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EXPLORING THE RELATIONSHIP BETWEEN THE PERCEIVED IMPORTANCE OF HEALTHY CITY INDICATORS AND SATISFACTION LEVELS TOWARDS THE LOCAL GOVERNMENT IN SHAPING A HEALTHY CITY

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Abstract

This study explores the correlation between the perceived importance of healthy city indicators and the satisfaction level towards the effectiveness of the government in creating a healthy city environment. Nineteen distinct healthy city indicators, categorised within 5 dimensions, were tested for their significance in relation to satisfaction levels towards the effectiveness of the local authority. The cross-sectional data collected from face-to-face questionnaire survey was analysed using Goodman and Kruskal's gamma, while controlling for socio-demographic variables (n=121). Significant indicators include; (i) improving accessibility to public spaces (β= .528, p= .004), recreational and commercial areas (β= .506, p= .001); (ii) increasing the availability of public transport (β= .398, p= .026) complemented by proper infrastructures and facilities (β= .305, p= .014), (iii) providing more variety of green spaces (β= .529, p= .004), and improving the continuity of green networks (β= .399, p= .015); (iv) introducing measures to improve the quality of housing, focusing on increasing occupants' comfortability and healthy living (β= .474, p= .005); (v) facilitating better accessibility to business and commercial areas (β= .598, p= .000); (vi) improving street connectivity and increasing the number of intersections (β= .418, p= .002). Although this study only found a meaningful connection between the perceived importance of indicators and satisfaction levels towards the government without a comparative analysis against the current city condition, this does not negate the crucial role of subjective perceptions in the government's efforts to manage public expectations. Studies of this nature provide opportunities for further exploration, particularly in involving public participation in the planning processes.

***Keywords*:** Healthy city, public participation, public perception, Urban governance, Local government

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INTRODUCTION

Numerous studies have shown strong indications that an individual's health is influenced by factors beyond the personal sphere (Meng, et al., 2006), extending to a wider context which includes neighbourhoods, communities, and even national-level externalities. According to the World Health Organisation (2016), efforts to cultivate a healthy community necessitates attention not only to the health sector but also to investments in planning across social, physical, and environmental realms. Hence, the responsibility for achieving and sustaining a state of health transcends individual efforts, resting also upon the shoulders of policymakers and the government (Leh, et al., 2011).

On this note, many governments have started to prioritise and incorporate the element of health into their long-term urban planning strategies. This global trend is evident in the deliberate integration of the features of ideal healthy cities into the respective master plans of concerned governments (Harpham, Burton & Blue, 2001; Barton & Grant, 2013). Such efforts are particularly crucial for countries undergoing rapid urbanisation, such as those in Southeast Asia. Given the dynamic shifts in urban morphology, it becomes paramount for decision-makers in these swiftly evolving cities to remain cognisant of developments and their implications on the well-being of its inhabitants. This vigilance serves to mitigate uncertainties within the society in question. However, there remains room for refinement in evaluating the efficacy of these features of healthy city features and in effectively monitoring the progress of these plans (De Leeuw, 2009), especially for Southeast Asian countries (De Leeuw & Simos, 2017).

While most research focuses on assessing the positive impact of a city's urban environment on the health of its inhabitants (Paquet, Cargo, Kestens & Daniel, 2010; De Leeuw, et al., 2015), there is a relative lack of studies dedicated to soliciting feedback from the target population. Gathering input from the public not only reinforces but also encourages active public participation in the planning and policy-making processes. Urban planning that values and incorporates public perspectives can substantially contribute to the creation of a more human-centric living environment. In line with the concept of public participation through advocacy planning forwarded by Davidoff in the 1960s, numerous contemporary studies have established a correlation between the satisfaction levels of the target population and the likelihood of success in government initiatives (Andrews, 2018; Zyed et al., 2021).

Building on this premise, Bryson (2018) advocates for strategic plans as a means to increase public trust and garner support, thereby ensuring the quality and effectiveness of government initiatives. This is further supported by McLean & Roblyer (2017), which asserts that public endorsement shapes policy effectiveness through individual subjective evaluations. The author contends that

the higher the perceived effectiveness, the greater the support the government will receive.

