Adaptation of Community Activity Spaces in the City Centre of Semarang in the Post COVID-19 Pandemic

Wakhidah Kurniawati1, Retno Widjajanti1, Fitriyani Eka Permatasari1 and Ramadhani Asher Putra1

1Diponegoro University, Urban and Regional Planning Department, Semarang, Indonesia
Email: wakhidahkurniawati@lecturer.undip.ac.id, wakhidahkurniawati3@gmail.com

Abstract. The COVID-19 pandemic has drastically changed the relationship between space users in the street, public spaces, and public facilities. Restrictions on physical distance (physical distancing) and activity (social distancing) are in place to prevent the spread of the Coronavirus. Borders on physical distance and access to public spaces do not reduce activity in these spaces. Public spaces must have an adaptive response to the spread of the virus while still implementing inclusive practices for all space users. Spatial adaptation patterns overcome the pandemic crisis in public spaces applied temporarily or permanently in the main areas where community activities are carried out. And now, in the transition of post-pandemic, when the city begins to open the pandemic, we hope people will remain comfortable and safe doing activities in public spaces from the spread of the Coronavirus. The specific purpose of this study is to explore the adaptation of community activity spaces that occurred in the centre of Semarang after the pandemic. This study uses a qualitative method with direct observation and interviews. This method captures the phenomenon of public spaces adaptation after the COVID-19 pandemic. The result is a temporary adaptation and viability pattern of community activity spaces in downtown Semarang in the COVID-19 pandemic transition. Hopefully, the finding can support the knowledge about sustainable public space after the pandemic.

Keywords: adaptation, post covid-19 pandemic, sustainable public space

1. Introduction
The COVID-19 pandemic has changed our connection with the public sphere. It was even stated that 2020 was the year without public space, marked by 40% of the world's population experiencing a lockdown in April 2020 [1]. The physical and social distancing imposed by the COVID-19 health protocol affects access to public spaces and creates various impacts at different levels. At the start of the March-April 2020 pandemic, everyone was asked to stay at home and reorganise daily routines for work and school from home.

At the beginning of the pandemic, the implementation of health protocols has made city streets, parks, beaches, squares, promenades, and cities famous for active life, such as New York, Rome, or Barcelona, appear empty as if without occupants [2]. The same thing happened in Indonesian urban spaces at the pandemic's beginning. Along with the government's policy-setting regarding Large-Scale Social Restrictions (PSBB) in early and mid-2020 and the Enforcement of Community Activity Restrictions (PPKM) in early 2021, the community using space adapts to these policies. The community continues to carry out daily routine and other non-routine activities with the necessary adjustments, such
as using masks in outdoor areas, maintaining a minimum distance of 6 feet (1.5 meters) from other space users [3][4], avoiding crowding, and getting used to washing hands.

Public space as a place for community activities also adapts to the health protocols implementation. In the early days of the pandemic, public spaces were locked down, and gathering activities such as Car Free Day were prohibited. But the public's need for outdoor activities and awareness to move and exercise in open spaces creates new activities that are vulnerable to the spread of the virus if not regulated and planned. So, setting up a pandemic-responsive activity space is vital because we have to prepare for a new normal to recover a new life. We need to find more ways to safely keep better and healthier use of these spaces to reopen public spaces. In other words, our urban areas have to adapt. Then this research will explore the adaptation of the community activity space in the city centre of Semarang.

Several researchers have already explored the phenomenon and the possibility of adaptation from the urban spaces in the post-COVID-19 pandemic. The phenomenon is the shifting paradigm in urban areas to be healthier cities after the COVID-19 pandemic [5]. Besides, the city in and post-pandemic want to focus on improving quality and encouraging social interactions, even though in respect of the physical distance [6]. It also needs to increase the larger green environments such as parks and squares because 86% of people want to spend time in the green area [7]. Meanwhile, the possibility of adaptation is in the form of public spaces that should be equipped with the forward-thinking mind's solution, such as sterile and contact-free equipment [8], adjusted with temporary adaptation [9], and permanent adaptation [10]. All the research did globally and happened outside Indonesia. As Indonesia is one big country with a large population and dynamic activities, it is essential to examine the adaptation pattern in one of Indonesia's cities. Semarang, one of the big cities located in the central part of Java Island in Indonesia, is an important city to be researched. And Simpang Lima, as an area in the centre of Semarang, is a research locus that can represent locations in the city of Indonesia.

