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Sustainability of Smart Cities in Malaysia and the Philippines using ESG Model

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Abstract
Using the environmental, social and governance (ESG) model, this study examines the sustainability of local communities living in smart cities in Malaysia and the Philippines. Self-administered questionnaires were distributed to 400 respondents living in smart cities in Malaysia and the Philippines. PLS-SEM was used to analyse the data using the Singapore smart city initiatives framework. Findings show that local communities' awareness, perception and readiness to participate in the smart city initiatives impact smart city sustainability. In line with SDG 11, towards a more sustainable city, the study provides micro-level data to show the significance of local communities who are ultimately the end-users.

Keywords: smart cities, benchmarking, quality of life, SDG 11

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1.0 Introduction

As reported by United Nations, by the year 2050, 90 per cent of the population growth will be in the African and Asia regions, and this case, including Malaysia and the Philippines (United Nations, 2018). Various literature defines a smart city differently (Patrão, Moura, & de Almeida, 2020). Based on the study by Höjer and Wangel (2015), a smart city is defined as "communities that use information and communication technology to enhance liveability, workability, and sustainability" (ICMA, 2016). A review conducted by Lim, Abdul Malek, Hussain and Tahir (2020) on the Malaysia Smart City Framework highlighted the lack of citizen involvement and engagement in building a united society in the smart city framework. As such, this study intends to study the perception of the smart city initiatives among the local communities based on the environmental, social and governance (ESG) model as championed by the Singapore government in assessing the smart city initiatives.

1.1 Problem of the Study

Studies on smart cities primarily focus on governmental policies, sustainability, infrastructure, communication technology, the Internet of Things (IoT), 5G network, virtual reality, etc. There needs to be more literature discussing the non-technological impact of smart cities on

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local communities and how these communities perceive smart city initiatives. Furthermore, studies on the extent local communities are willing to participate in smart city initiatives by the government should be researched. Hence, there is a need for more empirical evidence to examine the roles played by smart cities globally. The understanding and in-depth knowledge of the smart city's impact on the local communities lives and how they react to it poses challenging tasks for policymakers and technology vendors to advocate the contribution of smart city initiatives to the people. This study aims to provide empirical evidence on the local communities towards the sustainability of smart cities.

1.2 Objectives of Study

This study aims to measure local communities' awareness level and prioritisation level toward the sustainability of smart cities. Besides, this study also evaluates local communities' perception level towards the sustainability of smart cities. Finally, it investigates local communities' readiness to participate in smart city initiatives.

2.0 Literature Review

2.1.1 Smart Cities - Malaysia

According to the World Cities Report 2022, the population in the urban area is expected to grow from 55 per cent in 2022 to 68 per cent by 2050. Singapore is ranked as the top smart city in terms of quality of life, which is way ahead of Norway, Switzerland, Finland, and Taiwan. In Asia, cities are expected to be home to approximately 3,479 million people in 2050 (66 %), compared to 2,361 million people in 2020 (51 %). Regarding the global perspective, 6,680 million (68 %) of the urban population will live in cities in 2050 compared to the 4,378 million urban population in 2020 (56 %). The smart city initiatives in Malaysia have been included in the Eleventh Malaysia Plan (11MP), the third National Physical Plan (NPP3) and the National Urbanisation Policy 2 (NUP2). These initiatives emphasise the role of smart city development in coping with Malaysia's urbanisation issues and its impact on sustainability (Tan, Assim, Chong, & Lai, 2021). Nonetheless, the adoption rate of smart city initiatives still needs to be higher among the local communities, which has created problems for the continuity and development of further smart city plans.

2.1.2 Smart Cities – Philippines

Smart cities have a high quality of life that pursue sustainable economic development through investing in human and social capital, financing traditional and modern communications infrastructure, and managing natural resources through participatory policies (Thuzar, 2011). Being online for nine hours and 45 minutes per day, the Philippines is considered the current social media capital of the world (Green, 2022). In addition, Manila is included in the top seven cities in the world that have self-reported digital skills in coding, troubleshooting, technical issues and mitigating cyber threats.

The digitalisation of services in the Philippines was advantageous during the COVID-19 pandemic. The Department of Information and Communications Technology installed free wi-fi connections in Manila quarantine centres (Green, 2022). This enabled health workers to communicate with their families and enabled faster COVID-19 data collection and reporting. Makati City, the Philippines' business capital, established IT applications, namely Makatizen Card and Makatizen App, to distribute financial assistance and services to its people, including legal assistance, teleconsultations, and online learning (US Dept. of Commerce, 2022). In Quezon City, a unified identification system called QCitizens ID was launched to be a platform for publicising its financial aid and city announcements on COVID-19 plans and programmes (US Dept. of Commerce, 2022). Meanwhile, Manila City, the capital of the Philippines, released the Go!Manila web mobile application that aims to promote e-commerce, access government services, and facilitate bill payment of its constituents without physical presence at the City Hall (PNA, 2021; US Dept. of Commerce, 2022).