Consequently, the first step in managing public expectations lies in an understanding of the perspectives and sentiments of the intended population. Integral to shaping an environment conducive to healthy living habits is the active integration of perspectives from the intended population by decision-makers. Friedman (1987) and Forester (1999), as cited in Corburn (2009), argued that public participation in the planning process and urban governance serves as a mediator of disagreements, thereby facilitating greater support for and success of the proposed plan. Consulting with the intended population prior to significant decision-making, whether through formal or informal methods, as advocated by Forester (1999) and reinforced by Corburn (2009), promotes consensual decision-making among multiple stakeholders, ultimately leading to more rationalised outcomes (Hashim, 2021).

Furthermore, in the absence of important questions such as "how receptive are the inhabitants towards the government's initiatives in creating a healthy city?", "do they think that the plans made by the government are important in achieving the ultimate goals?" as well as "how satisfied are they with the government's initiatives?", critical insights from the intended population are overlooked. Without this essential understanding, the government's ability to formulate a rational and equitable plan is compromised. Recognising this evident gap, it becomes imperative to gather such data, with the ultimate goal of providing the government with a more nuanced comprehension of the subject at hand.

The public's perception of the importance of initiatives plays a crucial role in their subjective evaluation of the government's effectiveness in planning towards a healthy city. As such, this study aims to explore the correlation between the perceived importance of healthy city indicators and their satisfaction levels towards the government's effectiveness in creating a healthy city environment. In addition, this study also offers a unique opportunity to understand what constitutes a 'healthy city' as perceived by the public. Building on the insights of De Leeuw (2009), soliciting public opinions enables the government to create a healthy city with a more harmonised alignment between public expectations and the governmental aspirations. The feedback also helps the government to assess the extent of support or potential lack of participation in its initiatives.

LITERATURE REVIEW

A systematic literature review conducted by Rothenberg, et al. (2015) revealed that urban health indicators encompass a broad spectrum, including health status and healthcare infrastructure, environmental factors, geographical attributes, economic variables and socio-demographic characteristics. Diverse experts from various fields have also contributed a myriad of healthy city indicators, spanning

disciplines such as transportation planning (Mueller, et al., 2021), information systems (Van Oers & Reelick, 1992), public policy (Li, et al., 2020) and occupational health (Boarin, Besen & Haarhoff, 2018), among others. The European Healthy Cities Network of the World Health Organisation also introduced a 53-item healthy city indicator set, later refined to 32 items by Webster & Sanderson (2013). Drawing on extensive literature, this review identifies five dimensions that have consistently emerged as significant in shaping a conducive environment for healthy living in previous studies.

Area density. Northridge & Sclar (2003), supported by Giles-Corti, Ryan & Foster (2012) stated that although continuous growth in population and density is an unavoidable consequence of rapid urbanisation, the creation of healthy living conditions remains achievable through insights from relevant field experts. The authors underscore the significance of vigilant monitoring and assessment of population and density patterns, deeming them crucial determinants of overall population health. As urban populations surge, the increase in accessibility to commercial areas assumes paramount importance in fostering a healthy living environment (Frank, et al., 2005; Powell, et al., 2007). In the recent global COVID-19 pandemic outbreak, studies have found that the population density is correlated to the severity of COVID-19 spread (Roy & Gosh, 2020; Han, et al., 2021; Teh, et al, 2022).

Mobility and transport. A systematic literature review and meta-analysis conducted by Jia et al. (2021) examined the relationship between street connectivity and physical activity among obese children, revealing a clear positive association between these variables. This correlation is also evident in the adult population (Frank, et al., 2005). Additionally, the availability of high-quality active transport infrastructure, encompassing facilities for cycling and walking, demonstrated a beneficial impact on healthy living habits, particularly in encouraging increased levels of physical activity (Van Dyck, et al., 2011; Nijkamp & Mobach, 2020). A healthier living environment can also be fortified by well-developed public transportation infrastructures (Lowe, Boulange & Giles-Corti, 2014), particularly benefiting individuals with limited mobility options (Grant, 2018).

