

Parking Space Demand Study for Dondo Market, Tojo Una-Una District

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Abstract:- The current parking space at Dondo Market is not effective because it still uses the road shoulder and is not well organised. When the market is busy, the parking area is full of two- and four-wheeled vehicles, spilling over onto the road, causing congestion and disturbing road users. Therefore, an analysis is needed to determine the ideal parking space requirements. The purpose of this study is to provide recommendations for parking space requirements and design its layout, as well as analyse traffic performance on Jl. Tj. Keramat before and after the parking facility. The results show that the market manager should provide potential land for off street parking. There is vacant land to the right and left of the market with a total area of 6,985 m² which exceeds the current parking demand. If needed, there is still vacant land owned by the community around the market that can be developed as an additional parking area.

Keywords:- Parking Space Demand, Dondo Traditional Market, and Traffic Performance.

I. INTRODUCTION

Parking is one of the instruments of transport management that affects the effectiveness and efficiency of transport. The condition of the parking system that is not optimal can provide significant disruption to the traffic system, one of the problems of the parking system that is not optimal is that it can cause congestion on movement mobility. In Tojo Una-Una Regency, there is a traditional market that has never been quiet from the activities of sellers and buyers, namely the Dondo Market which is located on Jalan Tanjung Keramat, Dondo Village, Ratolino District. Based on field observations, the parking space in the market has not functioned effectively and efficiently because the parking area has been used as a selling place. Meanwhile, parking in the market uses the road shoulder and is not well organised, so in terms of safety and comfort the parking lot has not been fulfilled,

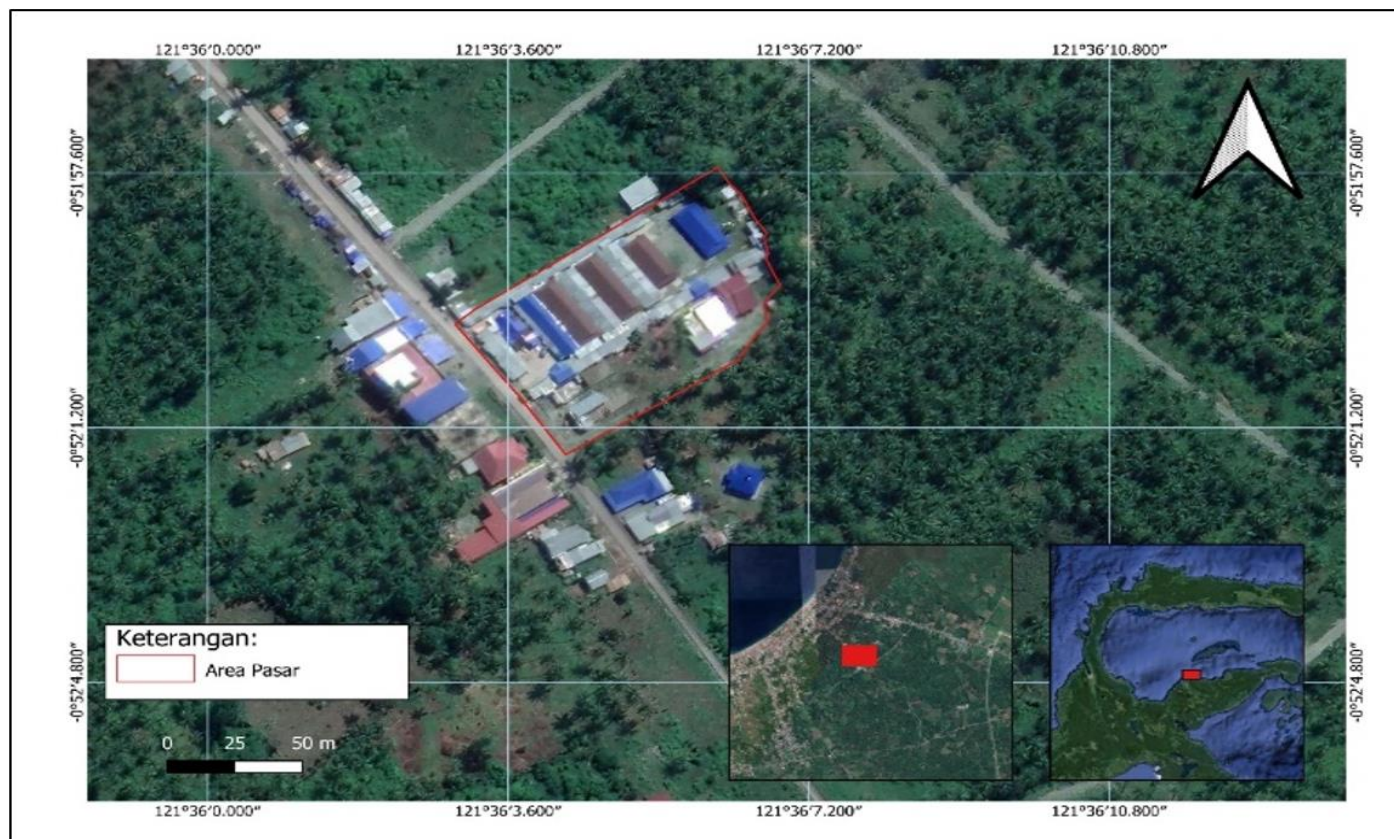


Fig 1 Research Location

The objectives of this study are: To provide recommendations related to the plan for parking space requirements at Dondo Market in accordance with conditions in the field which are equipped with a parking space layout design; to determine the traffic performance on Jl. Tj. Keramat for the existence of Dondo Market; to determine the traffic performance on Jl. Tj. Keramat before and after there is parking.

II. LITERATURE REVIEW

➤ Overview of Parking

Parking is the temporary immobility of a vehicle when it is abandoned by its driver. Parking is legally prohibited. Every motorist has a tendency to look for a place to park his vehicle as close as possible to the place of activity or activity. So that the place where an activity occurs, for example, such as a tourism area, a parking area is needed. The construction of a number of buildings or places of public activity often does not provide sufficient parking areas, resulting in the use of part of the road width for vehicle parking (Warpani, 2004).

