Conference Paper

Model Pure Community-smart Cities (PCSC) Components Assessment in Lembah Klang, Malaysia from Society 5.0 to Madani Society

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Abstract.

Pure community is one of the elements that must be present to create a holistic smart city that is not only focused on economic development. This study aims to measure the level of development of the pure community in the cities of the Klang Valley, Malaysia. The research was conducted at the Klang Valley, Peninsular Malaysia. This study uses cluster sampling to select the respondents. Stratified sampling is a technique used for dividing the population into specific characteristics, and then using simple random sampling, samples are taken from each population. Overall, the level of pure community in Malaysia's Klang Valley shows that they have a high value of good citizens. Despite this, it is crucial to put a guideline that allows the involvement of urban citizens to carry out mutual responsibilities in the location of their residence to be more organized. The government should be able to create an appropriate task force in the housing area that involves shared responsibility between the city's residents.

Keywords: smart city development, pure community, Model PCSC

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1. Introduction

Malaysia is now moving towards a new era of urban development. The latest new concept of urban development is the Smart City Concept. The concept can be proven by the Malaysia Smart City Framework document, the Putrajaya Smart City Blueprint, and the latest, the Federal Territory Smart City Framework. Smart City development only focuses on developing Information and communication technology (ICT) infrastructure, but the latest development, Smart City development, has focused on human development. Smart cities are gaining popularity globally because they provide opportunities to experience futuristic, automated, responsive, and high-quality urban living (1). Smart City development will also face problems like in Conventional Cities. Among them, issues and problems of urban residents, such as suicide, vandalism, drug addiction, and domestic abuse, have become the country's primary focus.

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Dewan Bandaraya Kuala Lumpur (DBKL) has spent RM 12 million to repair public facilities affected by acts of vandalism. The KPKT has given this issue attention by drafting a Master Plan for Urban People's Well-being. Citizens have the most ambiguous roles of the three main actors in smart cities, in contrast to the government, the clear decision-maker, and the private technological players, who are to provide smart cities with cutting-edge technologies. The possession of ambiguous characteristics or imprecise roles can lead to the manipulation and subjugation of the general public by those in positions of authority (2). Therefore, the SC is a sustainable, prosperous, resilient, quality, and happy city and village to live in due to its smartness in all areas of development, including political and administrative, economic, demographic, sociocultural, infrastructural and info- structural, innovative, technological, educational, legal, and environmental (3). Accordingly, in city management, the good regulatory aspect (good governance) is only practical when good citizens (GC) give development attention to realize a prosperous, peaceful, and happy city. Efforts to develop GC, i.e., Pure Community, can easily be achieved if city residents' views and wishes are considered to formulate a formula so that they are independent and have a sense of belonging to their surroundings. Therefore, this study aims to measure the level of development of the pure community in the cities of the Klang Valley, Malaysia.

2. Literature Review

The welfare state is a state with a governmental concept that plays an important role in protecting and prioritizing the economic and social welfare of its citizens. This concept is based on the principles of equality, agreement, equal distribution of wealth, and social responsibility to people who are unable to meet the minimum requirements to lead a decent life.

Although there is some consensus that "Smart City" refers to innovation in city administration, services, and infrastructures, no universally accepted definition of the term has yet been established. There are many different ways to define a "Smart City." The idea of a "smart city" suggests a complete strategy for urban planning and management. In order to rethink the urban model and the interactions among the stakeholders, the definitions reflect an all-encompassing approach to urban challenges that use modern technology (4). The goal of every city, regardless of size, has been understood as a "smart city" since 2009, and since then, the notion has spread internationally (5). The phrase "smart city" has characterized urban planning, emphasizing sustainability, better services, and increased quality of life (6).

Giffinger et al. (2007) defined "Smart cities" as urban areas that are performing in a forward-thinking manner across a mix of six categories, including governance, people, mobility (technology), economy, environment, and lifestyle (7). The concept of a smart city frequently emphasizes the importance of citizen participation. Participation can be political, affecting political decision-making, or non-political, where residents contribute to the city's problem-solving efforts (6). According to Willems et al. (2017), the three components of a smart city are smart technology, smart people, and smart collaboration (8). Generally, a smart city is known as an urbanized area that has undergone development and excels in several areas, including economy, mobility, environment, people, living, and government (9). Cardullo and Kitchin (2017) observed that citizens play a primarily passive role, with businesses and local governments exercising civic paternalism (choosing what is best for citizens) and stewardship (executing on behalf of citizens) (10). They also include the actions of knowledgeable, self-reliant citizens (1). The program, based on prior experiences assessing livable, ecologically friendly communities, considering sustainability and quality of life, was created with an essential and significant inclusion of technical and informational components (11) .

