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Submission date: 25-Oct-2020 08:40PM (UTC+0700)

Submission ID: 1425740165

File name: 031_Radiaswari_S.docx (440.5K)

Word count: 4283

Character count: 22319

Spatial Utilization for Public Activities On The Boundary of Railway line at Mejing and Sedayu, Special of Yogyakarta

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Abstract. *Abstract Street and railways crossing is considered as area prone to accidents, specially crossing area without safety barrier. However, this vacant space attract more visitors from surrounding residential area. On certain hours of the day people use this space to interact, socialize, play and spend they pastime while train watching from the rail edge. Street vendors also contribute to the crowding of the area.*

Utilization of space in surrounding street-railways crossing as public space is caused by the lack of urban public space around residential area, in neighborhood scale as well as in district to town scale. This phenomenon, creates organic and spontaneous urban public space. Observing the Mejing and Sedayu crossing, we might see the vibrant activities creates by local community. Using the vacant and spacious space as playground, social space, culinary space, or just passing time doing train watching are some example of vacant public space utilization.

1. Introduction

Background Issues

The crossing between the railway and the highway, in the world of railways is referred to as the crossing of a piece. A field crossing is an area that should be free of public activity. Where the crossing area of a plot is a rail border area. But in the reality of the field, the rail border is used for public activities. Among others, at Mejing Crossing, Gamping, Sleman Regency and Sedayu Land Crossing, Sedayu, Bantul Regency.

Crossing of Sebidang Mejing and Sedayu, at certain times especially in the afternoon used by the community for blessing. Activities performed, such as; sit around looking at the train and chatting, the children play (take the odong-odong or mini train), and not a few bring the children to just play or see the passing train while feed them. In addition, the area is also functioned as a place to enjoy the culinary of street vendors. Various types of food are peddled, ranging from meatballs, siomay, satay, angkringan and others

Activities conducted by the community, usually held in the afternoon, starting at 03.00 PM to 07.00 PM. While the perpetrators of the activities are children to parents. One of the highlights, is the train.



Figure 1 of Space on the Rail Edge in Mejing



Figure 2 of Space on the Rail Edge in Sedayu

Based on the description of activities in the two locations, it can be concluded that public open space is one of the facilities that the community desperately needs. Public open spaces are a place to interact, socialize and also a recreation place. In addition, public open space also has a role in improving the economy. But the problem is the lack of safe and comfortable public open space. The limited availability of open space, makes the community create its own space to interact, socialize as well as recreation places. One example is the activity that occurs in the border area of the crossing rail.

The phenomenon of the on-the-go public activity at the border crossing, the research entitled **Pattern of Utilization of Space for Public Activities on the Border of The Railway at the Crossing of a Section of The Railway/ Mejing and Sedayu Roads.**

Problem Identification

The identification of the problem in this study is the absence of the availability of safe and comfortable public spaces to meet the recreational needs of the local community.

Problem Restrictions

1. The research site was conducted at the rail border at the crossing of a railway/road in Mejing and Sedayu.

The scope of discussion is: various types of activities played by the community at the rail border, the point of location / utilization room selected, and the background of the perpetrator of the activity.

Research Formulation

The formulation of the problem in this study is: How is the Pattern of Utilization of Public Open Space on the Rail Border per Railway/ Road in Mejing and Sedayu formed?

Research Objectives

The objectives of this research are as follows:

1. Found a pattern of utilization of public open space on the rail line at the railway/road in Mejing and Sedayu.
2. Make recommendations based on this research so that it can be used as a reference for the development of public open spaces.

Benefits of Research

The benefits of this research are:

1. Knowing the effectiveness of the rail border as a public open space.
2. Provide recommendations for utilizing rail borders as safe, comfortable and recreative public open spaces.

LIBRARY REVIEW AND THEORETICAL FOUNDATIONS

Library Review

Research conducted by several studies related to the utilization of space and activities in public open spaces, among others; research conducted by Haryati (2008), the research site in Pancasila Field Area, found that there are patterns of activity that can be typified into political activities, mass worship, sports, and recreation. While from the results of research conducted by Batubara (1991) it was found that the border area of binjai-besitang railway parallel to T.A. Hamzah road *became lost space* since August 2003, and subsequently the inactive line was used illegally by the community as a function of housing and shops.. From Mahendra's research, et.all. (2014) it was found that the utilization of open space in Alun-Alun Batu was uneven. Utilization of space with high intensity of activity, *there is in smoking area*, fountain area A, fountain area B and *playground*.. While the space with a low intensity of activity, it is located in fountain area D and fountain area E.

Based on the library study of the three studies above there are differences in the results of open space utilization patterns utilized by the community. In previous research, the research site strongly determines the pattern of utilization of open space, because the activity of space users has its own influence

Theoretical Foundations

The understanding of space utilization under Law no. 26 of 2007 is an attempt to realize the structure of space and space pattern in accordance with the spatial plan through the preparation and implementation of the program and its financing (article 1 paragraph 14). Effendi, et.all, (2017) states, that d nature of any human activity, especially those in urban areas is usually inseparable from the utilization of space as is the case in the use of public open spaces. While Mahendra et.all (2014), suggested; pola public open space utilization activities have several factors that affect the activity space, the perpetrator of the activity and the time of the activity.

³ Based on The Minister of Public Works Regulation No. 05/PRT/M/2008, it says that the railway boundary line is a Green Open Space or RTH, whose border has the main function of limiting the interaction between community activities and railways. The width of the railway boundary line on the straight railway is more than 11 m of plants and more than 20 m from the building. And for the railway turn / arch i.e. the deep arch is more than 23 m from the plant and more than 23 m from the building as well as the width of the border on the arch in more than 11m of plants and more than 11 m of the building.

