inaugural Meeting, the twenty-six (26) members of the ASCN showcased their Smart City Action Plans.

The mutual learning activities continued in the following year, 2019. The ASCN conducted the ASCN Roundtable Meeting and Conference on Smart and Sustainable Cities in June 2019 and the ASCN Annual Meeting and ASCN Conference & Exhibition in August 2019. These various events provided a forum for the exchange of information and best practices on smart city development.

The highlights of the ASCN Roundtable Meeting and Conference on Smart and Sustainable Cities on June 6 – 7, 2019 were the presentation of the member cities' respective smart city projects, discussion various issues pertaining to the ASEAN processes, presentation of the draft of the ASCN Term of Reference and Monitoring and Evaluation Framework, and the discussion on the proposed membership expansion criteria.[38] During the event, there was an exhibition by the pilot ASEAN smart cities and Conference on the theme "Smart and Sustainable Cities" where Sustainable Development Goals (SDGs), international corporations' role in smart city development, and smart city solutions and best practices were discussed.[39]

On August 22 – 24, 2019, the second ASCN Annual Meeting was conducted with the ASCN Annual Conference & Exhibition. During the Annual Meeting, there was another discussion on the development of the smart city development framework and a follow-up on the progress of each pilot smart city. The ASCN also adopted the ASCN Terms of Reference, elected Singapore as ASCN shepherd, and discussed the development of the ASCN monitoring and evaluation framework and modalities for engagement with external partners. Lastly, external partners like China, Japan, Korea, and the USA presented their respective smart city initiatives as well as plans to support the ASCN. During the ASCN Conference and Exhibition, there was an exhibition by the pilot ASEAN smart cities, a forum in the field of town and city planning, and a sharing of experiences and best practices on smart city development by the G20 countries.

35 *1st ASEAN Smart Cities Governance Workshop*, May 22-25, 2018, 4.
36 *1st ASEAN Smart Cities Governance Workshop*, 4.
37 *1st ASEAN Smart Cities Governance Workshop*, 5.
38 *ASCN Roundtable Meeting and Conference on Smart and Sustainable Cities*, June 6 – 7, 2019, 7.
39 *ASCN Roundtable Meeting and Conference on Smart and Sustainable Cities*.

In the statement by Ms. Ajarin Pattanapanchai, the Permanent Secretary of the Ministry of Digital Economy and Society, Thailand, and the ASCN Chair in 2019, she emphasized that the "ASCN attaches importance to dialogue, interaction, and cooperation with external partners, recognizing the mutual benefits that can be gained from the sharing of best practices on the development of smart and sustainable cities as drivers of sustainable growth and sustainable development." In the speech of HE. Mr. Nguyen Van Sinh, the Deputy Minister of Construction, Viet Nam, the incoming ASCN Chair in 2020, he proposed the exchange of experience, the research on the smart city legal framework, the promotion and attraction of international investment and cooperation as the steps forward for the smart city development implementation.

In its infancy stage, the ASCN is not only a collaborative platform for the successful implementation of smart cities development in the ASEAN region. It also promotes "greater cooperation among member cities, the private sector, and external" parties.[40] The ASCN has become an "attractive network for global actors who pose themselves as an influencer of sustainability and technology within the urban development sectors."[41] The table below provides a summary of support and cooperation provided by the influencers of sustainability and technology to the ASCN.

US-ASEAN Smart Cities Partnership (USASCP)	The US invested US $10 million focus on private sector engagement in smart city solution and digital economy, sharing best practices to promote collaboration, and strengthening regional cybersecurity capacity at the sub-national level.
ASEAN Australia Smart Cities Trust Fund	Australia pledged to establish an AU $20 million to support the master plan development of digital solutions in ASCN pilot cities. Through this effort, Australia is looking to advance its soft influence in ASEAN, especially amidst growing competition from external partners.
Japanese Quality Infrastructure	Japan also showed support for the ASCN through the knowledge exchange program on smart cities and matching up Japanese public and private organizations to ASCN. Japanese support of ASCN complements Prime Minister Shinzo Abe's vision to promote "Japanese Quality Infrastructure" internationally. In Thailand, the City of Yokohama provided expertise to Amata Smart City Chonburi in the conduct of a feasibility study for an efficient and sustainable industrial state. In Yangon, Myanmar, the Japanese International Cooperation Agency (JICA) is collaborating with the Yangon Downton Convention Project to assist the city government of Yangon in mitigating traffic congestion and improving the urban environment in the city and providing technical assessment towards rehabilitating drainage facilities, removing bottlenecks on major roads, improving the streetscape to restore the city liveability, and advancing the socio-economic development in Yangon Central Business District. Fujitsu, a Japanese multinational technology corporation, has assisted the Jakarta Regional Disaster Management Agency (BNPB) in developing the Disaster Information Management System (DMS) for anticipating severe flooding.
ASEAN Leaders and China Smart City Cooperation Initiative	The cooperation will focus on eight areas of collaboration such as exchanging best practices, exploring collaboration, advancing research and technology adoption, supporting private sector collaboration, and city-to-city partnership.

