

Factors Affecting the Willingness of Using Parking Area in Shopping Area in Banjarmasin

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Abstract: This study aims to find out and analyze what factors influence the drivers' willingness to use the parking lot in a shopping area in Banjarmasin City and to propose a discussion about fulfilling parking eligibility in accordance with the needs of the parking area users in a shopping area in Banjarmasin. The variables reviewed were non-independent variables such as the willingness to park the vehicles, and independent variables such as parking fee, area availability, entry and exit access, security, cleanliness, availability of signs, lighting, officer performance, number of officers, and parking shade. To get the influential factors, the method used was logistic regression analysis. From the results of the analysis, it was found that the influencing factors were the area availability, entry and exit access, security, lighting, officer performance and parking shade. The fulfillment of parking eligibility according to the user needs in the shopping area of Banjarmasin City is the available and adequate area for parking which can provide entry and exit doors to facilitate vehicles entering and exiting parking locations, increasing security with the placement of security officers and CCTV, lighting by using street lights. In terms of performance, the officers can prioritize their role to regulate the vehicle parking, especially for four-wheeled vehicles, and in terms of parking shade, natural facilities can be used such as trees or artificial means in the form of adequate protective construction.

Keywords: *shopping areas, parking facilities, logistic regression*

I. INTRODUCTION

The increasing population and increasing vehicle ownership in the city of Banjarmasin will affect the need for parking facilities as well as the growth and development of human activities in them, especially in shopping areas that have a high percentage of trade and commercial activities. Parking services at the shopping area in the city of Banjarmasin are considered to be currently less than optimal in terms of services, parking facilities and in terms of income. Talking about service issues, they cannot be separated from three elements, namely customers, customer services, and company management (organization that raises the output of a service delivery process in the form of services that will be revalued by customers as quality, satisfying or poor-quality services[1].

Most residents in big cities carry out activities or travel by using private vehicles so that adequate area of parking is required [2].

Available parking facilities and service quality are one measure of customer satisfaction visiting the shopping area. Changes in the design of parking facilities can overcome various problems and concerns about parking [3]. One way to find out about parking facilities and the quality of service

what the customer wants or expects is to know what factors influence the willingness of the drivers to use the parking lot in the shopping area.

The research problems raised in this study are as follows:

- What are the factors that influence the desire of riders to use a parking lot in a shopping area in Banjarmasin City?
- How is the fulfilment of parking eligibility in accordance with users' needs in the shopping area in Banjarmasin City?

Based on the research problems raised, the objectives of this study are:

- To find out and analyse what are the factors that influence the desire of riders to use a parking lot in a shopping area in Banjarmasin City.
- To express the discussion regarding the fulfilment of parking eligibility according to the needs of users in the shopping area in Banjarmasin City.

In this study, the author proposes the discussions with the following limitations:

- Survey through questionnaires to the users of parking facilities at the shopping area in Banjarmasin such as like at the Sudimampir Market shopping area, at the Antasari Market department store, and at the Mitra Plaza store.

The sampling in this research uses *random sampling technique*.

- b. The study is only focused on the users of two-wheeled and four-wheeled motorized vehicles parking lot.
- c. The analysis technique used in this study is descriptive statistics and probability analysis carried out with the help of statistical analysis tools in the *Statistical Program for Social Science (SPSS) version 20 for Windows* with logistic regression analysis method.

II. LITERATURE REVIEW

a. Parking Necessities

Parking is one of the facility elements that cannot be separated from the overall road transportation system. With the increase of the population in a city, it will increase the need for various types of activities. Most residents in the developing cities do activities or travel using private vehicles so that it indirectly increases the amount of required parking area.