Mixed-use and proximity. Healthy behaviours can be stimulated via the strategic provision of public facilities, recreational spaces and commercial areas in close proximity to both workplaces and residential areas (Gehl, 2011; Pozoukidou & Chatziyiannaki, 2021). Proximity facilitates easier access for individuals of varying physical abilities, promoting increased mobility and physical activity among residents. This closeness of destinations also creates diverse land-use mix encouraging not only more physical activity, but also increasing the likelihood of readily available healthy food options near workplaces and residences (Sallis & Glanz, 2009; Lowe, Boulange & Giles-Corti,

2014). Consequently, this proximity leads to an improved quality of dietary choices (Majid, Lim, Zaman & Ruslik, 2021).

Environment and urban landscape. Numerous studies have provided evidence that improving green and blue coverage yields substantial benefits for an individual's health, regardless of mental, physical or overall well-being (Pouso, et al., 2021; Markevych, et al., 2017). The equitable distribution of these qualities across locales and population, together with a robust network of green spaces (Moseley, Marzano, Chetcuti & Watts, 2013; Nieuwenhuijsen, 2021), provides opportunities for social interaction and communion with nature, thereby encouraging increased physical activity and active movement.

Housing quality and energy efficiency. Good housing quality serves as a form of preventative medicine, effectively mitigating general health risks, enhancing climate resilience, and, in some cases, minimising carbon footprint. It is highly encouraged for governments to provide houses with better energy efficiency features, a proposition suggested by Visscher, Meijer, Majcen & Itard (2016), who assert that well-performing buildings can significantly influence occupational behaviours, consequently contributing to improved health status. Furthermore, houses with better quality have demonstrated positive effects on both net mortality and morbidity (Hamilton, et al., 2015), affording occupants better indoor air quality and temperature regulation, among other benefits.

MATERIALS AND METHODS

Study design

This study intends to explore the correlation between the perceived importance of healthy city indicators and their satisfaction levels concerning the effectiveness of the government in cultivating a healthy city environment. The selected study site is the Federal Territory of Kuala Lumpur, serving as the capital city of Malaysia. This area falls under the administration of the Kuala Lumpur City Hall (DBKL), encompassing a total land area of 243 square kilometres. The city's strategic vision, outlined in the Kuala Lumpur Structure Plan 2040, aspires to be a healthy and vibrant city by 2040. Therefore, in this study, DBKL, as the local governing body, is regarded as the representative entity signifying "the government".

As of 2022, the population of Kuala Lumpur stands at 1.9 million (Department of Statistics Malaysia, 2022). From this demographic, respondents were selected based on specific eligibility criteria; i) aged 18-years or older; ii) able-bodied Malaysians with a residency of more than five years within the administrative area of DBKL; and iii) either a house owner or renter. Employing a simple random sampling technique, respondents were further stratified by gender. Although the precise size of the targeted population based on the eligibility criteria is unknown, it is presumed to be substantial, likely exceeding

100,000 individuals. Hence, employing Yamane's (1967) sampling size calculation, and considering a 90% confidence level for populations exceeding 100,000, the minimum sample size required for this study is set at a minimum of 100 respondents.

Data collection took place over a three-month period, spanning from July 2022 to September 2022, via face-to-face questionnaire surveys. The questionnaire consisted of 3 sections: the first solicited demographic information from respondents (3 questions), the second focused on assessing the perceived importance of healthy city indicators (19 questions), and the third evaluated satisfaction levels regarding the government's effectiveness in creating a healthy city environment (1 question). All collected data were recorded and subsequently analysed using the IBM Statistical Package for Social Sciences (SPSS) version 22.0.

Independent variables: Healthy city indicators

Nineteen indicators categorised under five healthy city dimensions were included in the study (refer Table 2). The respondents were asked to rate their perceived importance of those indicators in shaping a healthy city through a 4-point Likert scale (1: Extremely not important, 2: Not important, 3: Important, and 4: Extremely important).

1. Area density (2 items): Increase in the number of populations, residential units, business activities and commercial spaces in an area.
2. Mobility and transport (6 items): Increase in street connectivity and number of intersections. Improve accessibility to public spaces, cycling connectivity, pedestrian networks and infrastructures, availability and efficiency of public transport services as well as reducing the speed of, and volume of traffic.
3. Mixed-use and proximity (4 items): Provide public facilities, recreational and commercial areas that are in close proximity to workplace and residential areas. Integrate public facilities and institutions through mixed development as well as improve the food environment.
4. Environment and urban landscape (5 items): Improve and increase green coverage, blue spaces as well as green networks.
5. Housing Quality and Energy Efficiency (2 items): Measures to improve the quality and energy efficiency of housing.