In the context of Malaysia, the Jabatan Perancangan Bandar dan Desa (1997) (12) has made universal planning and development guidelines that aim to "create a balance between physical development with human spiritual development and universal virtues for the country's continued progress (12). As a result of the literature review as a whole, the researcher found five components that are a measure of pure community, namely:

1. Pure Citizen Empathy: In general, empathy is the ability to understand and understand the feelings or emotions of others. In the concept of pure citizen empathy, it relates to how the understanding of pure citizens, confidence in the needs of pure citizens, and the practice of the concept of pure citizens are classified (13–15).

2. Self-Reliance: In the context of self-reliance, emphasis on the concepts of manners, morals, ethics, truth, trust, conveying, intelligence, wisdom, and charity (16).

3. Citizen Culture: This construct discusses the need to apply a specific culture among pure city citizens. Šulyová and Vodák (2020) interpret citizen culture as maintaining local culture and identity adaptation over generations (ages) (17). At the same time, Julsrud and Krogstad (2020) interpret the culture of the people as how the belief system change can bring good (18).

4. Cultivating Technology: This construct discusses how technology is cultured or practiced by the society of pure citizens. Schwab (2016) highlights how technology is classified in the Industrial Revolution 4.0 and influenced by physical, digital,

and biological dimensions (19). Furthermore, Baudier et al. (2019) emphasize that culturalization technology involves the physical, digital, emotional, mental, and ethical aspects (20).

5. Environmental Sustainability: Environmental sustainability defines how virtuous citizens practice the environment by preserving, reducing impact, and ensuring recyclability for future generations in various natural and built environment resources, climate, infrastructure, economy, and green technology (21,22). As presented by most references (21–24), the environmental sustainability of pure citizens is measured in terms of lifestyle practices of nature love, 5R (refuse, reduce, reuse, repurpose, recycle) practices, environmental sustainability education, liking recreational activities and engaging in green economic activities. Therefore, the researchers evaluated these five components to formulate a measure for assessing the pure community-smart cities (PCSC)..

3. Research Method

This research is qualitative research. Qualitative research is research that produces findings that cannot be The research will conduct at the Klang Valley, Peninsular Malaysia, which consists of nine main cities, as shown in Table 1. This research uses the sample size of 382 people recommended by Krejcia and Morgan (1970) for a population of greater than 75,000 but less than one million. Nevertheless, the researcher took the initiative by distributing more than that amount, as many as 500 people. Bhat (25), Krejcia and Morgan (1970) stated that a large sample increases the accuracy of measuring unknown parameters (25). This study uses cluster sampling to select the respondents. Stratified sampling is a method in which the researcher divides the population into specific characteristics, and then using simple random sampling, samples are taken from each population subgroup (26). Respondents were approached and invited to complete a questionnaire on a voluntary basis. The overall sample size for this study presents in Table 1. The field study was conducted from 22 to 28 February 2022 with 500 respondents. Calculation of the number of samples for each area using the following formula:

Total sample = Total Population of the Area x 500 ÷ Total Population.

Before conducting research in the actual field, the researchers obtained validation from five experts: academics and city leaders. A pilot study will also obtain the questionnaire's reliability on 30 respondents from Nusajaya, Johor, from 14 to 16 January 2022. The results presented in this paper were analyzed using a descriptive statistical

TABLE 1: Study sample population.

No	Location	Total Population	Sample Size
1	Selayang	410,315	46 (46.25)
2	Gombak/UIA	748,500	84 (84.36)
3	Shah Alam	507,666	57 (57.21)
4	Petaling jaya	619,925	70 (69.87)
5	Subang jaya/Serdang	642,100	72 (72.36)
6	Cyberjaya	102,000	12 (11.49)
7	Putrajaya	103,800	12 (11.69)
8	Nilai/Seremban	393,057	44 (44.30)
9	Bangi/Kajang (Hulu Langat)	908,876	103 (102.45)
Total	**4,436,239**	**500**	

analysis aided by the computer software Statistical Package for the Social Sciences (SPSS) version 23. To assess the level of pure community, the researcher obtains the mean and standard deviation values.