Parking is a state of immobility of a vehicle that is not temporary. Included in the definition of parking is any vehicle that stops at certain places whether stated by signs or not, and not solely to raise and or lower goods and or people (Abubakar, 1998). According to Hobbs (1995), parking is defined as an activity to place or store a vehicle in a certain place whose duration depends on the completion of the driving needs. Parking is a state of immobility of a vehicle that is temporary because it is left by the driver (Adisasmita, 2011). Parking is a place to place by stopping transport vehicles / goods (motorised or non-motorised) at a place within a certain period of time (Nawawi et al, 2015).

➤ Parking Space Requirement Standard

Standard parking requirements vary depending on several conditions, including applicable services and fees. Availability of car parks, ownership of electric vehicles, and income levels. Based on the findings, activities and criteria of the Directorate General of Land Transportation (1996).

Table 1 SRP Requirement for Motorcycles in Trade Centres

| Total Area (m) ² | 5000 | 7500 | 10000 | 15000 | 20000 | 30000 | 40000 | 50000 | 100000 |
|-----------------------------|------|------|-------|-------|-------|-------|-------|-------|--------|
| SRP Requirement | 225 | 250 | 270 | 310 | 350 | 440 | 520 | 600 | 1050 |

Assuming that the ratio of motorcycle SRP to passenger car SRP is 1 : 6, the size of the motorcycle parking space requirement is 6 times smaller than the parking space requirement for passenger cars.

➤ Parking Characteristics

In order to analyse the operating status of the car park and make plans for the development of the car park, car park property data is required. Parking terminologies that need to be known in order to properly plan and manage the car park according to the facility requirements include:

- *Parking Accumulation*

$$\text{Accumulation} = E_i - E_x + X \tag{1}$$

- *Parking Volume*

$$\text{Volume} = N_{in} + X \tag{2}$$

- *Duration of Parking*

$$\text{Duration} = T_i - T_0 \tag{3}$$

Average parking duration is the average time spent by each vehicle in a parking facility. According to the time spent on parking, parking can be classified as follows: Short Parkers, which are parkers who use the parking space for less than 1 hour and for business trips; Middle Parkers, which are parkers who use the parking space between 1 - 4 hours and

for shopping purposes; Long Parkers, which are parkers who use the parking space for more than 4 hours, usually for work purposes.

$$\text{Change of parking } TR = n/R \tag{4}$$

$$\text{Parking index } IP = AP/R \times 100\% \tag{5}$$

$$\text{Required parking spaces } Z = (y \times D)/T \tag{6}$$

- *Road Capacity*

The equation to determine the capacity of road sections based on PKJI 2023 can be seen in the following equation:

$$C = C_0 \times FCLJ \times FCPA \times FCHS \times FCUK$$

III. RESEARCH METHODE

To obtain the existing parking conditions, a direct survey to the field was conducted. From the survey conducted can be obtained data in the field and the real conditions of the study area. With some data from the survey results, processing is carried out to obtain data consisting of parking volume, parking accumulation, parking capacity, trun over, parking index, and parking space requirements. From the results of data processing will be made graphs to see the highest accumulation with time, the highest trun over with time, the highest volume with time, the highest index with time.

IV. RESULTS AND DISCUSSION

A. Parking Characteristics

Data from observations at the study site, then processed and analysed according to the formulation of the problem in the study, namely the characteristics of vehicle parking at Dondo Market which includes:

➤ *Parking Capacity*

The available parking area is obtained from direct observation in the field, which at this time the parking manager has not made a division of parking space arrangements for four-wheeled vehicles and two-wheeled vehicles, each type of vehicle only fills the existing space at the designated parking location, it is estimated that currently the parking area is 300 m² on both sides of the road shoulder.

