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The Image of the Region Element Based on the Activities of Pedestrians

(A Case Study in Alun-Alun Merdeka and Alun-Alun Tugu, Malang)

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Abstract:- The development of the Alun - Alun Merdeka and Tugu Area areas has caused changes in visual characters to the image of the area in both public spaces. However, not many people are interested to visit those areas. This shows that the image of the region is less supportive in increasing visitor interest. The image of the public spaces can be assessed based on the views of pedestrian lane users as it has a role as an image booster of the public space. Therefore, this study aimed to determine the image perception of public space elements according to the users with their own types of activity on the pedestrian pathway. The results of the study demonstrated that there are similarities in the parameters and indicators of image of the public space elements from the perception giver based on the type of activity.

Keywords:- *Perception; Regional Image; Pedestrian Ways; Multidimensional Scaling.*

I. INTRODUCTION

Activities carried out in public space (eg pedestrian walkway) will make the user observe and build an image of the area (Lynch, 1960) [4]. This relates to the statement according to (Shirvani, 1985) [11], that the pedestrian has a function for enhancing the image of the public space area because it plays a role in the formation of cities, thus the good quality of pedestrian lines increases one's desire to use pedestrian walkway. The physical components that play a role in forming the comfort quality of pedestrian users are supported by the attraction of visual images (Pratitis, 2015) [8].

The city image is an imaginary picture of the city based on the general view of society (Lynch, 1960) [4]. Assessment of these views makes it easy for someone to recognize and remember an area. The more elements that are attached to an area, the easier it gets to be remembered. In addition, diversity support activities involving people and the environment are able to provide certain views or perceptions, both of which have an impact on increasing or decreasing the image of the region. Low visual perceptions of streets in the historic region can gradually reduce regional characteristics (Kiruthiga & Thirumaran, 2016) [3].

Malang City is one of the cities that has cultural heritage, such as historic buildings. Many buildings are still physically maintained and kept just like their original design, although some buildings have been modified. Based on the observations, many historic areas have experienced changes in visual character due to the emergence of new buildings even the image of the region (Rahajeng, 2014) [10]. Alun-Alun Tugu and Alun-Alun Merdeka provide public facilities such as pedestrian lanes. However, not many people are interested to do activities in the areas. The more comfortable the pedestrian walkway, the more interested the people to do activities in the public area. It is able to strengthen the visual area so that the character of the area is easy to describe or identify.

II. METHOD

This study used a Quantitative method. The sample in the research is applied as a population, and it has a clear design and data analysis that are done after the observation (Arikunto, 2014) [1]. This study aimed to determine the image perception of public space elements according to the pedestrian users in accordance with their activities. The variables studied are the image of the public area (regional image) and the character of the user. Image parameters of the region elements (figure 1) were a combination of several theories from (Zahnd, 1999) [13]; (Lynch, 1960) [4]; (Shirvani, 1985) [11]; (Budihardjo, 1991) [2] as well as the Pragnanz law of the Gestalt theory (Pocock, 1978) [7] and (Stephanie, 2012) [12]. User characteristics variables were based on (Metha, 2007) [6] and (Pratitis, 2015) [8].

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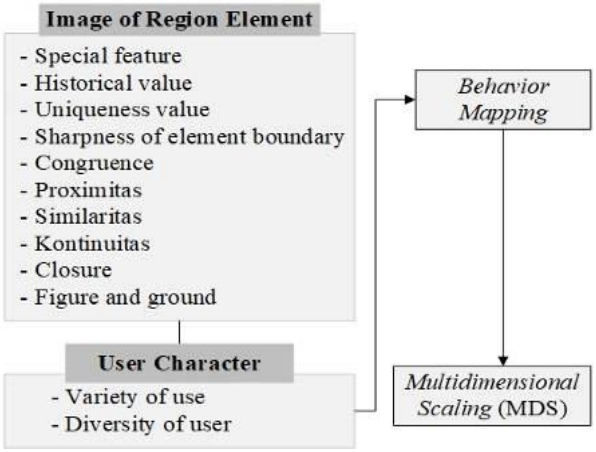

Fig. 1:- Research Stage

The techniques of data collection include observation and interview that were done directly to the research samples, namely the pedestrian users. Data were collected on both weekdays and weekend, with the consideration that both are the main times for the community to do their activities on the pedestrian walkway. Interviews were conducted in the morning (07.00-09.00), during the day (12.00-14.00), and in the afternoon (17.00-19.00).

Furthermore, the sampling technique implemented was accidental sampling, which was directly conducted by interviewing the people met in each research area. The number of respondents from Tugu Area was 100 respondents, while from the Alun-Alun merdeka was 200 respondents. The difference of samples number was adjusted to the preliminary observation obtained in both areas.

