

### ISSN 2581-5148

Vol. 4, Issue.6, Nov-Dec 2021, page no. 90-103

To cite this article: Bobby Danu Priatna, Hilma Tamiami Fachrudin and Achmad Delianur Nasution (2021). LEGIBILITY IN LAPANGAN MERDEKA MEDAN IN RELATIONSHIP TO PLACE ATTACHMENT, International Journal of Education and Social Science Research (IJESSR) 4 (6): 90-103

## LEGIBILITY IN LAPANGAN MERDEKA MEDAN IN RELATIONSHIP TO PLACE ATTACHMENT

Bobby Danu Priatna<sup>1</sup>, Hilma Tamiami Fachrudin<sup>2</sup> and Achmad Delianur Nasution<sup>3</sup>

<sup>1</sup>Master's Degree Program of Architecture, Faculty of Engineering, Universitas Sumatera Utara, Medan, Indonesia

<sup>2</sup>Master's Degree Program of Architecture, Faculty of Engineering, Universitas Sumatera Utara, Medan, Indonesia

<sup>3</sup>Master's Degree Program of Architecture, Faculty of Engineering, Universitas Sumatera Utara, Medan, Indonesia

DOI: http://dx.doi.org/10.37500/IJESSR.2021.4608

### ABSTRACT

Lapangan Merdeka as an important historical element of Medan should have more value to citizens more than others through the place attachment's phenomenon between people and place. Nowadays, Lapangan Merdeka has no different from other recent open spaces created, especially in the Sumatera Utara Province in Indonesia. This research aims to analyze the place for activities in Lapangan Merdeka if it has a strong separation affected to the place to be more legible for the visitors. Theories about place and place attachment will become the basic approach to solving the problem. This research uses a qualitative method with descriptive analysis, data collected by observation and interview. The main finding in this research is that Lapangan Merdeka has no absolute separation between each activity in the open area in the middle of it, strong separation only on Merdeka Walk, which it's not managed by the government. There are some different perspectives between the observer and the visitor in seeing the indicators, but the result will be taken based on the closest value to the theories taken. The conclusion is Lapangan Merdeka needs some improvement to become more legible to the visitor. Legibility is one of the elements that can affect the attachment point, which can increase the value of a place.

**KEYWORDS**: Lapangan Merdeka, Legibility, Attachment.

## 1. INTRODUCTION

Lapangan Merdeka as a historical asset of Medan was established in 1872 but officially started to use in 1880. Used to be built as the square for 13 plantation companies around who moved to Medan from Labuhan Deli. Esplanade was the name given the first time it was built, turn to fukuraido (1942) when Japan colonized Indonesia and become Lapangan Merdeka from 1950 until now (2021). This square can be a welcome park for people travelling by train, the field for state events ceremonial, and also a



### ISSN 2581-5148

Vol. 4, Issue.6, Nov-Dec 2021, p no. 90-103

place for citizen's activities such as doing sport, recreation and other group activities. These routine activities have taken a place until nowadays, but the problem is, does Lapangan Merdeka from then to now take a place as a part of the Medan's society and part of the city? There are many government policies are considered by the citizen, detrimental to the existence of Lapangan Merdeka. "Free Lapangan Merdeka" become the slogan of activists to restore the function and vision of Lapangan Merdeka. Therefore, research is needed to examine the level of attachment between people and places. Legibility is one of the important elements to know how a place influenced people through how a place is recognized and how the place has something that can make visitors impressed about the place. The attachment takes an important place to create a sense of belonging to a place [1]. Also, increasing individual self-esteem, further can create regional identity [2]. With the sense of belonging people with self-awareness will keep, maintain and protect the place from everything that can damage to maintain the continuity of a place to be passed onto the next generation. This is the reason why keeping Lapangan Merdeka as the historical site is very important for the identity of Medan city.