Mean Score Calculation:

High Mean Score (7) – Low Mean Score (1) = 6

6 / 3 = 2 (Gap)

TABLE 2: Interpretation Score Mean.

Score mean	Interpretation
1.00 – 3.00	Low
3.10 – 5.00	Average
5.10 – 7.00	High

4. Findings and Discussion

As discussed in the literature review, this study selects five components of pure community in the smart city will be evaluated in this study, namely:

4.1. Pure citizen empathy

The analysis results for pure citizens' empathy are in Table 3 below. The result found that the mean score value was high and exceeded 5.10. This result shows that in the Klang Valley, Malaysia, the urban community agrees that empathy is vital to develop pure citizens in this country.

Table 3: Pure Citizen Empathy

No	Item	Mean	Standard Deviation
1	I know that pure citizens are wise, civilized, moral, and empathetic.	5.77	1.030
2	I know pure citizens have a proactive, innovative, creative, and holistic thinking style.	5.71	0.985
3	I understand that pure citizens are those who maintain good relationships with other people, take care of nature, and obey the teachings of their Creator.	5.86	1.022
4	I believe that a pure community/citizen can realize a prosperous and welfare nation.	5.79	1.006
5	I believe all races will accept the concept of pure citizens.	5.70	1.045
6	I believe the concept of pure citizens can be the lifestyle of the smart city community.	5.74	1.042
7	I believe the concept of a pure citizen can guide everyday life.	5.74	1.011
8	I am able to practice the concept of a pure citizen as a way of life.	5.67	0.957
9	I am able to invite my neighborhood to practice pure practices in life.	5.53	1.038
10	I am ready to follow all the rules and guidelines of the society of pure citizens.	5.70	1.011

The preparation of the citizens of this city should be a leapfrog for the leaders of the area to create good citizens to create smart cities. Although many smart cities, such as Smart London and Smart Dublin, appear to put their citizens' needs first, they continue to be passive beneficiaries rather than directly engaging with their cities [8,10]. This quote could be attributed to the fact that most smart city visions emphasized citizen-centricity but needed more specifics to achieve it. Therefore, transforming the citizens' passive duties into active ones could solve the issue [1].

4.2. Self-Reliance

Based on table 4 shows the results of the evaluation of the self-sufficiency level of urban citizens. The results found that all the mean values for all items were high, which exceeded 5.10. This result shows that urban citizens have a high sense of belonging to the social environment, public infrastructure, and the environment.

Self-reliance is important because showing concern and love for the living environment causes city residents to maintain a safe environment. According to Malek et al.

TABLE 4: Self-Reliance.

No	Item	Mean	Standard Deviation
1	I feel love and belonging to my living environment.	5.77	1.048
2	I must show a pure attitude and behavior that the local community can accept.	5.84	1.004
3	I am always ready to help neighbors in trouble without expecting anything.	5.81	0.986
4	I obey the instructions to maintain the local community's cleanliness, safety, and harmony.	5.94	0.951
5	I use public facilities such as playgrounds in the neighborhood prudently and responsibly.	5.89	1.007
6	I am ready to be an honest citizen to carry out the duties and responsibilities entrusted by the local community.	5.77	1.009
7	I am able to carry out campaigns and persuasion so that my neighborhood complies with and practices pure culture.	5.46	1.113
8	I am sociable, friendly and have a good relationship with the neighborhood and the leaders in my area.	5.63	1.085
9	I aspire for myself, my family, and my community to become a pure, polite, and prosperous society.	5.80	0.979
10	I am confident that I can practice all good knowledge to improve the economic status, sociocultural environment, and identity of a society of pure citizens.	5.76	0.993
11	I always educate my family to be law-abiding citizens, such as road safety regulations.	5.85	1.004

(2021), the individualistic factors of the anti-social community, loss of identity, and not loving where to live are the leading causes of a city becoming unsafe (27).