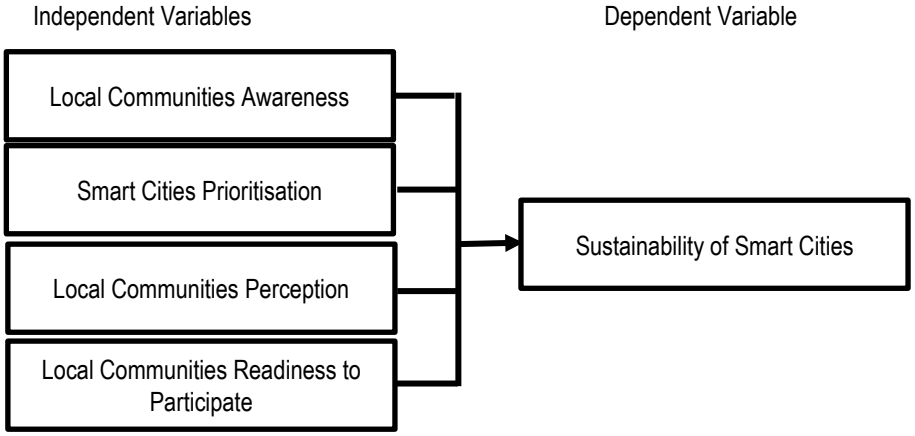

Figure 1: The Research Framework
Source: Formulated based on authors' review of literature

In the 4th ASEAN Smart Cities Network (ASCN) Annual Meeting, the Department of the Interior and Local Government (DILG) committed to finishing its six smart city projects. The smart city projects showcased include the Command Centre Upgrade and E-government Services in the City of Manila; the Bus Rapid Transit System and Digital Traffic System in Cebu City; and the Converged Command and Control Centre and Intelligent Transportation and Traffic Systems with Security in Davao City (PNA, 2021).

Despite these efforts to create smart cities, Manila is featured as part of the bottom five cities in terms of sustainability performance and occupies the lowest position in smart traffic management (Green, 2022). Out of the 30 cities included in the study, Manila garnered the lowest score and ranks based on Economist Impact weights with an overall score of 39.1 (Green, 2022).

As shown in Figure 1, there are four independent variables (IV) in this study.

The four IVs are local communities' awareness, prioritisation, perception and readiness to participate. The dependent variable or the issue in focus is the sustainability of smart cities.

2.1.3 Local Community Awareness

For a smart city to work, the local community must know its existence. Holland (2020) investigated how far "smart cities" can be seen as a high-tech version of the "entrepreneurial city." His study highlighted some general principles that would make them more forward-thinking and welcoming. Different parts of the world have different ideas about what awareness is all about. Likewise, different societies have different interpretations of what comprises good smart city concepts. A study by Yigitcanlar, Kankanamge, & Vella (2022) using a social media analysis method called systematic geo-Twitter analysis, which included descriptive, content, policy and spatial analyses in Australia, found that: (a) Sydney is the smartest city; (b) internet-of-things, artificial intelligence, and autonomous vehicle technology are the most popular technologies; (c) there is a balanced view on the importance of both smart city concepts and technologies; and (d) innovation, sustainability, and governance are the most popular smart city concepts.

Meanwhile, in Indonesia, the Jakarta government has implemented six smart city elements by using digital infrastructures, such as online platforms and software applications. However, more work can still be done, and there is still room for improvement for the city and its communities to get the most out of its "smartness". One of the key highlights is that the government of Jakarta needs to improve how people use the apps they already have and make more people aware of them (Syalianda & Kusumastuti, 2021).

In Malaysia, results showed that practitioners had different levels of understanding and acceptance of smart city domains. Hence, the results were different. The practitioners participating in the study agreed with all the understanding and acceptance goals for the smart economy, living, people, and governance domains. However, they disagreed with all the goals for the smart environment and digital infrastructure domains. The results show that it is crucial to consider all opinions, including those who disagree, when making smart city plans that are more inclusive (Lim, Malek, Yussoff, & Yigitcanlar 2021). With the literature discussed above, this study hypothesises that:

H1: Local communities' awareness of smart cities has a significant relationship with the sustainability of smart cities.

2.1.4 Smart Cities Prioritisation

Townsend (2013) coined the idea that a smart city is a place where infrastructure, architecture, everyday objects and even our bodies work together with information technology to solve social, economic, and environmental problems.

Smart cities are the next big thing in technology; their goal is to improve people's lives. Future smart cities will rely on blockchain technology in data security, urban management, energy and waste management, supply chain, governance, transport, emergency events, and environmental monitoring. In addition, using blockchain in emergencies will allow multiple parties to coordinate resources, make disaster responses more efficient, help rescue teams do their jobs better, and provide interoperability (Sanghami, Lee, & Hu, 2022).

