

A Pandemic Response to the Issues of Inclusivity and Accessibility in Green Open Spaces

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Abstract. Urban areas in the world often disregard the importance of social and environmental aspects in the process of rapid growth. The principle of inclusiveness in urban design which bears the meaning of "space for all" ensures the fulfillment of this aspect. Inclusiveness is one of the indicators of the Sustainable Development Goals (SDGs), and the same principles applies to Indonesia through the Decree of the Minister of Public Works number 5 year 2008, which includes the provision of green open spaces in order to launch Indonesian citizens' livelihood towards an ideal quality. This research focuses on accessibility can be applied to achieve inclusiveness during the Covid-19 pandemic era. To answer the question, this research employs three different open green spaces as the case studies, which are Martha Tiahahu Park, Ayodya Park, and Puring Park, to observe how inclusiveness and accessibility were implemented. The accessibility factor is infused in the inclusiveness principle, which is accessibility for all residents to their rights in enjoying affordable open green spaces. However, the implementation of accessibility during the pandemic cannot be worked thoroughly, mainly due to rules of physical distancing and the Covid-19 operational standards. But still we can use the several key aspects for a pandemic respond is engineering and designing on the use of space and time at public green open spaces, such as innovative design on its elements (bench, pathway, jog track, etc).

Keywords: accessibility, inclusiveness, green, open spaces, Covid-19 pandemic

Introduction

Urban areas in the world often disregard the importance of social and environmental aspects in the process of rapid growth. The principle of inclusiveness in urban design which bears the meaning of "space for all" ensures the fulfillment of this aspect. This research wants to analyze what happens and how importance open green areas are on human mental health while this pandemic covid 19. By remaining in the large context of inclusiveness and accessibility at open green spaces.

Space is a place for humans to do an activity in it. One of the activities that can take place in it is the interaction of communication between the users of the space, both verbally and non verbally. Space exists of various kinds with various basic divisions. According to Edward (1966), one of them is to divide the space based on the distance or dimension between humans in doing their activities in the form of intimate, personal, social and public spaces. Among these spaces, one of the spaces where every human being can gather and do activities together is a public space. (Edward T.Hall, 1966)

In an urban area in the world often ignores a social aspect in the growth process that can affect the mental community itself. As a human being as an individual and social is very necessary to have adequate space that can make up the mind. Adequate space example of such a green open space.

There is a principle of inclusivity in an urban design that contains a sense of space for all. As a green open space that can be accessed by the public there are many phenomena that occur that I found at this research site. In the three case studies taken in this study the location is in Kebayoran Baru Area, South Jakarta which is one of the areas that is experiencing residential development in the city.

Research Problem and Methodology

Research problem. Referring to existing regulations, the government is required to provide green open spaces available to meet the needs of decent living for its citizens. Phenomenon in open green spaces such as city park in all big cities in the pandemic Covid-19 era, found that suddenly empty the open space for all activities instead of mass fear avoid to use the open space for fear of transmission of Covid-19 virus that occurs in all parts of the world. Many experts in the field of pandemics stated that this pandemic will take place not within months because it may occur within 2 to 3 years. As well as focusing on our shared global agenda on SDGs, this research will look at how the continuity of the principles of inclusivity and accessibility aspects existed and occurred in the green open spaces of the city during this pandemic. The first research question is what happens on our open green spaces while pandemic Covid-19 era, second is how importance inclusiveness and accessibility open green space for community. The purpose of this research is to know how **space and time engineering**, according to science in the field of architecture, which how it can be implemented into the use of public spaces, especially open green

Research methodology. This research methodology answer the purposes, this research employs three different open green spaces as the case studies, which are Martha Tiahahu Park, Ayodya Park, and Puring Park, to observe how inclusiveness and accessibility were implemented and how their response to pandemic Covid-19. This research based on [1] recent issues related to pandemic Covid-19, inclusivity and accesibility on our SDGs goals and agendas, then we find [2]primary and secondary datas [3] to analyze the research questions. Otherwise, this research uses function and ownership approach to make a focus this reseach .



Figure 1 Research site of Martha Tiahahu Park, Ayodya Park and Puring Park

Source: Google earth, March 2020

Data Collection Method. In this study, data collection techniques and information were carried out with two types of data, namely primary data and secondary data. Primary data obtained by field observations and interviews or interviews, with scaled questions, to find out profiles, habits and behaviors when engaged especially related to daily mobility. The scaled question form is also used to explore the perceptions, opinions and expectations of respondents as users of the three parks that become case studies namely, Martha Thiahau park, Ayodya Park, and Puring Park.