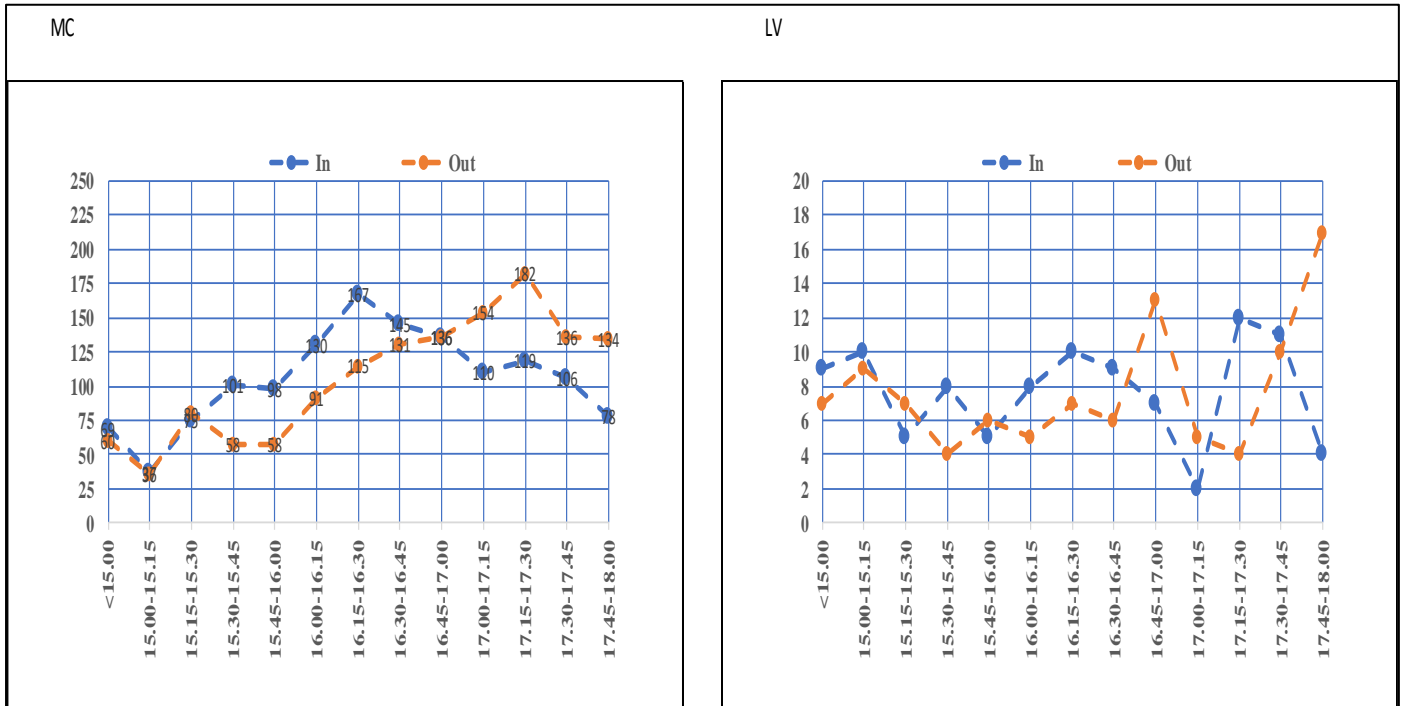


Fig 2 Number of Two-Wheeled and Four-Wheeled Vehicles Entering and Exiting (Monday, 6 May 2024)

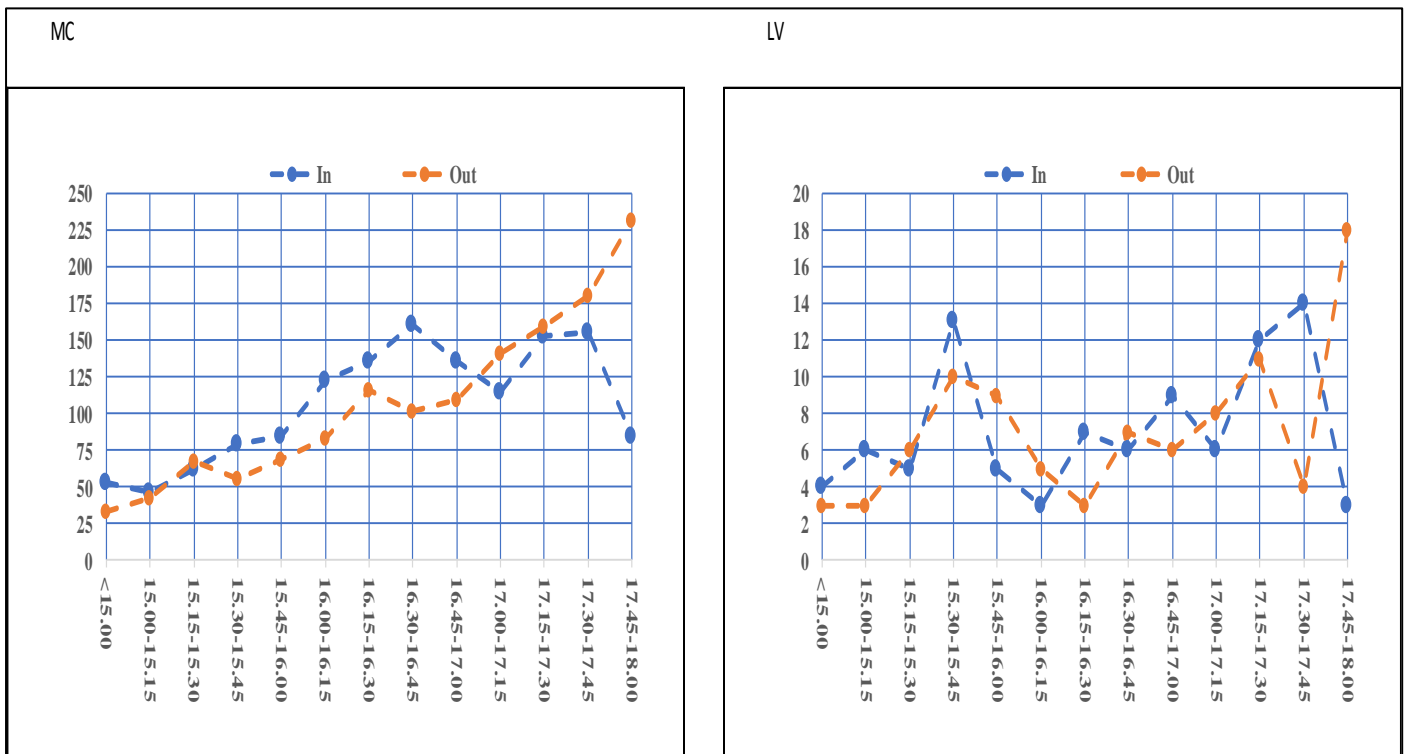


Fig 3 Number of Two-Wheeled and Four-Wheeled Vehicles Entering and Exiting (Tuesday, 7 May 2024)