2. Methods
This study uses qualitative methods to capture the phenomenon of community activity spaces in the city centre during the pandemic transition between April to May 2022. Although the World Health Organization (March 18 2022) states that the pandemic is not over yet, the President of Indonesia, Joko Widodo, has already given the flexibility to remove masks in public spaces since May 19 2022, due to the excellent handling of the COVID-19 pandemic in Indonesia. So, it means that currently, there is a transition from pandemic to endemic in Indonesia. So, the time between April to May 2022 is categorised as the pandemic transition in the research area.

This research used the method of observation and interviews with users of the activity space in the Simpang Lima Area of Semarang. The observation method was carried out on weekdays and weekends. The survey was made mainly at the main activity points along the main road and the Pancasila Square. Direct observations were made based on the morning, afternoon, and evening division by marking the area's main points, exploring the situation, and recording activities with video. This observation is expected to investigate who the users of space are and whether the public using the space implements health protocols by wearing masks. Concerning public space, after grouping the type, observations were made on whether it meets the rules of flexibility, multifunction, its supports to alternative mobility, and temporary adaptations such as pop-up spaces for communities, arrangements for street vendors and pedestrians other users.

The analysis carried out several steps, including (a) Delineation and determination of space for community activities in the research area; (b) Identifying the phenomenon of community activity post-pandemic in the centre of Semarang city; (c) Analysing adaptations of public spaces that occur after the pandemic, and (d) Formulating adaptation patterns for community activity spaces in downtown Semarang after the pandemic.
3. Result and Analysis

3.1. Delineation of the Research Area and Determination of Community Activities Spaces

The areas that will be used as research locations are activity spaces in the centre of Semarang City. Simpang Lima is one of the famous public spaces in Semarang City. Simpang Lima is located in the Semarang City centre, the place for economic activities, tourism, transportation, education, and other activities. In addition, Simpang Lima has several public space points.

This determination of public space is based on the principle of public space during the pandemic from the UN-Habitat Guidance on COVID-19 and Public Space [11]. The selected activity space area is based on the weight of accessibility, its location in the city centre, concentrated density, the flexibility of urban space related to formal and informal activities, and connectivity with other spaces. This weight is significant because it is increasingly being identified in the location, showing the importance of this space during the COVID-19 pandemic. Determination of this delineation is also essential to determine the location of research observations.

A community activity space is a physical space for several purposes to support the daily activities there. Based on the characteristic of public space from [12], [13], and [14], there are two types of community spaces in Simpang Lima Semarang, namely streets and square. And the other types of community spaces are the transportation hub in Ciputra Shelter and the educational centre in the elementary school of Hajjah Isriati Baiturrahman Semarang, and the vocational school SMK 7 Semarang. So, the four types of community spaces then will be measured in the level of importance in Simpang Lima Semarang, as stated in Table 1.

![Delineation Map of Simpang Lima Semarang](image)

Table 1. Community Activity Spaces in Simpang Lima Semarang.

| Type          | Location                        | Weight of accessibility (Everyone has the right to access and use this space independently and equally) | Concentrated Density | Flexibility to informal activities (multifunction, adaptive, pop-up design) | Connectivity with other spaces |
|---------------|---------------------------------|--------------------------------------------------------------------------------------------------|----------------------|--------------------------------------------------------------------------|---------------------------------|
| Street        | Pedestrian ways around the Simpang Lima Area | Everyone has the same right                                                                      | High density in the food court, which is located in pedestrian | Provided to street vendors, but not flexible to other functions due to | Yes, interconnected with other streets and formal activities |
3.2. Identifying the phenomenon of community activity post-pandemic in the centre of Semarang city
The object of this step is community activities in the downtown area. First, we will record all existing daily activities regarding actors, time, and responsive adaptation to the COVID-19 pandemic. From this data, it is hoped that the initial identification of users of the activity room and their activities will be recognised during the pandemic transition. Based on the direct observation, the amount of information can be concluded as stated in Table 2.