Smart cities promote using digital devices, like Internet-of-Things (IoT) and smartphones. This has led to a massive influx of data that needs to be stored, searched and managed. As such, it is crucial to have data protection (DP) tools which can prioritise a wide range of data innovatively and cost-effectively so that abnormal events can be found and managed well, making smart cities safer and more efficient (Muhammad, Lloret, and Baik, 2019). Current research in smart cities puts local communities in an innovative role. Most literature reviews what citizens want and how involved they are in smart cities projects and actions (Charalabidis, Alexopoulos, Vogiatzis, & Kolokotronis, 2019). Hence, this study hypothesises that:

H2 - Local communities' prioritisation of smart cities has a significant relationship with the sustainability of smart cities.

2.1.5 Local Communities Perception

Local communities have different opinions and perceptions about smart city initiatives. A study by Praharaj & Han (2019) provided an evidence-based framework to capture how local urban actors in India see smart cities, given the current urban conditions and the proposed changes under the 100 Smart Cities Mission. Indian urban stakeholders strongly connect the idea of a "smart city" with words like "sustainable city" and "eco-city," not with words like "ubiquitous city" or "digital city."

One of the things that needs to be done is to figure out what specific behaviours and features smart cities will need to have to build a reputation with the people who live there and adapt to their preferences, needs, and energy needs. Empirical research clearly shows that how safe a city is and how satisfied people are with the things it does have a significant effect on how good the city is seen to be, which in turn has a positive effect on its reputation (Żywiołek & Schiavone, 2021).

Using the NRC Emotion Lexicon, a study by Arku, Buttazzoni, Agyapon-Ntra, & Bandauko (2022) conducted a sentiment analysis of tweets about four smart city projects in Africa. Analysis shows that words linked to the emotions of anticipation, trust, and joy had solid

and consistent positive associations. Based on these cross-case trends, the larger smart city agenda and its positive strategic framing may have created a widespread and false sense of "smart city mirages" in the public's mind.

While for Malaysia, Greater Kuala Lumpur (KL), one of the twelve National Key Economic Areas of the Economic Transformation Program (ETP), has been mapped out to turn the capital city Kuala Lumpur and the cities around it into a thriving and prosperous metro area. In line with this vision, this article takes ideas from the Greater KL policy and turns them into technological opportunities (Yau, Lau, Chua, Ling, Iranmanesh, & Kwan, 2016). As such, it is clear that smart cities have different agendas and various communities' perceptions of sustainability. Hence, this study hypothesises that:

H3 - Local communities' perception of smart cities has a significant relationship with the sustainability of smart cities.

2.1.6 Local Communities Readiness to Participate

A smart city is not just about putting sensors all over the city to collect and send electronic data to citizens to keep up with the Internet of Things (IoT) trend. What is far more critical is to give people the tools they need to become smart citizens. Ghazali, Hussein, Mahmud & Md. Noor (2018) highlighted the importance of empowering Malaysian citizens by thinking about human-computer interaction (HCI) and user experience (UX). This is part of the bigger plan of the Kuala Lumpur ASEAN Capital Network (ACN), which is to create an ecosystem of collaborations between academia, government agencies and industries.

Not all local communities who agree to participate in the smart city initiative may bring a positive result. Lim & Yigitcanlar (2022) study investigated the status of participatory governance from the point of view of e-participation platforms and from the broader perspective of linking e-platforms to a smart city blueprint. Their study focused on shedding light on the e-governance space given to smart city realisation in a developing country, namely Putrajaya and Petaling Jaya smart cities, which were chosen as the testbeds for the study. The results showed that both smart cities needed more space for making decisions online. It was also clear that the planned projects to link the city plans to e-platforms needed to be fixed. Thus, this study hypothesises that:

H4 - Local communities' readiness to participate in the smart cities initiatives has a significant relationship with the sustainability of smart cities.

2.1.7 Sustainability of Smart Cities

Smart Cities are still a relatively new area of research. The number of research is limited, and so is their range (Luterek, 2018). However, studies have shown a few essential elements in building a smart city. A study by Tahir & Malek (2016) examines the requirements for a smart city. It uses the Analytic Hierarchy Process (AHP) to give each element considered vital to its growth a certain amount of weight. Smart mobility and an intelligent environment were the two most important aspects of building a smart city. The fundamental values that make up smart cities come from a balance of constructs like smart environmental practices, smart governance, smart living, smart mobility, smart people and a smart economy. These fundamental elements work together to utilise the technologies that help make a smart city a reality.

In Asia, two cities in Balochistan Province did things right when they implemented smart city technologies. They looked at how smart cities might help reach the UN's Sustainable Development Goals, which focus on Smart Economy, Smart People, Smart Governance, Smart Mobility, Smart Environment, Smart Living, and Smart City Adoption. It provides a valuable summary of the relevant literature on smart city framework adoption by reviewing and addressing critical findings from research on smart city problems (Hussain, Izzudin, & Shah, 2022).

3.0 Methodology

Using a purposive sampling technique, a self-administered questionnaire was distributed using Google Forms. Four hundred respondents were given the questionnaire online, but only 331 were usable; 124 were from Malaysia, and 207 were from the Philippines. A pilot test was conducted, and Cronbach Alpha showed that all the instruments were acceptable, with a value above 0.7. PLS-SEM analysis was used to analyse the data to capture the sustainability factors of smart cities. Based on the literature above, the constructs are local communities' awareness, local communities' prioritisation of smart cities, local communities' perception, readiness to participate and sustainability of smart cities. The questionnaire has six parts, and the items were adapted from sources listed in Table 1 below.

