PARKING LAND EVALUATION AND PLANNING AT THE KERENENG MARKET, DENPASAR CITY

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ABSTRACT

Kereneng Market is a place where the buying and selling process takes place, where most of the traders and buyers or the public who come to Kereneng Market use transportation services (vehicles) to get to the market. This activity resulted in an increase in the volume of vehicles entering the Kereneng Market area due to the activities that occurred, and even when the market caused congestion at the Kereneng intersection and its surroundings. To anticipate this, it is necessary to provide adequate and neatly arranged parking facilities so that they can provide the parking services desired by all parties. The method used in collecting data in this research is direct observation in the field by conducting a survey. The survey was conducted for 3 (three) days, namely on Friday, Saturday and Sunday. The results of the research on the characteristics of parking at Kereneng Market include parking volume, parking accumulation, parking turnover rate, average parking duration and parking index. After doing the research, it can be seen the characteristics of the parking for each vehicle, namely the average volume of motorcycles is5309.3vehicles, while for cars is 658 vehicles on average market day, the highest accumulation of parking for motorcycles occurs at 05.00 – 06.00 00 in the eastern Indonesia time zone which is 1245 vehicles, while for cars occurs at 07.00 – 08.00 00 in the eastern Indonesia time zone which is 138 vehicles. Based non the results of the research, it shows that the capacity of the Kereneng Market parking area is no longer able to meet the needs of parking users.

Keywords: Parking Area, Parking Characteristics, Parking Needs

INTRODUCTION

Background

Parking facilities are an integral part of the transportation system, especially land transportation. Basically, parking is a place to stop and store vehicles for a while in a certain space. The place can be in the form of a roadside, garage and other places provided to accommodate the vehicle. Thus parking is defined as a special place for vehicles to stop for safety. Therefore, there is a need for parking facilities, both on the side of the road (on-street parking) and off-street parking or special places (off-street parking) to meet the needs.

One of the places that the author observes and is closely related to the problem of providing parking spaces is the Kereneng Market, Denpasar City. Kereneng Market is one of the markets in Denpasar City, which is a place for community activities engaged in the economy, especially traders.

Based on the description above, it is very necessary to do research on parking at Kereneng Market, with a view to planning a parking area for all parking users, so that there is input that can be used as a reference for providing parking spaces at Kereneng Market.

Formulation of the problem

The formulation of the problem that can be raised regarding the provision of parking areas at Kereneng Market is how to design the optimal Kereneng Market parking area?

LITERATURE REVIEW

Parking

If the number of vehicles or the demand for parking has exceeded the provision of parking space capacity, there will be many violations of the parking lot. Likewise, people will park in places that should not be parked. Based on this, the offer for the availability of parking spaces must be met according to demand, in order to achieve a transportation system that is safe, comfortable and smooth. (Warpani, S. 1985)

Concept About Parking

Basically, a vehicle that is not being used on the highway will stop somewhere for a while. One part of the traffic system is the

provision of special facilities where the vehicle stops when not in use so that the stopped vehicle is safe enough from the point of view of security against criminal acts and does not interfere with the comfort of other road users, as well as facilitate access to the vehicle user at the time. needed

Parking Characteristics

Parking characteristics are the nature of basic parking and will be able to provide an assessment of the parking problems that occur (Hobbs FD, 1975). Based on parking characteristics, it can be seen that the parking conditions that occur in the study area include parking demand and utilization which include parking volume, parking accumulation, parking duration, parking turnover rate (parking turnover), and parking index.

A. Parking Volume

Volumeparking is the number of vehicles included in the parking load (i.e. the number of vehicles per certain period of time, usually per day). The formulas that can be used are:

Volume = Nin + X

Description :

Nin = The number of vehicles that enter (assuming each incoming vehicles are parking).

X = Existing vehicles before the survey

B. Parking Accumulation

Parking accumulation is the total number of vehicles parked in a certain period (Hobbs FD, 1975). This accumulation can be used as a measure of the need for parking spaces at the research site.

C. Parking Time

LongParking is the length of time a vehicle is in a certain parking space.

