

## OPTIMIZATION OF TRAYEMAN SUB TERMINAL PERFORMANCE IN TEGAL DISTRICT

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### ABSTRACT

*The terminal is a public motor vehicle station which used to regulate arrival and departure, pick and drop passenger and/or stuff, and movement of transportation mode. This research aims to know terminal technical performance, quality of service and level of satisfaction and make recommendations for handling to be more optimal.*

*The methods which used in this research for data collection are used terminal inventory survey methods, static surveys and interviews of terminal service users and literary methods. Analysis method using descriptive analysis of terminal technical performance to know the space capacity and terminal facility needs, Importance Performance Analysis (IPA) methods to know perceptions of terminal service users and SWOT analysis methods to obtain optimization strategies for handling. Based on IPA analysis method shows that passenger and driver feel less satisfied with service of sub terminal of Trayeman and obtained SWOT quadrant value for the x-axis is -0.15 and for the y-axis is 1.20 with the recommendations given are change strategy, among others with maintain location, accessibility, stretch path, improvement of main facilities and supporting facilities and with local government fund support in order to improveservice to the community. The calculation of the three investment criteria for structuring the utilization of trayeman sub terminal obtained values NPV Rp.157,692,680 B/C Ratio value is 1.05 and IRR value is 8.23% and it can be concluded that the project is feasible to implement.*

*Key word: Terminal, IPA, SWOT, Investment criteria*

### 1. Introduction

The terminal is a public motor vehicle station which used to regulate arrival and departure, pick and drop passenger and/or stuff, and movement of transportation mode. According constitution Number 22 2009 about Traffic and Road Transport, every public motor vehicle in the route is required to stop at the terminal that has been determined in accordance with the route permit. Terminal also should be equipped with main facilities and supporting facilities. Reality in the field, there are still many terminals that do not have a prerequisite of a terminal and it does not function optimally as happened in Trayeman sub terminal. The existence of existing Trayeman terminals is very important to support the mobility of rural communities in Tegal regency. However, in terms of technical performance and perceptions of current service users are still considered not meet the standards of service. From the background of the problem are formulated the problem as follows:

- a. How is the technical performance of Trayeman sub terminal at present?
- b. Do the current terminal service quality in accordance with the terminal technical standards?
- c. How is recommendation related to performance problems of Trayeman sub terminal?

The purpose of this research are:

- a. Knowing Sub Terminal Technical Performance;
- b. Knowing the Quality of Service and Level of Satisfaction from the perspective of terminal service users;
- c. Knowing the economic terminal's appropriateness;
- d. Make handling recommendation related the problems so that the management and the utilization are more optimized.

Benefit of the research:

- a. As government consideration related problems appropriateness in sub terminal's;
- b. As the basic to determined of district terminal's authority;
- c. Enhancement public service as manifest of good governance.

## **2. Research Method**

### **2.1 Data Collection**

- a. Primary Data obtain from direct observation or field surveys involve terminal static survey, terminal inventory survey, passengers and driver interview survey.
- b. Secondary Data is the data which are collected from any sources and related department aiming to obtain the general description and support data related the prime problems and research study.

### **2.2 Terminal Technical Performance Analysis**

#### *2.2.1. Terminal Technical Analysis*

- a. Terminal location
- b. Terminal facilities
- c. Vehicle services frequency in the terminal
- d. Passenger volume
- e. Vehicle headway in terminal
- f. Waiting time
- g. Traffic circulation

### 2.2.2. Comparing technical performance and terms with standard

Comparing technical performance and terms with standard area and terminal terms type C according to decree of the minister of transportation number Km 31 year 1995 about road transportation terminal and calculate the needed compatible facilities with vehicle's demand/ needed according field survey.