Dependent variable: Satisfaction Level Towards the Government

As previously mentioned, the Kuala Lumpur City Hall (DBKL), as the local governing body, serves as the representative embodiment of "the government" in this study. As such, respondents were asked about their overall satisfaction level towards the current efforts undertaken by their local authority to integrate healthy

city features into their place of residence. They were to provide a response using a 4-point Likert scale, ranging from 1: Extremely not satisfied, 2: Not satisfied, 3: Satisfied to 4: Extremely satisfied. This deliberate reduction in the scale was implemented to force subjects to formulate distinct opinions and offer specific responses, steering clear of the potentially ambivalent "neutral" middle category.

Controlled variables: Socio-demography

The socio-demographic details collected from the respondents were their gender (1: Male, 2: Female), age (1: 18 to 29 years old, 2: 30 to 49 years old, 3: 50 to 69 years old, and 4: 70 years old and above), ethnicity (1: Malay, 2: Chinese, 3: Indian, and 4: Others) and education level (1: Without tertiary education, and 2: With tertiary education). The categorisation for monthly household income follows the three income level classifications based on the Household Income and Basic Amenities survey 2019 by the Department of Statistics Malaysia (DOSM) (1: less than RM4,850, 2: RM4,851 – RM10,960, and 3: more than RM10,961).

Content validity

Given Malaysia's diverse cultural landscape, a content validity was conducted to ensure cross-cultural appropriateness in the language and terminology employed in the questionnaire. The survey questions underwent initial scrutiny and deliberation by two experts in the fields of urban and regional planning to assess its suitability for use among Malaysian residents. Both experts were contacted beforehand and apprised of the study's objectives. The experts were tasked with providing open-ended feedback on the instrument, evaluating its importance, language used and ease of comprehension. The feedback provided was collated, and both experts concurred that the questionnaire is indeed suitable for use within the Malaysian context.

Subsequently, linguistic equivalence was ensured by adhering to the instrument translation process as introduced by the World Health Organisation. First, a forward translation was conducted by a Malay-English bilingual translator well-versed in the survey's concept and terminology. This was then reviewed by the same experts mentioned earlier to address any deficiencies in word choice and suggest alternative expressions. Following this, a back-translation was carried out by an independent translator with no prior knowledge of the survey's objectives. As a result, a bilingual questionnaire offering respondents the choice between English and Malay languages was produced.

Data Analysis

Data Screening

All statistical analyses were conducted using the Statistical Package for Social Sciences version 19.0. Data screening revealed no instances of missing data

among the respondents (n=121). During the assessment of unengaged responses, it was observed that all items exhibited a standard deviation value of higher than 0.3, indicating a commendable level of respondent engagement. Outliers were checked for all items using the Mahalanobis Distance Stem-and-Leaf Plot. Although eight cases were initially flagged as outliers, none of the cases could be definitively classified as atypical. Hence, all 121 cases were retained for subsequent analysis.

Monotonic Relationship/ Linearity

Evidence of monotonic relationship between the indicators of the five healthy city dimensions and the satisfaction level towards the local authority was asserted by using the Scatterplot.

Correlation

As the variables were measured on an ordinal scale and and demonstrated a monotonic relationship, the study employed a non-parametric measure, Goodman and Kruskal's gamma, to examine the correlation between the perceived importance of healthy city indicators and their satisfaction levels towards the government's effectiveness in establishing a healthy city environment. This analysis controlled for socio-demographic factors. The significance threshold was set at $p < .05$ with a 95% confidence interval level, and an acceptable strength of relationship was defined as at least a moderate beta-value of $\beta > .04$.

RESULTS

Socio-demographic characteristics and satisfaction level towards the effectiveness of the government in creating a healthy city environment

A total of 121 eligible respondents participated in the questionnaire survey (**Table 1**). Among them, half fell within the 18 to 29 years age group (50%), with a slight majority being male (54%) and identifying as Malay ethnicity (56%). A significant portion held tertiary education qualifications (73%), and most reported a monthly household income of less than RM4,850 (65%). In terms of satisfaction levels, the majority expressed dissatisfaction, with 55% not satisfied and 7% extremely unsatisfied with the current efforts of the local authority in creating a healthy living environment. This totalled to 62% of respondents registering dissatisfaction. However, the remaining respondents (34%) reported satisfaction and 4% expressed extreme satisfaction with the ongoing efforts of the local authority, denoting a combined positive response rate of 38%.