Place attachment can be produced from many factors, collected personal experience, social and cultural activities, geographic, and building or space's design. If one of the factors disappear then it will make a negative impact on identity and community, memory, history and psychological balance [15]. Place attachment can appear because of dependence on a place, for example, comfortable for doing our activities, various activities to do, good supporting facilities, satisfaction level users to a place [16] William dan roggenbuck], peculiarity landscape also controls the meaning of a place, through how the environment responded to activities doing by the visitors [17]. A man-made environment is a political system in its own right [5]. It means that every man-made environment that is used as a public space have its own uniqueness which the design doesn't stop when the physical site is built, but it will keep formed through the routine activities day by day for no time limit [18]. Based on the Project for Public Space's experiment there are some factors to take place greater, there are: a) easy to access and connect some (important) place around it. Easy means the place is easy to access and easy to explore. Activities should arrange well, so all activities are possible to see from all sides of the site. b) comfortable and have a good image. Comfortable comes from feeling safe, good facilities such as bench, playground, enough toilets, but based on PPS's research, the appropriate amount of benches is the most important thing to make more visitors and make them stay longer. c) Invite people to come and join the activities. So selected activities to selected people will increase to the level of visits every time for example playground will be visited by children at noon to evening, basketball field will be visited at evening to the night. d) A place that makes people want to visit it again and again. This could be the most important and also the most difficult aspect to get in a public area, but it is possible if point a-c is well fulfilled. An indicator of this aspect running on its path is if people do their activities without being disturbed by others [8].

Legibility is one of the elements of responsive environment theory [5]. Legibility is about how people understand the place, it does not have to be a simple design even a complex place or design also can be easily understood with the proper zoning and signage. Easier explore the site can make people easier



#### ISSN 2581-5148

Vol. 4, Issue.6, Nov-Dec 2021, p no. 90-103

to move to another side of the object they want to go, with the clearly zoning and specific land use, people will know what to do in the area and make them stay longer in the site, which is good conditions to processing the attachment [6]. The uniqueness of landscape also contribute to the attachment process, the meaning that is formed by the place and satisfaction make the attachment process more easily [7]. A good public space should be a place that is easy to get into it, easy to enter and explore. Zoning should be arranged to easily see from all sides of the site, to attract people to come. The boundary line of the site plays an important role in facilitating and providing clarity of access to enter the area [8]. Routine activities also contribute a lot to the attachment process [9], routine activities show that it's the most people needed from the area. The more social transaction happen on the site, the place has more power to bind society. Public space should have a good temporality to adopt various conditions, space, time and users [10]. Temporality is divided into 3 types: a) space temporality, if a space has flexibility and ability to accommodate any kind of activities. The place doesn't design for a special purpose but can use for another different activity depending on the users needed. b) Times temporality, happened when the space can serve two or more activities in a time. and c) user temporality if the space can serve many kinds of users at a time. . These three types of temporality can influence the form of the physical mass because it is processed based on factual presences between space needed and human activities which change through time and stop at one point, that we can mention it as the basic needed of the users [10].

Times temporality [11] and routine activities [12] are important things to attach people and place. A good place at least has 1 primary activity and some others secondary activities [13], the great place has 10+ to do in an area [8]. From the statements above, there are several indicators that can be taken as the tools to use for this research. There are:

- Strong separated between elements
- Good signage
- Green area, activity area
- Interesting spots of the site
- Good building's design
- Landmark
- Traditional hawker

Through these indicators will show us whether Lapangan Merdeka has a friendy zone or not, easy to read and explore, comfortable place to do activities, interesting place, have unique characteristics. And finally, we can answer the main question if Lapangan Merdeka is ready to make the attachment to the users.

From these theories, Lapangan Merdeka should become the place that can attach people to it. Sense of belonging should have formed through 149 years old existence. But we find earlier researcher Nasution, AD [3], found that people come to Lapangan Merdeka only to maintain their quality of life,

ISSN 2581-5148

Vol. 4, Issue.6, Nov-Dec 2021, p no. 90-103

not because there is something that attracts them or something that can bring them back to the place for no reason. Fachruddin, HT [4], also found that Lapangan Merdeka needs a better setup for friendly design, signage and better facilities to achieve a better sense of place. This research will analyze the legibility of Lapangan Merdeka, which it's a part of the place attachment investigation series, discusses its readiness to get attached to people.

