



Pedestrian Area Development in Smart City Concept in Tangerang City

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A B S T R A C T

The city government of Tangerang has not been able to apply the concept of smart cities, while urban development has not used the concept of smart (intelligen) and attractive (attractive) which facilitates infrastructure, technology, and attracts local people based on a forward vision regarding the needs, capabilities and resources that exist. , safe and comfortable pedestrian facilities, and public spaces for pedestrians that can create an urban cultural concept that can provide business controversies that can help migrants and communities enjoy the city by foot. The purpose of this study is to study how the Tangerang City government can implement a development system that can be lived in and can be visited in accordance with the Tangerang Direct motto. This study uses a qualitative method that studies the literature with systematic literature review techniques by descriptive data analysis. The results of this study indicate that the Tangerang city government has just realized the construction of a pedestrian lane with a ratio of 72.40% of the length of the city road which has a length of 316.46 km with a very narrow space dimension of 1.5 meters combined with greening areas.

Keywords: Tangerang City, Liveable, Pedestrian, Visitable.

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INTRODUCTION

Liveable city (habitable city) and visitable (worth visiting) illustrates a city that has good environmental and atmospheric conditions to live and work. This condition can be seen from various aspects, both physical and non-physical. The principle is the availability of basic needs, public facilities, open space for social interaction, security, support for social economic functions, and sanitation (Nawangwulan and Sutriadi n.d.). Liveable city is a term that describes a comfortable and sustainable city and urban space as a place to live, work, visit various physical aspects (urban facilities, infrastructure, spatial planning, etc.), as well as non-physical (social relations, economic activities, dll) (Sasanpour 2017). Non-physical aspects are things that cannot be ignored in the development of livable cities. According to Arundel (2017), the social aspect can be seen from a community that can be inhabited in safe, socially cohesive and inclusive conditions, as well as environmentally friendly. They have affordable housing that is connected (via public transport, walking and cycling infrastructure) to jobs; education; shops and services, public open spaces, social opportunities, and culture and recreation. Based on various sources, it shows that the physical element remains the most important element in the development of a city that is livable and worth visiting, which is formed from public open spaces. Public open space is an aspect that forms urban design in addition to land use, buildings and building mass, parking and circulation, signage, pedestrians, support and preservation activities (Purwanti, Djunaedi, and Yan 2018). One of the supporting facilities for pedestrians is the pedestrian path.

The pedestrian path is part of the public space because on that path there is also social interaction between communities (Iswanto 2006). Apart from

being a public space, the pedestrian route can be an urban tourism (urban tourism). Urban tourism is a term for tourism in the city, which comes from elements of urban planning and urban infrastructure which are the main commodities of tourism (Prijadi and Tarore 2014). The importance of using the pedestrian path according to its function cannot be separated from the many benefits it brings. The benefits of walking can be seen in terms of health and the environment. The health benefits are as a means of exercise, for example walking. While the benefits to the environment for example reducing exhaust emissions. Exhaust emissions will continue to decrease when more people do not always use private vehicles as a means of daily transportation in urban areas (Aziz and Amin 2019). In addition to the many benefits for the community, there are dangers that threaten the safety of pedestrian path users, which is a problem in itself.

Jacobs (1961) recommends that large numbers of shops, bars, restaurants, and other public places be "sprinkled along the sidewalk" as a form of control among fellow pedestrians. If there is a crime or crime on the high street, then people will feel afraid and may turn to other modes of mobility. Le Corbusier (1929, in LeGates and Stout, 2016) said that high traffic often endangers pedestrian users and even many accidents (even death) are caused by motorized vehicle users on the highway. In order to increase the comfort of road users in the New Urbanism congress in 1993 in Chicago which produced principles and guidelines in urban planning and development, stating that in a contemporary metropolis, development must accommodate cars adequately. This must be done in a way that respects pedestrians (Congress of New Urbanism, 1993 in LeGates and Stout, 2016).

In addition to the convenience of pedestrian path users, they also need easy

access for all walks of life. Lynch (1981) stated that access is one of the elements of city formation. Access here means the degree to which the city has easy services that can be reached by the community, ease of carrying out city activities, ease of access to resources, ease of service and achievement, ease of information or ease of reaching places (Lynch, 1981). This ease of access must apply to everyone including people with different abilities such as small children, persons with disabilities, elderly people, sick people, pregnant women, etc. (Lynch, 1981). Lynch (1960) also determines the elements that form the image of the city, one of which is the path. Path is a path that is usually used by people for general movement. Paths can be in the form of roads, walkways, transit lines, canals, railroads, etc. (Lynch, 1960). For most people, the path is the most important element in the formation of the city's image. Similar to what was stated by Jacob (1961) that roads and pedestrians are vital organs of a city which reflect the good or bad of a city visually (Karim 2019).