| Type     | Location | Weight of accessibility | Concentrated Density | Flexibility to informal activities | Connectivity with other spaces |
|----------|----------|-------------------------|----------------------|------------------------------------|--------------------------------|
|          |          | (Everyone has the right to access and use this space independently and equally) | ways along with the Simpang Lima Area | the belongings being left in the location | Flexible, multifunction, adaptive, and possible to implement pop-up design | Located in a very strategic location, but pedestrians do not easy to cross the street to reach the location |
| Square   | Pancasila Square | Everyone has the same right | High-density activities at the weekend | Not flexible but adaptive with a health protocol | Located in a very strategic location, but the disabled persons do not easy to enter this shelter |
| Transit hub | Ciputra Shelter | Everyone has the same right, but it is not easy for the disabled to access this point | High-density activities at the peak hour | Not flexible but adaptive during the school hours with a health protocol | Yes, interconnected with other streets and formal activities |
| School The Elementary School of Hajjah Isriati Baiturrahman and Vocational School SMK 7 Semarang | Everyone has the same right | High-density activities at the weekend | Not flexible but adaptive with a health protocol | Located in a very strategic location, but the disabled persons do not easy to enter this shelter |

| Table 2. Users of Community Activity Spaces in Simpang Lima Semarang (person).

| Type     | Location | Number of users | Respond to Health Protocol |
|----------|----------|-----------------|----------------------------|
|          |          | Weekday | Weekends | Use Mask | Without Mask |
| Morning | Noon | Evening | Morning | Noon | Evening |
| Street | Pedestrian ways around the Simpang Lima Area | 5 | 82 | 190 | 23 | 108 | 265 | 325 | 348 |
| Square | Pancasila Square | 95 | 29 | 63 | 139 | 46 | 138 | 239 | 271 |
| Transit hub | Ciputra Shelter | 65 | 103 | 35 | 54 | 73 | 25 | 349 | 6 |
| Education Centre | Elementary and Vocational School | 103 | 0 | 0 | 0 | 0 | 0 | 103 | 0 |
| Total | | 268 | 214 | 288 | 216 | 227 | 428 | 1,016 | 619 |

People are starting to abandon health protocols using masks (table 2). This is verified by the many people who do sports in Pancasila Square without wearing a mask, especially in the morning and evening. People who use masks are still more than those who don’t use masks. The male took off their masks more than the females from the direct observation.
Another shifting phenomenon in pandemic transition happens in the food courts. Based on the interviews with the street vendors, the curfew for street vendors in the Simpang Lima Area is back at 01.00 UTC+7. Even so, the sellers can also sell until 04.00 UTC+7. This curfew applies to all food courts in the Simpang Lima area.

At Transit Hub, the highest number of visitors happens during the weekdays due to school students being allowed face-to-face learning. At Pancasila Square, visitors were found to visit more in the morning because the condition of the Simpang Lima Area was still quiet and comfortable for doing sports activities. People come to Pancasila Square starting at 04.35 UTC+7. Meanwhile, at the food court around Simpang Lima, many visitors come on weekends at night. It can be concluded that there is a fluctuation in the number of people and its intensity at each point in the Simpang Lima area.

3.3. Analysing spatial adaptations of public spaces that occur after the pandemic

At this phase, the adaptation of public spaces occurs due to the application of health protocols and analyses of the effect of adaptation of public spaces on community activities during the pandemic. The adaptation will be seen whether there are designs, rules, or function flexibility in implementing health protocols in public spaces. This data shows the initial identification of the activity space adaptation during the pandemic transition.

| Type | Location | Spatial Adaptation | Possibility to Sustain in Post Pandemic Era |
|------|----------|--------------------|------------------------------------------|
|      |          | Permanent          | Temporary | Possible | Not Possible |
|      |          | Sign design in facing the COVID-19 pandemic | Distancing/lifestyle and mobility | Multifunction/Flexibility |
|      |          | No permanent design | Bike lane sign in the street near pedestrian ways | Support mobility |
|      |          | Physical distancing sign on the food court table | Street close to pedestrian ways is an exercise track for cycling, jogging, and walking every morning day. | The street close to pedestrian ways facilitates walking, jogging and bike lanes to support safe mobility. |
|      |          | Street close to pedestrian ways | Disinfectant spray after the use of the food court area | Multi-use and shared use of the spaces for the food court, sidewalk, doing exercise |
|      |          | Street close to pedestrian ways | Portable wash hands in the location | Possible to continue in Post pandemic |