Perceived importance of healthy city indicators and their satisfaction levels towards the effectiveness of the government in creating a healthy city environment

The correlation between the perceived importance of healthy city indicators and satisfaction levels towards the government's effectiveness in creating a healthy city environment was assessed using Goodman and Kruskal's gamma, with control for socio-demographic variables (**Table 2**). Both indicators within the area density dimension exhibited significant correlations with satisfaction levels regarding government effectiveness. Most respondents perceived that the increase in population and residential density (β= .644, p= .000) of an area was not deemed important (36%) in creating a healthy living environment. However, a significant proportion regarded increasing accessible business and commercial density (β= .598, p= .000) as an important determinant (46%).

Within the dimension of mobility and transport, only three indicators demonstrated significance. Half of the respondents felt that the increase in street connectivity and the number of intersections in an area (β= .418, p= .002) is an important (50%) contributor to a healthy living environment. A large majority considered it extremely important (75%) for the government to improve accessibility to public spaces (β= .528, p= .004). Similarly, a substantial proportion found increasing the availability of public transport (β= .398, p= .026) was deemed extremely important (72%).

Table 1: Socio-demographic characteristics and satisfaction level towards local authority of respondents (n= 121) and proportion of distribution by gender

	Overall, *100%*	Proportion Distribution, *100%* Gender	
		Male (54%)	Female (46%)
Age, *%*			
18 - 29 years old	50	64	34
30 - 49 years old	22	21	23
50 - 69 years old	22	8	39
≥70 years old	6	7	4
Race, *%*			
Malay	56	58	54
Chinese	35	34	38
Indian	7	5	9
Others	2	3	-
Education level, *%*			
Without tertiary education	27	29	25
With tertiary education	73	71	75
Monthly household income, *%*			
≤ RM4,850	65	65	66
RM4,851 – RM10,960	27	32	21
≥ RM10,961	8	3	13

	Overall, *100%*	Proportion Distribution, *100%* Gender	
Satisfaction level towards local authority, *%*			
Extremely not satisfied	7	5	11
Not satisfied	55	48	12
Satisfied	34	43	70
Extremely satisfied	4	5	7

While a majority of respondents expressed a belief in the importance of increasing cyclability and cycling infrastructure (61%, β= .024, p= .875), enhancing walkability and pedestrian infrastructure (60%, β= .282, p= .088) and reducing traffic speed and/or volume (60%, β= -.016, p= .917) for creating a healthy living environment, none of these indicators were found to have significance influence on satisfaction levels towards the government.

Two significant indicators within the dimension of mixed-use and proximity were found to influence respondents' satisfaction levels towards the government. A significant majority of respondents emphasised the extreme importance of the local authority providing public facilities, recreational and commercial areas in close proximity to residential areas (60%, β= .506, p= .001), as well as providing public transport infrastructures and facilities that are connected to their workplaces and residences (64%, β= .305, p= .014). While the integration of public facilities and institutions with commercial spaces and residences was perceived as extremely important (52%, β= .227, p= .162), and improving the food environment was deemed important (44%, β= .113, p= .434), both were not found to be significant factors affecting satisfaction levels towards the government's efforts in creating a healthy city.

While all five indicators within the environment and urban landscape dimension were deemed extremely important by the respondents for creating a healthy city, only two indicators were found to be significantly associated with satisfaction levels towards the government, i.e., most respondents emphasised the significance of providing a diverse range of green areas (68%, β= .529, p= .004) and improving the continuity of green networks within their living environment (61%, β= .399, p= .015) was extremely important in shaping a healthier city environment. On the contrary, improving and increasing green coverage and visibility (70%, β= .242, p= .190), improving and increasing the proximity and visibility of blue spaces (63%, β= -.180, p= .251), as well as improving the urban landscape and amenities in public open spaces (53%, β= -.077, p= .634) were not deemed significant factors influencing satisfaction levels.