Secondary data are obtained from agency surveys, literature studies, news and documentation from social media. Agency surveys are conducted by visiting agencies that have data, information and documents that support research. While literature studies are conducted with data taken from a book, journal, web, thesis and research and news and documentation from social media through search engines for strategies to quickly capture the latest information of the situation and conditions of open spaces in urban areas, especially in the three city parks that are the focus of observation.

Result And Discussion

Inclusiveness is one of the indicators of the Sustainable Development Goals (SDGs), and the same principles applies to Indonesia through the Decree of the Minister of Public Works number 5 year 2008, which includes the provision of green open spaces in order to launch Indonesian citizens' livelihood towards an ideal quality. The 2030 Agenda for Sustainable Development (SDGs) is a new development agreement that encourages changes that shift towards sustainable development based on human rights and equality to promote social, economic and environmental development. SDGs are enforced with universal principles, integration and inclusiveness to ensure that no one will be missed or "no-one Left Behind". SDGs consist of 17 Goals and 169 targets in order to continue the efforts and achievements of Millennium Development Goals (MDGs) which ended late in 2015..

The concept of an inclusive city reduces injustice and social tension, unites the knowledge of its product, its fair equality. Green open space planning for everyone and accessavers reduce discrimination and ensure everyone gets easy access to improve their quality of life. The world's cities are growing rapidly through liberal economic euphoria so forget about the social and environmental aspects. The city was built only for productive people and actively marginalized other human groups that did not meet these productive and active prerequisites so that it was judged no longer humane. Changes in development orientation need to be changed towards fairness, one of which is through an inclusive planning approach. Inclusiveness is a process of formulating city policies that are sensitive to economic, social, environmental, and cultural conditions and promote the principles of participation as well as justice. Recognition of human rights in development is the main background to this planning approach.

In accordance with the regulations in the public service relating to the arrangement of spaces, that green open space is explicitly stated to be provided by 30% (Law no. 26 of 2007 on spatial arrangement). The percentage of urban land is provided by both the public and private sectors. The area is expected to guarantee the objectives of RTH functioning (ecological, socio-cultural, aesthetic and economic) and urban spatial structure (ecological patterns and planological patterns) at Regulation of the Minister of Public Workers no. 5/PRT/M/2008 on guidelines for the provision and utilization of RTH in Urban Areas..

The principle of universal inclusiveness in addition to integration is a principle that is not offered in the implementation of sustainable development and the provision and implementation of public services especially in the provision of RTH in urban areas. In reality, today the city and local governments and their citizens have begun to increase awareness related to the needs of RTH in their living areas. In many reports the performance of the government and da shows that there are efforts made to fulfill it.

Accesibility. In the early stages, the determination of territorial boundaries in case studies is done to make it easier to see aspects of the accessibility of residents to each city park. Mapping and dividing the area based on zoning restrictions is done to facilitate the analysis of a park located in the New Kebayoran Area.

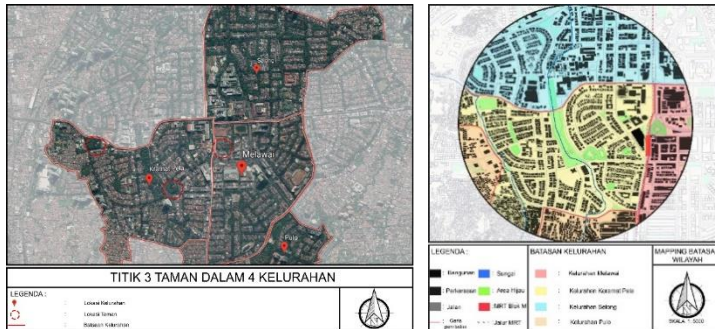


Figure 2. Research observation location in the context of urban road network (Martha Tiahahu Park, Ayodya Park, and Puring Park, South Jakarta, DKI Jakarta, Indonesia)
Source: processed research team from www.googlemap.com

In the image above is a mapping image of the new kebayoran area, which aims to see the proximity of the three parks. In the green open space located in the new kebayoran area. In this area there are many parks, but researchers only chose the three parks that would be discussed in the study. These three parks are considered important to researchers, because these three parks are very much needed once in the city, this intends to make a public space for residents living in the area.