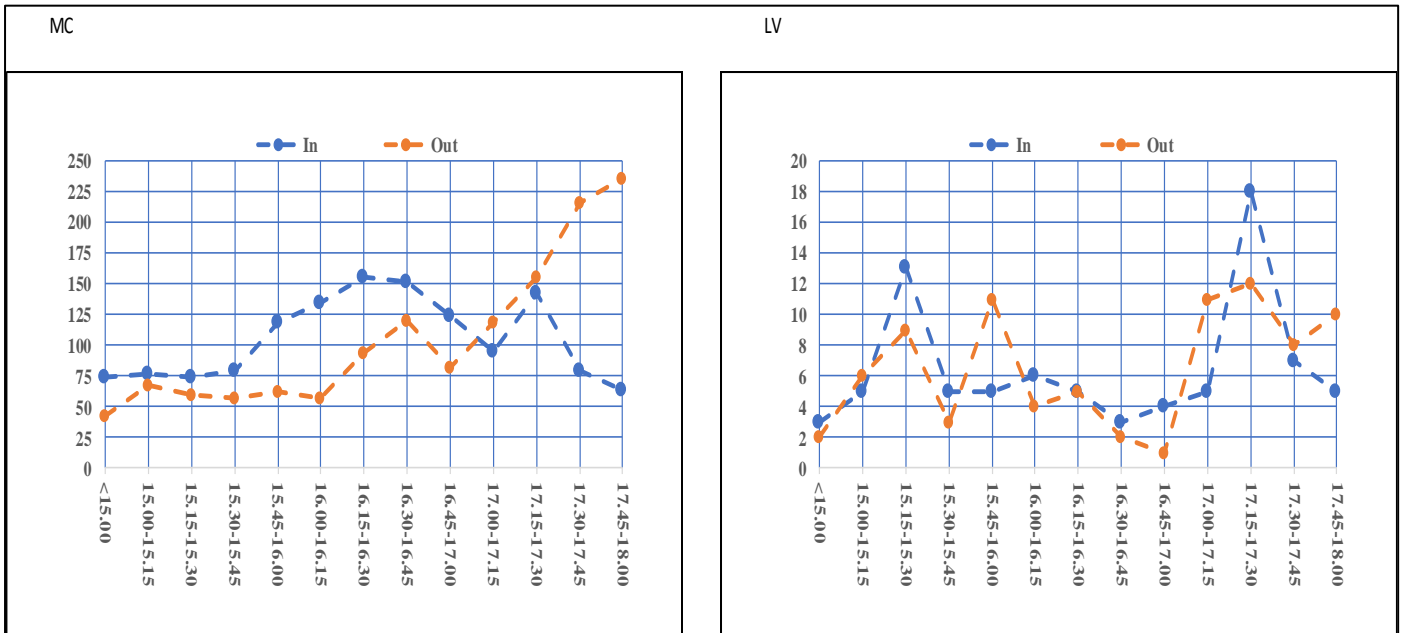


Fig 4 Number of Two-Wheeled and Four-Wheeled Vehicles Entering and Exiting (Wednesday, 8 May 2024)

➤ **Parking Accumulation**

The following is the amount of parking accumulation on each survey day.

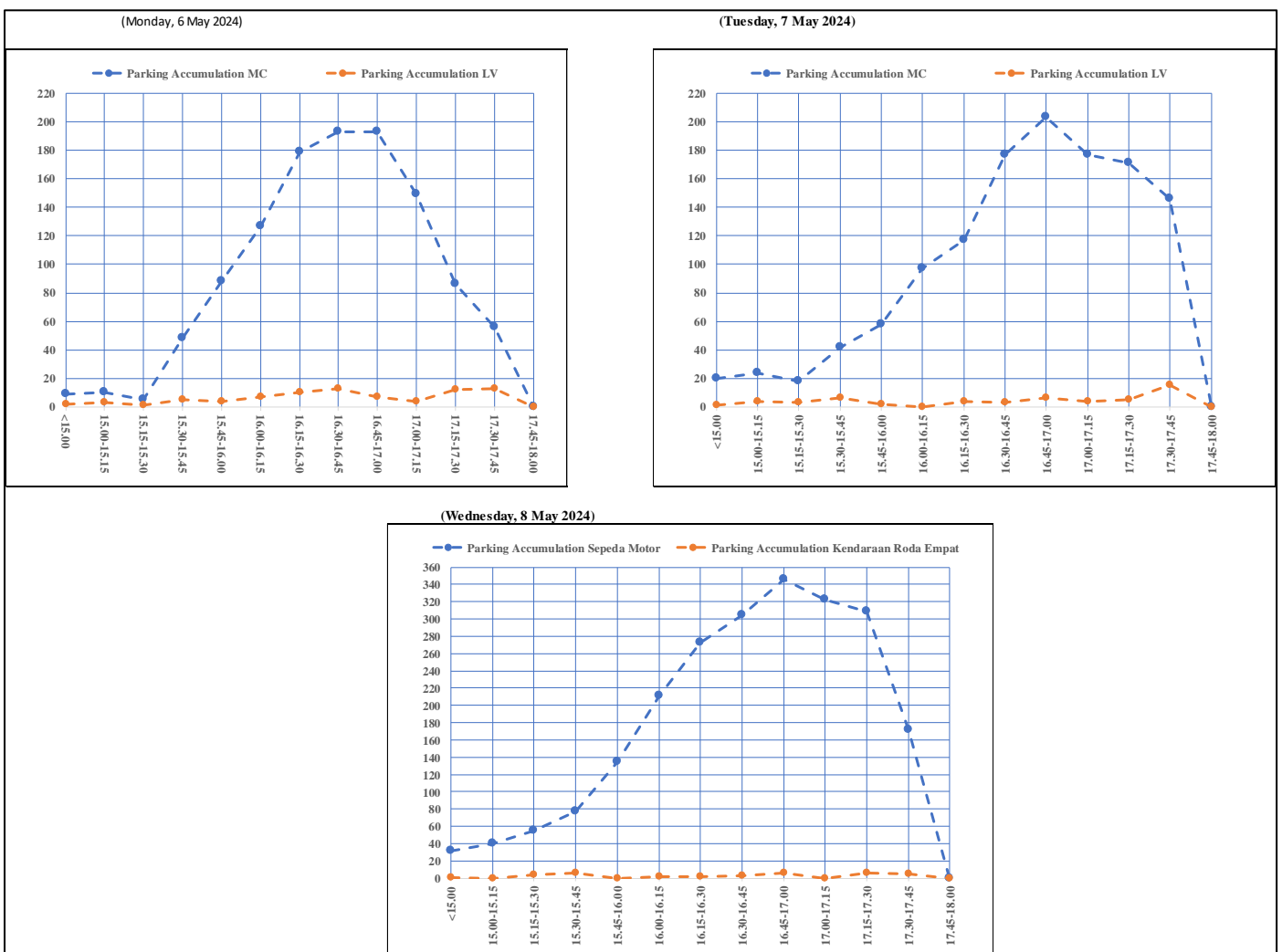


Fig 5 Two-Wheeler Parking Accumulation

➤ *Duration of Parking*

Parking duration is the time span (length of time) of the parked vehicle, by subtracting the time the vehicle exits from the time the vehicle enters.