From the length of parking, it will be known the time used for each parker to park their vehicle in each parking lot. To find out the average length of parking for each vehicle, it can be seen from the following formula (Oppelender, JC and PC Box. 1976)

$$D = \frac{\sum(Nx)(X)(I)}{Nt}$$

Description :

D = Average length of parking (hours/vehicle)

Nx = Number of vehicles parked during the survey time interval

X = Sum of intervals

I = duration time per interval (hours)

Nt = Total number of vehicles at the time of observation/survey

AverageThe length of this parking will affect the number of vehicles that can be parked in a parking area (Parking Supply) during a certain time interval.

$$Ps = \frac{St}{D} \times 0.9$$

Description :

PS = Number of vehicles that can be parked (Vehicle)

S = Total number of stalls / official plots

t = durationsurvey (hours)

D = Averagelength of parking (hours/vehicle)

0.9 = *Insufficiency factor*(due to turnover)

D. Level Parking Turn Over

The parking turnover rate will show the level of parking space usage obtained by dividing the parking volume by the number of parking lots available during the observation time. The formula used (Oppelender, JC and PC Box. 1976)

$$TR = \frac{NT}{SxTs}$$

Description :

TR = Numberparking change (vehicle/plot/hour)

S = Total number of stalls / official plots

Ts = durationsurvey period (hours)

NT = Total number of vehicles during survey time

E. Parking Index

The parking index is the amount of parking space used which is calculated from the number of parked vehicles divided by the total number of parking spaces. The formula that can be used to calculate the index is:

$$IP = \frac{\text{Parking volume}}{PS}$$

IP Value > 1 means that the parking requirement exceeds the capacity/capacity is not normal.
IP value = 1 means that the parking demand is balanced with the normal capacity.
IP value 1 means that the parking requirement does not exceed the normal capacity.

The magnitude of the parking index is obtained from the comparison between the total number of vehicles and the total number of parking spaces/parking capacity (Abubakar, I. et al. 1998).

Parking Space Needs

Indeterminate the size of the parking space in a place that has certain activities such as offices, hospitals, markets, etc. In every available area based on the results of studies that have been carried out, different parking spaces are needed between one activity and another. For more details can be seen in the following table:

Table 1. Parking Space Requirement Criteria for Market

MARKET			
Total Area (100m2)	Needs (SRP)	Total Area (100m2)	Needs (SRP)
40	160	300	750
50	185	400	970
75	240	500	1,200
100	300	1000	2,300
200	520		

Source: Kadir Y, 2008

RESEARCH METHODS

Method Survey

The method used in obtaining data about the parking area planning at Kereneng Market is the survey method. The things surveyed are the number of existing parking lots, parking arrangements regarding the size of parking lots and parking angles, parking accumulation, parking patterns or methods, parking volume, average parking duration and parking turnover rates.

Research Place

The place or location taken in this research is Kereneng Market in Denpasar City. This location was chosen because based on field observations, Kereneng Market is located in the school area on Jalan Kamboja Denpasar. At this location, the level of parking service has reached the saturation point so that on market days there are often traffic jams around Kereneng Market.

Time Survey

This parking survey was conducted for 3 (three) days, namely on Friday, Saturday and Sunday. With the hope that on that day, the peak day and hour of parking will be obtained as well as variations in parking loads that occur at the survey location. The time of the survey started from routine activities, starting at 04.00 00 in the eastern Indonesia time zone until 13.00 Eastern Indonesian Time zone when activity in Kereneng Market began to decrease.

RESULTS AND DISCUSSION

General data

Market Kereneng is located side by side with the Kereneng intersection which connects Kereneng with Jalan Hayam Wuruk, besides that this location is located in a school area on Jalan Kamboja Denpasar south of the intersection that connects Pasar Kereneng with Jalan Hayam Wuruk and the school and college area is quite crowded at peak hours. - certain hours.

The number of workers or employees at PD Pasar Kereneng is 82 people, 78 male and 4 female. Meanwhile, the number of traders who use Kereneng Market as a place to sell consists of 168 permanent traders, 623 non-permanent traders, so the total is 791 traders. The number of activities that occurred resulted in an increase in the volume of vehicles entering the Kereneng Market area. This causes the volume of parking vehicles to increase.