Table 1: Constructs and the source of adaptation of items

Constructs	Studies
Local Communities Awareness	Tan, Adam Assim, Chong, & Lai (2021)
Smart Cities Prioritisation	Myeong, S., Jung, Y., & Lee, E. (2018); Cui, Xie, Qu, Gao, & Yang (2016); Bibri, (2019).
Local Communities Perception	Digital Readiness Blueprint (2018); Tan, Adam Assim, Chong, & Lai, (2021).
Local Communities Readiness to Participate	Yang & Pandey, (2011); Digital Readiness Blueprint (2018).
Sustainability of Smart Cities	Giffinger, Kalasek, Fertner, & Milanovic (2007); Moosavi, M. S. (2018); Bursa Malaysia Securities Berhad (2015).

(Source: Author)

3.1 Demographic Profile

In both countries, more females than males participated in the research, Malaysia (59.7%) and the Philippines (54.1%). Most of the respondents in both countries are in the age range of 21-30 years old. However, the Philippines respondents are relatively young, with 73.4 per cent below 30 years old. This age group reflects that most of them are students. Respondents in both countries are relatively

from the younger generation, with a majority earning a monthly income below RM7,000 (Malaysians) PHP32,000 (Philippines) respondents. Among the smart cities in Malaysia, most of the community stays in Miri or Kuala Lumpur. While in the Philippines, the majority of the community stay in Manila.

Table 2: Demographic profile for respondents in both Malaysia and the Philippines

Variables	**Malaysia N (%)**	**Philippines N (%)**
1) Gender: (n=124 and 207)		
Male	50 (40.3)	95 (45.9)
Female	74 (59.7)	112 (54.1)
2) Age: (n=124 and 207)		
21-30	63 (50.8)	152 (73.4)
31-40	44 (35.5)	34 (16.4)
41-50	13 (10.5)	16 (7.7)
51-60	1 (0.8)	4 (1.9)
61 and above	3 (2.4)	1 (5)
3) Occupational status: (n=124 and 207)		
Work in the private sector	42 (33.9)	72 (34.8)
Work in the public sector	20 (16.1)	13 (6.3)
Freelancer	3 (2.4)	1 (0.5)
Student	46 (37.1)	97 (46.9)
Self-employed	7 (5.6)	5 (2.4)
Housemaker	2 (1.6)	7 (3.4)
Others	4 (3.2)	12 (5.8)
Retired	-	-
Unemployed	-	-
I am not looking for a job.	-	-
4) Income Level: (n=124 and 207)		
RM1001-RM3000/ PHP12,000-PHP17,000	52 (41.9)	27 (13)
RM3001-RM5000/PHP17,001-PHP22,000	22 (17.7)	17 (8.2)
RM5001-RM7000/PHP 22,001-PHP32,000	9 (7.3)	25 (12.1)
RM7001-RM9000/PHP 32,001-PHP37,000	5 (4)	7 (3.4)
RM9001-RM11,000	1 (0.8)	-
RM11,001 and above	8 (6.5)	-
Not applicable	27 (21.8)	103 (49.8)
5) Marital Status: (n=124 and 207)		
Single	87 (70.2)	173 (83.6)
Married	35 (28.2)	34 (16.4)
Divorced	2 (1.6)	-
Widowed	-	-
6) Nationality: (n=124 and 207)		
Malaysian/ Philippines	95 (76.6)	205 (99)
Non-Malaysian/ Non- Philippines	29 (23.4)	2 (1)
7) Ethnicity: (n=124 and 207)		
Malay/ Filipino	56 (45.2)	204 (98.6)
Chinese/ Others	34 (27.4)	3 (1.4)
Indian	11 (8.9)	-
Others	23 (18.5)	-
8) I am currently staying in (n=124 and 207)		
Kuala Lumpur/ Cebu	31 (25)	1 (0.5)
Cyberjaya/ Davoa	2 (1.6)	1(0.5)
Putrajaya/ Manila	3 (2.4)	146 (70.5)
Selangor/ Others	31 (25)	59 (28.5)
Johor	6 (4.8)	-
Penang	1 (0.8)	-
Melaka	4 (3.2)	-
Sabah	5 (4)	-
Kuching	3 (2.4)	-
Miri	38 (30.6)	-

(Source: Author)

4.0 Findings

Table 3: Results of measurement items

Model Construct	Measurement Item	Loading	CR*	AVE**
Local Communities Awareness	1. I know the existence of smart cities in my country.	MAL: 0.387 PHL: 0.357	MAL: 0.847 PHL: 0.857	MAL: 0.538 PHL: 0.542
	2. Smart cities are worth the economic cost.	MAL: 0.859 PHL: 0.792		
	3. I think "smart" is essential to the future of cities.	MAL: 0.771 PHL: 0.791		
	4. Smart cities are generally good for the local communities.	MAL: 0.768		