Tangerang City has a mission to create a liveable and visitable city located in a strategic economic zone, there is an international airport, terminal, and station that creates a cultural plurality through assimilation and acculturation, so it can be said as a tourist city. Judging from the location of the pattern and structure of the geographical area, the city of Tangerang can become a city of tourism and trade. Therefore, the area should be provided with pedestrian facilities that are comfortable and safe for the circulation of travelers and the public who are on a shopping or culinary tour. With the potential of the city of Tangerang, especially in the city center, it makes the public or travelers to visit, on foot or tour by seeing the state of the city. Travelers and the public will get more than just seeing and shopping, they will be healthier by walking. To realize a pedestrian-friendly tourist city, a pedestrian

path that is comfortable and safe for all walks of life is needed.

Sidewalks with very small sizes and dimensions only allow people to move around. But basically, sidewalks as a walking medium are not just for mobility, according to its function written by Iderlina Mateobabiano, walking is a moving entity where sidewalks are not only a space for distribution. However, the sidewalk also serves as a communication space. Thus, to achieve the sustainability of the road space with a user centered approach, consider the user as an agent of change. With this user certificate, the sidewalk can serve as a place for operational trips such as for exercising or breathing fresh air. As agents of change, their loyalty to the given space is manifested by their constant presence not only on foot, but as participants in the given space so as to create the effectiveness of pedestrian facilities (Mateo-Babiano, 2007). Therefore, the author is very interested in conducting a study that aims to see the strategy of the city of Tangerang in providing and building road support facilities for pedestrians. By arranging roads for pedestrians using liveable and visitable concepts that can attract and create an urban tourism/city tourism with potential resources and culture in the city of Tangerang through its development orientation in practice and planning

METHODOLOGY

The preparation of this journal uses a qualitative approach, namely the approach using a Literature review. Literature review is one of the qualitative research methods, the process is carried out by linking events with theories that can be used as a basis and linking with previous research, to show the relationship between research that is being carried out and what has been done. In qualitative research, theory serves as a "mirror" for understanding phenomena. So that it is easily understood and meaningful (Chariri 2009). According to Moh. Hakimi,

literature is a process of looking critically at the results of existing research. The literature in question is journals, books, reports, newspapers, conferences, and others.

The data used in this study are: journals from previous research in case examples of structuring road modeling for pedestrians or the influence of complementary elements of pedestrian paths on the protection, convenience, enjoyment, equality and identity of pedestrians. These elements are a facility where pedestrians want protection, convenience, enjoyment, equality and pedestrian identity.

Protection refers to a situation where pedestrians are free from conflict with road users and motorized vehicles while walking so that an accident will not occur (Pau et al. 2018). After pedestrians get a pedestrian protection, they must also get a pleasure. Enjoyment and convenience refers to the quality of the environment that is integrated with other transportation access, providing walking support facilities that do not limit the use of sidewalks for walking so that pedestrians feel emotionally and mentally comfortable and free from stress while walking. Equality of pedestrians encourages pedestrians to not only do walking activities. However, pedestrians can socialize, communicate and interact in the pedestrian area. Finally, pedestrians will form a self-identity that is formed on the supporting elements of the road so as to create a sociocultural in the form of a culture that produces a sense of place and encourages belonging among users.

RESULT AND DISCUSSION

Tangerang City is a city that is improving itself to become a livable city and a tourism city, so that every year there is always infrastructure development. The development of the Tangerang city area is managed directly by the Department of

Public Works and Public Housing which has a vision of "Infrastructure, Water Resources, Drinking Water and Groundwater that is Adequate, Adequate and Quality to Support an Advanced, Independent, Dynamic, and Prosperous Tangerang City". The vision of this SKPD supports the vision of an advanced, independent, dynamic and prosperous Tangerang city which translates into the realization of its infrastructure. The development of the Tangerang city infrastructure managed by the PUPR service is an implementation of a Tangerang city community development meeting which is sourced from the Tangerang city's PAD. The city of Tangerang has increased from year to year and there is even a positive Silva every year. The following is a description of the PAD of the city of Tangerang in 2017 and 2019.

Total revenue for the city of Tangerang in 2017 came from 3 sectors of the main source of funds, namely: regional original income, balancing funds, and other legitimate regional income, with a total of IDR 3,708,387,835,169.00. The largest income comes from the local revenue sector, amounting to Rp. 1,599,596,744,478.00. The contribution of regional original income is divided into 4 sources of funds, namely: regional tax proceeds, regional retribution proceeds, separated regional wealth management results, and other legitimate regional original income. Based on its contribution, local taxes are the biggest source of revenue for the city of Tangerang, amounting to Rp. 1,323,500,000,000.00. While the lowest contribution comes from the results of the management of separated regional assets, which is Rp. 19,064,991,338.00.