It should be noted that the parking area at Kereneng Market already has a parking lot, so in theory, parking users can park their vehicles according to the location provided. However, at certain hours the parking area that was previously provided for parking users, then becomes full of vehicles. And for that, the compiler takes measurements to get the number of parking lots so that later it can help in analyzing the existing data. The number of parking plots was obtained according to the measurement results, namely for motorbikes as many as 825 parking lots and for cars as many as 105 parking lots.

Parking Characteristics Analysis

No	Time	Car Volume			Average Car Volume Per day
		Friday	Saturday	Sunday	
1	04.00 – 05.00	54	65	72	63.6
2	05.00 – 06.00	124	129	124	85
3	06.00 – 07.00	138	125	121	99.6
4	07.00 – 08.00	94	107	107	112.6
5	08.00 – 09.00	52	79	104	88.3
6	09.00 – 10.00	41	87	94	79.3
7	10.00 – 11.00	43	56	76	58.3
8	11.00 – 12.00	22	24	73	43
9	12.00 – 13.00	16	21	38	28.3
	Total	584	693	809	658
	Average/hour	64, 9	77	89.9	73.1

As described in the previous chapter, parking characteristics include parking volume, parking accumulation, parking duration, parking turnover rate, and parking index. From the parking characteristics, it will be known the parking problems that exist in Kereneng Market, Denpasar City.

Parking Volume

Volume Parking is the number of vehicles parked at the study location during a certain period of time. In this case, the calculation is every 1 (one) hour, so that later it can be seen the fluctuation of vehicles parked every one hour at the research location.

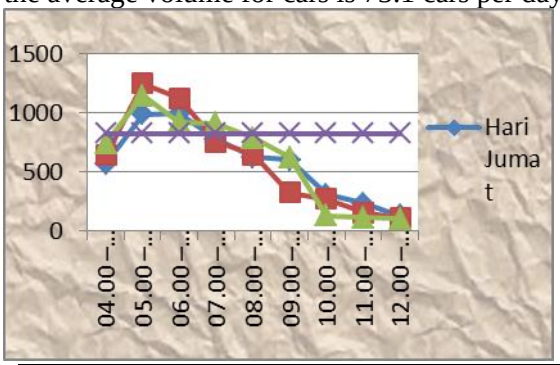
From the results of the data analysis, it is known the parking volume, vehicles parked at the study location as shown in table 2 and table 3 below:

Table 2. Motorcycle Parking Volume
Source: Survey Data Analysis

From Table 2 above, it can be seen that the highest motorcycle parking volume occurred on Saturday at 05.00 – 06.00 00 in the eastern Indonesia time zone which was 1245 vehicles with the number of parking lots available was 825 plots. It can also be seen that the total average volume of motorcycles is 5309.3 vehicles.

Table 3. Car Parking Volume
Source: Survey Data Analysis

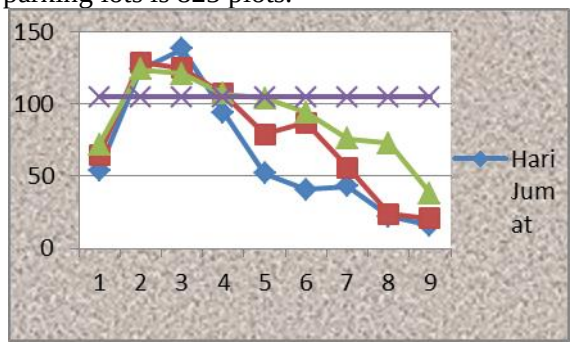
From Table 3 above can be seen that the highest volume of car parking occurs at 07.00 – 08.00 00 in the eastern Indonesia time zone which is 138 cars with the number of available parking lots is 105 plots. It can also be seen that the average volume for cars is 73.1 cars per day.