4.3. Citizen culture

The next component is assessing citizens' cultural level in pure citizens. Based on Table 5, the study results show that the mean Score for all items to assess the cultural level of citizens is high, with a mean score exceeding 5.10. This result shows that city citizens have a responsibility and high social capital among residents.

Social capital is the relationship between individuals that includes a social network and the norms of reciprocity and trust that emerge from it. Tahir et al. (2016) measurement of social capital consists of community organization, association membership, social trust, voluntary work, corruption, and freedom (28). To actively participate in political decision-making, citizens must be well-informed about the municipality's or

TABLE 5: Citizen Culture.

No	Item	Mean	Standard Deviation
1	My neighborhood and I constantly interact and talk to each other.	5.36	1.166
2	My neighborhood and I are always keeping in touch with each other through social media and face-to-face.	5.31	1.166
3	My neighborhood always shares information about neighborhood issues, safety issues, and community activity information.	5.39	1.185
4	I always take care of the public facilities that will use together with the neighborhood residents.	5.69	1.058
5	I immediately contacted the management in the neighborhood to report the damage to public facilities.	5.42	1.149
6	I participate in communal work and neighborhood activities when I have time.	5.39	1.164
7	I always give suggestions and views in my neighborhood association meetings/general meetings.	5.09	1.213
8	I always respond to neighborhood information from the resident committee, such as safety, well-being, and cleaning information.	5.42	1.145
9	I report to the resident committee/authorities if negative behaviors and practices threaten the neighborhood's safety.	5.52	1.120
10	I always obey local rules and laws.	5.75	1.008
11	I respect others when interacting and during meetings.	5.85	0.991

city's recent history, current state, and plans (6). Lim et al. (2019) found that in actual practice, the roles and characteristics of the people are interchangeable, depending on the level of interaction and cooperation between the people and the government (2). Therefore, the community should be exposed to their mutual responsibilities and role in deciding their area.

4.4. Cultivating technology

Table 6 shows the mean score value for the technology culture component against the evaluation of good citizens. The study results found that inculcating technology among city residents is high because the mean Score for all items is above 5.10. This result also shows that the city's citizens have high technical skills and knowledge.

The term "smart city" encompasses cities that use information technology to enhance their citizens' services and quality of life (6). Smart communities use ICT to acquire

TABLE 6: Cultivating Technology.

No	Item	Mean	Standard Deviation
1	I need to be ready to accept and adopt the technology available in smart city services.	5.77	1.077
2	I like to experiment with new technologies, such as in the field of artificial intelligence.	5.49	1.148
3	Among my friends, I am usually the first to try new technology, such as Google Maps and Waze, to get information about the traffic conditions to my desired destination.	5.58	1.212
4	I can get help from others when I have difficulties using smart city services.	5.64	1.091
5	Smart city services such as e-government and One Stop Center make it easy to get information to complete my official business.	5.58	1.088
6	Using smart city services such as high-speed internet networks can increase productivity.	5.44	1.109
7	Smart city services such as IoT-based systems are very convenient as they provide automated controls such as smart parking and lighting.	5.61	1.038
8	Using smart city services such as e-commerce is efficient and fun because it can increase business networks.	5.64	1.104
9	I use smart economic services such as QR pay to facilitate purchases and payments.	5.67	1.214
10	Society must be exposed to the ethical use of ICT technology to avoid being the trigger/cause of cybercrime.	5.89	1.062
11	Society needs to know the threat of cybercrime and common computer crime.	6.07	1.026

and share information and daily transactions (28). Increasingly, technology-driven city development strategies are criticized for neglecting their citizens (Mora et al., 2017; Lim et al., 2018). Overall, the IT dimension appears to be central to the smart city (29), and proponents of this urban paradigm emphasize the benefits resulting from the adoption of technologies, techniques, and visions, assuming that these are "scientific, objective, commonsense, and apolitical" in nature (30).

Smart city-policy makers and technology vendors are growing interested in creating citizen-centric smart cities (31). Recent studies and surveys corroborate that our culture has entered the digital transformation era (32). Recent data from several studies and surveys confirm that our society has entered the digital transformation era (32). Proficient in smart technology not only helps facilitate the community itself but also reduces congestion such as road congestion and systematically planning their journey to a particular place. Therefore, the results of this study confirm that the knowledge of the city's citizens about the use of smart technology is high.