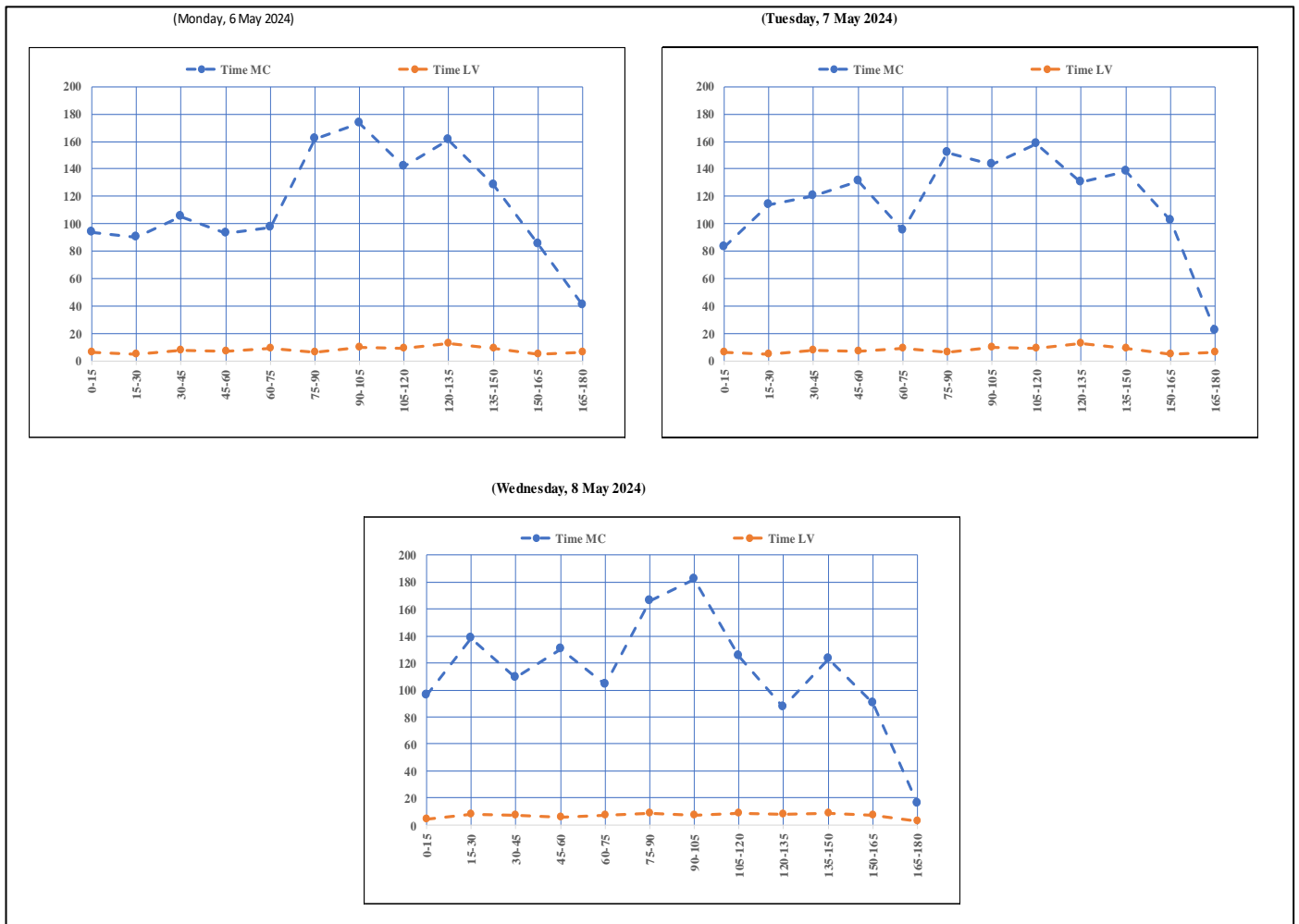


Fig 6 Parking Duration

Table 2 Vehicle Parking Duration

| Vehicle Type | Date | Duration/minute | | |
|---------------|-----------------------|-----------------|-------|---------|
| | | Max | Min. | Average |
| Two Wheelers | Monday, 6 May 2024 | 172.32 | 7.66 | 89.77 |
| | Tuesday, 7 May 2024 | 171.42 | 5.91 | 89.62 |
| | Wednesday, 8 May 2024 | 172.32 | 7.66 | 86.04 |
| Four Wheelers | Monday, 6 May 2024 | 168.05 | 11.63 | 89.63 |
| | Tuesday, 7 May 2024 | 173.05 | 11.06 | 91.02 |
| | Wednesday, 8 May 2024 | 176.03 | 11.62 | 90.65 |

➤ *Parking Volume*

The parking volume is calculated using formula (2).

Table 3 Dondo Market Vehicle Parking Volume

| Vehicle Type | Date | Vehicle Volume |
|---------------|-----------------------|----------------|
| Two Wheelers | Monday, 6 May 2024 | 1371 |
| | Tuesday, 7 May 2024 | 1388 |
| | Wednesday, 8 May 2024 | 1366 |
| Four Wheelers | Monday, 6 May 2024 | 100 |
| | Tuesday, 7 May 2024 | 93 |
| | Wednesday, 8 May 2024 | 84 |

➤ *Parking Turn Over*

Parking Turn Over is a value that shows the level of use of parking spaces, can be found using formula (4):

Table 4 Parking Turn Over Rate

| Vehicle Type | Date | Vehicle Volume | Capacity (SRP) | Parking Turn Over (SRP) |
|---------------|-----------------------|----------------|----------------|-------------------------|
| Two Wheelers | Monday, 6 May 2024 | 1371 | 215 | 6.38 |
| | Tuesday, 7 May 2024 | 1388 | 215 | 6.46 |
| | Wednesday, 8 May 2024 | 1366 | 215 | 6.35 |
| Four Wheelers | Monday, 6 May 2024 | 100 | 14 | 7.14 |
| | Tuesday, 7 May 2024 | 93 | 14 | 6.64 |
| | Wednesday, 8 May 2024 | 84 | 14 | 6.00 |

➤ *Parking Index*

The parking index is the percentage of the number of parking vehicles occupying the parking area to the number of parking spaces available in the parking area, calculated by formula (5).