In Tugu area, the samples were obtained spread out from eight pedestrian lines (Kahuripan pedestrian, Trunojoyo, Majapahit, Kertanegara, Tugu Park, Tugu, Gajahmada, and Suropati). On the other hand, the samples of the Alun-Alun Merdeka were spread across ten pedestrian lines (pedestrian AR Hakim, Merdeka Utara, Merdeka Selatan, Merdeka Barat, Merdeka Timur, SW Pranoto, Kauman, Alun - Alun Malang, Basuki Rahmat, KH. Agus Salim). The distribution was adjusted to the physical characteristic of the area and its surroundings.

The analytical tool used in the study was the Behavior mapping (Place-centered mapping) for analyzing a person's activity patterns on the pedestrian. The users who were included in the research object were respondents who provide perceptual assessments regarding the image of the area elements, which will then be analyzed using the Multidimensional Scaling (MDS) method. MDS analysis was used to investigate the differences and similarities of the perceptions of respondents based on the different types of activities. This study useed MDS non-metrics since the research data were Ordinal. The steps of MDS analysis include testing the validity by seeing the value of stress, as well as reliability test by seeing the RSQ value. The low percentage of stress values demonstrates good suitability, while the high RSQ values indicate closeness between objects.

Stress (%)	*Goodness of fit*
> 20	Poor
10 < stress ≤20	Enough
5 < stress ≤ 10	Good
2,5 <stress ≤5	Very Good
0 <2,5	Excelent

Table 1:- Category of Stress
Source: Putri (2018) [8]

III. DISCUSSION

A. The Activities of Pedestrians

This activity pattern is the output of the mapping behavior carried out in each research location. The selected respondents were pedestrian users who gave their perceptions to the image of regional elements. In figure 2 and figure 3, it can be seen that there are similarities in types of activities carried out by visitors. Primary activities are more diverse when weekday than during weekends. But in general, the types of activities in both times tend to be the same since there is only one primary activity done on weekday but not on the weekends, namely learning activities. This shows that weekday tends to be a day for busy people, so that they pay less attention to the condition of the area. In addition, the types of optional activities carried out in the pedestrian of Alun-Alun area are fairly similar, and only different in the number of activity participants which is more during weekends. The type of social activity is more vary during weekends. Regarding the types of activities that are mostly carried out from morning to evening on weekdays, the users are mosly using the pedestrian route only as a route or connector of the area. This shows that the attractiveness of the area does not affect the respondents' interest in carrying out other activities other than just passing the way. On the other hand, the most dominant activity on the weekends is enjoying the scenery. This is influenced by the individual needs for refreshing after doing the work during weekdays. In addition, respondents can spend more time with their families with various type of activities that can be done in the same location.

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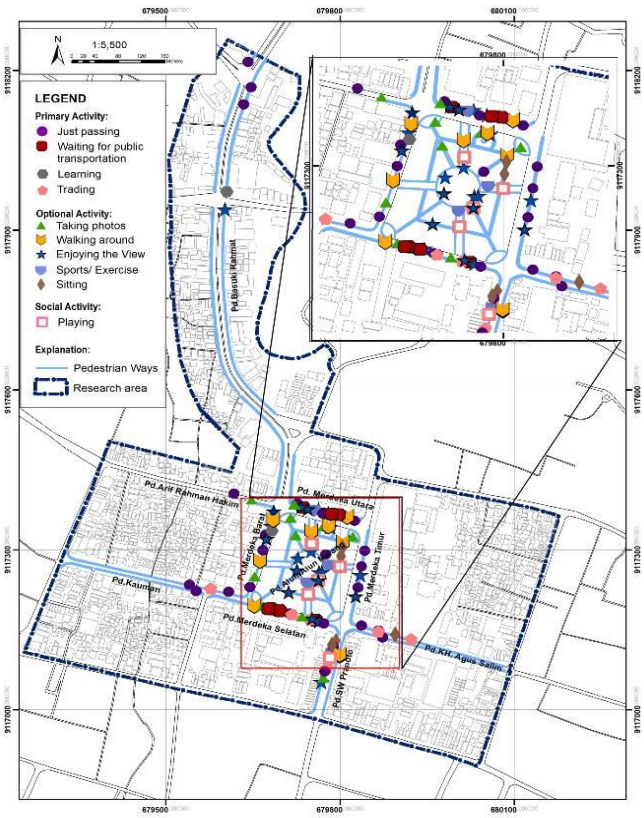

