



Digitizing of User Activity Settings in Alun-alun Kauman Semarang

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Abstract. The function of the Alun-alun as a public space was originally to accommodate state ceremonial activities and religious rituals. Slowly the function of the Alun-alun also changed according to the times. This diverse function of the Alun-alun also still applies in Alun-alun Kauman and becomes more complex with the addition of other functions due to the dynamics of development that occur. The current function of Alun-alun Kauman is to accommodate three main activities, namely sports activities, recreational activities, and religious ritual activities, which are supported by trading activities. This research aims to find the activity order of Alun-alun Kauman users in the new design. The method used was a quantitative approach. Data collection techniques were conducted through field observations in a full day for one week. The time span of a day was broken down into 2-hour intervals. This is based on the consideration that the average visitor activity time ranges from 1 to 2 hours. Data quantification and analysis are based on observations of visitor activity settings. Digitization is an effort to utilize applications or software used as research aids, by translating quantitative data into graphics. Through the digitization picture, the data of visitor activity order can be seen quickly, easily, and accurately. It was found that the Alun-alun as a public space has a function that is still in demand by local residents to conduct activities.

Keywords: *activity settings; user; Alun-alun Kauman Semarang*

I. Introduction

Alun-alun Kauman Area

The Alun-alun is a city public open space that has specific characteristics because it has a significant influence on the formation of a city. The Alun-alun has a role as a center of orientation, as a landmark or *tetenger kota*, a clear direction (path), and also as the main nodes of a city [1].

The function of the Alun-alun as a public space is to accommodate state ceremonial activities and religious rituals (Gerebeg, Sekaten, Dugderan, Eid prayer, etc.) to show the legitimacy of the ruler to his people, as an economic center (retail and trade), in addition to accommodating general community activities (sports, recreation), and as a green open space [2], [3].

This diverse function of the Alun-alun is also still valid in Alun-alun Kauman and becomes more complex with the addition of other functions due to the dynamics of development that occur. The current design of Alun-alun Kauman does not only accommodate the function of urban public space, but also tries to provide solutions to socio-economic problems. The solution is to provide a place for former Yaik Permai Market traders. Architecturally, this solution is done vertically, by creating a basement to accommodate the traders of Pasar Yaik Permai, and using the basement roof as an open field to accommodate public activities.

Thus, the complexity of the current setting of Alun-alun Kauman, both in terms of the physical setting and the architectural setting of the building.



Figure 1 Alun-alun Kauman Semarang (figure by author)



Figure 2 Horizontal Section of Alun-alun Kauman Semarang (figure by author)

In comparison, Alun-alun Merdeka Malang has a more diverse physical setting but remains the identity of Malang City. Around Malang City Square there are two churches and one mosque, it is unique that the function is also added to the worship building for non-Muslims [4].



Figure 3 Alun-alun Kauman Site (figure by author)

Physical Setting of Alun-alun Kauman

The physical layout of Alun-alun Kauman is specific and unique as indicated by the presence of:

- The rectangular shape of the Alun-alun Kauman.
- Elevation of the peil of the field area which is generally higher than the surrounding area
- A special elevation of the peil of the central field area as high as approximately 1.5 meters in the form of an open field on a concrete deck, which also functions as a roof for the basement floor below.
- Vertical transportation that connects the field on the upper floor with the basement floor in the form of stairs and ramps.

- The field material on the concrete deck is a wide grass plant combined with an air ventilation building for air circulation of the basement space below.
- The pavement material that dominates the north, east, and west areas can be used flexibly for activities and vehicle parking. While the area to the south uses a mixture of pavement material with soft material in the form of plants and trees.
- The basement function is for trading activities for ex-Yaik Permai Market traders and partly for parking lots. While the pavement on the four sides, the edge of the field is used for temporary trading activities and other special activities.

Activity Setting of Alun-alun Kauman

There are three main activities found in Alun-alun Kauman, namely sports activities, recreational activities, and religious ritual activities supported by trade activities.