In the dimension of housing quality and efficiency, the majority of respondents emphasised that measures to improve quality of housing for comfortability and healthy living (69%, β= .474, p= .005), as well as measures to

improve the energy efficiency of housing (54%, β= .028, p= .865) were extremely important features of a healthy city. However, only the former was found to be significantly correlated with respondents' satisfaction levels towards the government, while the latter did not exhibit a significant correlation.

DISCUSSION

The core premise of this study asserts that an individual's perception of the importance of a healthy city indicator, when aligned with its presence in their current place of residence, influences their satisfaction level towards the government's efforts to shaping a healthy city, and vice versa. Through this understanding, the correlation between the public's perceived importance of healthy city indicators and their satisfaction levels towards the government's effectiveness in creating a healthy city environment was explored, focussing on the context of a local authority in the capital city of Malaysia. Nineteen indicators categorised under five dimensions were assessed; area density (2 items), mobility and transport (6 items), mixed use and proximity (4 items), environment and urban landscape (5 items), and housing quality and energy efficiency (2 items). Among these 19 healthy city indicators, 10 were identified as significant factors affecting satisfaction levels towards the local authority's efforts in shaping a healthy city.

There are seven indicators marked as 'extremely important' that significantly influence satisfaction levels towards the local authority's efforts in shaping a healthy city. It is highly recommended for the local authority to prioritise these indicators in future healthy city planning, as doing so will likely increase public satisfaction with the provided services. These essential factors include (i) improving accessibility to public spaces, especially public facilities, recreational and commercial areas, from residential areas; (ii) increasing the availability of public transport , complemented by adequate infrastructure and facilities that are connected to workplaces and residential areas; (iii) providing more variety of green spaces and improving the continuity of green networks within an area; and (iv) implementing measures to improve the quality of housing, focusing on increasing occupant comfortability and healthy living.

Two indicators deemed as 'important' contributors to a healthy city include (v) improved accessibility to business and commercial areas, as well as planning for (vi) better street connectivity and increasing the number of intersections. This is in tandem with a myriad of studies emphasising the correlation between healthy behaviours to close proximity and convenient access to commercial activities from residential areas, as well as the availability of sufficient parking lots in those commercial areas. Given the statistical significance of these two indicators in influencing satisfaction levels towards

healthy city planning efforts, it is recommended for the local authority to give due consideration to these aspects in the planning for future healthy cities.

The respondents viewed increasing population and residential density as less important indicators of a healthy city. This perspective is entirely understandable from a layperson's point of view, as discussions surrounding a healthy living environment typically do not immediately evoke thoughts of population nor density. Most do not realise that residing in the capital city of a developing country inherently entails a trajectory of rapid urbanisation, resulting in a growing pattern of population and residential density. Consequently, city residents will have to coexist and share residences, commercial areas, public facilities and amenities with a larger population; potentially affecting public health. Additionally, in light of the recent Covid-19 pandemic, there has been a heightened emphasis on avoiding overcrowded areas and adhering to social distancing measures as crucial elements in maintaining public health.

Table 2: Distribution of the respondents' perceived importance of healthy city indicators on a 4-point Likert scale (n= 121)

Healthy city indicators	Perceived importance of healthy city indicators				Correlation to satisfaction level towards local authority
	Extremely not important, *%*	Not important, *%*	Important, *%*	Extremely important, *%*	β-value (*p*-value)
Dimension 1: Area Density, *%*					
Increase in population and residential density	15	36	31	18	.644** (.000)
Increase accessible business and commercial density	14	19	46	21	.598** (.000)
Dimension 2: Mobility and Transport, *%*					
Increase street connectivity and number of intersections	10	11	50	29	.418** (.002)
Improve accessibility to public spaces	5	-	20	75	.528** (.004)
Increase cyclability and cycling infrastructure	-	7	32	61	.024 (.875)
Increase walkability and pedestrian infrastructure	5	-	35	60	.282 (.088)
Increase availability of public transport	5	-	23	72	.398* (.026)
Reduce the speed and/or volume of traffic	2	4	34	60	-.016 (.917)
Dimension 3: Mixed-use and Proximity, *%*					
Provide public facilities, recreational and commercial areas close to residential area	3	-	36	60	.506** (.001)
Provide public transport infrastructures and facilities that are connected to workplace and residence	5	-	31	64	.305** (.014)
	4	1	43	52	.227 (.162)