Parking is the condition of a vehicle that does not move temporarily or does not stop. In other words, the parking is every vehicle which stops at certain places whether marked by signs or not, and not solely for the purpose of carrying in and carrying out the passengers. The location which is appointed as a temporary stop for vehicles to carry out activities at a certain time is called a parking facility. Parking facility is an important part of the total transportation system. Planning and designing of this facility requires an understanding about the characteristics of generating an area from the different area uses that are served. A vehicle user who wants to get parking exactly near the intended area use may not always be obtained. Road space will be more profitable if it is used for traffic. Parking facility has function to accommodate vehicles that are stopping for a certain purpose. The provision of good parking facility will not cause conflict on the surrounding roads. Parking problems basically occur if the number of parking needs is greater than the existing parking capacity. So, the vehicles that are not accommodated in the parking lot will interfere the flow of traffic on the surrounding roads. In the developing cities, parking problems become very complex problem and need fast and appropriate handling and good cooperation between the parties concerned.

According to the management, parking facility can be classified as follows:

- 1) Public parking, this facility is owned and managed by the local government.
- 2) Special parking, the parking facility is organized by third parties.
- 3) Emergency parking, this parking facility is in public places such as roadside, vacant areas, both local government and private property and is incidental.
- 4) Park parking, this parking facility is in the area of a special park, usually managed by the government.

- 5) Building parking, it is organized by local and private governments.

According to the type of vehicle

- 1) Parking for two-wheeled transportation tool which is not motorized, it is needed for such as bicycles and the like.
- 2) Parking for two-wheeled motorized vehicles, it is for motorbike vehicles and the like.
- 3) Parking for three-wheeled or more motorized vehicles, it is needed for vehicles which require parking of vehicles such as cars.

Based on the purpose of the parking lot, a parking lot can be divided as follows:

- 1) Parking of passengers, this facility is intended as a place to carry in and carry out the passengers.
- 2) Parking of goods, this parking facility is intended as a place for loading and unloading goods.

According to ownership and operation, there are three types of parking facility, namely:

- 1) Parking facility that is owned and operated by the private sector.
- 2) Parking facility which is owned by the local government and operated by the private sector.
- 3) Parking facility that is owned and operated by the local government.

According to parking placement, it can be divided into two, namely:

1) *On street parking*

It is a parking location that is provided along the road, both with and without road widening. Along the way there is an area to park the vehicle. On roads that have quite heavy traffic, this will be very disturbing especially for roads that do not have special widening for parking because the road body that is supposed to function to be passed by the vehicles is reduced its wide due to the vehicles that are parking in the area.

2) *Off street parking*

It is a special location provided for parking vehicles, both with or without special fees. The location is not disturbing or using an existing road area because it is placed in a special location provided for parking. The forms of *off street parking* are:

- a) Parking lot
- b) Building's parking lot
- c) Underground parking (*basement*)
- d) Garage
- e) Levelled Parking

The advantage of *off street parking* is that it does not disturb the traffic and existing road facilities. However, this *off street parking* also has weaknesses that must be planned specifically which means the emergence of the cost for planning, releasing and additional construction. In this carried out research, the parking facilities that are used as research objects are included in the type of *off-street parking*.

Seeing the significance influence of a parking facility on the surrounding environment, it is necessary to have a parking control. Parking control can be carried out such as by distributing appropriate parking spaces, setting rate, installing signs and markers, and limiting parking time.

One of the parking controls is to set the parking rate. In determining parking rate, there are often differences between operators and parking service users. The users from a community generally assume that the rate applied takes side the operators without seeing the ability of the purchasing power of the people. However, it should be noted whether the current rates have concerned the interests of both the operators (maintaining and improving parking service facilities) and the purchasing power of the people in general.

The determination of parking rates is one of the ways to control the traffic of parking tariff calculation which is not based on the calculation of return on investment and operational costs and also is not solely to obtain material and/or financial benefits. The determination of parking rates is conducted to control traffic through reducing the use of private vehicles, so it can reduce the traffic jam on the road. Through tariff setting in such a way, certain rate is expected to reduce people's intention to use private vehicles.