- Sports activities are generally carried out on the concrete deck that functions as the Alun-alun's field. The types of sports activities that visitors usually do in the Alun-alun include soccer, gymnastics, martial arts, skate boarding, jogging, and volleyball. Activity times generally take place in the morning at 05.30 WIB until 08.30 WIB and at 16.00 WIB until 18.00 WIB in the afternoon.
- Recreational activities are carried out in the Alun-alun and the courtyard surrounding the Alun-alun. All sides of the Alun-alun can be accessed easily and can be used for recreation in the form of sitting, enjoying the nature of the area, discussing, enjoying culinary. The time of recreational activities is most often done at 06.00 WIB until 09.00 WIB in the morning and 16.00 WIB until 22.30 WIB in the afternoon/evening. In comparison, Wonosobo Square has more sports activities than other activities [5].
- Religious ritual activities that take place in Alun-alun Kauman are religious celebrations and holidays such as Eid al-Fitr/ Eid al-Adha prayers, Friday prayers, dugderan rituals, and tablig akbar recitations. The timing of religious activities is tentative according to the schedule of religious celebrations.
- Trading activities are divided into two, namely, relocation trading from Pasar Yaik occupying the basement of Alun-alun which takes place from 08.00 WIB until 17.00 WIB.

2. Methods

The method used was a quantitative approach. Data quantification and analysis are based on observations of visitor activities at the research site in a full day for 1 (one) week.

Visitor activities observed include the type of activity, time of activity, number of visitors, duration (time) of visits, activity patterns, peak activity times, times of no activity and activities that are dominantly carried out by visitors.

Data processing techniques are carried out by structuring the quantitative data in the form of activity time periodization detailed in 2 (two) hour intervals. The consideration of determining the interval every two hours is based on the general observation that the time required by visitors for activities is an average of between 1 (one) to 2 (two) hours.

The period of activity time in a day is detailed from 00.00-02.00, 02-00-04.00, 04.00-06.00, 06.00-08.00, 08.00-10.00, 10.00-12.00, 12.00-14.00, 14.00-16.00, 16.00-18.00, 18.00-20.00, 20.00-22.00, 22.00-24.00.

The digitization technique of the diverse visitor activities is poured in the form of activity order graphics using Excel applications. Through the activity order graphic, visitor activity information can be obtained easily and accurately, because the diversity of complex activity

data can be displayed in just one screenshot. Thus, the digitization of the activity order of the visitors can be obtained easily and accurately. This digitization technique is also summarized through discussions with several experts in the field of architecture separately and explicitly [6]. The digitalization technique used also supports the smart city launched by Semarang City [7]

3. Results and Discussion

The research was conducted for 1 (one) week, namely from August 3 to August 9, 2023, with the target of observation being the order of activities that occur, including the variety of users, the variety of activities, and the time of activity.

The variety of users of the Alun-alun Kauman space in Semarang are city residents and passers-by consisting of all levels of society and age and education groups, which are broadly divided into Alun-alun **visitors** and **traders**.

Visitor activities generally include **recreational activities** (walking, enjoying the scenery, sitting, eating and drinking, discussing, etc.), **sports activities**, and **religious activities**. The variety of **trader activities** is trading using tents, and carts on the edge of the field on a semi-permanent basis and trading permanently in the basement.

From initial observations, it is known that the activities that occur in general are as follows:

- On weekdays, the activities carried out by visitors are generally sports and recreational activities. The time used by visitors for activities is in the morning and afternoon.
- On Fridays, Saturdays, and Sundays there is an increase in recreational and trading activities because there are culinary events that are usually held from 16.00 to 22.30 WIB.
- During the one-week research period, there were no religious ritual activities in Alun-alun Kauman Semarang.
- Trading activities in the basement take place from morning (09.00 am) to afternoon (17.00 pm), while semi-permanent trading activities take place from afternoon to evening.