² A public open space is a public place where people perform routine and functional activities that bind a community, both the normal routine of daily life and in periodic celebrations (Carr, 1992). Public open space is a place of interaction between people in a space. Open space is also a shared space where the public can do a variety of activities and is free of charge to enter the area (Carr, 1992). There are several factors to be aware of in an effort to optimize the use of public open spaces (Carr, 1992) namely:

2. *Use of space*, where different spaces host different functions and activities.
3. *Space form and context*, defined as the physical character of the space. The shape of the space can be characterized by the presence of physical borders as well as interesting objects or focal *points*.

RESEARCH METHODS

Research Approach

Based on the characteristics of the research objectives to be achieved, this research uses a qualitative approach. By using qualitative methods, the data obtained will be more complete, in-depth, and trustworthy. Metode, there will be data that is norm, value, response, habit, mental attitude, and culture embraced by a person or group of people.

T₁ characteristics of qualitative research according to Bogdan and Biklen (1982:27), are as follows:

1. *Qualitative research has the natural setting as the direct source of data dan research is the key instrument.*
2. *Qualitative research is descriptive. The data collected is in the form of words of pictures rather than number.*
3. *Qualitative research are concerned with process rather than simply with outcomes or products.*
4. *Qualitative research tend to analyze their data inductively.*
5. *"Meaning" is of essential to the qualitative approach.*

Research Framework Scheme

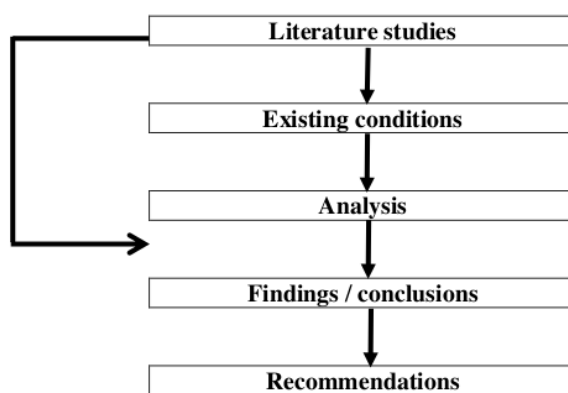


Figure 3 Research Framework Scheme

Research Sites

The research site was conducted at two crossing sites of Mejing Railway/Road and Sedayu, Special Region of Yogyakarta.

Data Collection Techniques

Data collection techniques to be used in research using qualitative methods *with purposive sampling* and prioritizing *perspective emic*, which means to care about the respondent's view, which is how they view and interpret the world and from their point of view

Data Analysis Techniques

At the analysis stage, the identified data is presented in the form of matrixs data (in the form of spatial schematics). It is intended to facilitate reading, understanding and intepretation (qualitative). The data on the table is then analyzed based on visual perception theory, which is divided into 2 types of interpretation. The *first type*, the interpretation process is directed to get a tendency towards a research variable in a location, and the second *type*, the interpretation process is directed to obtain a tendency towards several research variables in one location.

Here is the research matrix as a reference for the implementation of observation, wawancaea and behavior mapping in the research area:

Table 1 Matrik Research

Theory	Variable	Parameter	Indicator	
Use of Space	ACTOR (Perpetrator)	Perpetrators of Activities	Goal	
		Activities	Usia Type Intensity	
	TIME (Waktu)	Weekdays	Morning (6.00 - 10.00) Afternoon (15.00 - 19.00)	
		Holiday	Morning (6.00 - 10.00) Afternoon (15.00 - 19.00)	
	Space Form	PLACE (Venue)	Spaces	Types / Functions of Space Relationship
			Space Forming Components	Type Size Layout Relationship

RESULTS AND DISCUSSIONS

Visitor Characteristics

Based on surveys conducted by researchers on the activities and patterns of space use for public activities on the rail border, it is known as follows;

a. Visitor Characteristics by Gender

Visitors by gender, of the 64% are male and the remaining 36% are female. Details of visitors by age can be viewed from the flowchart below:

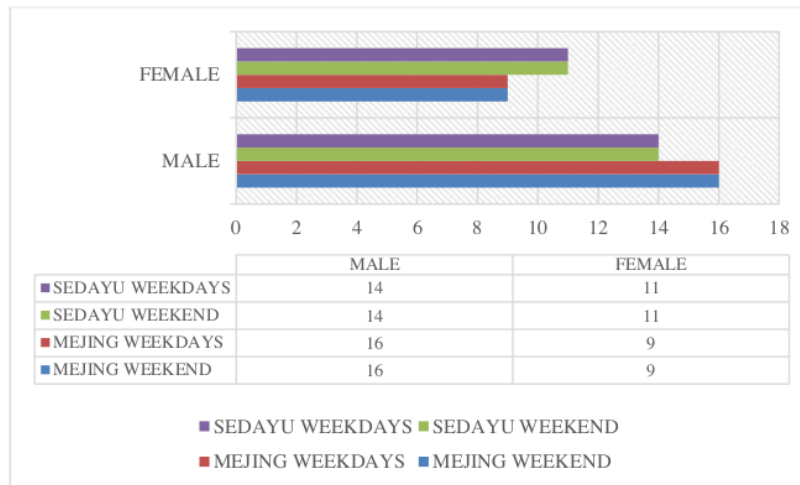


Figure 4 of Visitors by Gender

b. Visitor Characteristics By Age

Visitors crossing a section of Mejing and Sedayu railways, dominated by 17-20 year olds by 35%, then ages 21-30 (25%), followed by 31-40 years old (22%) and ages 41-50 know (15%), while visitors over the age of 50 are last in line with percentage (3%).