[40] Melinda Martinus, "ASEAN Smart Cities Network: A Catalyst for Partnerships" in *Perspective*, ISEAS Yusof Ishak Institution, Issue: 2020, No. 32, Singapore, 3.
[41] Martinus.

ASEAN-ROK	Collaboration between ASEAN and ROK in smart cities, digital economy, and cybersecurity as part of its New Southern Policy that envisions stronger ROK diplomacy with ASEAN. The ROK started by exploring smart city partnership in ASEAN through the education sector. The ASEAN-ROK Centre actively conducts seminars, training, and capacity-building programs on urban innovation and creativity-driven growth in various ASEAN cities.

(Source: Melinda Martinus, "ASEAN Smart Cities Network: A Catalyst for Partnership," April 21, 2020)

ASCN also created an inter-collaboration between ASEAN Countries. An example of this is the partnership between Singapore and Indonesia where International Enterprise Singapore has a project with the City Government of Makassar "to build the city's digital service platform, which includes smart cards, intelligence transportation, flood detection, and intelligent street lighting."[42]

In the *ASEAN Smart Cities Network Monitoring & Evaluation Report 2022*, it was reported that the smart city projects increased from sixty-five (65) projects in 2021 to seventy-seven (77) projects in 2022. The ASCN projects across the Six Focus Areas in 2022 are as follows:

Six Focus Areas	Percentage
Civic & Social: Tourism, Public & Municipal Services, Governance, Culture & Heritage	29%
Health & Well-Being: Healthcare, Housing & Home, Education	6%
Safety & Security: Resource Security, Public Safety, City Surveillance & Crime Prevention	13%
Quality Environment: Clean Environment, Resources Access & Management, Urban Resilience	22%
Built Infrastructure: Mobility & Transportation	25%
Industry & Innovation: Business & Entrepreneurship	5%

(source: ASEAN Smart Cities Network Monitoring & Evaluation Report 2022)

[42] Martinus, 6-7.

The projects per country and city are as follows:

Country	City	Project (per Focus Area)	Status
Brunei Darussalam	Bandar Seri Begawan	Business and Entrepreneurship (Industry & Innovation) Clean Environment (Quality Environment) Tourism, Public & Municipal Services (Civic & Social)	Completed: 20% On-going: 20% Planning: 60%
Cambodia	Battambang, Phnom Penh, Siem Reap	Mobility & Transportation (Built Infrastructure) Tourism, Public & Municipal Services (Civic & Social) Clean Environment (Quality Environment)	Completed: 14.29% On-going: 71.43% Planning: 60%
Indonesia	Banyuwangi, Jakarta, Makassar	Business and Entrepreneurship (Industry & Innovation) Mobility & Transportation (Built Infrastructure) Clean Environment (Quality Environment) Tourism, Public & Municipal Services (Civic & Social) Healthcare (Health and Well-Being	Completed: 100% On-going: 0% Planning: 0%
Lao PDR	Luang Prabang, Vientiane	Mobility & Transportation (Built Infrastructure) Culture & Heritage (Civic & Social) Resource Access & Management, Clean Environment (Quality Environment)	Completed: 0% On-going: 83.33% Planning: 16.67%