Figure 3. Puring Park before Covid-19 pandemic
Source: personal documentation



Figure 4. Puring park after Covid-19 pandemic
Source: <https://www.liputan6.com/news/read/4205287/foto-sepi-begini-suasana-taman-puring-imbis-covid-19?page=2>

In the picture above there is a crowded atmosphere of visitors and traders who make use of this park. Visitors use this park to be used as a recreation place with relatives and family while traders use this park as a place to sell. In the picture, before Covid-19 pandemic, now the atmosphere in the Puring Park becomes very quiet even arguably no one uses this park at all. On the observation of researchers it is unfortunate that public spaces are not used properly, in this park should be reopened but visitors who come should be restricted and also have to adhere to health protocols that must be maintained such as wearing masks and washing hands due to the Covid-19 pandemic.

From the analysis of accessibility network results from mapping activities, analysis of activities directly on site and analysis of the latest news from images and videos on social media in the period since large scale social restriction/Pembatasan Sosial Berskala Besar (PSBB) was enacted in several cities in Indonesia because it responds to the Covid-19 pandemic on March 2020, can represent the existence of city parks in other major cities, that urban parks are located in the city area. The same location as its residents live making the city park accessible in a normal mileage based on the concept of Transit Oriented Development (ITDP, 2017) with a radius of 500m.

Green spaces and mental health. In green open space an urban is indispensable in addition to the source of water absorption of green open space is also good for the mental for the human being itself because man also needs an outdoor atmosphere that is self-supporting for his body so that it is good for the mentality of one's self.

Recently, COVID-19 has revealed the inequalities that exist when it comes to access to green spaces. There have been many petitions to keep parks and gardens open for public use, with green spaces described as crucial for our well-being. Affluence allows people to buy homes in areas that have more green spaces and access to nature, less air pollution and more space for physical activity. If someone has less access to local parks, gardens and playing fields, they are far less likely to gain the benefits that those spaces can provide. Inequalities to keep parks and gardens open for public uses clearly existed before Covid-19, but the pandemic brought a wider awareness that easy access to existing green spaces was not an opportunity available to everyone. Using many parks and gardens at Jakarta as an example, the wealthiest areas have around 10% more public space compared to the most deprived areas. Approximately more than half of the residents in the most deprived areas of Jakarta are from minority backgrounds.

Redefining social space at public space. The phenomenon of local lockdown in many suburb and rural area occurs in major cities areas throughout Indonesia in response to the Covid-19 pandemic. It is generally interpreted as a new normal system. Porthalization and installation of barricades accompanied by spraying disinfectants, as well as information banners in order to translate physical distancing literally physical restrictions. The creativity of the community in trying not to give in to the situation by enforcing a new principle of life that practices physical distancing at the space level, becomes an interesting behavior as well as an independent mechanism that can be the key to controlling Covid-19 transmission. The potential of outdoor space that drains fresh air, sun exposure, and settings that distance against saturation in the house months since the large scale social restriction period was enacted in Jakarta and other areas, is the best option today. Similarly, the potential for improving quality of life by maximizing outdoor space, especially open green spaces.

Guidelines for the provision and utilization of green open spaces are set out in the regulation of the minister of public works no 5/PRT. M/2008 set about the width dimensions of the circulation path at least 120 cm for 1 person and 180 cm for 2 person need to be revised to respond to the protocols of new normal life era. Similarly, the understanding of bubble personal space that is 46 – 120 cm can no longer be applied in green open space planning. The movement and socialization of Physical distancing which is understood proxemics theory in analogy with social space that has a radius of space 120-370 cm. There needs to be space engineering in planning and design that adaptive with current conditions.

Time and space engineering design based on protocol Covid-19. It is important than government funding for parks and green spaces is kept as a high priority, especially when mental health is reported to have deteriorated during lockdown. Not only are parks and green spaces crucial for our mental health and important for reducing inequalities, but quality spaces and green development are essential in the ongoing fight against climate change.

Related to the concept of the use of time and event, that occurs in green open space (Virillio, 2000), it is necessary to rule capacity based on space and time to activities management. One of the settings of that space is with engineering design for example with the entry and exit area specified, both with signage and information on the use and capacity of green openspace in real time that uses Internet Of Things (IOT) technology equipment.

The time and capacity information of people who enter in the green open space is very detectable and polated, seperti common things that we can see when we use search engines such as Google Search to get location information, time usage patterns inside green open space. The information presented by Google search engines allows us to know the usage information of rush hour or regular or even quiet times. It would be good if the Government or stakeholders authorized by the city's green open space use or recommend the use of apps of a type or that suggest using Google or the like to arrange visits to public open spaces by accessing information on Google. We can use LCD or LED big screen as analogy such as in malls that can indicate the use of parking in buildings. The information served can be a guide for visitors to be able to know the capacity of space and real time. The sensors are installed at the entry point and exit point in order to indicate how many people enter and exit. It can be planned and utilized in terms of managing.