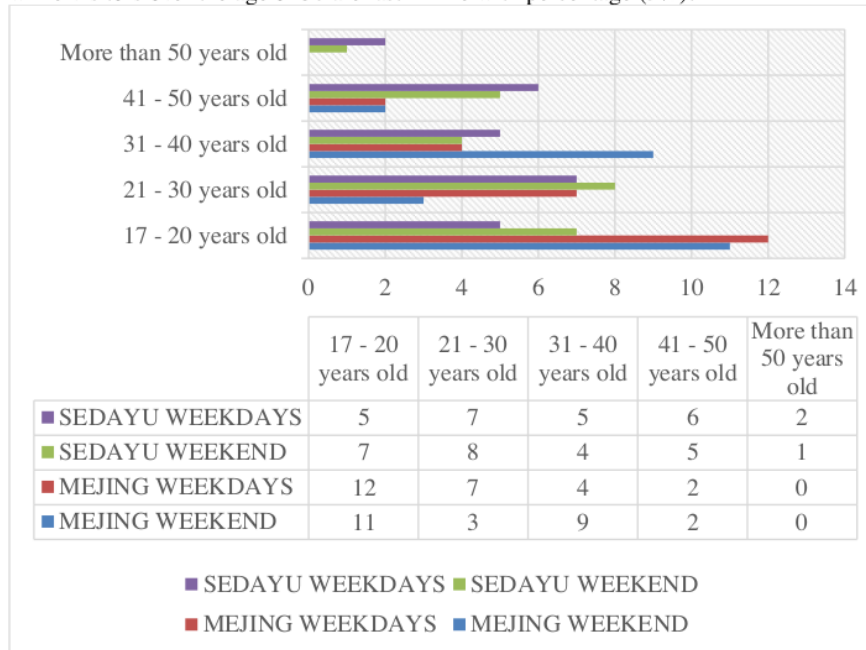


Figure 5 of Visitors By Age

c. Visitor Characteristics by Livelihood

Students are the most likely to cross a railway/road in Mejing and Sedayu, with a percentage of 35%, as traders (19%), employees (14%), housewives (13%), entrepreneurs (4%), pesiunan (1%). While others reached (14%) it consists of various professions, such as; teachers, farmers and laborers.

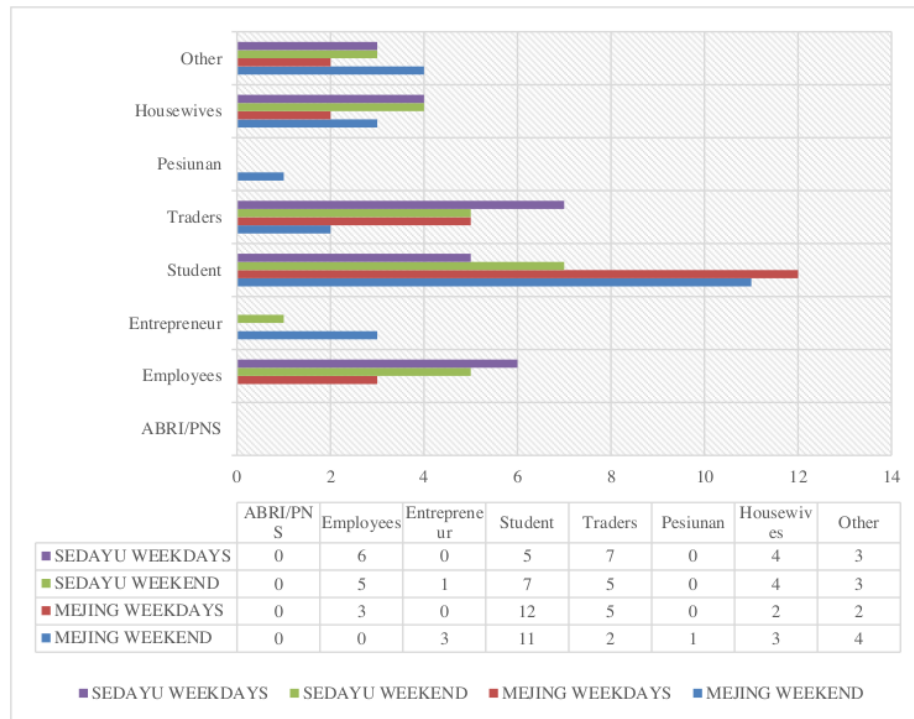


Figure 6 of Visitors By Livelihood

d. Destination Visitors To The Location

Based on the results of the interview there are several destinations from visitors crossing a section of mejing and sedayu railways, among others; watch trains pass by, promise with friends, accompany son or daughter, sell, buy snacks/food or culinary and recreation.