## 2. METHOD

This research used the qualitative method, which is described the process of why and how times can influence the formation of attachment between place and the meaning. The observation study will be the basic data to be analyzed. It's suitable to use this method because as an architect we know about space and function better than the visitor. Observation study will be held a day in weekday, Saturday and Sunday. The main time to collect data would be, the morning at 06:00-08:00 AM, afternoon at 12:00-02:00 PM – 04:00-06:00 PM, and in the night at 07:00-10:00 PM. The data will be presented as maps to find the problems easier. Interview 10 visitors with some criteria from family, group, school students, community or individual doing their activity in the area, and also for 5 static users such as mobile hawker, hawkers with the permanent tenant, café staff/manager, and other people doing the economic activities. They all will be interviewed to collect supporting data as a complement or comparison to the main data.

Main data dan secondary data will be blended to become the factual condition at the site. Secondary data can't directly become the factual condition, must be compared or combined with main data from the observer, because there could be different perspectives or points of view from the users/visitors who responded to a situation, and its observer's job to choose and put it in the right path. Then the facts will be analyzed with the theories taken to get the finding to answer the problem.

## 3. RESULTS AND DISCUSSIONS

Lapangan Merdeka is a historical square placed on 0 kilometer of Medan city. Position at 3°35'26.43" North latitude and 98°40'42.51 East longitude, around 21-23 meters above sea level. Lapangan Merdeka is a non-green square park based on district law no. 13 the year 2011 (about Medan's city plan) and the area is 44.044 m2 (4.04 hectares)



## ISSN 2581-5148

Vol. 4, Issue.6, Nov-Dec 2021, p no. 90-103



## Figure 1. Research area

Lapangan Merdeka sorrounding with:

- North: Bukit Barisan street, 10 meters wide street, this area is usually used for on-street parking of Lapangan Merdekas's visitors. This area has the smallest pedestrian walkway at about 1.5 meters. There is a Historical post office building built in 1911, there is a fountain as the kilometre 0 monument, which is the beginning if we want to measure the distance from Medan to everyplace around the world.
- East: Stasiun street, 20 meters wide street, part of this side taken by the Transport Department to built parking area for the railway station's passenger and used book store sellers called "Titi Gantung". There is a Medan railway station built in 1886, and historical Titi Gantung bridge to cross over the railway and still use until now.
- South: Pulau Pinang street, 15 meters wide street. There is the main gate to enter Lapangan Merdeka. Historical building London Sumatera PTPN was built in 1906, some bank and some insurance office building.
- West: Balai Kota street, 20 meters wide street. There are bank office, city hall and historical Dharma Deli hotel

Lapangan Merdeka existing site has 15 permanent buildings and 2 open buildings (building without wall). All buildings spread at the edge of the area. The building built in Lapangan Merdeka is not only owned by itself, but some of it belongs to another government department. The main square takes position right in the middle of the site (no.24). This square can be seen from Stasiun street (blocked



Vol. 4, Issue.6, Nov-Dec 2021, p no. 90-103

by the parking lot and old book store building) and Balai Kota street (blocked by Merdeka Walk buildings).

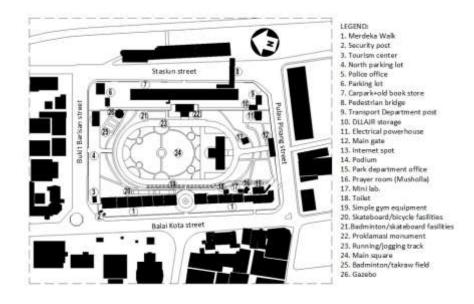


Figure 2. Eksisting mass in the site

Lapangan Merdeka has 2 main entrances, north entrance no.4 and south entrance (no. 12), it has 2 more side entrance from the east (Merdeka Walk entrance) (no.1) and an unofficial entrance beside the proklamasi monument (no.22). Merdeka Walk (no.1) is a restaurant selling many kinds of dishes such as western food, Chinese food, Indonesian food, fast food, and café for the visitor to hang out. Built-in 2005 Merdeka Walk have become one of Lapangan Merdeka's activities generator that an extended time to liven up the area especially for the night. Area with ten restaurants and cafés open until about 02:00 am every day.