4.5. Environmental sustainability

Table 7 shows the level of environmental sustainability among urban residents against the pure community assessment. The study results show that the mean Score for all items is high, exceeding 5.10. This result shows that the city's citizens are aware of the responsibility of taking care of the natural environment and other facilities. This value ensures that the environment is aware, safe, and protected from vandalism.

TABLE 7: Environmental Sustainability.

No	Item	Mean	Standard Deviation
1	My community and I should always care for the landscape and animals like birds in the neighborhood.	5.75	1.068
2	My community and I must maintain cleanliness continually and cooperate in the neighborhood.	5.85	0.990
3	My community and I should be aware of climate change and choose to reduce carbon emissions, such as taking public transport and reducing the use of air conditioning.	5.76	1.022
4	My community and I always practice reusing items before throwing them away as garbage.	5.64	1.093
5	My community and I always recycle household items and electronics to reduce waste generation.	5.59	1.089
6	I invest part of the money for the children to follow the education of loving the environment.	5.44	1.113
7	My family and I follow environmental care awareness activities.	5.61	1.040
8	I encourage children to get involved in activities related to loving nature, such as drawing competitions.	5.64	1.107
9	I took the opportunity to educate the family about recognizing the types of plants, trees, and insects that need to be observed and take care of the environment.	5.64	1.095
10	I encourage the children to play traditional games such as congkak and kite flying.	5.69	1.063
11	I always take care of public facilities and report damage to recreational facilities to the relevant parties for further action.	5.69	1.062
12	My community and I agreed to create neighborhood infrastructure, such as jointly building a seat under a tree for community recreation.	5.61	1.118

Environmental care includes preserving flora and fauna and taking measures to prevent climate change by reducing carbon and practicing recycling. Promoting investment

and creating a sustainable urban environment are two additional objectives of smart cities (9). "Implementing a Climate City Mission is a revolutionary new approach to reaching climate neutrality, and it is a method of doing so more quickly by 2030. The mission's objective is to encourage system innovation across the value chain of city investment. It will focus on various industries, including governance, transportation, energy, construction, and recycling, and cutting-edge digital technology will support it. As such, it calls for a shift in regulations, techniques, and tools and a readiness to go beyond previously established patterns and routines (33). Thus, environmental sustainability is essential to create good citizens to reduce the effects of climate change and others.

References

[1] Lim S, Malek JA, Hussain MY, Tahir Z. Citizen participation in building citizen-centric smart cities. Geogr OnlineTM Malaysian J Soc Sp. 2018;14(4):42–53.

[2] Lim S, Malek JA, Hussain MY, Tahir Z. The behaviours and job positions of citizens in smart cities' development. Plan Malaysia J Malaysian Inst Planners. 2019;17(2):133–45.

[3] Malek JA, Baharudin RA. Smart City (SC)-Smart Village (SC) and the "Rurban" concept from a Malaysia-Indonesia perspective. African J Hosp Tour Leis. 2019;1–7.

[4] Monzon A. Smart cities concept and challenges: Bases for the assessment of smart city projects. In: SMARTGREENS 2015 - 4th International Conference on Smart Cities and Green ICT Systems, Proceedings, IS-11-IS-21. 2015.

[5] Marsal-Llacuna ML, Colomer-Llinàs J, Meléndez-Frigola J. Lessons in urban monitoring taken from sustainable and livable cities to better address the Smart cities initiative. Technol Forecast Soc Change. 2015;611–622.

[6] Berntzen L, Johannessen MR. The Role of Citizens in " Smart Cities". 2016.

[7] Giffinger R, Fertner C, Kramar H, Kalasek R, Pichler N, Meijers E. Smart cities: Ranking of European medium-sized cities. Vienna: Vienna University of Technology; 2007.

[8] Willems J, Bergh J Van den, Viaene S. Smart city projects and citizen participation: the case of London. Public Sector Management in a Globalized World. 2017;249–66.

[9] Mutiara D, Yuniarti S, Pratama B. Smart governance for smart city. In: IOP Conference Series: Earth and Environmental Science. 2018.