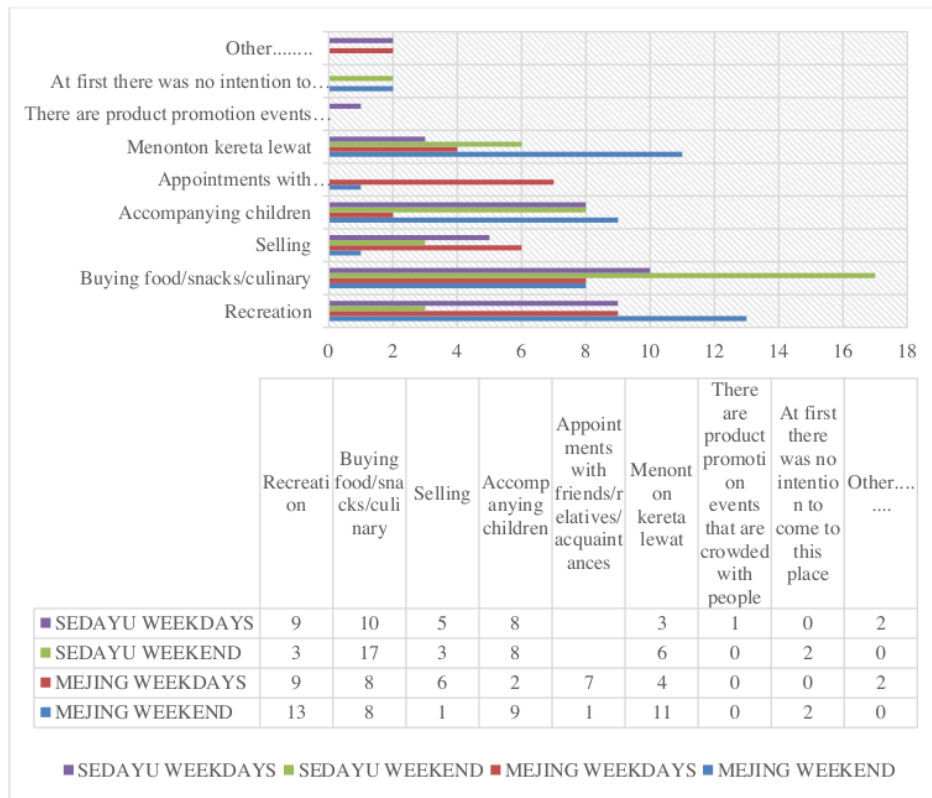
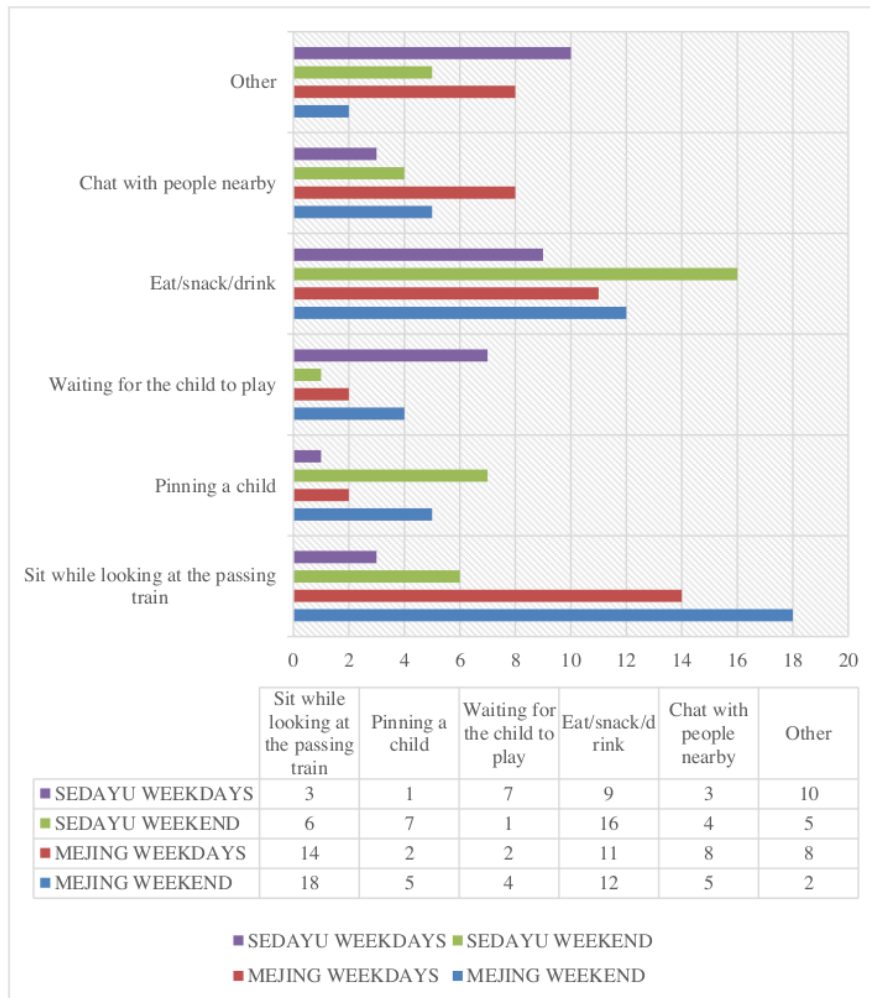


Figure 7 Destinations To Come To The Location

e. The Activities Visitors

The percentage of activities that most visitors do at the crossing of a section of mejing and sedayu railway line is Makan/jajan/minum (29%), sitting while looking at the passing train (25%), chatting with people or friends (12%), feeding the child and waiting for the child to play (9%). While the remaining 15% of other activities, among others; sell, walk around, sit back and take photos of the train.



Gambar 8 Kegiatan yang Dilakukan Pengunjung

- f. ² Location of Activities
- Based on the results of the interview conducted, the place of visitors to the event is as follows; on the edge of the rail, radius ≥ 1 meter (30%), stalls around the tracks (26%), rail edges, radius ≤ 2 meters (18%), sitting on the tracks (if no trains pass) (17%) and others (9%). Other areas, among others; rail edge, radius 3-10 meters.

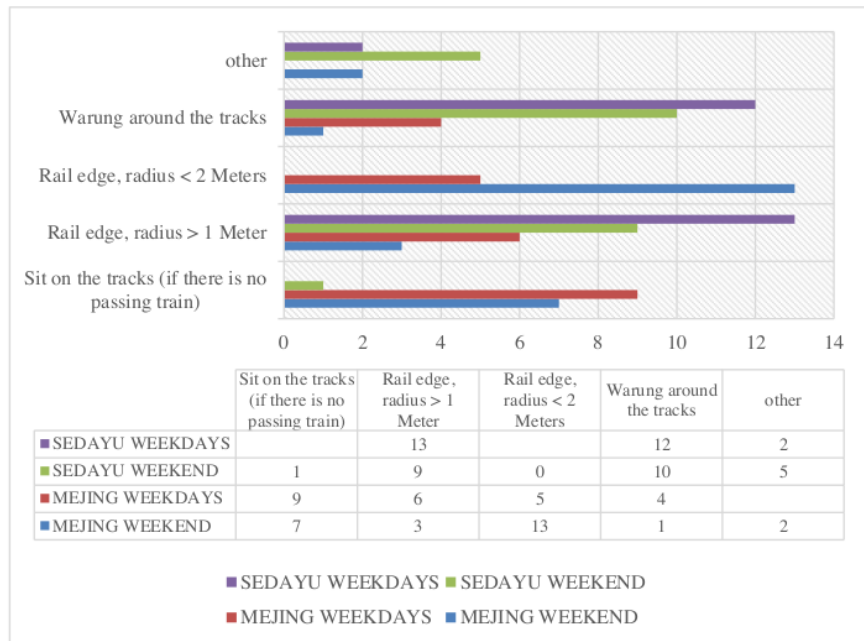


Figure 9 of Activity

g. Frequency of Visits

The most number of visitors to the location is once a week (27%), once a month (21%), daily (17%), twice a week (11%). Others reached (24%), with the frequency of visits uncertain, sometimes, rare and new first time.