Fig. 2:- The Activities of Pedestrians on Weekday

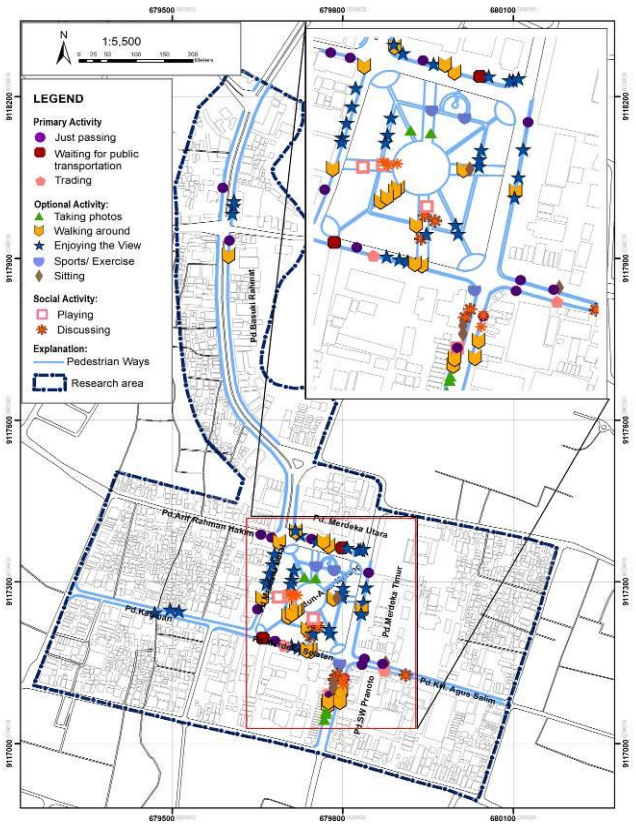

Fig. 3:- The Activities of Merdeka's Pedestrians on Weekend

The results of the mapping behavior of Tugu area can be seen in figure 4 and figure 5. The results show that the type of primary activity on both weekday and weekend is similar, but there are more primary activity participants on weekdays. The major type of activity is just passing by, and it is considered as the dominant type of activity carried out at both times. The type of optional activities on weekends are more diverse than on weekdays. The tendency of respondents to do the optional activities in the Tugu area is because of the attraction of a area since it has special characteristic, such as good scenery with its well-arranged park. The type of social activity on weekday and weekend are not the same. On weekdays, many users do discussions, but on weeknd, most users are just playing or relaxing.

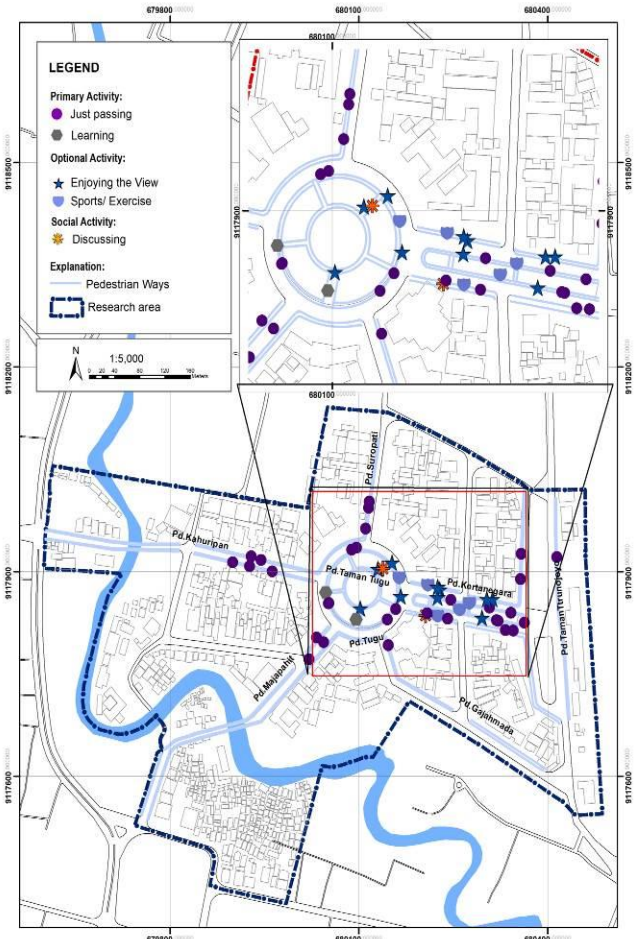

Fig. 4:- The Activities of Tugu's Pedestrians on Weekday

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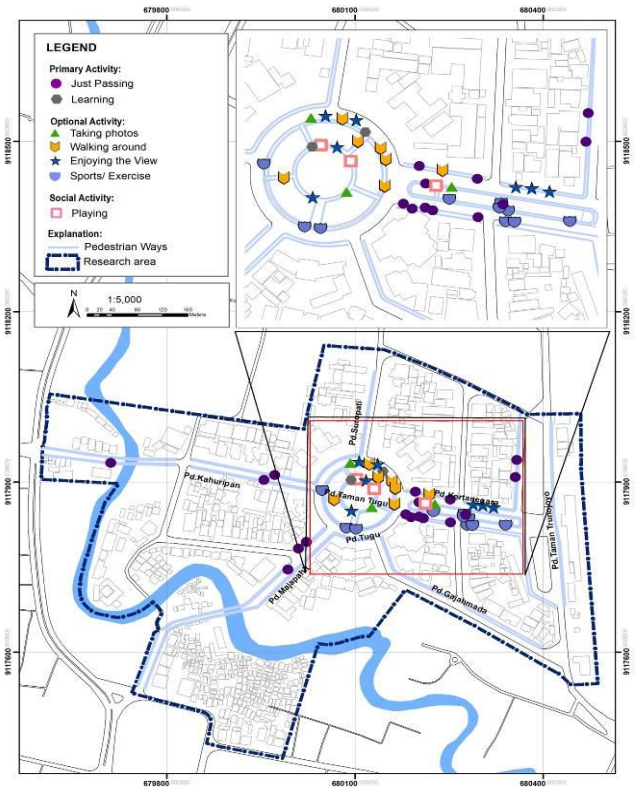