The results of the quantitative data collection translated in the form of an Activity Order Graphic are as described below:

I. Thursday, August 3, 2023

The activity order on Thursday, August 3, 2023 is dominated by sports and recreational activities which take place at 06.00 WIB to 10.00 WIB in the morning and 16.00 WIB to 22.00 WIB in the afternoon / evening. The peak time of visitation is at 16.00 WIB until 20.00 WIB. Activity patterns, times of inactivity, and the number of visitors can be seen in the quantitative table and digitized in graphical form below:

Table 1 Quantification of Activity Setting August 3, 2023

	00-02	02-04	04-06	06-08	08-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24
SPORTS	0	0	12	62	62	0	0	10	70	36	24	0
RECREATIONAL	0	0	12	72	72	42	53	60	114	66	50	0
TRADING	0	0	12	72	72	42	53	60	114	66	50	0

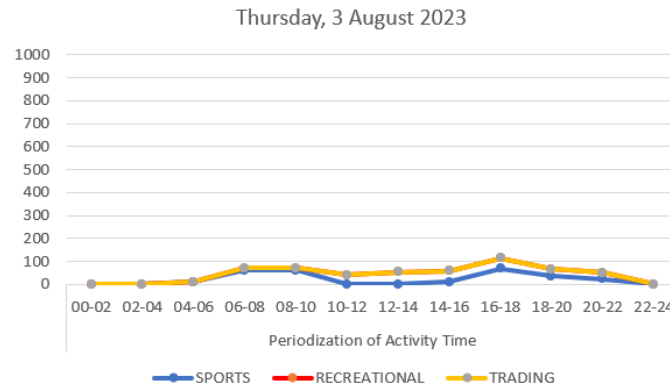


Figure 4 Daily Graphic of Thursday, 3rd August 2023 (figure by author)

2. Friday, August 4, 2023

The activity order on Friday, August 4, 2023 is dominated by recreational activities that take place at 06.00 WIB to 10.00 WIB in the morning and 16.00 WIB to 22.00 WIB in the afternoon / evening. The peak time of visitation is at 16.00 WIB until 20.00 WIB. Activity patterns, times of inactivity, and the number of visitors can be seen in the quantitative table and digitized in graphical form below:

Table 2 Quantification of Activity Setting August 4, 2023

	00-02	02-04	04-06	06-08	08-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24
SPORTS	0	0	12	64	64	0	0	0	52	32	18	0
RECREATIONAL	0	0	12	74	76	50	78	60	492	692	538	16
TRADING	0	0	12	74	76	50	78	60	796	996	842	16

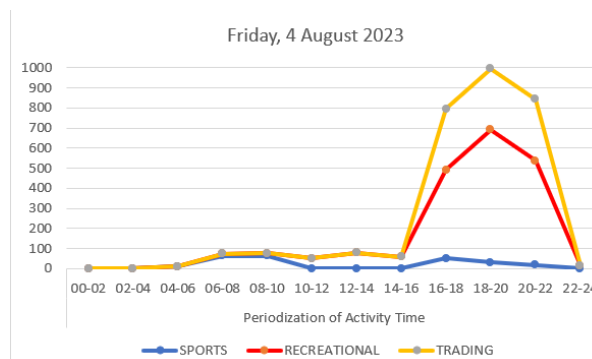


Figure 5 Daily Graphic of Friday, 4th August 2023 (figure by author)

3. Saturday, August 5, 2023

The activity order on Saturday, August 5, 2023 is dominated by recreational activities that take place at 08.00 WIB to 10.00 WIB in the morning and 16.00 WIB to 22.00 WIB in the afternoon / evening. The peak time of visitation is at 16.00 WIB until 20.00 WIB. Activity patterns, times of inactivity, and the number of visitors can be seen in the quantitative table and digitized in graphical form below:

Table 3 Quantification of Activity Setting August 5, 2023

	00-02	02-04	04-06	06-08	08-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24
SPORTS	0	0	15	68	68	0	0	0	65	0	0	0
RECREATIONAL	0	0	15	78	110	63	50	72	375	450	300	0
TRADING	0	0	15	78	110	63	50	72	679	754	604	0