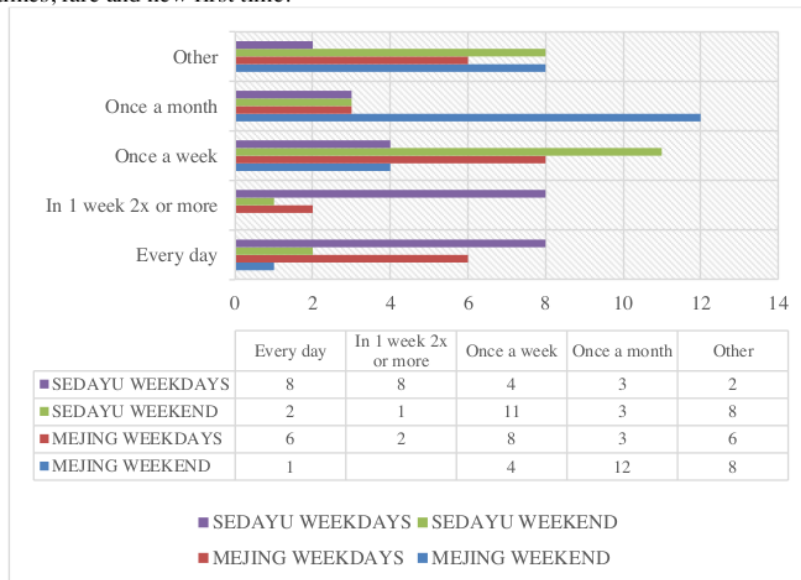


Figure 10 Frequency

h. Visit Time

During the visit to the crossing of the mejing and sedayu railways, the most common is on weekends, reaching (40%). Those who visit on weekdays (27%) and who visit daily (21%). And when viewed from visiting hours, the afternoon (03.00 – 08.00 PM), becomes the most visiting hours, which is reaching (84%). While the morning is visited (9%), while others (7%)

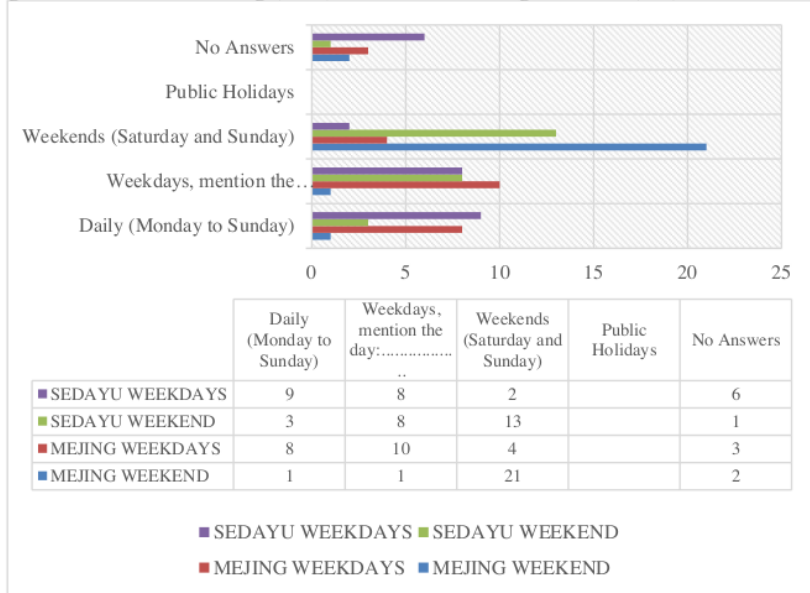


Figure 11 time (Day)

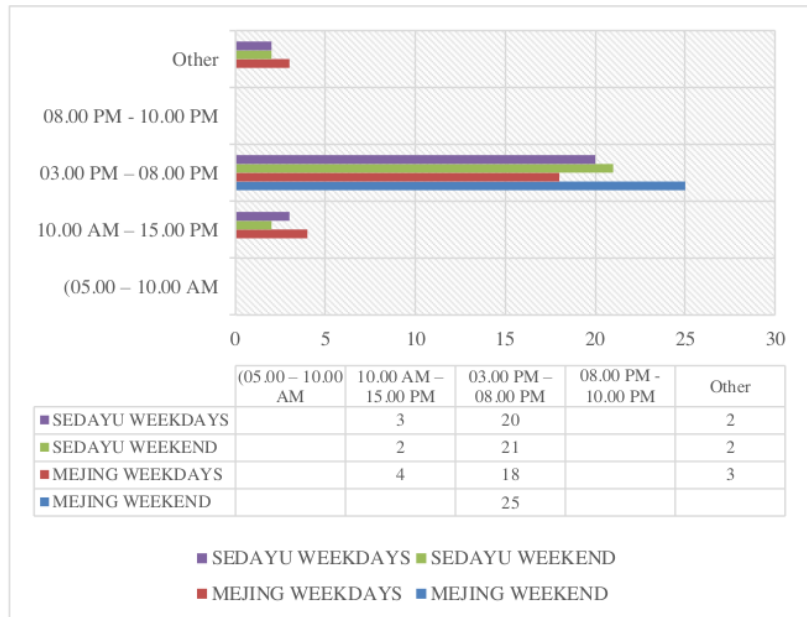


Figure 12 Visit time (Hours)

Space Utilization Pattern



Based on the survey results at two crossings of the mejing and sedayu railways, it has the same pattern of space use. The space used is on the edge of the railway and is the crossing area of a railway/road. The time of the study was distinguished *on weekdays and weekends*, with the morning time span (05.00 – 10.00 AM); daytime (10.00 AM– 03.00 PM); afternoon (03.00 – 08.00 PM) and evening (08.00 – 10.00 PM).