Malaysia	Johor Bahru, Kota Kinabalu, Kuala Lumpur, Kuching	Mobility & Transportation (Built Infrastructure) Culture & Heritage (Civic & Social) Urban Resilience, Resource Access & Management, Clean Environment (Quality Environment) Governance, Public & Municipal Services (Civic & Social) Resource Security (Safety & Security)	Completed: 67.67% On-going: 0% Planning: 33.33%
Myanmar	Mandalay, Nay Pyi Taw, Yangon	Mobility & Transportation (Built Infrastructure) Culture & Heritage, Governance (Civic & Social) Resource Access & Management, Clean Environment, & Management (Quality Environment) Governance, Culture & Heritage (Civic & Social) Housing & Home, Education (Health & Well-being)	Completed: 0 % On-going: 81.82% Planning: 18.18%
Philippines	Cebu City, Davao City, Manila	Mobility & Transportation (Built Infrastructure) Public & Municipal Services (Civic & Social) Public Safety, City Surveillance, & Crime Prevention (Safety & Security)	Completed: 0 % On-going: 100% Planning: 0 %
Singapore	Singapore	Business and Entrepreneurship (Industry & Innovation) Public & Municipal Services (Civic & Social)	Completed: 0 % On-going: 100% Planning: 0 %
Thailand	Bangkok, Chonburi, Phuket	Utilities Mobility & Transportation (Built Infrastructure) Public Safety, City Surveillance, & Crime Prevention (Safety & Security) Clean Environment (Quality Environment)	Completed: 0 % On-going: 57.14 % Planning: 42.86 %
Viet Nam	Da Nang, Ha Noi, Ho Chi Minh	Mobility & Transportation (Built Infrastructure) Clean Environment (Quality Environment) Public & Municipal Services (Civic & Social) Public Safety, City Surveillance, & Crime Prevention (Safety & Security)	Completed: 0 % On-going: 66.67 % Planning: 33.33 %

The *ASCN Monitoring and Evaluation Report 2022* also highlighted the development of the following documents that are essential for the realization of the goals of the ASCN. These are the *ASEAN Smart City Planning Guidebook* and the *ASEAN Smart Investment City Toolkit*. The former will be used as a "reference for ASEAN cities to promote smart and sustainable urbanization by introducing the best practices in the ASEAN region." On the other hand, the latter will be used for "various options available for funding and financing smart city initiatives."

The *ASCN Monitoring & Evaluation Report 2023* showed an increase in the number of projects from seventy-seven (77) in 2022 to eighty-six (86) in 2023. The ASCN projects across the Six Focus Areas in 2022 are as follows:

Six Focus Areas	Percentage
Civic & Social: Tourism, Public & Municipal Services, Governance, Culture & Heritage	30%
Health & Well-Being: Healthcare, Housing & Home, Education	6%
Safety & Security: Resource Security, Public Safety, City Surveillance & Crime Prevention	12%

Quality Environment: Clean Environment, Resources Access & Management, Urban Resilience	21%
Built Infrastructure: Mobility & Transportation	23%
Industry & Innovation: Business & Entrepreneurship	8%

(source: ASEAN Smart Cities Network Monitoring & Evaluation Report 2023)

The figures showed an increase in the projects under the "Civic & Social" and "Industry and Innovation" focus areas. While there is a decrease in other focus areas. The projects per country and cities are as follows:

Country	City	Project (per Focus Area)	Status
Brunei Darussalam	Bandar Seri Begawan	Business and Entrepreneurship (Industry & Innovation) Mobility & Transportation (Built Infrastructure) Clean Environment (Quality Environment) Tourism, Public & Municipal Services (Civic & Social)	Completed: 14.29% On-going: 42.86% Planning: 42.86%
Cambodia	Battambang, Phnom Penh, Siem Reap	Mobility & Transportation (Built Infrastructure) Mobility & Transportation (Built Infrastructure) Tourism, Public & Municipal Services (Civic & Social) Clean Environment (Quality Environment)	Completed: 12.50% On-going: 75% Planning: 12.50%
Indonesia	Banyuwangi, Jakarta, Makassar	Business and Entrepreneurship (Industry & Innovation) Mobility & Transportation (Built Infrastructure) Clean Environment (Quality Environment) Tourism, Public & Municipal Services (Civic & Social) Healthcare (Health and Well-Being	Completed: 100% On-going: 0% Planning: 0%
Lao PDR	Luang Prabang, Vientiane	Mobility & Transportation (Built Infrastructure) Culture & Heritage (Civic & Social) Resource Access & Management, Clean Environment (Quality Environment)	Completed: 0% On-going: 83.33% Planning: 16.67%
Malaysia	Johor Bahru, Kota Kinabalu, Kuala Lumpur, Kuching	Mobility & Transportation (Built Infrastructure) Urban Resilience, Resource Access & Management, Clean Environment (Quality Environment) Governance, Public & Municipal Services (Civic & Social) Resource Security (Safety & Security)	Completed: 67.67% On-going: 0% Planning: 33.33%
Myanmar	Mandalay, Nay Pyi Taw, Yangon	Mobility & Transportation (Built Infrastructure) Clean Environment, Resource Access, & Management (Quality Environment) Resource Access & Management, Clean Environment, & Management (Quality Environment) Governance, Culture & Heritage (Civic & Social) Housing & Home, Education (Health & Well-being)	Completed: 0 % On-going: 83.33% Planning: 16.67%