Fig. 5:- The Activities of Tugu's Pedestrians on Weekend

Alun – Alun Merdeka	Tugu Area
Learning	Learning
Discussing	Discussing
Taking Photos	Playing
Trading	Passing
Playing	Walking
Sitting	Enjoying the View
Just Passing	Exercise
Walking	
Enjoying the View	
Waiting for Public Transportation	
Sport/Exercise	

Table 2:- Type of activities of the public space users

Those activities are the information to support the process of evaluating the similarity of image perception of regional elements based on the subjectivity of the results of the assessment of pedestrian track respondents. The Behavior mapping is used to identify the parameters and image indicators of regional elements based on different types of activities.

B. Element Image of Each Public Space Base on User Perception

Every respondent gave an assessment toward the different elements of the public space image in accordance with the type of activity. Therefore, researchers conducted an assessment process of elemental images in the two public spaces using Multidimensional Scaling (MDS) analysis to see the analogy or similarity of the selections made by the respondents. Election of MDS analysis was conducted from the research of (Putri, 2018) [8] and (Robertus, 2010) [10] about the perception and preference. The parameters used to determine perceptions are in accordance with the image points of elements (figure 1). The results of the MDS analysis are the stress value and RSQ obtained from the SPSS 25 program. The stress value obtained was 0.08109 or 8% which is included in the category of good "goodness of fit" value. In addition, the RSQ value obtained was 0.96574 or 96% (> 60%) and included in good category. In other words, the measure of proximity between activities can be explained in the position of each activity in the perceptual map quadrant.

Based on fig. 6 on the quadrant, it can be seen that there are similarities in the assessment or the results of perceptions of the image of regional elements. The main objective is to find out the results of the similarity of image perception by looking at the closeness of the position in each type of public activity in the research location. The type of activity included in the same quadrant is considered as a type of activity that has proximity.

Quadrant I: Just passing, waiting for public transportation and sports;
Quadrant II: Travel, enjoying the view, taking photos, playing;
Quadrant III: Trading, learning;
Quadrant IV: Discussing, Relaxing (Sitting down).

Based on quadrant I, similarities can be seen from the type of activity itself. Respondents who carry out these three types of activities tend to have a specific goal by concentrating on the main purpose of using the pedestrian lane as an intermediary to a particular location point, so as not to pay attention to the area.

Quadrant II shows the influence of the type of activity carried out at the site. These activities have an intensity of interest in the location being visited at that time. Respondents who are active are encouraged to enjoy the visual area based on the comfort of the atmosphere. This attraction causes all four types of activities to gather in the same quadrant.

Quadrant III shows that the respondents have similarities in terms of choosing location points to conduct activities. Respondents tended to choose location points that were crowded by many people to carry out their activities.

In quadrant IV, it can be seen that both types of activities are perceived to have similarities in assessing regional image. This is seen from the type of activity that tends to have a long duration when viewed from the purpose and has a level of centralization of thinking higher when giving an assessment of regional images than other types of activities. This result causes the grouping of the two types of activities in the quadrant and good proximity positions.

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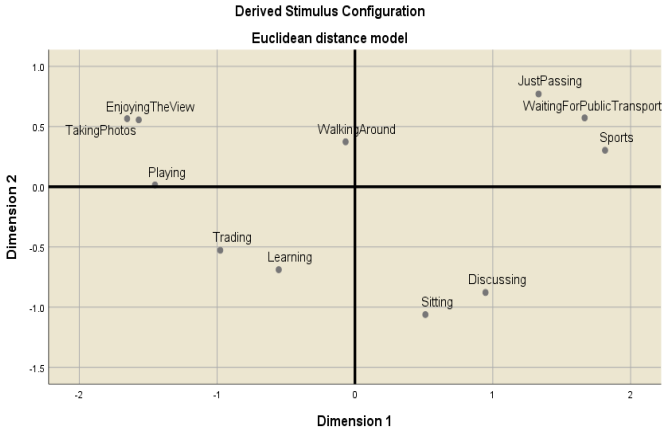

Fig. 6:- The Map of Activity Position in Alun-Alun Merdeka's Area

Figure 7 shows different results in the Tugu area for grouping types of activities whose positions are close together. The process is carried out with the same analytical method, namely validity and reliability. The results demonstrate a value of 0.07167 or 7% for the stress value and 0.96621 or 995 for the RSQ. Both indicate that the data meets the qualifications.