No	Time	Motor Volume			Average Motorcycle Volume Per day
		Friday	Saturday	Sunday	
1	04.00 – 05.00	569	639	742	650
2	05.00 – 06.00	986	1245	1143	1124, 7
3	06.00 – 07.00	994	1124	921	1013
4	07.00 – 08.00	776	754	910	813, 3
5	08.00 – 09.00	623	645	786	684, 7
6	09.00 – 10.00	598	324	621	514, 3
7	10.00 – 11.00	308	268	126	234
8	11.00 – 12.00	232	156	109	165, 7
9	12.00 – 13.00	126	105	98	109, 7
	Total	5212	5260	5456	5309.3
	Average/hour	579.1	584.4	606.2	624.8

Graph 1. Motorcycle Parking Volume

From Graph 1 above, it can be seen that the highest volume of motorcycle parking occurs on Saturdays at 05.00 – 06.00 00 in the eastern Indonesia time zone, which is as many as 1245 vehicles with the number of available parking lots is 825 plots.



Graph 2. Car Parking Volume

From Graph 2 above, it can be seen that the highest volume of car parking occurred at

Time	Enter	Go out	Accumulation
	0	0	112
04.00 – 05.00	742	129	613
05.00 – 06.00	1143	278	1478
06.00 – 07.00	921	879	1520
07.00 – 08.00	910	998	1432
08.00 – 09.00	786	1028	1190
09.00 – 10.00	621	810	1001
10.00 – 11.00	126	662	465
11.00 – 12.00	109	212	362
12.00 – 13.00	98	118	342
	5456	5114	

07.00 – 08.00 00 in the eastern Indonesia time zone, namely 138 cars with the number of available parking lots is 105 plots.

Parking Accumulation

Parking accumulation is the total number of vehicles parked in a certain time period. In this case, the time interval of 1 (one) hour is taken. From the survey results, it can be seen that the fluctuations of parked vehicles every 1 (one) hour are as follows.

Table 4 Accumulation of Motorcycle Parking on Fridays

Source: Survey Data Analysis

Table 5 Accumulation of Motorcycle Parking on Saturdays

Source: Survey Data Analysis

Table 6 Accumulation of Sunday Motorcycle Parking

Source: Survey Data Analysis

Table 7 Accumulation of Friday Car Parking

Time	Enter	Go out	Accumulation
	0	0	24
04.00 – 05.00	54	18	60
05.00 – 06.00	124	68	116
06.00 – 07.00	138	106	148
07.00 – 08.00	94	105	137
08.00 – 09.00	52	98	91
09.00 – 10.00	41	70	62
10.00 – 11.00	43	54	51
11.00 – 12.00	22	36	37
12.00 – 13.00	16	18	35
	584	573	737

Source: Survey Data Analysis

Table 8 Accumulation of Saturday Car Parking

Time	Enter	Go out	Accumulation
	0	0	28
04.00 – 05.00	65	27	66
05.00 – 06.00	129	78	117
06.00 – 07.00	125	89	153
07.00 – 08.00	107	105	155
08.00 – 09.00	79	124	110
09.00 – 10.00	87	118	79
10.00 – 11.00	56	89	46
11.00 – 12.00	24	54	16
12.00 – 13.00	21	24	13
	693	708	

Time	Enter	Go out	Accumulation
	0	0	102
04.00 – 05.00	569	164	507
05.00 – 06.00	986	356	1137
06.00 – 07.00	994	681	1450
07.00 – 08.00	776	990	1236
08.00 – 09.00	623	903	956
09.00 – 10.00	598	872	682
10.00 – 11.00	308	423	567
11.00 – 12.00	232	487	312
12.00 – 13.00	126	261	177
	5212	5137	

Source: Survey Data Analysis,

Time	Enter	Go out	Accumulation
	0	0	115
04.00 – 05.00	639	344	410
05.00 – 06.00	1245	499	1156
06.00 – 07.00	1124	865	1415
07.00 – 08.00	754	1042	1127
08.00 – 09.00	645	887	885
09.00 – 10.00	324	645	564
10.00 – 11.00	268	503	329
11.00 – 12.00	156	421	64
12.00 – 13.00	105	127	42
	5260	5333	