Philippines	Cebu City, Davao City, Manila	Mobility & Transportation (Built Infrastructure) Public & Municipal Services (Civic & Social) Public Safety, City Surveillance, & Crime Prevention (Safety & Security)	Completed: 0 % On-going: 100% Planning: 0 %
Singapore	Singapore	Business and Entrepreneurship (Industry & Innovation) Public & Municipal Services (Civic & Social)	Completed: 0 % On-going: 100% Planning: 0 %
Thailand	Bangkok, Chonburi, Phuket	Utilities Mobility & Transportation (Built Infrastructure) Tourism (Civic & Social) Healthcare (Health & Well-Being) Public Safety, City Surveillance, & Crime Prevention (Safety & Security) Clean Environment (Quality Environment)	Completed: 0 % On-going: 66.67 % Planning: 33.33%
Viet Nam	Da Nang, Ha Noi, Ho Chi Minh	Mobility & Transportation (Built Infrastructure) Clean Environment (Quality Environment) Public & Municipal Services (Civic & Social) Public Safety, City Surveillance, & Crime Prevention (Safety & Security)	Completed: 0 % On-going: 66.67 % Planning: 33.33 %

Based on this 2023 monitoring and evaluation report, Brunei and Cambodia added "Mobility & Transportation," Myanmar embarked on "Clean Environment," and Thailand added "Tourism" as one of its focus areas. On the other hand, Malaysia abandoned the "Culture & Heritage" project. The rest of the ASEAN countries maintained the same projects. Singapore and the Philippines have one hundred percent (100%) implementation of their planned projects.

In the 2023 monitoring and evaluation report, the ASCN implemented the *ASEAN Smart City Professional Program* in cooperation with Seoul National University supported by the ASEAN-Republic of Korea (ROK) Cooperation Fund. The objective of this professional program is to provide "short-term training, master's degree course, and knowledge platform" on "data-driven smart city planning."

In the speech of HE Dr. Kao Kim Hourn, Secretary-General of ASEAN during the Opening Ceremony of the 6th ASEAN ASCN Annual Meeting on July 12, 2023, in Bali, Indonesia, he emphasized three (3) key points in promoting smart and sustainable cities. The first is the sharing of knowledge and learning between cities. It is followed by evidence-based city planning in making a livable urban environment in the ASEAN region. The last is the promotion of public-private-people partnerships to seize smart city opportunities. Based on the documents discussed, from the year of its inception in 2018 and up to the present, the ASCN has been doing these three (3) keys in order to achieve its goal of integrating smart technology in city governance to improve government services, make cities livable, and improve people's quality of life.

Policy Diffusion: Notion and Mechanism

Policy diffusion is a framework that analysts use in studying the causes of the spread of policy from one country to another. Technically, it is described as "policy diffusion occurs when government policy decision in a given country is systematically conditioned by prior policy

choices made in other countries."[43] In this context, policy diffusion takes place when one country's policy decision directly or indirectly influenced the policy decision of another country to adopt the same policy. In other words, the policy action or decision of one policy actor (i.e., country or government) has an impact on the policy action or decision of another policy actor (i.e., country or government). In simple terms, the policy decision and action of one head of state or government impacted or influenced the policy decision and action of another head of state or government.

In the context of the theory of diffusion, it is difficult to determine who influenced who and why. It cannot be easily determined if the diffusion is caused by political, economic, or social motives. Furthermore, the policy actors may not also be easily identified. The theory of diffusion explains that there is "a wide array of assumptions about who the primary actors are, what motivates their behavior, the nature and extent of the information on which they base decisions, and their ultimate goals."[44] However, what is crystally clear in the theory of diffusion is that governments do not make policy decisions and actions independent. They are influenced by external policy actors or governments influenced one another. In other words, there is a "possibility of interdependent decision-making," and that is, the "impact of policy choices in other countries on the behavior of governments at home."[45]

There are four (4) mechanisms of policy diffusion. These are coercion, competition, learning, and emulation.