Table 3. Spatial Adaptation of Community Activity Spaces in Simpang Lima Semarang.
3.4. Formulating adaptation patterns for community activity spaces in downtown Semarang after the pandemic

This last step is intended to reveal the correlation between adaptation patterns of activity spaces and community activity patterns in the city centre during the COVID-19 pandemic. By mapping this relationship, we can get knowledge-based empirical about the types of space characteristics and community activities that adapt to health protocols. The phenomenon shows that the spatial adaptation of public spaces in the COVID-19 pandemic transition is dominated by temporary adaptation by adding the pop-up design to manage the spreading of the Coronavirus. This temporary adaptation implies the short-term action but influences the long-term effect of reducing the virus spreading. In other words, it shows that this pandemic does not change the Semarang downtown permanently.

The other expected result is the pattern of the viability of the community using downtown space in the face of the Coronavirus endemic. It
is proved by the adaptability of the Health Protocol, its impact on educating people to behave [15] as
the protocol until now, and the possibility to continue in post-pandemic.

**Table 4. Spatial Adaptation Pattern of Community Activity Spaces in Simpang Lima Semarang**

| Type     | Location                                   | Character of Users                             | Time Intensity       | Users Respond to Health Protocol | Spatial Adaptation Pattern | Viability Pattern                                                                 |
|----------|--------------------------------------------|------------------------------------------------|----------------------|----------------------------------|---------------------------|----------------------------------------------------------------------------------|
| Street   | Pedestrian ways around the Simpang Lima Area | Customers, street vendors, and visitors of Simpang Lima | Evening             | Use Masks 48%                    | Temporary adaptation by sign and flexibility of the space | The viability is high due to the adaptability of the health protocol in early pandemics and its sustainability until the transition era. |
| Square   | Pancasila Square                           | Visitors who do exercise and recreation        | Morning and evening | Use Masks 46%                    | Temporary adaptation by sign and multifunction space | The viability is high due to the adaptability of the health protocol in early pandemics and its sustainability until the transition era. |
| Transit hub | Ciputra Shelter                           | Workers, students, Noon and visitors of Simpang Lima | Noon                | Use Masks 98%                    | Temporary adaptation by portable hand sanitiser | The viability is high due to the adaptability of the health protocol in early pandemics and its sustainability until the transition era. |
| School   | The Elementary and Vocational School       | Students, Teachers Morning                    | Morning              | Use Masks 100%                   | Temporary adaptation by sign and school regulations | The viability is high due to the adaptability of the health protocol in early pandemics and its sustainability until the transition era. |

4. Conclusion
Public spaces during the pandemic are under tremendous pressure, resulting in the death of public spaces in several places in the world. However, vaccinations, the application of adequate health protocols and the need for community activities in outdoor spaces create new hope for the survival and sustainability of public spaces. UN-Habitat [11] has required that public space interventions be the focus of local and national governments to prevent the spread of COVID-19 and develop resilience and preparedness of
urban spaces for similar events. Some of the interventions that can be done include temporary and permanent.

This research explored four community spaces in Simpang Lima, namely streets around the Simpang Lima Area, Pancasila Square, the transportation hub in Ciputra Shelter and the educational centre in the elementary and the vocational school. The pandemic transition phenomenon shows a shifting phenomenon from health protocol implementation to the condition before the pandemic, i.e. the back curfew in food courts and only about 50% of people wearing masks on the street and squares. Then the spatial adaptation in Simpang Lima is dominated by temporary transformation with additional signs about health protocol and flexibility of the space to become multifunction spaces. Finally, the last analysis generates spatial adaption and viability patterns for all points. Most of the significant community activity spaces in Simpang Lima have high viability in facing the Coronavirus endemic. This is reinforced by the fact that there is adaptability with the Health Protocol. Also the impact on educating people to behave as the protocol until now, and the possibility to continue this adaptability in post-pandemic. Hopefully, this finding can support the knowledge about sustainable public space after the pandemic.

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