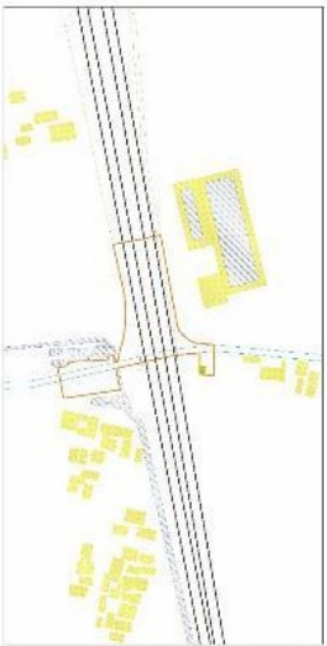

Activity Patterns By Time

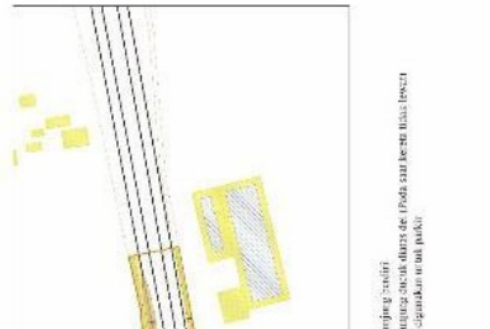
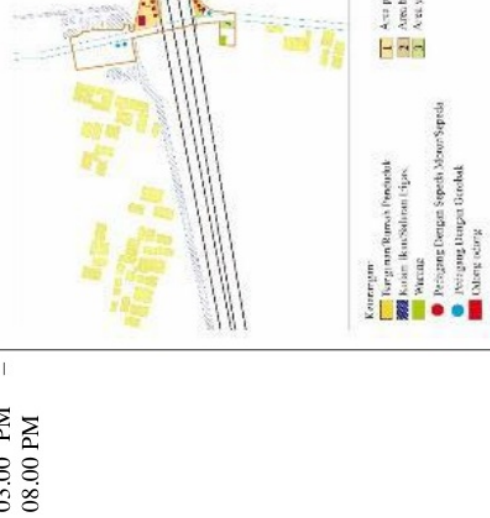
Weekday Utilization Pattern


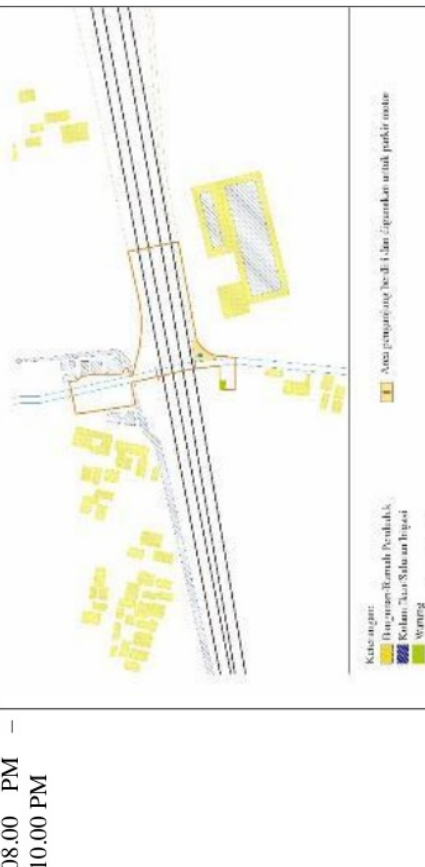
Based on observations in the field, visitors at the crossing of a section of mejing and sedayu railways in general found similarities. Visitors arrive after 03.00 PM. In the morning to noon, there tend to be no visitors. And at night after 08.00 PM there are also no visitors and activities.

Table 2 Time-Based Activity Patterns (Weekdays)

Time	Mejing Weekdays	Sedayu Weekdays
05.00 AM – 10.00 AM	 <p>Keterangan: Dungur, Kambi, Perilaku, Kali, Alu, Sidi, an, Tegal Wring Podipreg, Dogram, Gedobek Area yang sering terjadi transaksi untuk parkir motor</p>	 <p>Keterangan: Kecamatan, Regulasi, Pasar, Perilaku, Pasar, Wring, Perilaku, Wring Area yang digunakan untuk parkir</p>
	<p>In the morning, there is only one trader (satay trader), and the activity of visitors who come tends to only make trade transactions. And there is no relaxing/refreshing activity. And the activity, only lasts approximately until 10.00 AM. And only one point of location is used</p>	<p>In the time range from 05.00 – 10.00 AM there has not been any activity</p>

Time	Mejing Weekdays	Sedayu Weekdays
10.00 AM – 03.00 PM	 <p>Keterangan: - Zonasi Kawasan Perumahan - Jalan dan Saluran Irigasi - Waduk - Perumahan Daging Cebok</p> <p>- Area pengalihan sepi (dilarang melakukan parkir motor)</p>	 <p>Keterangan: - Zonasi Kawasan Perumahan - Jalan Pedestrian - Waduk - Area zonisasi kawasan parkir pejalan kaki</p>
	<p>In the time range from 10.00 AM – 03.00 PM there has been no activity</p>	<p>Activities begin, after 10:00 AM. This activity takes place in permanent stalls (rows of Kabita meatballs). And visitors come to enjoy the culinary, directly there is no activity related to the edge of the rails. And only one location point is used.</p>