Table 5 Parking Index

| Vehicle Type | Date | Parking Accumulation | Capacity (SRP) | Maximum Parking Index (%) |
|---------------|-----------------------|----------------------|----------------|---------------------------|
| Two Wheelers | Monday, 6 May 2024 | 193 | 215 | 89.77 |
| | Tuesday, 7 May 2024 | 203 | 215 | 94.42 |
| | Wednesday, 8 May 2024 | 346 | 215 | 160.93 |
| Four Wheelers | Monday, 6 May 2024 | 13 | 14 | 92.86 |
| | Tuesday, 7 May 2024 | 15 | 14 | 107.14 |
| | Wednesday, 8 May 2024 | 6 | 14 | 42.86 |

➤ *Parking Space Requirement*

Based on the Z formula approach to parking space requirements (6), the motorcycle parking space requirements at Dondo Market during the survey day were obtained.

Table 6. Size of Parking Space Requirement

| Vehicle Type | Date | Vehicle Volume | Average Duration (Hour) | Suvey Time (Hour) | KRP (SRP) |
|---------------|------------------|----------------|-------------------------|-------------------|-----------|
| Two Wheelers | Monday, 6 May | 1371 | 1.5 | 3 | 684 |
| | Tuesday, 7 May | 1388 | 1.49 | 3 | 691 |
| | Wednesday, 8 May | 1366 | 1.43 | 3 | 653 |
| Four Wheelers | Monday, 6 May | 100 | 1.49 | 3 | 50 |
| | Tuesday, 7 May | 93 | 1.52 | 3 | 47 |
| | Wednesday, 8 May | 84 | 1.51 | 3 | 42 |

From the results of the calculation of parking space requirements above, it can be concluded that the calculation using the Z formula, the two-wheeled vehicle parking space provided by the Dondo Market does not meet the needs. From the results of calculations using the Z formula, it is obtained that the maximum parking space requirement for two-wheeled vehicles at Dondo Market is 691 SRP while the static capacity currently provided for two-wheeled vehicles is only 215 SRP, it can be seen that the value of parking space requirements based on the formula approach (Z) is greater than the existing capacity, thus still lacking 476 SRP. In addition, from the results of the above calculations it is obtained that the maximum parking space requirement for four-wheeled vehicles in Dondo Market is 50 SRP while the static capacity currently provided for two-wheeled vehicles is only 14 SRP, it can be seen that the value of parking space requirements based on the formula approach (Z) is also greater than the existing capacity, thus still lacking 36 SRP.

➤ *Determination of Parking Spaces*

From the results of the analysis of parking space requirements at Dondo Market, it can be found that the land area that will be provided by the market manager for the provision of parking spaces. The pattern that can be used is a parking pattern with an angle of 90o with the following calculations:

The standard parking space (SRP) for two-wheelers uses a 90° angle parking patterno .

- SRP size $0.75 \times 2.00 = 1.5 \text{ m}^2$
- Alley/manoeuvring lane size = 1 m
- Land size for one parking space plus alley/manoeuvring lane $0.75 \times 3 = 2.25 \text{ m}^2$.

So the land area required for the planned additional parking spaces of 691 SRP is $691 \times 2.25 = 1554.93 \text{ m}^2$.

The standard parking space (SRP) for four-wheelers uses a 90° angle parking patterno .

- SRP size $2.50 \times 5.00 = 12.5 \text{ m}^2$
- Alley/manoeuvring lane size = 2.0 m
- Land size for one parking space plus alley/manoeuvring lane $2.50 \times 7 = 17.5 \text{ m}^2$.

So the land area required for the planned additional parking space of 50 SRP is $50 \times 17.5 = 871.38 \text{ m}^2$.

Based on the calculation of parking space requirements above, it can be seen that the land area needed for the addition of parking spaces for 691 SRP two-wheeled vehicles is 1554.93 m^2 , while the land area needed for the addition of parking spaces for four-wheeled vehicles as much as 50 SRP is 871.38 m^2 . So the land area needed for parking spaces at Dondo Market is 2426.31 m^2 .

The value of parking demand based on the formula (Z) approach is determined as the value of parking demand that must be met by the parking management. If the parking demand is determined based on the results of field research, then the parking demand value taken is at the time of maximum accumulation.

To provide off street parking facilities at Dondo Market, the market manager must provide vacant land to be used as a location for additional parking spaces. Potential vacant land for additional parking spaces owned by the Dondo Market is behind the northern stalls with an area of 825 m^2 , behind the southern stalls with an area of 1281 m^2 , and behind the market or precisely behind the Fish Market Stalls with a total area of 813 m^2 , so that if you add up the total parking space that can be utilised in the market area is 2919 m^2 which certainly exceeds the parking space requirements based on the results of the previous analysis, even if needed there is still potential vacant land owned by the community that can be used as a parking space location located to the north, south and east of the Dondo Market boundary.

B. Traffic Performance

Based on the results of the traffic volume survey, a description of the traffic volume conditions on the road section of the observation point at the research location can be seen in the following table.