Most of the buildings in Lapangan Merdeka are facilities of the square. Except no. 6 as a police office, no.7,8,9 and10 are buildings belonging to the Department of Transportation, built as the parking facilities for Medan's railway station across the street. The facilities are concentrated in the southern part of the area. Observation study found that some of the facilities not running well, for example, the public toilet can't be used and looks like become a storage room to keep the recycle bin safe from stealing. If users want to use the toilet, they can go to the prayer room (musholla), tourism office and to the ceremonial podium. Some fitness equipment is broken, some of them even disappeared. Some Park benches might be not enough to serve the visitor, because so many visitors sit wherever they want, on the grass, on the walkway, and on the sports facilities if it doesn't use by others. The main square (no. 24) is the most of the activities take place. The main square itself took 60% area of



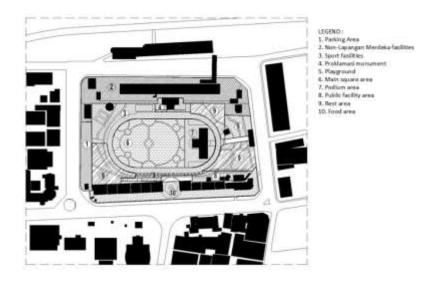
### ISSN 2581-5148

Vol. 4, Issue.6, Nov-Dec 2021, p no. 90-103

Lapangan Merdeka, Merdeka Walk (no.1) took 15 %, 4% of the parking area (no.4) and 12% the place taken by the police station and Transportation Department (no. 6,7,8,9,10).

The ease of being recognized as one of the factors that facilitate the process of attachment to the places formed. Easy to know and easy to explore usually come from the place that has a unique characteristic, dominated rich culture or design that can make users easy doing their activities. Lapangan Merdeka only has 1 firm line that is separated between the square and Merdeka Walk. Merdeka walk has a clear function as a place to eat, drink and hang out. While the square has very random activities in it. All activities happened in this square not only the people doing sport, family recreation, group discussion, etc. even many people doing the same activities as in Merdeka Walk, eating, drinking and hanging out but with the cheaper price compared by the dishes' price offered in Merdeka Walk. Even this situation isn't a good thing for the place to become more legible, but this is the positive value for the space temporality because the place can accommodate many activities at one time. Despite that, Lapangan Merdeka has lost its characteristic [5], something that Lapangan Merdeka must have to make it different from other parks in Medan. It can increase the value of Lapangan Merdeka so it can attach people more.

As a matter of fact, 7 of 10 respondents from mobile user said that Lapangan Merdeka have a good site divided for separated the activities, but observer analyzes that five of them usually doing their activities in Merdeka Walk that make their mindset that Lapangan Merdeka separated well. The other mobile respondents usually doing their activities in the square said that there aren't clear boundaries between activities on the site. People did their activities wherever they want, wherever they felt comfortable, without being disturbed by other users' activities.



**Figure 3. Zoning site** 

# **JESSR**

# **International Journal of Education and Social Science Research**

### ISSN 2581-5148

Vol. 4, Issue.6, Nov-Dec 2021, p no. 90-103

Base on the observation study, there are some undefined zoning that can be made based on what facilities are provided by the government in the main area. In the middle of the square (no.6-7) is the ceremonial field, government don't provide any facility in this area, for area no.3, the government provide a jogging/athletic track around the ceremonial field, also simple fitness equipment, takraw and badminton field, rock climbing facilities, and some facilities for skateboard training provided in this area. For area no.9 would be the rest area or relaxing area, this area contains many trees and park benches that can increase the comfortability of the users. Area no. 5 is a children's playground that provides children play facilities such as swing, slide, etc. In area no. 4, there is a tugu proklamasi (monument for Indonesia's Independence Day), which becomes proof that Indonesian independent's text was read here for the first time outside of java island. There is no special activity here, the place should become an important part of Lapangan Merdeka historical story seem to be neglected. No.7 is a ceremonial podium, this place is the favourite place for a group of students or hobbies community gathering.