Table 9 ccumulation of Sunday Car Parking

Time	Enter	Go out	Accumulation
	0	0	31
04.00 – 05.00	72	14	89
05.00 – 06.00	124	57	156
06.00 – 07.00	121	115	162
07.00 – 08.00	107	134	135
08.00 – 09.00	104	128	111
09.00 – 10.00	94	122	83
10.00 – 11.00	76	98	61
11.00 – 12.00	73	80	54
12.00 – 13.00	38	43	49
	809	791	

Source: Survey Data Analysis

Table 10 Highest Parking Accumulation For Motorcycles

Day	Time	Accumulation (vehicle)
Friday	07.00 - 08.00	1450
Saturday	06.00 - 07.00	1415
Sunday	06.00 - 07.00	1520

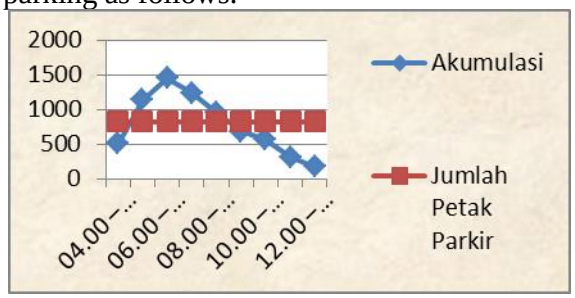
Source: Survey Data Analysis

Table 11 Highest Parking Accumulation For Cars

Day	Time	Accumulation (vehicle)
Friday	**08.00 - 09.00**	**148**
Saturday	**07.00 - 08.00**	**155**
Sunday	**07.00 - 08.00**	**162**

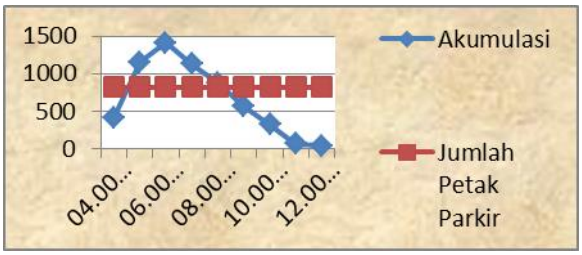
Source: Survey Data Analysis

From the vehicle parking accumulation table above, an accumulation graph can be made parking as follows.



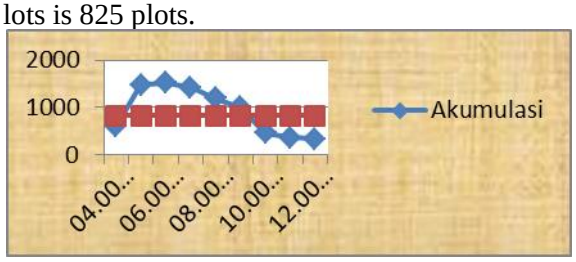
Graph 3 Accumulation of Friday Motorcycle Parking

From Graph 3 above, it can be seen that the highest accumulation of motorcycle parking is on Saturday at 06.00 – 07.00 00 in the eastern Indonesia time zone which is 1450 vehicles with the number of available parking lots is 825 plots.



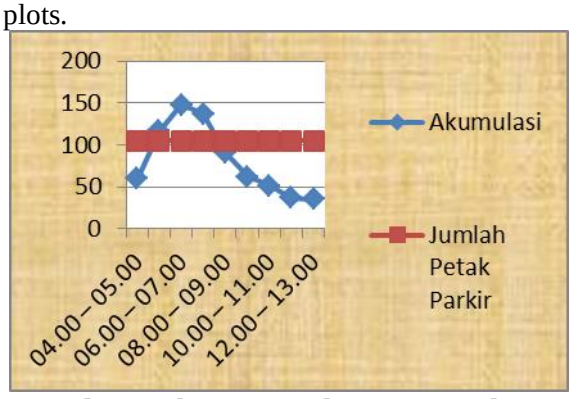
Graph 4 Accumulation of Saturday Motorcycle Parking

From Graph 4 above, it can be seen that the highest accumulation of motorcycle parking is on Saturday at 06.00 – 07.00 00 in the eastern Indonesia time zone, which is as many as 1415 vehicles with the number of available parking lots is 825 plots.