And the amount of revenue for the city of Tangerang in 2019 was obtained from 3 main funding sources, namely: regional original income, balancing funds, and other legitimate regional income, with a total of Rp 4,578,363,500,610.81. The most source of income comes from

local revenue with the funds collected as much as Rp. 2,377,890,325,336.81. The contribution of regional original income is divided into 4 sectors, namely: regional tax proceeds, regional retribution proceeds, separated regional wealth management results, and other legitimate regional original income. Judging from its contribution, local tax revenues are the highest source of income for the Tangerang city government in 2020, which is Rp 2,087,962,239,160.00. The lowest contribution is obtained from the results of the management of separated regional assets, which is Rp. 19,443,860,000.00.

Based on the development of the Tangerang pedestrian area, it refers to the development guidelines provided by the Ministry of PUPR. The effective width for pedestrians with the need for one person is 60 cm with an additional 15 cm width of space that moves without carrying goods, so the total lane requirement for two pedestrians holding hands or two pedestrians passing by without contact is at least 150cm or 1.5 meters. The procedure for collecting pedestrian volume data is in a separate guideline where the pedestrian space with high pedestrian generation roads is 1.5 meters, and for sidewalk space with moderate pedestrian generation it is 1.0 meters, and the sidewalk pavement space for low-rise pedestrians is 0.5 meters.

The need for walking about an effective environment and inspired by a theory of human needs postulated by Maslow and Maxnef. Underlying this need is the desire to move (mobility), and pedestrians also have physiological and psychological needs. Where, basically pedestrians want protection, convenience, enjoyment, equality, identity (Mateo, Ieda, and Eng 2007). Protection means a situation where pedestrians avoid a conflict with other vehicles and minimize an accident to pedestrians. Therefore, a city must facilitate a tool or media in a crossing

so that pedestrians avoid an accident (Pau et al. 2018). Apart from protecting pedestrians, they also want convenience and enjoyment. This ease and enjoyment means that pedestrians feel comfortable emotionally and mentally so that they can spend time walking while doing other activities. Equality in pedestrians is an opportunity for self-expression that serves as a place to socialize, communicate and interact. And lastly, pedestrians need an identity that refers to a sociocultural element that creates a culture and produces a sense of belonging among its users (Mateo et al. 2007).

From the discussion above, the city of Tangerang provides a maximum space of 1.5 meters of road in areas with high pedestrian generation, while the minimum limit of road space provided is only 0.5 meters of roads in areas with low pedestrian generation. And from picture 1, the location of the sidewalk is combined with a green path. Meanwhile, according to the geometry of the national urban road, the location of the sidewalk should be separated from the green path (National 2004). The combined sidewalk space and road greening space provide an overview, that the city of Tangerang has not yet implemented a socio-ecological concept. Socio-ecology is very important in development planning. Because, according to previous research, pedestrianization is a business where planning must prioritize the interests of users or pedestrians. A pedestrian-friendly city environment is a human environment, having a size and dimension based on the human scale. This effort should pay attention to the strategic elements of the city in accordance with the environment and city characteristics so that it can create an image and character of the city (Ashadi, Houtrina, and Setiawan 2012). To build a liveable and visitable city must use a plan that is based on knowledge of the functioning of the lens. The plan on the function of the landscape is a plan for

a combined socio-ecological system or human environmental system. According to Steiner, humans and nature interact in the landscape as part of an interconnected network and form a complex etiquette at the landscape scale (Hersperger et al. 2020).

CONCLUSION

The city of Tangerang which has a goal to be liveable and visitable is a picture of a city that is able to provide an infrastructure for the community and its residents so that the community and its residents can feel comfortable and safe in carrying out activities to meet their needs. The road is a basic facility for the community to carry out activities, both roads for vehicles and roads for pedestrians. The development of the pedestrian area must consider a socio-ecological aspect where the construction of the pedestrian area can facilitate and support the community to carry out an activity of walking, socializing, communicating and interacting with each other. However, the city of Tangerang, which applies the liveable and visitable concepts, has not been able to provide suitable roads for pedestrians. Because pedestrians do not feel comfortable walking with a very narrow road space that is still integrated into the building. Besides that it is still integrated into the building, the sidewalks in the city of Tangerang do not yet have a beautiful landscape pattern that attracts people to walk.

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