In the Perceptual map of the Tugu Area, there is a grouping of activitie type in the quadrant. The grouping shows the closeness of the position between the types of activities.
Quadrant I: Enjoying the view, playing, taking photos;
Quadrant II: Walking, just passing;
Quadrant III: Sports;
Quadrant IV: Learning, discussing.

Based on quadrant I, respondents who carried out the three types of activities had certain reasons for choosing locations compared to other locations. Even though they have different ways of enjoying the area, they have the same attraction to enjoy the visual aspect, which means that they were not just passing by.

In quadrant II, it can be seen that the perpetrators of both types of activities tend to see the visual area from the pedestrian. If it visually attractive, then the intensity of people to visit increases as it increases the comfort of activities. The type of activity carried out does not require a long duration, because they prioritize momentary vision in enjoying the area to enjoy the view from various angles of location.

Quadrant III shows that there are only types of sports activities. This shows that this activity does not have the same perception with other activities based on the results obtained from the MDS analysis. This shows that the respondents do not have the dominance of the image parameters of the same regional elements as other types of activities.

For quadrant IV, the location chosen for activities is a location that is considered convenient. Activities require a long duration compared to other types of activities. Activities carried out occur due to the attraction of locations that meet the criteria and support their activities.

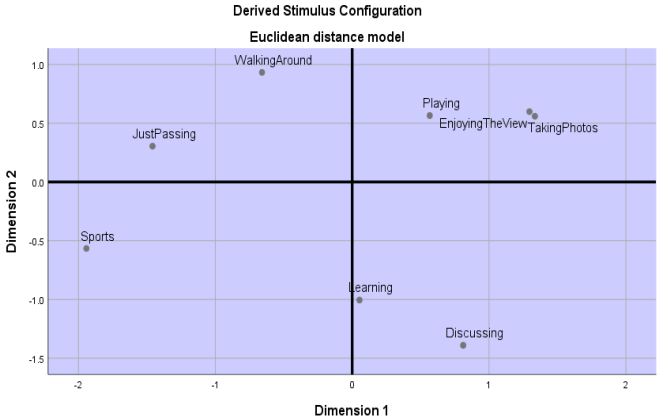

Fig. 7:- The Map of Activity Position in Tugu's Area

The closeness of the position in each type of activity shows that there are similarities in the image parameters of regional elements. The similarity is not only the important parameters for strengthening the image, but also the parameters that are considered not important. This subjectivity is influenced by the type of activity carried out by respondents. the similarity of parameters in each quadrant of the activity type can be seen in table 3 and table 4.

Type of Activity	Parameters of Image of Space Elements
Activity K1: - Passing - Waiting for Public Transportation - Sport	- Proximity (F) - Continuity (H) - Closure (I) - Historical value (B)
Activity K2: - Walking - Enjoying the View - Taking Photo - Playing	- Special feature (A) - Uniqueness Value (C) - Figure and ground (J)
Activity K3: - Trading - Learning	- Closure (I) - Figure and ground (J) - Proximity (F) - Special feature (A) - Uniqueness Value (C)
Activity K4: - Discussing - Sitting	- Proximitas (F) - Continuity (H) - Special feature (A) - Uniqueness Value (C) - Historical value (B) - Sharpness of element boundary (D)

Table 3:- The Similarity of Perception toward Alun-Alun Merdeka Based On the Activity Type in Each Quadrant

Type of Activity	Parameters of Image of Space Elements
Activity K1: - Playing - Enjoying the View - Taking Photos	- Figure and ground (J) - Special feature (A) - Uniqueness Value (C) - Sharpness of element boundary (D) - Closure (I)
Activity K2: - Walking - Passing	- proximity (F) - Continuity (H) - Congruence Value (E) - Similarity (G) - Closure (I)
Activity K3: - Sport	
Activity K4: - Learning - Discussing	- Closure (I) - Figure and ground (J) - Uniqueness Value (C) - Congruence Value (E) - Similarity (G) - Proximitay (F) - Continuity (H) - Special feature (A) - Historical value (B)

Table 4:- The Similarity of Perception toward Alun-Alun Tugu Based On the Activity Type In Each Quadrant

In figure 8, it is explained that the similarity of perceptions of public space users in quadrant I has a tendency, namely voters who are active in the pedestrian path of Tugu area and Kertanegara. In this case, respondents have a certain point of interest compared to respondents who rate the image of other pedestrian lines in the Tugu area. In addition, figure 9 shows the tendency of respondents who have similar images of regional elements, judging from the Tugu pedestrian path. Fig. 10 explained that respondents in quadrant IV have similar perceptions of the image of regional elements from the Tugu pedestrian path. On the other hand, in Alun-Alun Merdeka (figure 11), it can be seen that the activity participants included in quadrant I have an activity position closeness that influences the similarity of perception, such as the Merdeka Utara pedestrian path and S.W. Pranoto.