[10] Cardullo P, Kitchin R. Being a 'citizen' in the smart city: Up and down the scaffold of smart citizen participation. Ireland: County Kildare; 2017.

[11] da Silva CA, dos Santos EA, Maier SM, da Rosa FS. Urban resilience and sustainable development policies: An analysis of smart cities in the state of São Paulo. Rev Gest. 2020;27(1):61–78.

[12] Jabatan Perancangan Bandar dan Desa. Garis Panduan Perancangan dan Pembangunan Sejagat. Kementerian Perumahan dan Kerajaan Tempatan Malaysia; 1997.

[13] Howe D. Attachment across the lifecourse: A brief introduction. Basingstoke: Palgrave Macmillan; 2011.

[14] Christakis NA. The Evolutionary Origins of a Good Society. New York, Boston, London, Little, Brown Spark; 2019.

[15] Edwards S. Youth Movements, Citizenship and the English Countryside: Creating Good Citizens 1930-1960. J Hist Child Youth. 2020;13(1):146–8.

[16] Zakaria M. Kuala Lumpur Telaga Biru Sdn. Bhd. In: Ensiklopedia Adab. 2020.

[17] Šulyová D, Vodák J. Managing Diversity in Europe (London), North America (New York) and Asia (Singapore). Sustainability. 2020;12(22):1–11.

[18] Julsrud DTE, Krogstad DJR. Is there enough trust for the smart city? exploring acceptance for use of mobile phone data in oslo and tallinn. 161(120314). Technol Forecast Soc Chang. 2020;161(120314).

[19] Schwab K. The Fourth Industrial Revolution. World Economic Forum. 2016;

[20] Baudier P, Ammi C, Lecouteux A. Employees' acceptance of the healthcare internet of things: a source of innovation in corporate human resource policies. J Innov Econ Manag. 2019;3:89–111.

[21] Hakovirta M, Denuwara N. How COVID-19 Redefines the Concept of Sustainability. Sustain 2020, 12, 3727. 2020;

[22] Kasayanond A, Umam R, Jermsittiparsert K. Environmental Sustainability and its Growth In Malaysia by Elaborating the Green Economy and Environmental Efficiency. Int J Energy Econ Policy. 2019;9(5):465–473.

[23] Kumwenda S. Challenges to Hygiene Improvement in Developing Countries: The Relevance of Hygiene to Health in Developing Countries. . London: IntechOpen Publisher; 2019.

[24] Delcea C, Crăciun L, Ioanăș C, Ferruzzi G, Cotfas L-A. Determinants of Individuals' E-Waste Recycling Decision: A Case Study from Romania. Sustain 2020, 12, 2753. 2020;

[25] Krejcie R V, Morgan DW. Determining sample size for research activities. Educ Psychol Meas. 1970;30(3):607–10.

[26] Creswell JW, Poth CN. Qualitative inquiry and research design: Choosing among five approaches. Sage publications; 2016.

[27] Malek JA, Lim SB, Yigitcanlar T. Social Inclusion Indicators for Building Citizen-Centric Smart Cities: A Systematic Literature Review. Sustain 13, 376. 2021;

[28] Tahir Z, Abdul Malik J, Ibrahim MA. Developing Smart Ict In Rural Communities In Malaysia Through The Establishment Of Telecenters. E-Bangi, J Soc Scinces Humanit. 2016;11(1):227–242.

[29] Carvalho L. Smart cities from scratch? A socio-technical perspective. Cambridge J Reg Econ Soc. 2015;8(1):43–60.

[30] Kitchin R. Making sense of smart cities: Addressing present shortcomings. Cambridge J Reg Econ Soc. 2015;8(1):131–6.

[31] de Waal M, Dignum M. The citizen in the smart city. How the smart city could transform citizenship. Inf Technol. 2017;59(6):263–73.

[32] Sidani D, Veglianti E, Maroufkhani P. Smart Cities for a Sustainable Social Inclusion Strategy – A Comparative Study between Italy and Malaysia. Pacific Asia J Assoc Inf Syst. 2022;14(2).

[33] Boeri A, Longo D, Palma M. Climate-neutral and smart cities: a European policies' overview. WIT Trans Ecol Environ 243. 2021;3–14.