Based on the types of facility, the imposition of parking rates can be classified as follows:

- 1) Group A
 - a) Road's body without the purpose of parking controlling.
 - b) Regions with relatively low parking frequency (1,5 vehicles/SRP/ day).
 - c) Parking for a long time.
 - d) Residential areas, parking can be without payment or at low rates.
 - e) Areas with low levels of traffic control.
- 2) Group B
 - a) Road's body without the purpose of parking controlling.
 - b) Areas with relatively high parking frequency (20 vehicles/SRP/day).
 - c) Commercial areas or shops, parking rates can be applied relatively high, to control traffic.
 - d) Areas with high levels of traffic control.
- 3) Group C
 - a) Parking area in public parking facilities with the intention of parking controlling.
 - b) Getting in and out of a vehicle that is controlled through a ticket with a registered time, parking rates can be progressively applied, which can increase according to the length of parking.
 - c) Areas with high levels of traffic control.

b. Parking Performance Assessment

Parking performance can be measured and assessed in several ways including [4]:

- 1) Parking arrivals and exits

Arrival-out parking is the number of vehicles that come and go out in a certain period of time which is usually measured for one hour which shows the number of vehicles that park in a span of one hour. It can also show the time of the largest number of vehicle which comes and goes out and the number of arrival-out and the number of vehicles parking for one day.

- 2) Parking accumulation

Parking accumulation is the number of vehicles that are still parking for a certain period of time. It is usually measured for one hour, obtained from the results of the measurement of the number of parking vehicles with the number of parking out in the same time span. This accumulation can provide information about the number and the pattern of parking demand, that is when parking demand is the lowest when compared to existing parking capacity.

- 3) Parking index number

The parking index number is a number that shows a comparison between the number of parked vehicles at a certain time period and the existing parking capacity, which is expressed as a percentage. The parking index number is used to regulate the use of parking spaces. This result will then be used to see the peak time of parking.

- 4) *Turn-over* rate

The *turnover* rate is a number that shows the average number of vehicles using a parking lot for a certain period. This number can be interpreted as the use of parking lot.

- 5) Parking duration

Parking duration is the amount of time used by parkers to park their vehicles, which is calculated from the start of the vehicle entering the parking lot until it exits.

c. Logistic Regression Analysis

- 1) Logistic Regression Model

Regression is one of the data analysis techniques in statistics that can explain and evaluate the relationship between independent variables and dependent variables and can be used to predict the dependent variables [5].

If a model is built from one or several dependent variables that are not related then a simple regression approach can be used. However, if it involves the interrelationship between the dependent variables, a more structured model called Structural Equation Model (SEM) analysis is needed [6].

One regression model that is often used for qualitative or categorical data is logistic regression. Logistic regression is one of the regression models that can explain the relationship between categorical dichotomous response variables (nominal or ordinal scale consisting of two categories) or polycotomus (nominal or ordinal scale in more than two categories) with one or more categorical or continuous or both the combination of categorical and continuous predictor variables [7].

In general, connecting functions are used, namely the logit connection function. Then, the probability distribution function is a logistical function [8]. By using the nature of natural logarithms, a simpler equation is obtained [9].

$$g(x_i) = \ln \frac{\pi(x_i)}{1-\pi(x_i)} = (\beta_0 + \beta_1 x_1 + \dots + \beta_i x_i)$$

with $g(x_i)$ = logit equation, $\pi(x_i)$ = chance of a successful event with a probability value $0 \leq \pi(x) \leq 1$, β_0 = constant, β_i = i predictor variable regression coefficient, x_i = i predictor variable.