[43] Simmons, 787.
[44] Simmons.
[45] Simmons, 790.

Coercion

Coercion diffusion can be best simplified when "dominant nations and their agents coerce weaker nations to adopt policy changes that those weaker nations would not otherwise have adopted."[46] To demonstrate coercion diffusion, one must identify the powerful policy actors and show that they support the policy in question and utilize a channel through which they can influence policy change across borders.[47] The exercise of influence of powerful policy actors can be expressed or implied or direct or indirect. These can involve the "use of physical force, the manipulation of the economic costs and benefits, or the monopolization of information or expertise."[48] In coercion diffusion, there is the presence of asymmetry of power, information, resources, expertise which the strong policy actor exploit in order to exercise influence to the weaker ones.[49] Experts in coercion diffusion also assume that a powerful policy actor (i.e., government) has a vested interest in stimulating policy change in another policy actor (i.e., weak government), and the latter cannot resist because of the influence and of the benefits.[50]

Competition

The second mechanism of diffusion is competition. This diffusion mechanism explains that governments make policy choices because they want a greater share of mobile capital and the export market. In analyzing competition diffusion, one must first identify the "networks of countries that compete in different markets;" and secondly, one must demonstrate that policy

[46] Simmons.
[47] Simmons, 791.
[48] Simmons, 790.
[49] Simmons.
[50] Simmons.

change increases the probability of similar changes in other countries in the network.[51]

Competition diffusion assumes that the policy in question has the "potential to affect the flow of international production and capital or the attractiveness of a nation's exports."[52] Second, the "policies that diffuse have consequential effects in the short- to medium-term."[53] Third, the "competitive models assume an information-rich environment."[54] Lastly, the "most important relationships are horizontal."[55]

Learning

Learning explains that diffusion is a result of the change in belief, attitude, and behavior due to the "exposure to new evidence, theories, or behavioral repertoires."[56] For learning diffusion, the policy choice of other actors is essential because it "generates new data that inform beliefs about a causal relationship."[57] Based on learning theories, individual learn directly or indirectly. They learn directly by experiencing the consequences (i.e., positive or negative) of their actions. They learn indirectly based on the experiences (i.e., positive or negative consequences) of others. Policy actors can learn about the policy decisions of others by studying the consequences of such decisions. If the consequence is positive, most likely they will adopt the same policy. If it is, otherwise, they will decide against the adoption of the same policy.

There are three (3) perspectives in learning diffusion. The first is the political perspective. In this perspective, "policy change and innovation spread because of the shared fund of knowledge among elites about what is effective" including shared norms, beliefs, and notions of evidentiary validity.[58] "Epistemic communities" (i.e., universities, think tanks, research firms, training agencies, and the media) are "major actors in the development of social knowledge and are especially influential in the policy-making process."[59] The second is economic perspective. The economic perspective focuses on the process of Bayesian learning which is objective and rational.[60] In the context of Bayesian learning, individuals change their behavior because of the additional data and information that they learned. Individuals are also expected to make optimal use of the new data and information that they acquired.[61] The third perspective is the international institutions and channels. These institutions and channels affect learning because these are the means for "information flow and policy transmission."[62]

Emulation

The last diffusion mechanism is emulation. Policy actors or governments emulate policies of other actor or governments because of shared norms, socio-cultural linkages, or "psychological proximity."[63] Emulation assumes that policy actors emulate the policy choices of other policy actors even if they cannot ascertain the results or consequences if they share culture and norms, or due to psychological proximity.

[51] Simmons, 795.
[52] Simmons, 792.
[53] Simmons, 793.
[54] Simmons.
[55] Simmons.
[56] Simmons, 795.
[57] Simmons.
[58] Simmons.
[59] Simmons.
[60] Simmons, 797.
[61] Simmons.
[62] Simmons, 798.
[63] Simmons, 801.

The Diffusion of Smart Cities in ASEAN Countries

Does smart cities development program diffuse in the ASEAN countries? To answer this question, the diffusion or non-diffusion of smart cities in ASEAN countries will be analyzed based on the mechanisms of diffusion.

Does Coercion Diffuse Smart Cities?

As mentioned in the previous part of this paper, coercion diffusion is characterized by the following: (1) an expressed or implied or direct or indirect exercise of influence of powerful policy actors can be expressed or implied or direct or indirect; (2) the use of physical force, the manipulation of the economic costs and benefits, or the monopolization of information or expertise; (3) the presence of asymmetry of power, information, resources, expertise which the strong policy actor exploit in order to exercise influence to the weaker ones.