Based on figure 12, it can be seen that the similarity of image evaluation of regional elements is strongly influenced by the closeness of activities at the same location point, such as on the Merdeka Utara, Merdeka Timur, Merdeka selatan, Merdeka Barat, Alun-Alun Merdeka, , S.W. Pranoto and Basuki Rahmat. But this is different from activity actors in quadrant III (figure 13), in which the similarity of image perception of regional elements between types of activities does not have spatial proximity. In other words, the aspects that affect the similarity come from the memory of each public space user. Furthermore, figure 14 shows that the closeness of activity position in quadrant IV causes the similarity of image perception on the SW. Pranoto pedestrian. The relationship between pedestrian paths demonstrated by the result of Multidimensional Scaling analysis showing the position grouping of pedestrian user.

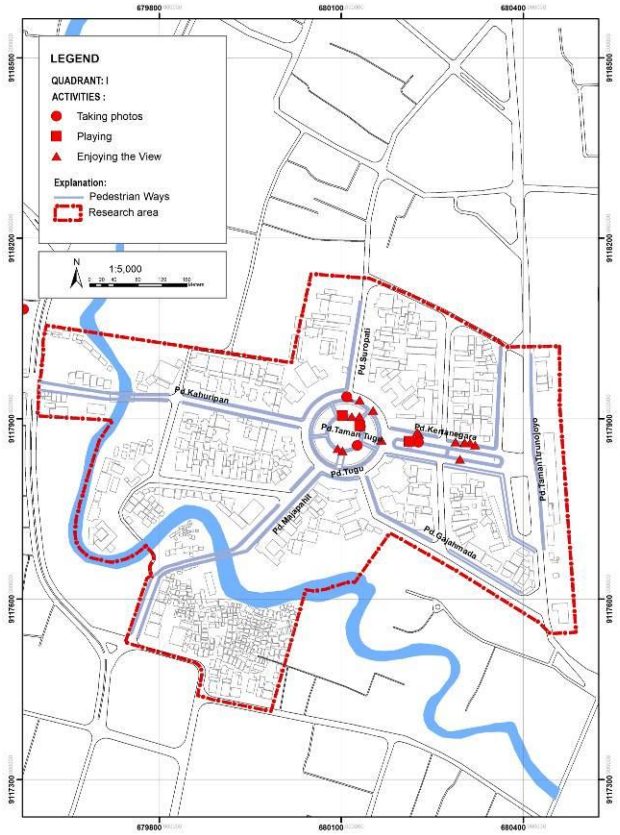

Fig. 8:- Pedestrians Mapping on Similarity Value of Tugu's Image (Quadrant I)

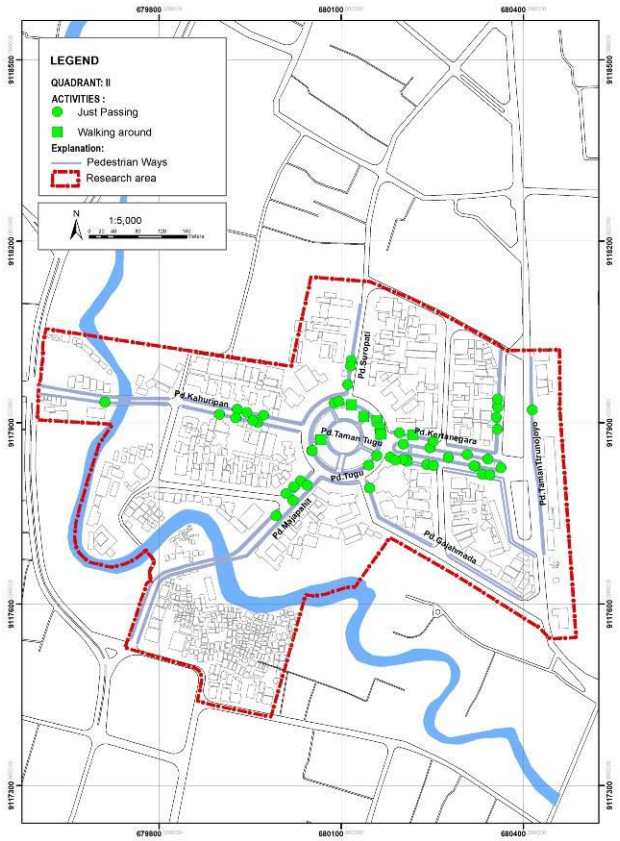

Fig. 9:- Pedestrians Mapping on Similarity Value of Tugu's Image (Quadrant II)