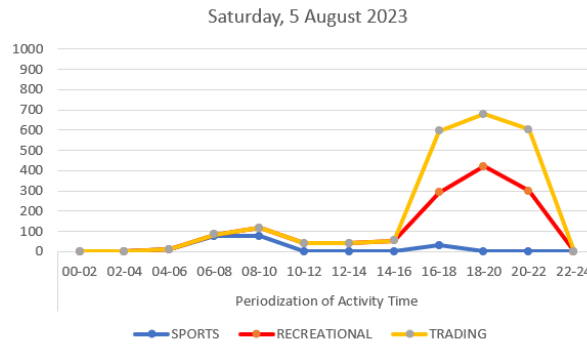


Figure 6 Daily Graphic of Saturday, 5th August 2023 (figure by author)

4. Sunday, August 6, 2023

The activity order on Sunday, August 6, 2023 is dominated by recreational activities that take place at 08.00 WIB to 10.00 WIB in the morning and 16.00 WIB to 22.00 WIB in the afternoon / evening. The peak time of visitation is at 16.00 WIB until 20.00 WIB. Activity patterns, times of inactivity, and the number of visitors can be seen in the quantitative table and digitized in graphical form below:

Table 4 Quantification of Activity Setting August 6, 2023

	00-02	02-04	04-06	06-08	08-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24
SPORTS	0	0	10	76	76	0	0	0	32	0	0	0
RECREATIONAL	0	0	10	84	118	40	40	54	292	420	300	0
TRADING	0	0	10	84	118	40	40	54	596	678	604	0

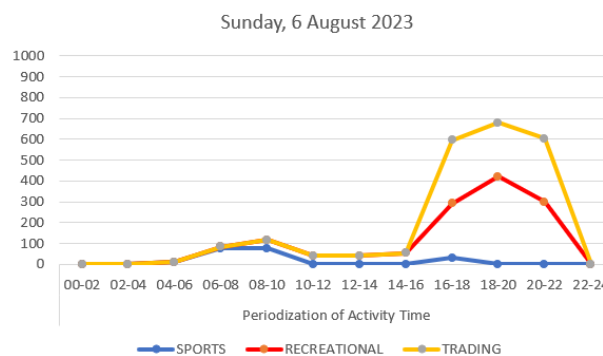


Figure 7 Daily Graphic of Sunday, 6th August 2023 (figure by author)

5. Monday, August 7, 2023

The activity order on Monday, August 7, 2023 is dominated by recreational activities that take place at 06.00 WIB to 10.00 WIB in the morning and 16.00 WIB to 18.00 WIB in

the afternoon / evening. The peak time of visitation is at 16.00 WIB until 18.00 WIB. Activity patterns, times of inactivity, and the number of visitors can be seen in the quantitative table and digitized in graphical form below:

Table 5 Quantification of Activity Setting August 7, 2023

	00-02	02-04	04-06	06-08	08-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24
SPORTS	0	0	8	60	60	0	0	0	60	36	20	0
RECREATIONAL	0	0	16	70	75	40	40	40	102	61	50	0
TRADING	0	0	16	70	75	40	40	40	102	61	50	0

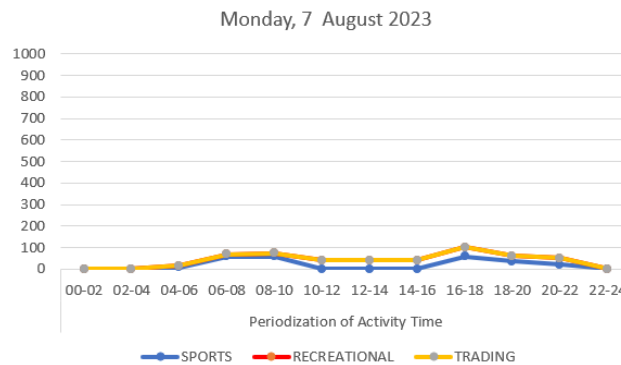


Figure 8 Daily Graphic of Monday, 7th August 2023 (figure by author)