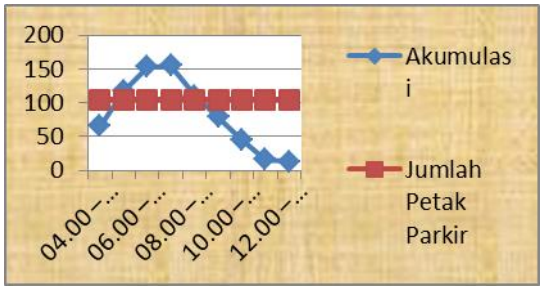
Graph 5 Weekly Motorcycle Parking Accumulation

From Graph 5 above, it can be seen that the highest accumulation of motorcycle parking is on Saturday at 06.00 – 07.00 00 in the eastern Indonesia time zone, which is 1520 vehicles with the number of available parking lots is 825 plots.



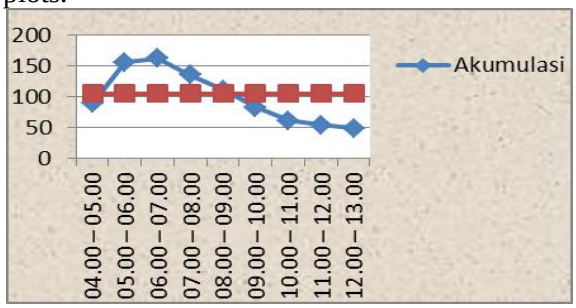
Graph 6 Friday Car Parking Accumulation

From Graph 3 above, it can be seen that the highest accumulation of car parks is on Friday at 06.00 – 07.00 00 in the eastern Indonesia time zone, which is as many as 148 vehicles with the number of available parking lots being 105 plots.



Graph 7 Accumulation of Saturday Car Parking

From Graph 3 above, it can be seen that the highest motorcycle parking volume is on Saturday at 07.00 – 08.00 in the eastern Indonesia time zone, which is 155 vehicles with the number of available parking lots is 825 plots.



Graph 8 Sunday Car Parking Accumulation

From Graph 8 above, it can be seen that the highest motorcycle parking volume is on Saturday at 05.00 – 06.00 00 in the eastern Indonesia time zone , which is as many as 162 vehicles with the number of available parking lots is 825 plots.

Average Parking Length

So that the average length of parking for each day is obtained as shown in the table below:

Table 12 Average Length of Parking

Day	Average Length of Parking (hours/vehicles)	
	Motorcycle	Car
Friday	2.95	2.5
Saturday	2.97	2.9
Sunday	3.1	3.5
Average	3.1	2.9

Source: Survey Data Analysis

Based on Table 12 it can be seen that the average length of parking for motorbikes and cars can be classified as medium time parking, which is between 1-4 hours of parking.

Parking Shift Rate

The calculation of the parking turnover rate from the survey results can be found for the parking turnover rate as follows:

Tabel 13. Parking Change Rate For Motorcycle

Day	Number of Vehicles (Nt)	Number of tiles (S)	Survey duration (Ts)	Turnover Rate TR = Nt/(SxTs)
Friday	5212	825	9	0.701
Saturday	5260	825	9	0.708
Sunday	5456	825	9	0.73
Average				0.71

Source: Survey Data Analysis

Tabel 14. Parking Turnover Rate For Car

Day	Number of Vehicles (Nt)	Number of tiles (S)	Survey duration (Ts)	Turnover Rate TR = Nt/(SxTs)
Friday	584	105	`9	0.61
Saturday	693	105	9	0.73
Sunday	809	105	9	0.85
Average				0.73

Source: Survey Data Analysis

From Table 13 and Table 14 it can be seen that the parking turnover rate for all vehicles is less than 1, this means that every hour the parking lot serves less than 1 vehicle in the parking lot at Kereneng Market.

Parking Facility Inventory

Systematically parking facilities for vehicles in the study location can be seen in Table 15 and Table 16 below, from this table an inventory of parking facilities available at Kereneng Market can be drawn.