2) Model Suitability Test

The analysis technique in processing this data does not require more normality test and classic assumption test on the independent variables [10]. This test was conducted to find out whether there were differences between the results of observations and the possible outcome of the model predictions. The criteria for conformity test models can be seen from several tests including Hosmer Lemeshow testing, Overall model test, Omnibus Test Of Model Coefficients and Nagelgarke R-Square.

a) Hosmer-Lemeshow Test

One tool that can be used to test the suitability of the model from logistic regression is the Hosmer-Lemeshow Test. the steps in the Hosmer-Lemeshow test are by knowing the coefficient of determination. The coefficient of determination can explain the magnitude of the relationship between the dependent variable and the independent variable. The determination coefficient in linear regression cannot be used in logistic regression analysis because there is an assumption that the dependent variable must be a metric in ordinary linear regression analysis. A coefficient of determination in the logistic regression model for the dependent variable is binary, namely (coefficient of determination) and R^2 , adj (adjusted coefficient of determination) [11].

If the statistical value of Hosmer and Lemeshow's Goodness of Fit Test > 0.05 , then the null hypothesis is accepted and it means that the model is able to predict the value of its observations or it can be said that the model is acceptable because it matches the observation data.

In general, if the value is reviewed on a significant value, each independent variable approaches 0 ($\alpha < 0.05$) to show the independent variable that is considered valid to be used. The algebraic sign of the independent variable which is inversely proportional to the dependent variable is (-) and if it is directly proportional to the dependent variable is (+). Therefore, the logical criteria are met [12].

b) Assessing the Overall of the Model (Overall Fit Test Model)

This test was used to assess models that have been hypothesized to have been fit or not with data. The testing was done by comparing the value between -2 log

likelihood at the beginning (block number = 0) with the value of -2 log likelihood at the end (block number = 1). The reduction of the value between the initial -2LL (initial-2LL function) and the value of -2LL in the next step (-2LL end) indicated that the model hypothesized was fit with the data.

c) Determination Coefficient Test (Nagelkarke R-Square)

Nagelkarke R-Square testing is also known as the determination coefficient testing on the logistic regression. *Nagelkarke R-Square* in the "Model Summary" table is a modification of the *Cox and Snell* coefficient to ensure that the values vary from 0 to 1.

This test aims to find out how much the combination of independent variables can explain the variation of the dependent variables.

d) Model Coefficient Testing (Omnibus Test of Model Coefficient)

This test is conducted to test whether all the independent variables or one of the independent variables affect the dependent variable.

3) Hypothesis Testing

Hypothesis testing is done by comparing the value of probability (sig) with a significance level (α). To determine the acceptance or rejection of H_0 , it is based on the significance level (α) of 5% with the criteria:

- H_0 will not be rejected if the Wald statistic counts $<$ Chi square table, and the probability value (sig) $>$ significance level (α). It means that the H alternative is rejected or the hypothesis that states the independent variable has an effect on the dependent variable is rejected.
- If H_0 is rejected if the Wald statistic counts $>$ Chi-square table, and the probability value (sig) $<$ level of significance (α), it means that the H alternative is accepted or the hypothesis that states the independent variable has an effect on the dependent variable is accepted.

III. RESEARCH METHOD

a. Research Variables

The research variables consisted of the response/dependent variables (Y) and independent variable (X). As for the response variables, they were 0 = no parking and 1 = parking, while the independent variables that were expected to affect the willingness of the drivers to use the parking lot were parking fee (x_1), area availability (x_2), parking access (x_3), security (x_4), cleanliness of the parking lot (x_5), availability of signs (x_6), lighting (x_7), performance of officers (x_8), number of parking officers (x_9), and parking shade (x_{10}).

b. Data Gathering Technique

The data were gathered by using a survey technique using questionnaire. The research instrument used a Likert Scale

of 1-5: 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree). The sampling locations were in the shopping areas of Banjarmasin City, namely in Sudimampir shops, Antasari Market shops and Mitra Plaza Banjarmasin shops. These three locations were chosen based on the available parking characteristics that were very crowded of users but still managed traditionally, not using a digital parking management system. The number of samples used is as many as 150 people using two-wheeled vehicles, 90 people using four-wheeled vehicles so that the total respondents were 240 people.