Lapangan Merdeka has a 45% green area, plant with many trees. This should be able to give users or visitors a sense of comfort when doing activities in the area. But the distribution of the trees only fills the edge of the square. This condition makes the centre field become uncomfortable to use during the day. The temperature is 33°C at 12:00-02:00 PM, nobody doing their activities in the middle of the field during the day.

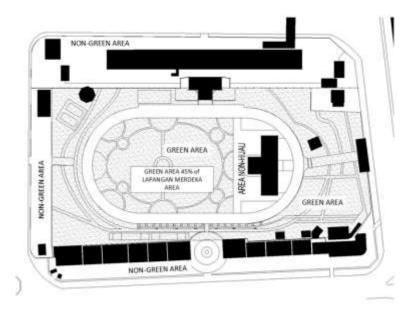


Figure 4. Green area of Lapangan Merdeka

Some users feel enough for the green area the government provide for the site, they do their activities comfortably. Other than that, it's rare to do sports activities at the noon, visitor move their activities to



### ISSN 2581-5148

Vol. 4, Issue.6, Nov-Dec 2021, p no. 90-103

Merdeka Walk to have lunch or just rest from their office or routine activities. In Merdeka Walk, the temperature doesn't as hot as at the centre of the park, because there are so many old big trees shading the area. But one of them said that:

*"it's better to put the trees too in the middle of the field, so we can do the activity even in the hot day" (MU-03).* 

(Mobile User number 3 for respondent or visitor)

"it's better to put the trees too in the middle of the field, so we can do the activity even in the hot day" (MU-03).

(Mobile User number 3 for respondent or visitor)



Figure 5. Main square of Lapangan Merdeka at noon

Interesting spots in Lapangan Merdeka are separated into 2, interesting for doing activities, and interesting for taking pictures because, at the industrial revolution 4.0, we can't separate humans, gadgets and social media. The best spot to take selfies or welfies is a new need that we have to provide a special space for the visitor to get their existence. The big letter "MEDAN" was the spot deliberately made to answer the needs.



Figure 6. Interesting spot to take pictures



ISSN 2581-5148

Vol. 4, Issue.6, Nov-Dec 2021, p no. 90-103

Although there are some other interesting spots to take a picture in the area, but there is no spot that can explicitly show that we are in Lapangan Merdeka, it means that this site still doesn't have an iconic spot that shows the identity of the place [14]. Interesting spots for doing activities are based on how this spot always interest visitors to do their activities here, so that makes this spot become the most crowded area on this site.

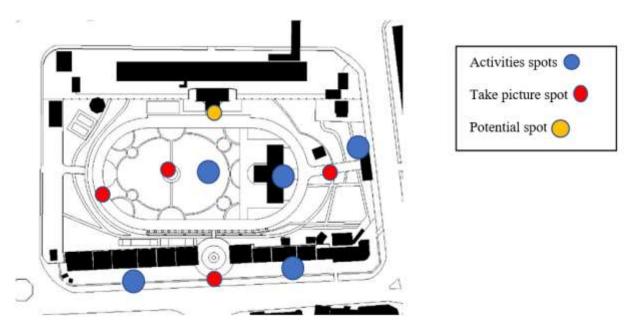


Figure 7. Interesting spots in the area

Observation study mapping the interesting spots in the area and a place that has great potential to become a new spot, that is Monumen Proklamasi (Independence day's monument). This monument is being ignored as a potential spot because of its bad background, the 2 level book store building that makes the monument lose its focus, and ceramic tile as the floor finishing without trees, making this place too hot and uncomfortable to do activities at the noon.