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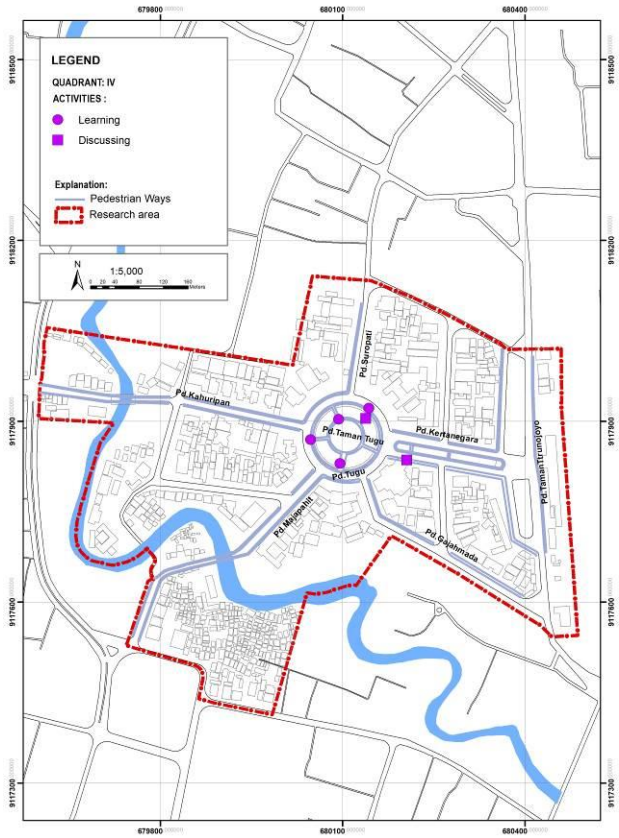

Fig. 9:- Pedestrians Mapping on Similarity Value of Tugu's Image (Quadrant IV)

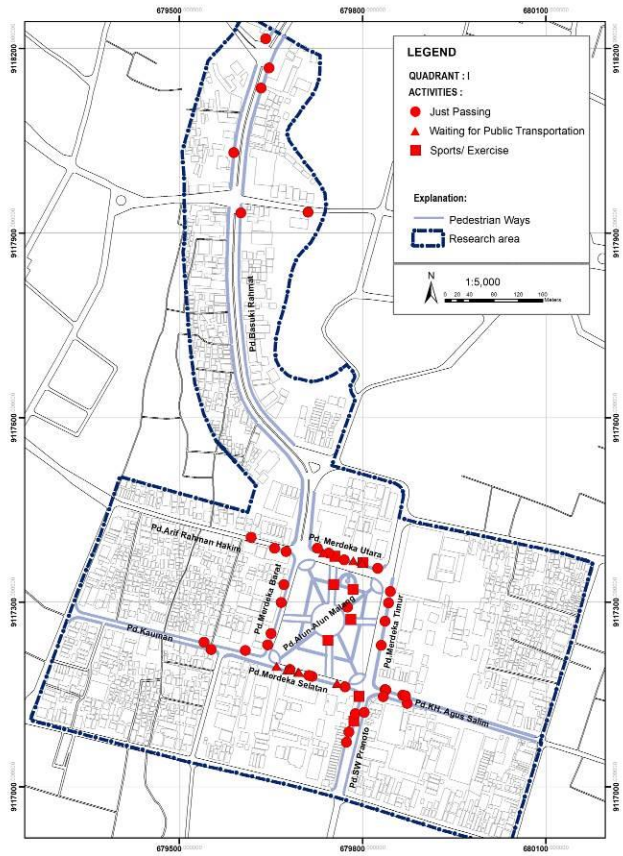

Fig. 10:- Pedestrians Mapping on Similarity Value of Alun – Alun Merdeka's Image (Quadrant I)

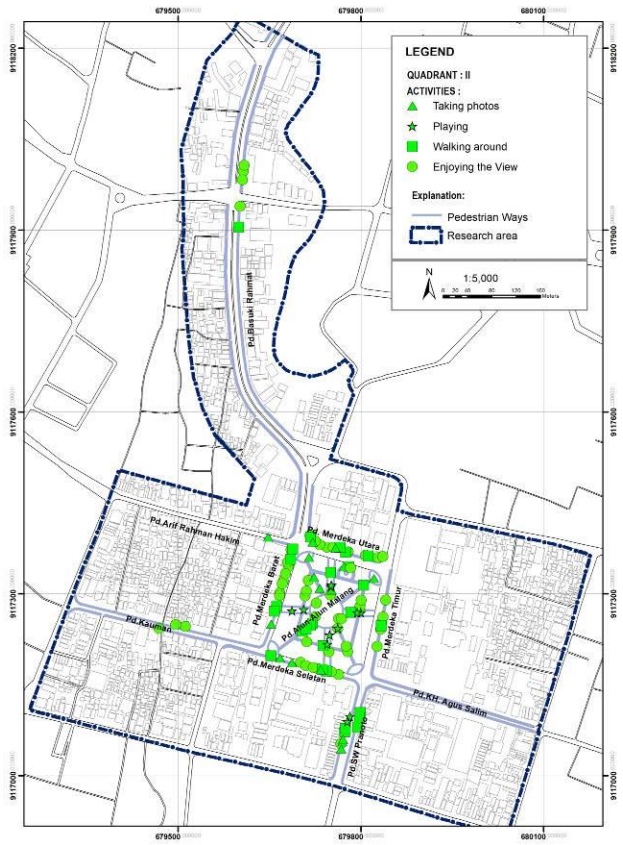

Fig. 11:- Pedestrians Mapping on Similarity Value of Alun – Alun Merdeka's Image (Quadrant II)