Time	Mejing Weekdays	Sedayu Weekdays
03.00 PM – 08.00 PM	 <p> Keterangan: Tempat main Rumah Peternakan Jalan Bunchelahan Ekap Perumahan Persegi panjang seperti Momen Sepeda Persegi panjang Gendak Odong-odong Area pengujian sendiri Area bangunan toko dalam dan tidak ada keran busa buset Area yang digunakan untuk parkir </p>	 <p> Keterangan: Tempat main Rumah Peternakan Jalan Bunchelahan Ekap Perumahan Persegi panjang seperti Momen Sepeda Persegi panjang Gendak Odong-odong Area pengujian sendiri Area bangunan toko dalam dan tidak ada keran busa buset Area yang digunakan untuk parkir Area tempat parkir Area tempat parkir Area tempat parkir </p>
	<p>There is an increase in activity points in the afternoon. The activity starts at 15.00 WIB, and experiences peak activity at 04.00 – 17.30 PM. Activities that are done standing, sitting (on the rails or around the tracks), chatting, watching the train, enjoying the food and for the children to play (ride odong-odong or run around in the airy area)</p>	<p>Similarly, the activity that occurred at the crossing of a section of Mejing railway/ road, at the crossing of a section of Sedayu railway/ road also experienced an increase in activity and started at 03.00 PM, and experienced peak activity at 04.00 – 05.30 PM. Activities that are done standing, sitting (on the rails or around the tracks), chatting, watching the train, enjoying the food and for the children to play (ride odong-odong or run around in the airy area)</p>

Time	Mejing Weekdays	Sedayu Weekdays
08.00 PM – 10.00 PM		
	<p data-bbox="349 441 722 934">At night (08.00 PM) there is no activity at all. This is possible because it is not a lighting facility.</p>	<p data-bbox="349 945 722 1806">At night (08.00 PM) there is no activity at all. This is possible because it is not a lighting facility.</p>

Weekend Utilization Pattern

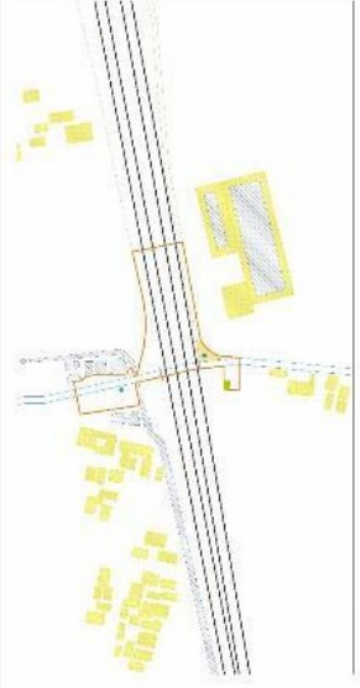

From observation on holidays (Saturdays and Sundays), visitors come more than on weekdays.

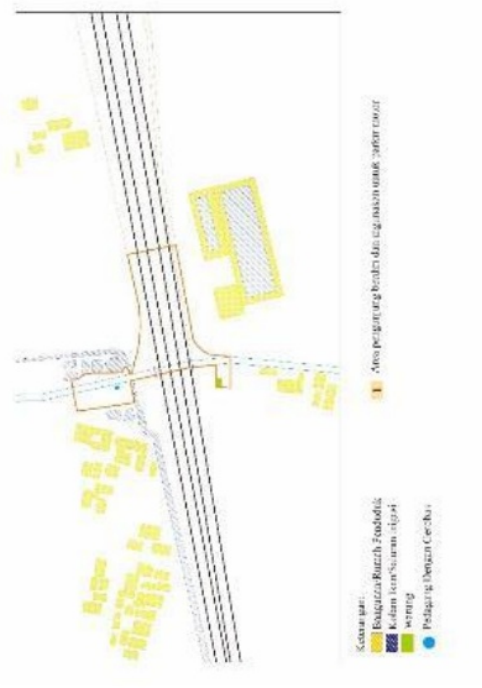

Thus affecting the diversity and dissemination of activities that occur. The utilization of space in Mejing and Sedayu by visitors alike, consists of standing, sitting, playing, drinking, feeding children and watching the child play. The activity of playing consists of playing using tools, namely riding odong-odong and playing activities without using tools, namely children running around.

The most common activity is standing and sitting. Standing activities are done a lot because visitors are moving places or standing still in place because they do not get a seat. Standing activities are often carried out in the circulation line.

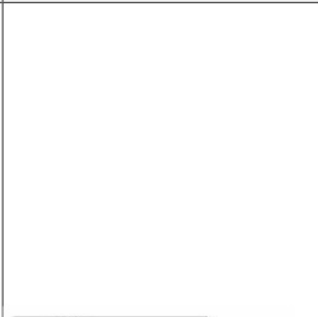
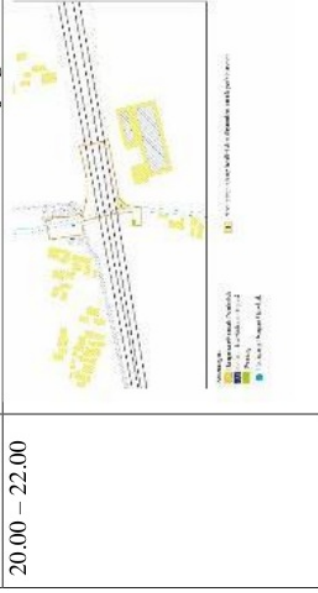
The activities that visitors experience and their association with the pattern of space use can be seen from the table below;

Tabel 3 Pola Aktivitas Berdasarkan Waktu (Akhir Pekan / Weekend)

Time	Mejing Weekend	Sedayu Weekend
05.00 AM – 10.00 AM	 <p>Kawasan:</p> <ul style="list-style-type: none"> Dusun Karang Putih Kediri Kediri-Sida-an Wanig Pudjigeg Dogram Geduk <p>Arahan yang lebih sering digunakan untuk parkir motor</p>	 <p>Kawasan:</p> <ul style="list-style-type: none"> Bongoran-Surrah Pembalok Pawajo-Palintan Wanig Arahan yang digunakan untuk parkir
	<p>In the morning, there is only one trader (satay trader), and the activity of visitors who come tends to only make trade transactions. And there is no relaxing/refreshing activity. And the activity, only lasts approximately until 10.00 AM. And only one point of location is used</p>	<p>In the time range from 05.00 AM – 10.00 AM there has not been any activity</p>

Time	Mejing Weekend	Sedayu Weekend
10.00 – 15.00	 <p>Keterangan: Esoguzza Buzhizh Foodstall Kotam San'Suwan' al'gha waring Pedagang Degan' Ce'zhu</p> <p>1 Area pengatur g'beutir dan' ag'asahan untuk' z'ar'at' cover</p>	 <p>Keterangan: Hutanman' (Bumuk' De'ak'abuk Pw' 'aga' P'oh'it'at'at'at' waring Area yang' dij'aman'kan' untuk' parkir</p>
	In the time span of 10.00 – 15.00 WIB there has not been any activity	The activity starts , after 10.00 AM. This activity takes place in permanent stalls (rows of Kabita meatballs). And visitors come to enjoy the culinary, directly there is no activity related to the edge of the rails. And only one location point is used.