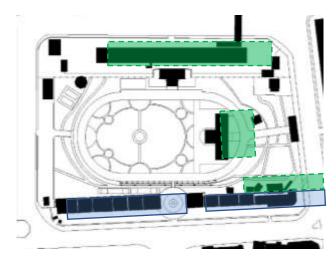
## ISSN 2581-5148

Vol. 4, Issue.6, Nov-Dec 2021, p no. 90-103



Figure 8. Proklamasi (Indonesia Independence day's) monument

Building's design in Lapangan Merdeka can be divided into 2 parts, buildings built and managed by the government and buildings built and managed by the private sector, Merdeka Walk. These two kinds of buildings have very different designs. Government buildings adopt the conventional design with a little amount of traditional ornament in it. But Merdeka Walk has adopted modern technology using steel pipe as the structure and textile membrane as the roof, this style gives a dynamic impression to the building. Outdoor eating space under the big trees makes us feel more comfortable.



Green area is the buildings built and managed by government

Blue area is the buildings build and managed by private

Figure 9. Building design in the area

3 of 10 respondents said that the buildings inside the site look not maintained well. Many facilities don't run well as it has to be. One of them commented:



ISSN 2581-5148

Vol. 4, Issue.6, Nov-Dec 2021, p no. 90-103

" Public bathroom is out of service, if I want to go to the bathroom, I have to use musholla's bathroom, I'm not Muslim and I feel unworthy. If else I have to use the podium's toilet, which is quite far, and I have to pay for it" (MU-01).

(Mobile User number 1 for respondent or visitor)

From many buildings/mass inside the site, nothing can be tread as a landmark, which can represent the spirit of Lapangan Merdeka, or have the unique design make people know where we are with only see the picture. The government also still haven't decided yet, what's going to be the landmark of Lapangan Merdeka. Interview with the respondents also give many different opinions about the landmark, there are 5 respondents who say that pendopo (gazebo/ceremonial podium), and the other has their own answer such as Merdeka Walk, post office, the square itself, the old building around, and 1 respondent answer that he has no idea about it.

In Lapangan Merdeka we didn't find strong traditional elements, either from food or souvenir sold in the area. The hawker sells common food sell in the traditional market, and many of them sell the same kind of food, making the variation of the food sold in the area have less choice. But many respondents have a positive value for the food sold in the area, they can find the food that suits them easily. Variation food sold in Merdeka Walk, they are western food, chinese food, and only one of them sell traditional food that not much different kind from the hawker sold inside the square, but with better taste, better presentation and higher price.

## 4. CONCLUSIONS

From the result and discussion above we can conclude legibility in Lapangan Merdeka and separate it into 3 values, positive, neutral and negative value based on the suitability between theory, observation and user's response to the indicators of legibility.

Lapangan Merdeka have positif value for the indicator. It has enough green areas that impacted to feeling comfortable for users to do activities in the area. Even though the distribution of the trees is uneven, but the comfort can be felt when we are at the border of the site even at the noon.

Lapangan Merdeka have a neutral value for the indicator about building design, government buildings have an average design which isn't interesting for the user but accepted because the government have its own standard for the building. Building in Merdeka Walk helped raise the design taste of Lapangan Merdeka.

Lapangan Merdeka has weakness or negative value for some indicators, this weakens the ability for the site to get the attachment to the visitor. This should be the input for the government or related parties to improve the value of Lapangan Merdeka. The first indicator is that spaces at Lapangan Merdeka need more arranged and the gap between the activities should have a clear boundary to make



### ISSN 2581-5148

Vol. 4, Issue.6, Nov-Dec 2021, p no. 90-103

the activities more legible for all people not only the visitor, to attract people passing around to visit the site. Adding some special elements or theme for the square could be one of the solutions to make the square looks more divided or more colourful and interactive to visit. To feel more legible, adding more signage is needed to avoid the confusion for the user to take place for their activities or moving from one to other activities. Other indicators showed that Lapangan Merdeka also has no special spot to represent its own existence, the government or related parties should dare to make something out of the box as the differentiator from the other open space. The differentiator should become the landmark of the site that Lapangan Merdeka doesn't have for 149 years since it was built. The last indicator showed that the hawker selling their stuff around or in Lapangan Merdeka don't have something different from one to another, this needs more selected sellers to guarantee the food sold in the area varied. From all findings based on the indicators, we can say that Lapangan Merdeka still cannot show its unique characteristic, and it becomes the negative values from this site.