Table 15 Inventory of Motorcycle Parking Facilities

Number of Plots	Parking Corner	Plot Size
825	900	0.70 x 2.00 m

Source: Survey Data Analysis

Table 16 Car Parking Facility Inventory

Number of Plots	Parking Corner	Plot Size
75	90^0	2.50 x 5.00 m
30	45^0	2.50 x 5.00 m

Source: Survey Data Analysis

Parking Supply

Parking Supply is a limit to the size of the number of vehicles that can be accommodated during a certain period of time (during the time of the survey). Parking Supply calculation is based on formula 2 so that the survey results are obtained as follows:

Table 17 Amount of Motorcycle Parking Supply

Day	Survey duration (T) Hours	Number of Tiles (S) Tiles	*Insufficiency*Factor (Due to Turn Over)	Average Length of Parking (D) hours/vehicle.	*Parking Supply*(vehicle) (SxTx0.9)/D
Friday	9	825	0.9	2.95	2265.25
Saturday	9	825	0.9	2.97	2250
Sunday	9	825	0.9	3.1	2155.64
Average					2223.63

Source: Survey Data Analysis

Based on Table 17 it can be seen that the motorbike parking plots during the 9-hour survey at Kereneng Market accommodated 2223.63 or 2223 motorbikes. This shows that the condition states that the parking accumulation exceeds the motorcycle parking capacity.

Table 18 Amount of Car Parking Supply

Day	Survey duration (T) Hours	Number of Tiles (S) Tiles	*Insufficiency*Factor (Due to Turn Over)	Average Length of Parking (D) hours/vehicle.	*Parking Supply*(vehicle) (SxTx0.9)/D
Friday	9	105	0.9	2.5	340.2
Saturday	9	105	0.9	2.9	293.2
Sunday	9	105	0.9	3.5	243
Average					292.15

Source: Survey Data Analysis

Based on Table 18 it can be seen that the motorcycle parking plot during the 9-hour survey at Kereneng Market accommodated 292.15 or 292 cars. This shows that the condition states that the parking accumulation exceeds the car parking capacity.

Parking Index

The parking index value can be known as shown in the following table.

Table 19 Motorcycle Parking Index

Day	Kend Parking Volume. (V)	Parking Supply Kend. (ps)	Parking Index (V/Ps)	IP value
Friday	5212	2265.2	2.3	> 1
Saturday	5260	2250	2.33	> 1
Sunday	5456	2155.7	2.5	> 1
Average			2.37	> 1

Source: Survey Data Analysis, 2012

From Table 19 it can be seen that the motorcycle parking index is more than one (1) on Friday, Saturday and Sunday, this shows that the accumulation of parking exceeds the existing motorcycle parking capacity.

Table 20 Car Parking Index

Day	Kend Parking Volume. (V)	Parking Supply Kend. (ps)	Parking Index (V/Ps)	IP value
Friday	584	340.2	1.7	> 1
Saturday	693	293.2	2.3	> 1
Sunday	809	243	3.3	> 1
Average			2.43	> 1

Source: Survey Data Analysis

From Table 20 it can be seen that the car parking index is more than one (1) on Friday, Saturday and Sunday, this shows that the accumulation of parking exceeds the existing car parking capacity.

CONCLUSIONS, SUGGESTIONS AND SOLUTION

Conclusion

Based on the research process which includes data collection and data analysis as well as from the results of data analysis and discussion described in previous chapters, it can be concluded as follows:

Parking Characteristics

Parking Characteristics include Parking Volume, Parking Accumulation, Average Length of Parking, Parking Turnover Rate, and Parking Index.

1. Parking characteristics at Kereneng Market for 9 (nine) hours of observation are as follows:
   a. Volumethe average motorcycle is5309.3vehicles, while for cars it is658market vehicles per day.
   b. The highest accumulation of parking for motorcycles occurs on Sundays at 06.00 – 07.00 00 in the eastern Indonesia time zone which is 1520 vehicles, while for cars it occurs on Sundays at 07.00 – 08.00 00 in the eastern Indonesia time zone which is 162 vehicles.
   c. Average length of parking for motorbikes is 3.1 hours/vehicle, while for cars it is 2.9 hours/vehicle, it can be classified as medium-time parking, i.e. parking time is more than 1 hour but less than 4 hours.
   d. Levelparking turnover for motorcycles is 0.71 vehicles/plot/hour, while for cars is 0.73 vehicles/plot/hour
   e. Parking provision /*Parking Supply* for motorbikes it is 2223.63 motorbikes,

while for Parking Supply for cars it is 292.15 cars

f. The parking index for motorbikes is 2.37, while for cars it is 2.43.