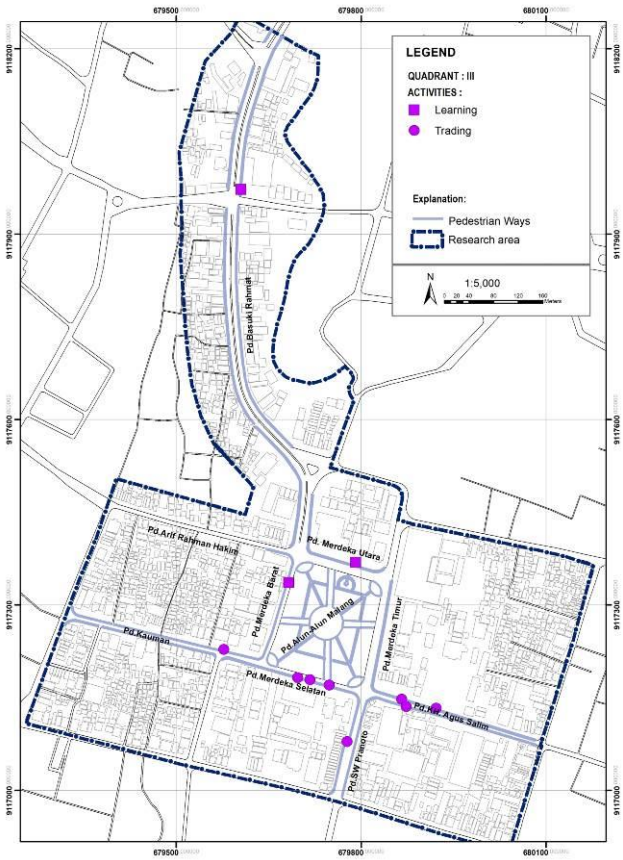

Fig. 12:- Pedestrians Mapping on Similarity Value of Alun – Alun Merdeka's Image (Quadrant III)

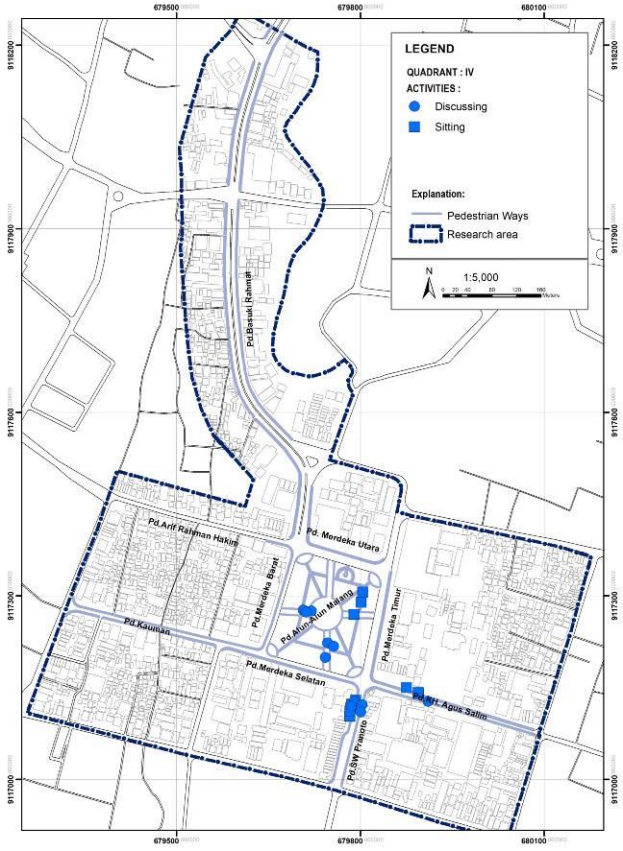

Fig. 13:- Pedestrians Mapping on Similarity Value of Alun – Alun Merdeka's Image (Quadrant IV)

IV. CONCLUSION AND SUGGESTION

Crucial parameters for strengthening the image of elements of the Alun - Alun Merdeka are found in quadrant I and quadrant IV, namely the proximity of the object's position. In quadrant II, the characteristic parameters of the object are found to play a crucial role in forming the public space image, meanwhile, quadrant III shows that closure on objects can affect the image. Parameters in the Tugu area for quadrant I are the shape and background of the object as the basis of the strength of the image characteristics of space elements. In quadrant II, the proximity of the position is crucial, meanwhile in quadrant IV, respondents consider the closure of objects can strengthen the character and image of regional elements.

The overall type of activity in each quadrant in both Tugu Area and Alun-Alun Merdeka shows that the most influential image parameter of the area element is the projection or proximity of the position.

The closeness of the position of the activity types in each quadrant has certain parameters which are considered to be the most important in strengthening the image of regional elements. The similarity of perception is not only in determining important parameters for the image reinforcement, but similarities are also shown in the influential parameters for image reinforcement.

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