Legibility in Lapangan Merdeka needs some improvement to be ready to attach people. The main improvement Lapangan Merdeka need is branding characteristic of its own, different from others. Lapangan Merdeka should become a place that attaches citizens of Medan through the place attachment phenomenon, not only because people need it to keep their quality of life [3].

## REFERENCES

- [1] Giuliani, Maria Vittoria. (2003). Theory of Attachment and Place Attachment. In M. Bonnes, T. Lee, and M. Bonaiuto (Eds.), Psychological theories for environmental issues.Groat, L., & Wang, D. (2002). *Architecture research Method*. New York: John Wiley and Sons, Inc.
- [2] Twigger-Ross, C. L., & Uzzell, D. L. (1996). Place and identity processes. *Journal of* environmental psychology, 16(3), 205-220.
- [3] Nasution, A. D., & Zahrah, W. (2012). Public open space privatization and quality of life, case study Merdeka Square Medan. *Procedia-Social and Behavioral Sciences*, *36*, 466-475.
- [4] Fachrudin, HT. (2020), <u>IOP Conference Series: Earth and Environmental Science</u>, 2020, 452(1), 012139
- [5] Bentley, I (1992). *Responsive Environments: A manual for designer*, Oxford: Butterworth Architecture
- [6] Smaldone, David. 2007. *The role of time in place attachment*. In: Burns, R.; Robinson, K., comps. Proceedings of the 2006 Northeastern Recreation Research Symposium; 2006 April 9-11; Bolton Landing, NY. Gen. Tech. Rep. NRS-P-14. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station: 47-56.
- [7] Getting from scene of place to place based management : An interpretative investigation of place meanings and perception of landscape change. *Journal of Society and Natural Resource*, 18, 625-641
- [8] Project for Public Space (PPS). https://www.pps.org/
- [9] Pellow, D. (1992). Space that teach. In. Altman &Low (Eds.) place attachment, New York: Plenum Press
- [10] Redyantanu, B. P., & Damayanti, R. (2017). *TEMPORALITY IN A DISCUSSION OF* SUSTAINABLE ARCHITECTURE. DIMENSI (Journal of Architecture and Built



### ISSN 2581-5148

Vol. 4, Issue.6, Nov-Dec 2021, p no. 90-103

Environment), 44(2), 163-170.

- [11] Altman, I., &Low, S. (Eds).(1992). Place Attachment. New York: Plenum Press
- [12] Pellow, D. (1992). Space that teach. In. Altman &Low (Eds.) place attachment, New York: Plenum Press
- [13] Jacobs, A. (1999) *Great Strees*. Massachusetts: MIT Press Kustianingrum, D; Angga Kusumah Sukarya; Rifan Athariq Nugraha; Franderdi
- [14] Vaske, J.J., Korbin, K.C. (2001). Place attachment and environmentally responsible behavior. The journal oe Environmental Education. 32(4):16-21.
- [15] Gieryn, T.F. (2000). A Space for place in sociology. Journal of Annu. Rev. Social, 26, 463-496.
- [16] Williams, Daniel & Roggenbuck, Joseph. (1989). Measuring Place Attachment: Some Preliminary Results.
- [17] Davemport, M. A., & Anderson, D.H. (2005). Getting from scene of place to place based management : An interpretative investigation of place meanings and perception of landscape change. *Journal of Society and Natural Resource*, 18, 625-641
- [18] Tartia, Jani. (2020). The Temporality and Rhythmicity of Lived Street Space (Doctoral Dissertation).

### **Author Profile**



**Bobby Danu Priatna** received the B.E. degrees in Architecture from Medan Institute of Technology in 2005. The student of Master's Degree Program of Architecture, Faculty of Engineering, Universitas Sumatera Utara (USU), Medan, Indonesia