2. As a result of the volume of vehicles entering the parking area exceeding the available parking lots and the average length of parking is classified as medium time parking, many vehicles are parked outside the parking area so it can be concluded that parking accumulation exceeds the existing parking capacity.
3. Judging from the parking index for motorcycles exceeding 1, this means that the existing parking space can no longer accommodate vehicles. As for cars that also exceed 1, this means that the parking space is already in the saturation level.

Suggestion

Based on the conclusions above, the authors try to give some suggestions related to the existence of parking at Kereneng Market. The suggestions are as follows:

1. PD Pasar Kereneng should:
   a. Reuse the old parking lot which is west of the market, to increase the land area for the parking area so that parking for all parking users can be fulfilled.
   b. Prohibit traders from using the parking area as a place to sell before the night market starts operating.
   c. Adding personnel (parking attendants) to arrange to park to be more orderly.
   d. Install signs at the entrance and exit of the Kereneng Market parking area.
2. It is necessary to carry out strict law enforcement policies against violators of the provisions of prohibited parking and prohibited from stopping and parking outside the designated place for that. The form of law enforcement can be done through fines or bywheel lockvehicles that violate regulations.
3. It is necessary to determine optimal parking rates so that local revenue can be optimized while traffic flows can still move smoothly.
4. Parking time restrictions are usually realized by setting rates according to the length of parking time.
5. It is necessary to conduct further research by increasing the hours and number of days of the survey so that the results obtained to determine the need for vehicle parking at Kereneng Market are more accurate.

Solution

Handling the problem of parking needs that the author has described in the previous chapter refers to the solution to the problem at Badung Market, Denpasar, namely by making Basement Parking or Multilevel Parking. This solution refers to the results of the author's research by making a new design of the market parking plan in the Appendix and is described as follows:

Figure 1 New Parking Plan Design

From the picture above, the details are as follows:

Table 21 Inventory of Parking Facilities

NO	PARKING LOCATION	CAR PARK	MOTORCYCLE PARKING ONLY	UNIT	DESCRIPTION
1	IN	130	250	PARKING PLATE	
2	OUTSIDE	-	400	PARKING PLATE	
3	3RD FLOOR	-	750	PARKING PLATE	
	TOTAL	130	1400		

Source: Survey Data Analysis

From the table above, the number of inner car parking lots can accommodate 130 vehicles, the inner motorcycle parking lot can accommodate 250 vehicles, the outer motorcycle parking lot is 400 vehicles and the parking lot is for parking on the 3rd floor of the Pasar Building. as many as 750 vehicles..

Discussion

From the results of the analysis, the following data can be obtained:

Table 22 Comparison of the number of parking plots

NO	TYPE OF VEHICLE AN	NUMBER OF PARKING PLOTS BEFORE DESIGN	NUMBER OF PARKING PLOTS AFTER DESIGN	DIFFERENCE	DESCRIPTION

1	Car	105	130	(+) 25	increase by 25%
2	Motorcycle	825	1400	(+) 575	increase by 70%

Source: Survey Data Analysis

From the data above, the number of car parking plots before the study was 105 after redesigning the number of car parking lots to 130 parking lots and an increase of 25% of parking lots, while the number of motorbike parking lots before the study was 825 after redesigning the number of motorized vehicle plots to become 1400 parking lots and an increase of 70% parking lots.

With a limited number of parking plans and an increase in the number of vehicles parked only at certain hours, it can also be used as a reference that in addition to solving problems that are focused on making basement parking or multi-story parking, the relevant institutions can choose a solution that can be used immediately without must make Basement Parking, namely the arrangement of vehicle entry hours. This arrangement is intended so that the utilization of parking lots can be used for a maximum of the peak hours of the number of vehicles. It is hoped that with the above solutions, the parking problem can be resolved.

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