Table 7 Traffic Volume Around Dondo Market on Monday

| 1 Hour Time Interval | Vehicle Type | | | EMP | | | Total Vehicles/Hour |
|----------------------|--------------|-----|-----|-------|-----|------|---------------------|
| | MC | LV | HV | MC | LV | HV | |
| | 0.4 | 1.0 | 1.3 | 0.4 | 1.0 | 1.3 | |
| 12.00-13.00 | 78 | 46 | 9 | 31.2 | 46 | 11.7 | 88.9 |
| 13.00-14.00 | 74 | 29 | 7 | 29.6 | 29 | 9.1 | 67.7 |
| 14.00-15.00 | 202 | 113 | 8 | 80.8 | 113 | 10.4 | 204.2 |
| 15.00-16.00 | 395 | 118 | 2 | 158 | 118 | 2.6 | 278.6 |
| 16.00-17.00 | 903 | 247 | 3 | 361.2 | 247 | 3.9 | 612.1 |
| 17.00-18.00 | 871 | 258 | 6 | 348.4 | 258 | 7.8 | 614.2 |

Table 8 Traffic Volume Around Dondo Market on Tuesday

| 1 Hour Time Interval | Vehicle Type | | | EMP | | | Total Vehicles/Hour |
|----------------------|--------------|-----|-----|-------|-----|-----|---------------------|
| | MC | LV | HV | MC | LV | HV | |
| | 0.4 | 1.0 | 1.3 | 0.4 | 1.0 | 1.3 | |
| 12.00-13.00 | 124 | 29 | 3 | 49.6 | 29 | 3.9 | 82.5 |
| 13.00-14.00 | 166 | 31 | 3 | 66.4 | 31 | 3.9 | 101.3 |
| 14.00-15.00 | 173 | 27 | 3 | 69.2 | 27 | 3.9 | 100.1 |
| 15.00-16.00 | 389 | 51 | 10 | 155.6 | 51 | 13 | 219.6 |
| 16.00-17.00 | 845 | 47 | 5 | 338 | 47 | 6.5 | 391.5 |
| 17.00-18.00 | 1099 | 76 | 3 | 439.6 | 76 | 3.9 | 519.5 |

Table 9 Traffic Volume Around Dondo Market on Wednesday

| 1 Hour Time Interval | Vehicle Type | | | EMP | | | Total Vehicles/Hour |
|----------------------|--------------|-----|-----|-------|-----|------|---------------------|
| | MC | LV | HV | MC | LV | HV | |
| | 0.4 | 1.0 | 1.3 | 0.4 | 1.0 | 1.3 | |
| 12.00-13.00 | 99 | 51 | 3 | 39.6 | 51 | 3.9 | 94.5 |
| 13.00-14.00 | 126 | 57 | 6 | 50.4 | 57 | 7.8 | 115.2 |
| 14.00-15.00 | 216 | 57 | 3 | 86.4 | 57 | 3.9 | 147.3 |
| 15.00-16.00 | 399 | 87 | 2 | 159.6 | 87 | 2.6 | 249.2 |
| 16.00-17.00 | 720 | 55 | 7 | 288 | 55 | 9.1 | 352.1 |
| 17.00-18.00 | 952 | 102 | 9 | 380.8 | 102 | 11.7 | 494.5 |

Based on the results of the analysis of the calculation of the class of side obstacles on the road of the research location, the class of side obstacles is obtained as follows:

Table 10 Class of Side Obstacles on Jl. Tj. Keramat Pasar Dondo on Monday

| 1 Hour Time Interval | Vehicles Entering and Exiting the Road | Pedestrians | Slow Vehicle | Vehicle Stops | Total | Side Barriers Class |
|---|--|-------------|--------------|---------------|------------|---------------------|
| 12.00-13.00 | 39.2 | 1.0 | 2.0 | 28.0 | 70 | Very Low |
| 13.00-14.00 | 68.6 | 1.5 | 4.0 | 25.0 | 99 | Very Low |
| 14.00-15.00 | 186.9 | 2.5 | 20.4 | 61.0 | 271 | Low |
| Average Weight of Side Obstacles Before the Market | | | | | 147 | Low |
| 15.00-16.00 | 322.7 | 1.0 | 39.6 | 151.0 | 514 | High |
| 16.00-17.00 | 686.0 | 2.0 | 35.2 | 692.0 | 1415 | Very High |
| 17.00-18.00 | 663.6 | 2.0 | 35.2 | 291.0 | 992 | Very High |
| Weighted Average of Side Barriers at Market | | | | | 974 | Very High |

Table 11 Class of Side Obstacles on Jl. Tj. Keramat Pasar Dondo on Tuesday

| 1 Hour Time Interval | Vehicles Entering and Exiting the Road | Pedestrians | Slow Vehicle | Vehicle Stops | Total | Side Barriers Class |
|---|--|-------------|--------------|---------------|-------------|---------------------|
| 12.00-13.00 | 39.2 | 4.0 | 6.4 | 8.0 | 58 | Very Low |
| 13.00-14.00 | 68.6 | 3.0 | 5.6 | 24.0 | 101 | Low |
| 14.00-15.00 | 148.4 | 3.5 | 14.4 | 61.0 | 227 | Low |
| Average Weight of Side Obstacles Before the Market | | | | | 129 | Low |
| 15.00-16.00 | 282.1 | 2.5 | 30.0 | 142.0 | 457 | High |
| 16.00-17.00 | 595.7 | 7.0 | 32.4 | 594.0 | 1229 | Very High |
| 17.00-18.00 | 794.5 | 2.5 | 52.4 | 494.0 | 1343 | Very High |
| Weighted Average of Side Barriers at Market | | | | | 1010 | Very High |

Table 12 Class of Side Obstacles on Jl. Tj. Keramat Pasar Dondo on Wednesday

| 1 Hour Time Interval | Vehicles Entering and Exiting the Road | Pedestrians | Slow Vehicle | Vehicle Stops | Total | Side Barriers Class |
|---|--|-------------|--------------|---------------|-------------|---------------------|
| 12.00-13.00 | 51.8 | 3.0 | 12.8 | 24.0 | 92 | Very Low |
| 13.00-14.00 | 70.7 | 2.5 | 18.4 | 30.0 | 122 | Low |
| 14.00-15.00 | 129.5 | 2.5 | 28.4 | 71.0 | 231 | Low |
| Average Weight of Side Obstacles Before the Market | | | | | 148 | Low |
| 15.00-16.00 | 288.4 | 1.5 | 31.6 | 306.0 | 628 | High |
| 16.00-17.00 | 494.2 | 2.0 | 33.2 | 1134.0 | 1663 | Very High |
| 17.00-18.00 | 688.8 | 7.5 | 36.0 | 803.0 | 1535 | Very High |
| Weighted Average of Side Barriers at Market | | | | | 1275 | Very High |