		PHL: 0.802		
	5. I would use the smart city apps if recommended by others.	MAL: 0.786 PHL: 0.828		
Smart Cities Prioritisation	1. There is the need for the community to express opinions in smart city development.	MAL: 0.736 PHL: 0.767	MAL: 0.866 PHL: 0.90	MAL: 0.566 PHL: 0.647
	2. The existence of creative communication channels for smart city development is essential.	MAL: 0.826 PHL: 0.886		
	3. The use of smart applications must be secured and free of privacy issues.	MAL: 0.762 PHL: 0.864		
	4. Communication privacy such as surveillance of conversation and correspondence, should be protected in smart cities.	MAL: 0.779 PHL: 0.849		
	5 Financial transactions through the smart city infrastructure should be given top priority.	MAL: 0.646 PHL: 0.626		
Local Communities Perception	1. The use of technology can achieve a better quality of life.	MAL: 0.774 PHL: 0.724	MAL: 0.911 PHL: 0.928	MAL: 0.672 PHL: 0.723
	2. Smart city can improve public safety.	MAL: 0.844 PHL: 0.873		
	3. The use of smart city facilities can enhance public convenience.	MAL: 0.826 PHL: 0.873		
	4. Smart city can increase the effectiveness of urban mobility.	MAL: 0.877 PHL: 0.889		
	5. Smart city can help in neighbourhood maintenance such as cleaning services.	MAL: 0.775 PHL: 0.875		
Local Communities Readiness to Participate	1. Local community's involvement helps in the decision-making process and assert influence in smart city development.	MAL: 0.837 PHL: 0.793	MAL: 0.911 PHL 0.917	MAL: 0.672 PHL: 0.69
	2. Local community participation enhances the city council administration and compliance.	MAL: 0.897 PHL: 0.829		
	3. Local community participation in the smart city will make the city a better place.	MAL: 0.782 PHL: 0.885		
	4. Local community participation will enhance the decision process by bringing new ideas for delivering city services.	MAL: 0.864 PHL: 0.908		
	5. Local communities have the skills, confidence, and motivation to use technology in smart cities.	MAL: 0.705 PHL: 0.726		
Sustainability of Smart Cities	1. The smart city can enhance the attractiveness of natural conditions.	MAL: 0.747 PHL: 0.738	MAL: 0.965 PHL: 0.969	MAL: 0.648 PHL: 0.673
	2. Smart city initiatives reduce pollution in the city.	MAL: 0.810 PHL: 0.868		
	3. Smart city development contributes to environmental protection in the city.	MAL: 0.846 PHL: 0.819		
	4. Smart city initiatives help in sustainable resource management in the city.	MAL: 0.832 PHL: 0.849		
	5. Smart city development improves the level of qualifications of the local community.	MAL: 0.776 PHL: 0.837		
	6. Smart city initiatives will demand more commitment to lifelong learning for the local community.	MAL: 0.816 PHL: 0.798		
	7. The development of smart cities promotes social and ethnic plurality.	MAL: 0.805 PHL: 0.798		
	8. Living in a smart city will have more flexibility in life.	MAL: 0.833 PHL: 0.73		
	9. Smart city initiatives promote creativity in local community.	MAL: 0.801 PHL: 0.805		
	10. Smart city development leads to cosmopolitanism and open-mindedness among the local community.	MAL: 0.777 PHL: 0.843		
	11. Smart city initiatives encourage the local community to participate in public life.	MAL: 0.809 PHL: 0.870		
	12. Smart city initiatives enable the local community to participate in governmental decision-making.	MAL: 0.724 PHL: 0.822		
	13. Smart city can provide better public and social services.	MAL: 0.829 PHL: 0.823		
	14. Smart city initiatives encourage transparent governance.	MAL: 0.801 PHL: 0.823		
	15. Smart city initiatives can complement the understanding of political strategies and perspectives.	MAL: 0.859 PHL: 0.857		

(Source: Author)