IV. RESULT AND DISCUSSION

a. Data Analysis of Two-wheeled Vehicle Users

The results of the analysis of the influence of parking fee, area availability, entry and exit access, security, cleanliness, parking signs, lighting, officer performance, number of officers, and parking shade on the drivers' willingness to use the parking lot in shopping areas were obtained by analyzing the results of variable in the equation in Table 1.

Table 1. Test Results of the Influence of Factors on Two-Wheeled Vehicles

N o.	Factor	Coefficient	Exp (B)	Sig.	Information
1.	Fee	-1,307	3,693	0,307	Not Significant
2.	Area availability	2,515	0,081	0,021	Significant
3.	Entry exit access	1,964	7,128	0,015	Significant
4.	Security	2,406	11,086	0,015	Significant
5.	Cleanliness	0,633	0,531	0,582	Not Significant
6.	Parking signs	0,458	0,632	0,649	Not Significant
7.	Lighting	0,897	2,452	0,593	Not Significant
8.	Officers performances	1,312	3,714	0,037	Significant
9.	Number of officers	2,246	9,48	0,111	Not Significant
10	Parking shade	1,192	0,304	0,282	Not Significant
Constants		-17,666			

Based on table 1, the results of the test of variable in equation, the logistic regression equation can be formulated as follows.

$$\ln \frac{p}{1-p} = - 12,859\alpha - 0,087_{\text{fee}} + 0,408_{\text{area availability}} + 1,310_{\text{entry exit access}} + 1,770_{\text{security}} + 1,456_{\text{cleanliness}} + 0,453_{\text{parking signs}} + 1,800_{\text{lighting}} + 1,584_{\text{officer performance}} + 0,542_{\text{number of officers}} + 2,163_{\text{parking shade}}$$

The result of the tests on the factors showed that:

- 1) The factors that significantly influence the respondents' willingness to use the parking lot in the shopping areas

are the area availability, vehicle entry and exit access, security, lighting, officer performance, and parking shade. This was seen based on the significant values of these factors which were smaller than the value of α (0.05).

- 2) The factors that did not have significant effects on the respondents' willingness to use the parking lot in the shopping area were the parking fee, the cleanliness of the parking lot, parking signs, and the number of parking officers. This was seen based on the significant values of these factors which were greater than the value of α (0.05).
- 3) The most significant factor was the lighting factor, of which the value of Exp (B) was equal to 6,051, which was greater than that of other factors.

b. Data Analysis of Four-wheeled Vehicle Users

The results of the analysis of the influence of factors or parking fee, area availability, vehicle entry and exit access, security, cleanliness, parking signs, lighting, officer performance, number of officers, and parking shade on the drivers' willingness to use parking lot in shopping areas is by analyzing the results of variable in equation in Table 2.

Table 2. Test Results of the Influence of Factors on Four-Wheel Vehicles

No .	Factor	Coefficient	Exp (B)	Sig.	Information
1.	Fee	-0,087	0,916	0,909	Not Significant
2.	Area availability	0,408	1,504	0,043	Significant
3.	Entry exit access	1,310	3,707	0,008	Significant
4.	Security	1,770	4,287	0,028	Significant
5.	Cleanliness	1,456	2,159	0,481	Not Significant
6.	Parking signs	0,453	0,635	0,515	Not Significant
7.	Lighting	1,800	6,051	0,006	Significant
8.	Officers performances	1,584	4,875	0,007	Significant
9.	Number of officers	0,542	0,561	0,246	Not Significant
10.	Parking shade	2,163	0,115	0,011	Significant
Constants		-12,859			

Based on Table 2 of the results of the analysis of the influence of the variable in equation, the logistic regression equation can be formulated as follows.

$$\ln \frac{p}{1-p} = - 17,666\alpha - 1,307_{\text{fee}} + 2,515_{\text{area availability}} + 1,964_{\text{entry and exit access}} + 2,406_{\text{security}} + 0,633_{\text{cleanliness}} + 0,458_{\text{parking signs}} + 0,897_{\text{lighting}} + 1,312_{\text{officer performance}} + 2,246_{\text{number of officers}} + 1,192_{\text{parking shade}}$$