Healthy city indicators	Perceived importance of healthy city indicators				Correlation to satisfaction level towards local authority
	Extremely not important, %	Not important, %	Important, %	Extremely important, %	β-value (*p*-value)
Integrate public facilities and institutions with commercial spaces and residence	2	12	44	42	.113 (.434)
Improve food environment					
Dimension 4: Environment and Urban Landscape, %					
Improve and increase green coverage and visibility	3	1	26	70	.242 (.190)
Provide varied types of green areas	5	1	26	68	.529** (.004)
Improve and increase proximity and visibility of blue spaces	-	7	31	63	-.180 (.251)
Improve continuity of green networks	3	1	35	61	.399** (.015)
Improve the urban landscape and amenities in public open spaces	-	3	44	53	-.077 (.634)
Dimension 5: Housing Quality and Efficiency, %					
Measures to improve quality of housing for comfortability and healthy living	4	-	27	69	.474** (.005)
Measures to improve the energy efficiency of housing	5	-	41	54	.028 (.865)

*p < 0.05, **p < 0.01

Given that this indicator significantly influences satisfaction levels towards the local authority, it is recommended for the government to increase public awareness regarding the importance of acknowledging that health extends beyond individual efforts to encompass population-level health approaches. This perspective, as supported by the United Nations and penned by Wilmoth, Menozzi & Bassarsky (2022) as well as Curry (2005), approaching health from a population perspective helps a country to understand that higher population and residential density amplifies its harmful impacts on health. Consequently, addressing this issue should be prioritised not only by local authorities, but also by the federal government.

There are seven 'extremely important' indicators that are significant in influencing satisfaction level towards the local authority's efforts in shaping a healthy city. From the output, it is highly recommended for the local authority to emphasize these indicators into future healthy city planning of the area in order to increase the public's satisfaction level towards the public services. It includes (i) improving accessibility to public spaces, especially public facilities, recreational and commercial areas, from residential areas; (ii) increasing the

availability of public transport supported by proper infrastructures and facilities that are connected to workplace and residential areas; (iii) providing more variety of green spaces as well as improving the continuity of green networks within an area; and (iv) introduce measures to improve the quality of housing, focusing on increasing occupant's comfortability and healthy living.

Two indicators thought to be 'important' contributors to a healthy city includes (v) a higher accessibility to business and commercial areas, as well as planning for (vi) a better street connectivity and increasing the number of intersections. This is in tandem with the results of a myriad of studies linking healthy behaviours to close proximity and having good accessibility to commercial activities from residential areas as well as having sufficient parking lots in those commercial areas. As these two indicators are statistically significant in influencing satisfaction level towards efforts in healthy city planning, it is recommended for the local authority to also pay attention to these two aspects when planning for future healthy cities.

Increasing population and residential density were thought to be an unimportant indicator of a healthy city by the respondents. This result is fully understandable from a laymen's point of view, as when talking about healthy living environment, the first thing that comes to mind is almost always not population nor density. Most do not realise that, living in the capital city of a developing country, means that rapid urbanisation will bring about a growing pattern of population and residential density. As a consequence of that, city residence will have to live and share residences, commerce, public facilities and amenities with a lot more people; thereby affecting public health. Additionally, with the advent of the recent Covid-19 pandemic, avoiding overcrowded areas and observing social distance have been encouraged as measures to maintaining public health.

Because this is a significant indicator that influences satisfaction level towards the local authority, it is recommended for the government to increase public awareness on the importance of acknowledging that health status extends beyond individual-level efforts. On a larger scale, it needs population-level health approaches as well. As supported by the United Nations, penned by Wilmoth, Menozzi & Bassarsky (2022) as well as Curry (2005), approaching health from a population perspective helps a country to understanding that higher population and residential density magnifies its harmful impacts towards health. And that this should be a priority for the local authority, right to the federal government to address.

CONCLUSION

The findings of this study illuminate how the perceived importance of specific aspects can influence satisfaction levels towards government efforts. While it is

worth noting that this study establishes a meaningful connection between the perceived importance of indicators and satisfaction levels towards the government without directly comparing the dataset with the current city condition, it still underscores the pivotal role of subjective perceptions in the government's efforts in managing public expectations. Studies such as this provide valuable opportunities for further exploration in integrating public participation into the planning processes, particularly in the pursuit of shaping a healthy city.

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