*Note: *Composite Reliability **Average Variance Explained*

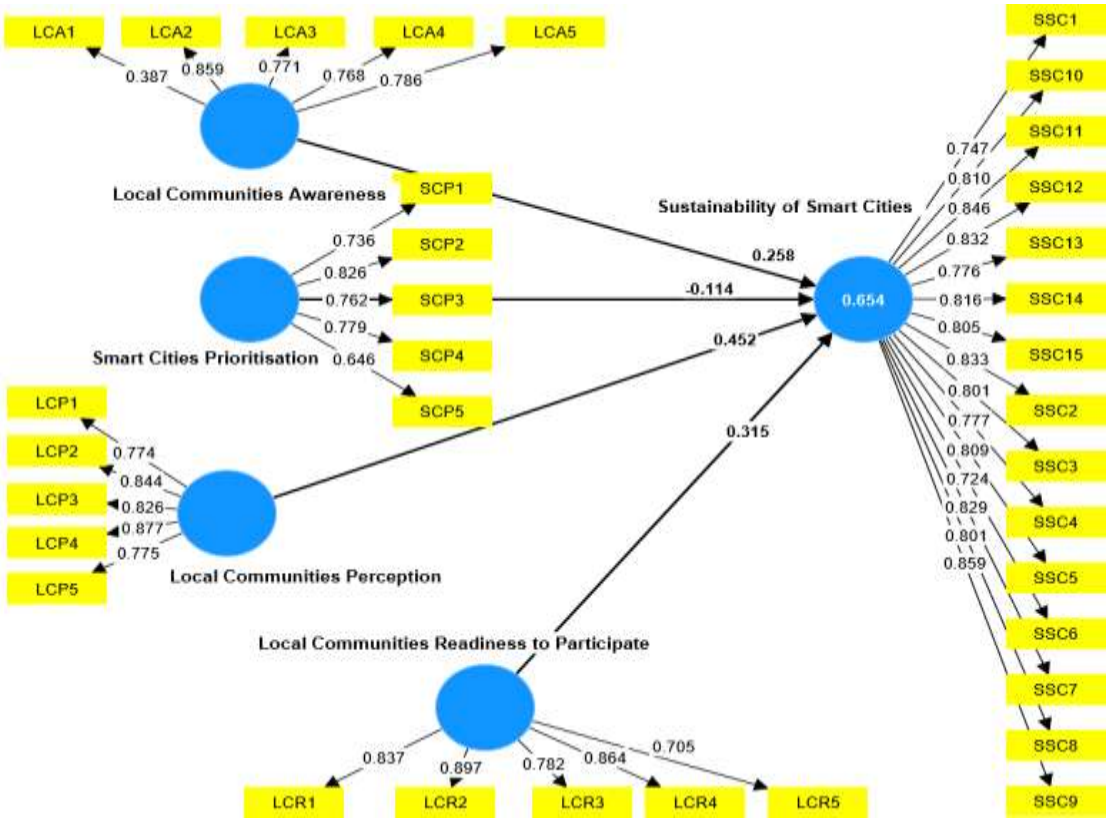

Figure 2: Results of the path analysis: Malaysia
(Source: Author)

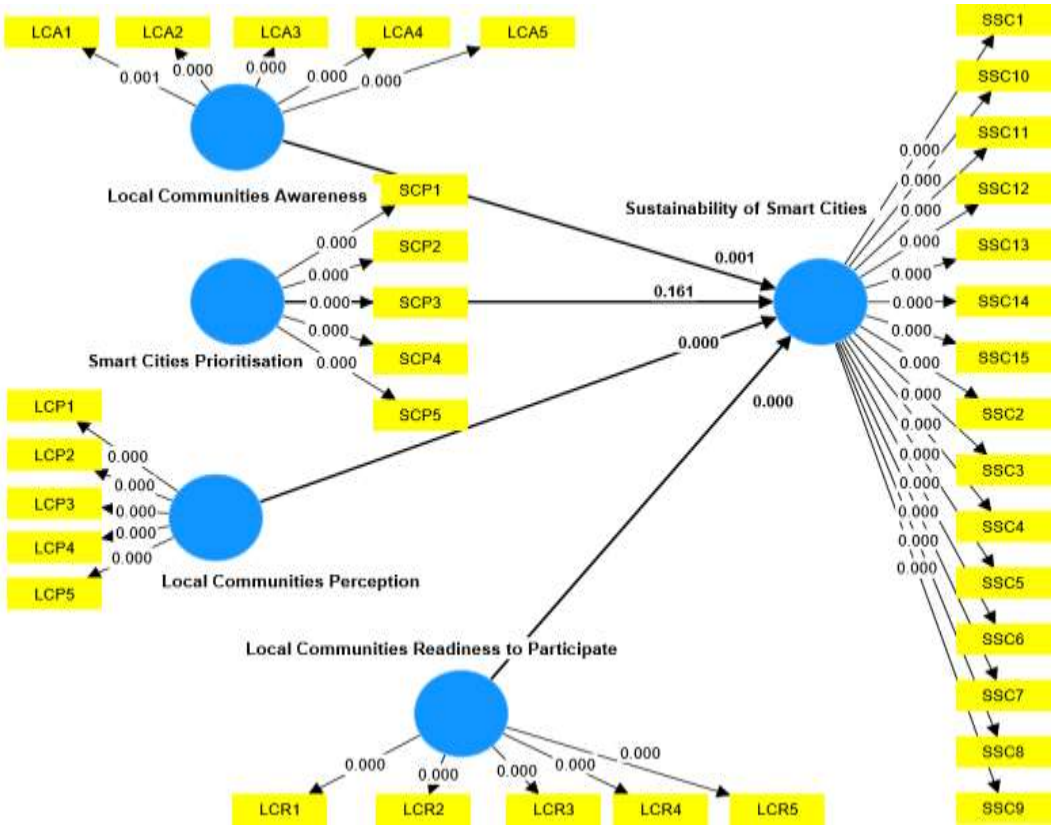

Figure 3: Results of bootstrapping: Malaysia
(Source: Author)