Another important aspect of the planning and design and utilization of the city's green open space can be seen from Regulation of the Minister of Home Affairs No. 5 of 2008 how we must plan to design the city's green open space and how to also regulate the utilization and management of the management of green open space of the city. In the planning and design process, we can see still those rules are still relevant but related from pandemic respond factors to space and time based on the capacity of green open space the city that should be rearranged.

Many cities are considered to represent the success of the City Government in the management of green open space cities such as Singapore state provides 0.7m²/person (Rustam, 2012) while the social space formula of the proxemics theory is at least at least at 4.5m²/person. The need for bubble space for the social space is a minimum number that should be calculated for the basis of determining the maximum capacity of green open spaces. The fulfillment of special facilities related to open green spaces function as a social and cultural container, example bench, shelter in the form of gazebo, open stage, etc. should meet social space standards for capacity and layout of visitors out of bubble area within of 4.5 m². Park benches can be designed in a unit with layouts at a distance or have a radius of at least 1.2 m.

Example of simulation of the calculation of space and time capacity with the use of Aplikasi IOT, e.g. with time and space management in Ayodya Park area of 7.500 m² with an artificial pool of 1.500m², then the maximum capacity of visitors is 1.300 assumed at the same time and visitors not move or standby mode. However, if by the recommended standards of the ministry of health for visitors who are doing sports activities (walking or running) is a radius of 5 meters, then the ideal space usage capacity is at 78.5m²/person. So the maximum capacity of Ayodya Park is 76 people at the same time and is in a state of motion or exercise.

While time engineering can be done is to look at the pattern of space usage on weekdays or weekends. Time-use segmentation rules or suggestions can be based on the user's age. For parents and children can be arranged to use peak hours and vice versa.

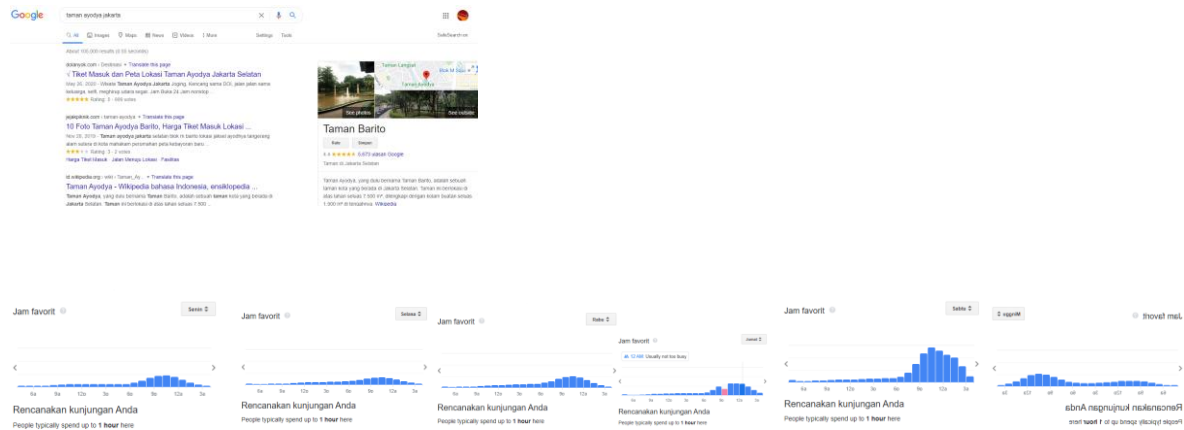


Figure 4. (top) Ayodya Park Location and (below) usage pattern on weekdays and weekends
Source: google search

Fulfillment of the principles of inclusivity and accessibility in the green open space of the city then it can be said that inclusivity still needs to be maintained because that principle is still relevant to public spaces in urban at green open spaces of the city. Another principle that needs to be included again is accessibility. It has to manage about how to use of public so access for all remains accessible but only regulated based on capacity, both space and time capacity. Arrangement time and space make the principle of inclusivity and the principle of accessibility in the use of public open spaces still implemented

In the stage puse or utilization of open green space it is recommended to enter doing capacity settings with the approach of space and time. It is an important factor in the process of planning and designing open green spaces in response to the Covid-19 pandemic. It is for the safety and health of the citizens of the city who live in it. The accessibility factor is infused in the inclusiveness principle, which is accessibility for all residents to their rights in enjoying affordable open green spaces. The implementation of optimal accessibility during the pandemic era can be work on pace and time maximum capacity, mainly due to rules of physical distancing and the Covid-19 operational standars.

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