“Factors Affecting the Willingness of Using Parking Area in Shopping Area in Banjarmasin”

Based on the test results, the following points were obtained:

- 1) The factors that had a significant effect on the drivers of four-wheeled vehicles willingness to use parking lot in shopping areas are the factors of area availability, vehicle entry and exit access, security, and officer performance. This was seen based on the significant values of these factors which were smaller than the value of α (0.05).
- 2) The factors that did not have significant effect on respondents' willingness to use parking spaces in shopping areas are parking fee, parking cleanliness, parking signs, lighting, parking officers and parking shade. This was seen based on the significant values of these factors which were more than the value of α (0.05).
- 3) The most significant factor was the security factor, on which the value of Exp (B) was equal to 11,086, which was greater than other factors.

c. Data Analysis of Two-wheeled and Four-wheeled Vehicle Users (Combined Data)

The results of the analysis of the effect of factors of parking fee, area availability, vehicle entry and exit access, security, cleanliness, parking signs, lighting, officer performance, number of officers, and parking shade on the drivers' willingness to use parking lot in shopping areas is by analyzing the results of variable in equation in Table 3.

Table 3. The Results of Testing the Effect of Factors on Combined Data

No	Factor	Coefficient	Exp (B)	Sig.	Information
1.	Fee	0,603	1,827	0,283	Not Significant
2.	Area availability	0,527	0,590	0,002	Significant
3.	Entry exit access	0,950	2,585	0,002	Significant
4.	Security	1,261	3,528	0,016	Significant
5.	Cleanliness	0,469	1,598	0,354	Not Significant
6.	Parking signs	0,409	0,664	0,419	Not Significant
7.	Lighting	1,897	6,664	0,000	Significant
8.	Officers performances	1,088	2,967	0,002	Significant
9.	Number of officers	0,161	1,174	0,580	Not Significant
10.	Parking shade	1,411	0,244	0,009	Significant
Constants		-13,084			

Based on Table 3, the results of the analysis of the effect of the variable in equation, the logistic regression equation can be formulated as follows:

$$\text{Ln} \frac{p}{1-p} = - 13,084_{\text{Constant}} + 0,603_{\text{fee}} + 0,527_{\text{area availability}} + 0,950_{\text{Access}} + 1,261_{\text{security}} + 0,469_{\text{cleanliness}} + 0,409_{\text{signs}} + 1,897_{\text{lighting}} + 1,088_{\text{performance}} + 0,161_{\text{officer performance}} + 1,411_{\text{parking shade}}$$

The result of the test obtained the following points:

- 1) The factors that significantly affected the willingness of respondents to use the parking lot in shopping areas are the factors of area availability, vehicle entry and exit access, security, lighting, officer performance, and parking shade. This was seen based on the significant values of these factors which were smaller than the value of α (0.05).
- 2) The factors that did not have significant effect on the respondents' willingness to use parking lot in shopping areas were the parking fee, cleanliness, parking signs, and parking officers and parking shade. This was seen based on the significant values of these factors which were greater than the value of α (0.05).
- 3) The most significant factor was the factor of lighting, on which the value of Exp (B), which is equal to 6.664, was greater than other factors.

d. Research Discussion

Meeting the needs of parking in the shopping area in Banjarmasin City can be done by suggesting an alternative discussion of the problem stating that the research factors that have effect on the willingness of the community to park their vehicles in the parking lot available in the shopping area in Banjarmasin City:

- 1) Parking lot management by taking into account the availability of parking area.

Parking lots are needed to meet dimensional needs for vehicles using the parking lot. Parking managers are required to be able to provide sufficient parking space and meet the required capacity, where the placement and designation of parking in accordance with the parking vehicle user mode, which is to distinguish parking locations for two-wheeled vehicles and four-wheeled vehicles, so as to facilitate the management. Procurement and provision of facilities for community needs such as shopping centers and shops must directly provide adequate locations to park the vehicles or parking lots, so that it can support economic development and trade in shopping centers.