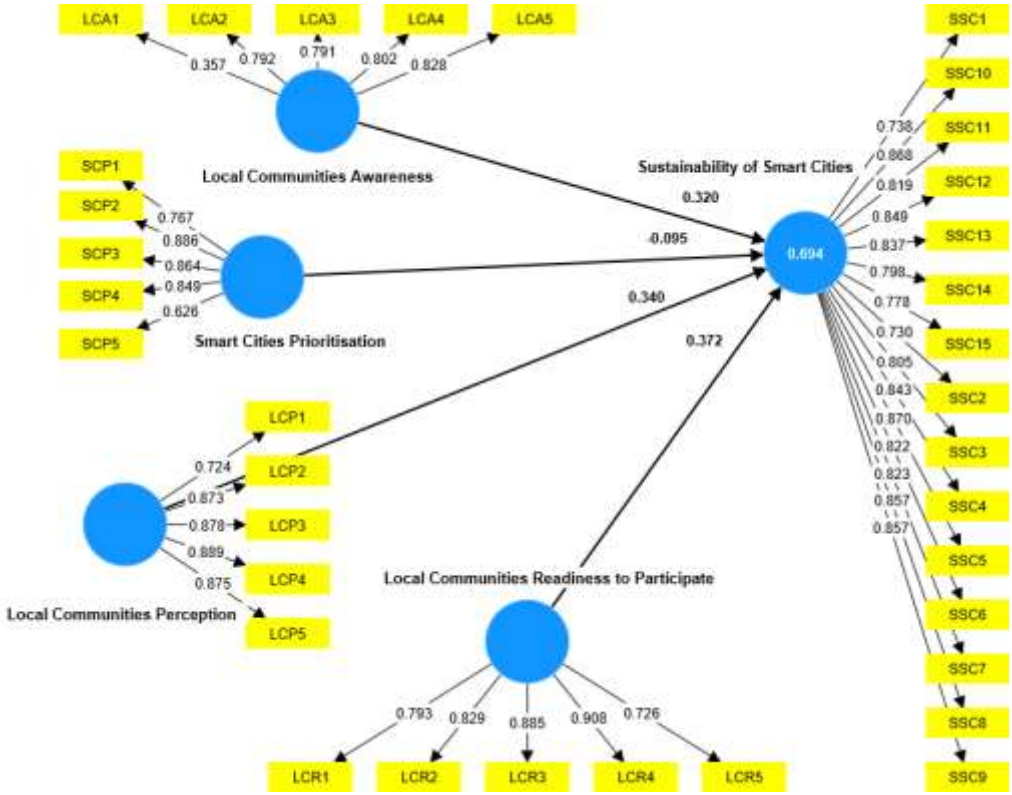

Figure 4: Results of the path analysis: Philippines
(Source: Author)

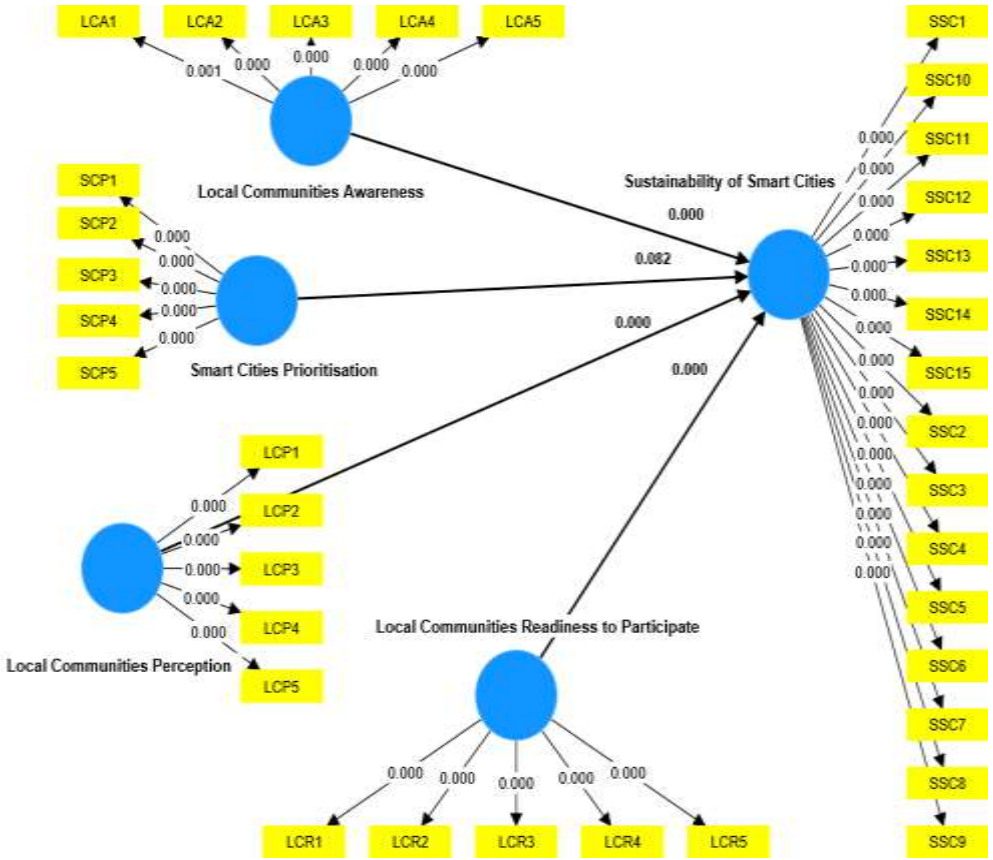

Figure 5: Results of bootstrapping: Philippines
(Source: Author)