One of the strategies of ASCN is to provide venues for cooperation and collaboration between ASCN member cities, between ASEAN nations and non-ASEAN nations such as the USA, Australia, ROK, Japan, and China, and between local governments and private corporations and financing institutions. Big economies like the USA, Australia, ROK, Japan, and China aid the ASCN in terms of funding, training and expertise, research and development, technological innovation, and technical assistance. It cannot be denied that these countries are using smart cities for them to exercise soft diplomacy and influence in the ASEAN region. Implementing smart cities can also provide additional resources to ASEAN members because of the support that they get from these countries as well as from big private corporations and financing institutions.

Coercion diffused smart cities in the ASEAN countries not in the form of physical force, intimidation, or threat, but in the form of manipulation of economic benefits, monopolization of information and expertise on the part of the powerful countries and big corporations. There is also the presence of asymmetry of information and resources between the ASEAN countries and powerful non-ASEAN countries. The latter entered a collaboration or cooperation with the former not only to assist them in the implementation of smart cities program but also to exercise soft, indirect, and implied diplomatic influence.

Does Coercion Diffuse Smart Cities?

Smart cities are not goals in themselves. Rather, they are the means to achieve a competitive economy, realize inclusive and sustainable development and economic growth in the region, and improve the quality of life of ASEAN citizens. In short, making ASEAN cities competitive is one of the goals if not the goal of smart cities. Competition diffusion is characterized by making policy choices to get a greater share of mobile capital and export market. Clearly, attracting investments, and making the economy productive to increase the export market share are some of the concrete objectives of smart cities. Hence, to the question: Does competition diffuse smart cities? It does. It is one of the reasons behind the policy decisions of ASEAN member states/governments to adopt smart cities.

Does Learning Diffuse Smart Cities?

Learning is the most obvious diffusion mechanism in the ASEAN smart cities. The ASEAN leaders acclaimed that the promotion of

mutual learning through the exchange of ideas, experiences, and views on policy, governance, best practices, business solutions, and joint research and innovation will contribute a lot to the realization of the smart cities program. Hence, the following activities were conducted to promote mutual learning: (1) the ASEAN Smart Cities Governance Workshop, (2) the Annual ASCN Meetings, (3) the ASCN Roundtable Meeting and Conference on Smart and Sustainable Cities, (4) the ASCN Conference & Exhibition, and (5) the *ASEAN Smart City Professional Program* in cooperation with Seoul National University supported by the ASEAN-Republic of Korea (ROK) Cooperation Fund.

Does Emulation Diffuse Smart Cities?

There is little evidence to suggest that emulation is one of the mechanisms that diffuse smart cities in the ASEAN region. However, Singapore is the main proponent of the establishment of smart cities in the ASEAN region. It is also given the title as the "shepherd" of the ASCN. Singapore is the wealthiest ASEAN nation and one of the most successful ASEAN cities when it comes to the implementation of smart cities. Singapore is the only ASEAN city that is focused on improving productivity and designing new types of citizen experiences. It is also one of the most advanced smart cities in the ASEAN region and one of the most advanced smart cities globally. Almost all ASEAN countries wanted to be like Singapore in terms of economy, education, technological innovation, and government service. Hence, it can be claimed that emulation is one of the mechanisms that diffused smart cities in ASEAN countries.

Conclusion

The smart cities diffused in the ASEAN countries because of the mechanisms of coercion, competition, learning, and emulation. Coercion diffused smart cities because of the manipulation of economic benefits and monopolization of information and expertise on the part of powerful countries and big corporations. Competition diffused smart cities because ASEAN leaders viewed it to achieve a competitive economy, inclusive and sustainable development and economic growth in the region, and improvement in the quality of life of ASEAN citizens. Learning diffused smart cities because the promotion of mutual learning through the exchange of ideas, experiences and views on policy, governance, best practices, business solutions and joint research and innovation will contribute a lot to the realization of the smart cities program. Lastly, emulate diffused smart cities because of the successes of Singapore. Singapore is the only ASEAN city that is focused on improving productivity and designing new types of citizen experiences. It is also one of the most advanced smart cities in the ASEAN region and one of the most advanced smart cities globally. Almost all ASEAN countries wanted to be like Singapore, in terms of economy, education, technological innovation, and government service.

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