6. Tuesday, August 8, 2023

The activity order on Tuesday, August 8, 2023 is dominated by recreational activities that take place at 06.00 WIB to 10.00 WIB in the morning and 16.00 WIB to 18.00 WIB in the afternoon / evening. The peak time of visitation is at 16.00 WIB until 18.00 WIB. Activity patterns, times of inactivity, and the number of visitors can be seen in the quantitative table and digitized in graphical form below:

Table 6 Quantification of Activity Setting August 8, 2023

	00-02	02-04	04-06	06-08	08-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24
SPORTS	0	0	12	62	62	0	0	0	68	30	30	0
RECREATIONAL	0	0	12	62	77	40	50	50	93	50	50	0
TRADING	0	0	12	62	77	40	50	50	93	50	50	0

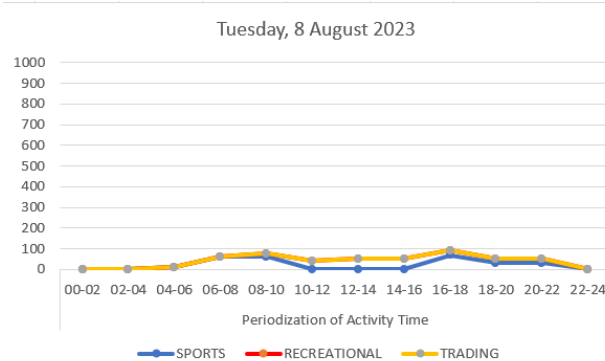


Figure 9 Daily Graphic of Monday, 8th August 2023 (figure by author)

7. Wednesday, August 9, 2023

The activity order on Wednesday, August 9, 2023 is dominated by recreational and sports activities that take place at 06.00 WIB to 10.00 WIB in the morning and 16.00 WIB to 22.00 WIB in the afternoon / evening. The peak time of visitation is at 16.00 WIB to 18.00 WIB. Activity patterns, times of inactivity, and the number of visitors can be seen in the quantitative table and digitized in graphical form below:

Table 7 Quantification of Activity Setting August 9, 2023

	00-02	02-04	04-06	06-08	08-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24
SPORTS	0	0	12	68	68	0	0	0	65	30	30	0
RECREATIONAL	0	0	12	78	23	50	50	50	95	30	55	0
TRADING	0	0	12	78	23	50	50	50	95	30	55	0

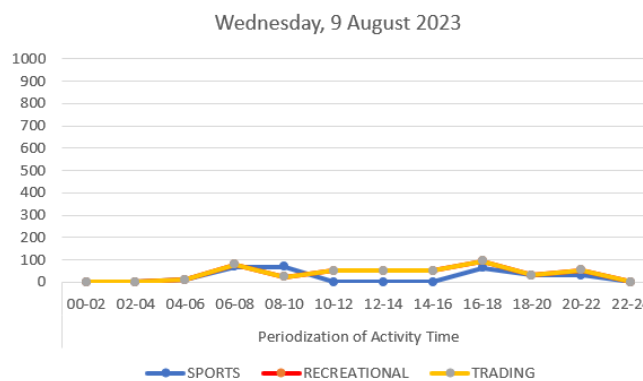


Figure 10 Daily Graphic of Tuesday, 9th August 2023 (figure by author)

4. Conclusions

From the graphical representation of the activity order in Alun-alun Kauman Semarang, the types, numbers, dominant activities, peak times, off-peak times, duration of visits and patterns or trends of activity each day can be clearly seen. If the graphical activity order for each day is compared for a week, the phenomenon can also be seen:

1. On weekdays (Monday, Tuesday, Wednesday and Thursday), visits to the Alun-alun have almost the same intensity and pattern of activity.
2. There is also a similar pattern and intensity of activity on holidays (Friday, Saturday, and Sunday), where there is a very significant increase in activity, due to the culinary events that are routinely held on weekends.
3. Peak activity occurred on Saturday, August 5, 2023 with a relatively longer duration of visit time at 16.00 WIB until 22.00 WIB.
4. The least activity occurs on Tuesday, August 8, 2023, in the form of sports and recreational activities.

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