The findings of the hypotheses testing are shown in Table 3 below.

Table 3: Results of hypothesis testing

Hypothesis	Relationship	T statistics	P-values	Results
H1	Local communities awareness > Sustainability of smart cities	MAL: 3.390 PHL: 4.845	MAL: 0.001 PHL: 0.000	MAL: Accepted PHL: Accepted
H2	Smart cities prioritisation> Sustainability of smart cities	MAL: 1.402 PHL: 1.739	MAL: 0.161 PHL: 0.082	MAL: Rejected PHL: Rejected
H3	Local communities' perception> Sustainability of smart cities	MAL: 5.126 PHL: 5.023	MAL: 0.000 PHL: 0.000	MAL: Accepted PHL: Accepted
H4	Local communities' readiness to participate > Sustainability of smart cities	MAL: 4.149 PHL: 6.821	MAL: 0.000 PHL: 0.000	MSL: Accepted PHL: Accepted

(Source: Author)

5.0 Discussion

Both samples from Malaysia and the Philippines show a high statistical fit with R^2 of 0.654 or 65.40% for Malaysia (Figure 1) and 0.694 or 69.40% for the Philippines (Figure 4).

Table 3 shows that three of the four hypotheses postulated were accepted.

Hypothesis 1 (H1) - Local communities' awareness of smart cities has a significant relationship towards the sustainability of the smart cities was accepted (Malaysia - t-value: 3.390, p-value: 0.001; Philippines - t-value: 4.845, p-value: 0.00) in both countries. Therefore, it implies that local communities in these two countries are aware of the existence of smart cities, and this section also validates the suitability of the respondents in completing the survey.

Hypothesis 3 (H3) –Local communities perception of smart cities has a significant relationship with the sustainability of smart cities. (Malaysia - t-value: 5.126, p-value: 0.000; Philippines - t-value: 5.023, p-value: 0.00). This indicates that the local communities are positive towards the existence of the smart cities, and they are aware of the initiatives related to the smart cities.

Hypothesis 4 (H4) – Local communities' readiness to participate in the smart cities initiatives has a significant relationship with the sustainability of smart cities was significantly accepted in both countries (Malaysia - t-value: 4.149, p-value: 0.000; Philippines - t-value: 6.821, p-value: 0.00). These findings further complement that local communities perception towards the positive role of the smart cities in their cities.

On the contrary, Hypothesis 2 (H2) – Local communities prioritisation of smart cities has a significant relationship with the sustainability of smart cities was not significant with a t-value of 1.402 and p-value of 0.161 for Malaysia and t-value of 1.739 and p-value of 0.082 for the Philippines. It implies that security and privacy issues in smart cities are not as crucial as other determinants in sustaining smart city initiatives. Conversely, these findings could be analysed from other beneficial perspectives reflecting that the local communities are less worried about the technological aspects of the smart cities as they perceive the technology in the smart cities are secure and reliable. The implications beyond the confines of the current research are that the younger generation are receptive towards smart cities technology, and eventually the development towards the smart cities will become an inevitable process in the urbanisation process in the developed and developing nations.

6.0 Conclusion and Recommendation

Interestingly, PLS-SEM results show that in both countries, awareness, the perception of local community and local community readiness to participate in the smart city initiatives have a positive and significant effect on the sustainability of smart cities. On the contrary, smart city prioritisation does not affect the sustainability of smart cities in Malaysia. It has a negative relationship in the Philippines. As the local community are the main players in the sustainability of smart cities in any country, their perception and awareness must be central in all planning of smart city initiatives.

The results of this study provide insights for industrial practitioners and policymakers to understand the local communities' perception and readiness level towards smart city initiatives. Furthermore, the findings will be helpful in improving and enhancing the current initiative, which needs to be appreciated by the community. In line with SDG 11 – towards a more sustainable city, and SDG 9 – in building more resilient infrastructure, the study provides micro-level data to show the significance of local communities who are ultimately the end-users.

7.0 Suggestion for Future Research

This study on the sustainability of smart cities in Malaysia and the Philippines uses the ESG model using quantitative data. However, future research should be done using a qualitative approach to explore how the local communities feel living in Smart cities.

Paper Contribution to Related Field of Study

For the development of any intervention measures, policymakers should focus on local community awareness and readiness in their heart, as the local community play a significant role that cannot be ignored.

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