- 2) Parking lot management by paying attention to entry and exit access of the vehicle.

Management of access to enter and exit the parking lot is to regulate the parking circulation, where the entry of vehicles, both two-wheeled and four-wheeled, is very important so that the parking lot does not experience vehicle congestion due to chaos in the arrangement of vehicles entering the parking lot and vehicles leaving the parking lot. With the management of vehicle entry and exit access, the use of parking blocks on parking lots will be maximized. Vehicle entry and exit access can use the parking entry and

exit gate. The size of the width of the exit and entrance can be determined, which is 3 meters wide and can accommodate 3 consecutive cars with a spacing of about 1.5 meters. Therefore, the width of the entrance gate is a minimum of 15 meters [13].

3) Increasing the Security in the Parking Lot

Parking security factor for manual parking area or parking area that does not use digital parking system is by placing security officers and assistance with surveillance facilities such as CCTV cameras. The increase in security factor is intended to reduce the opportunity of crime or other things that have an impact on material losses for parking users and managers.

4) Improving the Lighting in the Parking Lot

Parking area lighting is very necessary to facilitate management and parking arrangements. This is not only beneficial for parking managers, but also for parking users. Parking area lighting functions for the operation of parking lots at night, especially in the shopping areas of Antasari Market and Mitra Plasa Banjarmasin, where both shops operate until evening. Whereas in the Sudimampir (Pasar Baru) shopping area that does not operate until night, this information factor aims to maintain the security, comfort and cleanliness of the parking area when it is not used, from things that can disturb the parking area when it is not used, namely from the community or night animals that use dark vacant land for adverse actions. Parking area lighting can use street lights that have been designed to provide sufficient light for large parking locations [14].

5) Officer Performance

The role of parking officers in the implementation of parking management is very important. This directly becomes one of the considerations for parking users to park their vehicles in the parking area available in the shopping area of Banjarmasin City. The role of the parking officers is to arrange the placement of vehicles in the parking blocks and regulate the circulation of parking users for vehicles leaving the parking lot [15]. Especially for morning users of four-wheeled vehicles, the role of parking officers is very necessary to adjust the position of the vehicle, the direction of the vehicle and the placement of vehicles so as not to disturb other parking lot users. Four-wheeled vehicle drivers generally tend to wait for parking officers to direct and instruct the movement of cars moving forward and backward. With the parking officers, the drivers will feel safe to move their vehicles. Parking officer performance is needed during the operation of parking lots. The number of parking officers is adjusted to the size of the parking area that operates.

6) Parking Shade

Parking shade is one factor that becomes the consideration for vehicle users to park their vehicles in the parking area. This is related to the convenience of the users, especially the users of four-wheeled vehicles. The shade of parking in the shopping area in the city of Banjarmasin is

sometimes not considered by the manager, thereby reducing the convenience of parking users. The use of natural or artificial shade/ protectors for parking vehicles can be developed using available facilities and infrastructure, adequacy of the budget owned and the feasibility or suitability of the characteristics of the parking lot used.

V. CONCLUSIONS

Based on the result of the analysis and discussion, the following conclusions can be drawn:

- a. The factors affecting the willingness of vehicle drivers to use the parking lot in the shopping areas in Banjarmasin City are:
 - 1) Factors that had significant effect on the willingness of two-wheeled vehicle users to use the parking lot in the shopping areas in Banjarmasin City were the factors of area availability, entry and exit access, security, officer performance, lighting, and parking shade. While the factors that had no significant effect were the factors of parking fee, cleanliness, parking signs, and the number of officers.
 - 2) The factors that affected the willingness drivers to use parking lot in the shopping area in Banjarmasin City were the factors of area availability, entry and exit access, security, and performance of officers. While the factors that had no significant effect were the factors of parking fee, cleanliness, parking signs, lighting, number of officers, and parking shade.
- b. Fulfillment of parking eligibility in accordance with the needs of users in the shopping area in Banjarmasin City are as follows:
 - 1) Providing sufficient parking space in accordance with the parking capacity needed by parking users for two-wheeled or four-wheeled vehicles.
 - 2) Providing entry and exit access. It can be divided become two different tracks, one for the entrance and another for the exit, or only one access for both entry and exit access. It will make the vehicles entering and leaving the parking lot easy to manage.
 - 3) Increasing the security of the parking lot by employing security officers and providing assistance of parking lot monitoring facilities using security systems such as CCTV cameras.
 - 4) Providing the parking lot with lighting or street lights which are designed to give enough lights for wide parking locations.
 - 5) Prioritizing the role of parking officers to manage the position of vehicles in the parking blocks and manage the circulation of the vehicles leaving the parking lot, especially in the morning for the four-wheeled vehicle users.

- 6) Providing the facility to give shade in the parking lot by using the natural facility such as trees or artificial facility such as adequate construction to give protection and shade.

Shopping Area). Indonesian Standardization Body. Jakarta.

15. Banjarmasin City Government. 2010. Peraturan Daerah Kota Banjarmasin Nomor 18 Tahun 2010 Tentang Izin Pengelolaan Parkir (Local Regulation of Banjarmasin City Number 18 Year 2010 About Parking Management Permit). Banjarmasin

REFERENCES

1. Kotler Philip, Keller Kevin Lane. 1997. Marketing Management 12e. Pearson Internasional Edition. USA: Pearson Education.
2. Tamin, O.Z. 2008. Perencanaan, Permodelan dan Rekayasa Transportasi: Teori, Contoh Soal dan Aplikasi (Transportation Planning, Modeling and Engineering: Theory, Exercise and Application). Bandung: ITB Press
3. Shoup, D. 2006. Cruising for Parking. Transport Policy, 13, 479-486.
4. Hobbs. 1979. Perencanaan dan Teknik Lalu Lintas (Planning and Technique of Traffic). Yogyakarta: UGM Press.
5. Kutner, M.H, Nachtsheim, C.J & J. Neter. 2004. Applied Linear Regression Models. Fourth Edition. New York: McGraw-Hill/Irwin.
6. Radam I. F., Mulyono A. T. & Setiadji B. H. 2016. The Analysis of Lifestyle Affecting the Choice on River Transport in Banjarmasin. International Business Management 10 (19), pp. 4690-4698.
7. Agresti, A. 2002. Categorical Data Analysis. Second Edition. New York: John Wiley and Sons. Inc.
8. McVullagh, P & Nelder J.A.1989. Generalized Linear Models. Second Edition. London: Chapman and Hall.
9. Medenhall, William & Sincich, Terry. 2012. A Second Course in Statistics Regression Analysis. Seventh Edition. United States of America: Pearson Education.
10. Ghozali, Imam. 2011. Aplikasi Analisis Multivariate Dengan Program SPSS (Multivariate Analysis Application with SPSS Program). Semarang: Undip Press.
11. Agresti, A. 1990. Categorical Data Analysis. USA: John Wiley and Sons.
12. Radam, F, Iphan, Agus T. Mulyono, Bagus H. Setiadji. 2015. Influence Of Service Factors In The Model of Public Transport Mode A Banjarmasin-Banjarbaru Route Case Study. International Journal for Traffic and Transport Engineering. 5 (2), pp. 108-119.
13. Ministry of Transportation. 1998. Pedoman Perencanaan dan Pengoperasian Fasilitas Parkir (Guidelines for Planning and Operating Parking Facilities). Jakarta.
14. Indonesian National Standard, SNI 7391. 2008. Spesifikasi Penerangan Jalan Di Kawasan Pertokoan (Street Lighting Specification in