Time 15.00 – 20.00	Mejing Weekend	Sedayu Weekend
	<p>There is an increase in activity points in the afternoon. The activity starts at 03.00 PM, and experiences peak activity at 04.00–05.30 PM. Activities that are done standing, sitting (on the rails or around the tracks), chatting, watching the train, enjoying the food and for the children to play (ride odong-odong or run around in the airy area) Space utilization patterns vary greatly, with space utilization patterns scattered along the rail edges.</p>	<p>Similarly, the activity that occurs at the crossing of a mejing railway/ road, at the crossing of a piece of Sedayu railway/road also experienced an increase in activity and started at 03.00 PM, and experienced peak activity at 04.00 - 05.30 PM. Activities that are done standing, sitting (on the rails or around the tracks), chatting, watching the train, enjoying the food and for the children to play (ride odong-odong or run around in the airy area) Space utilization patterns vary greatly, with space utilization patterns scattered along the rail edges.</p>

Time	Mejing Weekend	Sedayu Weekend
20.00 – 22.00		
	<p>At night (08.00 PM) there is no activity at all. This is possible because there is no lighting facility.</p>	<p>At night (08.00 PM) there is no activity at all. This is possible because it is not a lighting facility.</p>

4. The *Effect of Physical Settings on Activity Patterns*

The crossing of a piece of mejing and sedayu railway line, when viewed from the function of open space, does not yet have *street furniture facilities*. Space tends to be, as an open space utilized for recreational and culinary activities.

The activities that occur at the crossing of railways / railways / roads in Mejing and Sedayu, influenced by the arrival of traders and child games loan services in the area, railways as seating locations and irregular motor vehicle parking areas.



13 That Influence Regional Fission Settings

Source: Survey 2019/2020

Discussion

From the results of the study, some of the things that are the subject of discussion are;

Perpetrators and activities

1. The purpose of visitors to come is to recreation, play, culinary, interact
2. Judging by age, visitors are the age of children until productive adulthood.
3. Judging by the education pole very various from children until undergraduate education level

The use of space for public activities is accessible to all walks of life. without any requirements and discrimination, to engage in it freely without disturbing other users. Visitors can also feel temporary ownership even though it can be used illegally.

The time that visitors use is in the afternoon. Locations that are not public spaces, making the activity dependent on the lighting of the sun.

Space Forming Components

The forming component of the space for public activity is the activity that visitors are engaged in. Spontaneously formed space as a result of the activity inflicted. Some of these activities are very dangerous for visitors, due to the use of rail/railways.

Based on observations in the field, there are several *types of* users, namely;

1. Type One, users or visitors sit down, chat while enjoying culinary on the tracks
2. Type Two, users or users or visitors sit, chatting while enjoying culinary on the edge of the distance rail \geq 1 meter
3. Type Three, users or users or visitors sit, chatting while enjoying culinary on the edge of the rails distance $<$ 3 meters
4. Type Four, users or users or visitors sit, chatting while enjoying food on a motorcycle, on the edge of the rails

As for traders and service providers borrowing game tools, it is identified as follows;

1. Traders based on their place of sale, among others; merchants with permanent stalls/ stalls, merchants with non-permanent stalls/ stalls, traders using bicycles and motor vehicles.
2. Merchants based on their merchandise, among others; beverage merchants, snack vendors (cilok, sostel, martabak, toast etc), heavy food vendors (meatballs, satay, angkringan etc)
3. The provider of the loan of game equipment, usually in the form of odong-odong, prosotan from plastic.

The space formed tends to still be organically spontaneous, although every day the position remains. This is because there is no maximum setup and the use of space can be said to be the use of space without permission.

Conclusion

When viewed from the function of space, the **3** area is a rail boundary line. The rail boundary line is based on the Minister of Public Works Regulation (05/PRT/M/2008), is Green Open Space area that serves to limit the interaction between community activities and **railways**. According to the Ministerial Regulation, the width of the railway boundary line on the straight railway is more than 11 m of plants and more than 20 m from the building. But the fact in the field, the area is used by the community to engage and interact.

From the results of the study, there can be a change of territory, where the area that should be a restricted area and cannot be functioned to be a public area with a wide range of activities. Based on the pattern of activities carried out by visitors, carried out along the rails and rail edges.

The use of space for public activities, patternedly seen along the railways/railways as well as the railway banks. This is very dangerous for the safety of the user.

The use of space as a public activity is due to the lack of comfortable and safe public spaces.

Recommendations

For Local/Central Government and Related Agencies

- Based on Permen PU 12-2009 related to the provision of Green Open Space facilities on the Rukun Tetangga scale for the population of 250 there must be at least 250 m² of land that serves as Green Open Space facilities with a radius of 300m from the residents' homes, then the government must facilitate Green Open Space facilities in every Rukun Warga.
- Identification by the relevant party or PT. kai to record the crossing of any railway/road used for blessing by residents and PT. KAI needs to synergize with the relevant Agencies to rearrange the crossing area of a piece of railway/road, so that it can be used safely by the community.

For Researcher

- This research is the first step in identifying changes in space and territory and looking at patterns of activity that occur, so that it can be used as material for the design foundation of the utilization of space for public activities.

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