➤ *Road Capacity*

Based on the data above, the calculation of the existing capacity on each section of Jl. Tj. Keramat Pasar Dondo studied before market activity and during market activity on Monday to Wednesday based on PKJI 2023 is as follows:

- *Road Capacity before Market Activity:*

$$C = C_0 \times FC_{LJ} \times FC_{PA} \times FC_{HS} \times FC_{UK}$$

$$C = 2800 \times 0.87 \times 1.00 \times 0.97 \times 0.86$$

$$C = 2032,11$$

- *Road Capacity during Market Activities:*

$$C = C_0 \times FC_{LJ} \times FC_{PA} \times FC_{HS} \times FC_{UK}$$

$$C = 2800 \times 0.56 \times 1.00 \times 0.68 \times 0.86$$

$$C = 916,97$$

➤ *Degree of Saturation*

The degree of saturation (DS) is the ratio of road flow to capacity, which is used as the main factor in determining the level of road performance. Based on the data and analysis of calculations, the degree of saturation is obtained before market activity and during market activity as follows:

Table 13 Degree Saturation (DS) values

| Section | Condition | Maximum Volume SMP/Hour (Q) | SMP Capacity/Hour (C) | DS Value (Q/C) |
|-----------------------|-------------------|-----------------------------|-----------------------|----------------|
| Monday, 6 May 2024 | Before the Market | 204.2 | 2032.11 | 0.100 |
| | During Market | 614.2 | 916.97 | 0.670 |
| Tuesday, 7 May 2024 | Before the Market | 101.3 | 2032.11 | 0.050 |
| | During Market | 519.5 | 916.97 | 0.567 |
| Wednesday, 8 May 2024 | Before the Market | 147.3 | 2032.11 | 0.072 |
| | During Market | 494.5 | 916.97 | 0.539 |

➤ *Road Service Level*

The performance of the road sections studied can be seen based on the level of service that refers to the DS value can be seen in the following table:

Table 14 Road Section Performance Based on Level of Service

| Day/Date | Condition | DS Value (Q/C) | Service Level | Characteristics |
|-----------------------|-------------------|----------------|---------------|---|
| Monday, 6 Mai 2024 | Before the Market | 0.100 | A | High-speed flow conditions, the driver can choose the desired speed without obstacles |
| | During Market | 0.670 | C | Steady flow, but vehicle speed and motion are controlled, with drivers restricted in their choice of speed. |
| Tuesday, 7 May 2024 | Before the Market | 0.050 | A | High-speed flow conditions, the driver can choose the desired speed without obstacles |
| | During Market | 0.567 | C | Steady flow, but vehicle speed and motion are controlled, with drivers restricted in their choice of speed. |
| Wednesday, 8 May 2024 | Before the Market | 0.072 | A | High-speed flow conditions, the driver can choose the desired speed without obstacles |
| | During Market | 0.539 | C | Steady flow, but vehicle speed and motion are controlled, with drivers restricted in their choice of speed. |

From the results of the above analysis, it shows that the performance of several road sections in conditions before the market takes place and when the market takes place results in different traffic performance, in conditions before the market takes place the traffic flow on Jl. Tj. Keramat Pasar Dondo flow conditions with high speed, the driver can choose the desired speed without obstacles on that section. But when the market takes place, the traffic performance on the road changes, although the traffic flow tends to be stable, but the speed and movement of vehicles need to be controlled, so in this case the driver is limited in choosing the speed.

The performance of the road section is reduced due to the presence of market activities in the area, market activities, especially the Dondo Market, certainly have a relationship with movement, movement has a relationship with motorists, and therefore Dondo Market activities have an influence on the surrounding traffic conditions. The most prominent phenomenon that occurs is congestion because market activity actors produce roadside obstacles caused by the absence of *off street parking* at the Dondo Market so that activity actors park vehicles on the shoulder of the road which ultimately causes the level of road saturation to exceed capacity, finally making traffic stalled and this is the main source of congestion occurs. When this phenomenon occurs, traffic becomes stalled, this can be seen from the results of the analysis above showing that the performance of Jl. Tj. Keramat in conditions without parking and in the presence of parking results in different traffic performance on the day of the survey, where in the absence of parking activities carried out on the road, the flow conditions are at high speed, the driver can choose the desired speed without obstacles. When there is on-street parking, the traffic performance changes but is stable, but the speed and motion of the vehicle is controlled, and the driver is restricted in choosing the speed.

V. CONCLUSION

Based on the results of data analysis that researchers have put forward and discussed systematically in the previous chapter, it can be concluded that: To provide off street parking facilities at the Dondo Market, the market manager must provide potential vacant land for additional parking spaces owned by the Dondo Market on the right side of the market or behind the northern stalls with an area of 3000 m², then on the left side of the market or behind the southern stalls with an area of 3985 m², so that if you add up the total parking space that can be utilised in the market area is 6985 m² which certainly exceeds the parking space requirements based on the results of the previous analysis, even if needed there is still potential vacant land owned by the community that can be used as a parking space location located to the north, south and east of the Dondo Market boundary. The existence of market activities affects traffic performance on Jl. Tj. Keramat Dondo, which when market activities take place produces side road obstacles caused by the absence of off street parking at the Dondo Market so that activity actors park vehicles on the shoulder of the road which ultimately causes the level of road saturation to exceed capacity, ultimately reducing traffic performance on the section. The results also show that traffic performance on Jl. Tj. Keramat in the absence of parking activities carried out on the roadside, flow conditions with high speed, drivers can choose the desired speed without obstacles. When there are on-street parking activities, traffic performance changes but is stable, but the speed and movement of vehicles are controlled, the driver is limited in choosing the speed

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