## 2.3 Importance Performance Analysis (IPA)

### 2.3.1 Respondent Sample

Respondent sample is the part of amount and characteristic has by populated (Sugiyono : 2010). Taking sampling in this research which give some chance to every population design or not as sample. Sample use Slovin's formula. Where the number of passengers and the number of drivers is was resulted from vehicle static survey:

$$n = \frac{N}{1 + N(e)^2} \quad (1)$$

Where:

n : number of sample

N : Size of population

e : mistakes level 10%

So, with entered N number of passengers 670 persons and N number of drivers 289 person and the number of e 10%, so the number of sample for passengers are 87 respondents, and for the driver vehicles are 74 respondent.

### 2.3.2. Service Perceptions

Service perception of customers is obtained with Importance Performance Analysis (IPA) with measuring answers from each samples and the questionnaire. With service attribute, involve:

**Table 1.** Service quality passenger perception

No.	Service quality attribute
1.	Terminal cleanliness
2.	Waiting time service
3.	Waiting rooms
4.	Toilet facilities/ bathrooms
5.	Traffic sign and information wall
6.	Information rooms
7.	Terminal office service

No.	Service quality attribute
8.	Intensiveness exit-enter terminal access
9.	Parking area
10.	Route information and fare's vehicle
11.	Loading facilities
12.	Fluency of terminal circulation
13.	Terminal courtyard

Sources :Survey results (2017)

While from the service quality attribute according to drivers perception, as follow:

**Table 2.** Service quality of drivers perception

No.	Service Quality Attribute
1.	Withdrawal of user charge
2.	Availability of arrival area
3.	Availability of departure area
4.	Waiting time of parking queue
5.	Terminal security
6.	Terminal location
7.	Terminal passengers
8.	Terminal controlling officers
9.	Vehicle schedule
10.	Traffic sign and information system
11.	Terminal exit-enter access
12.	Terminal supporting facilities
13.	Representative of transportation organization
14.	Traffic regulation by officer
15.	Market traders
16.	Condition of terminal's road/ courtyard
17.	Terminal's parking regulation

Sources :Survey results (2017).

According to Martila and James (1977) Importance Performance Analysis (IPA) obtain to answers formula of the problems about how far the satisfaction level and the customer expectations. Where the variable X show the satisfaction level and variable Y show importance indicator level.

$$T = \frac{X}{Y} \times 100\% \quad (2)$$

Where:

Tki : congruence of respondent level

Xi : score of performance assessment

Yi : score of importance assessment

To measuring importance level and customer satisfaction (*Supranto : 2006*) using Likert Scale, with Likert scale variable which will measured is description as sub variable and then description as well indicators be measured. These indicators will be starting point to make

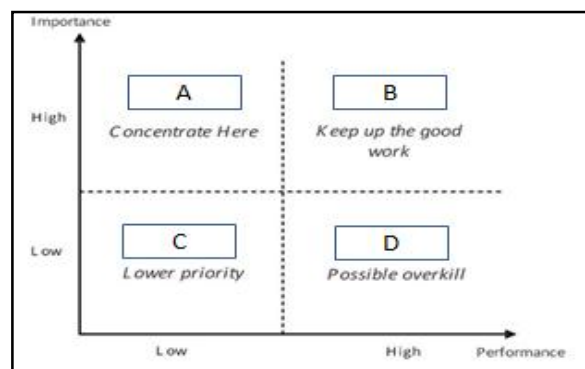
instrument as listed in Table 1 and Table 2. In this research obtain 5 (five) level (Likert), with assume that this 5 level could represent all of the respondent responses.

**Table 3.** Likert’s Scale are to Measuring Importance and Performance Level

Importance level	Satisfaction’s level	Score
Very importance	Very Satisfied	5
Importance	Satisfied	4
Importance enough	Satisfied enough	3
Unimportance	Unsatisfied	2
Very unimportance	Very unsatisfied	1

Sources: Supranto (2006)

Score of importance level and satisfied attribute are got from the entire respondent and then calculate the median, the median value of importance level and satisfied will determine of line position which will divide the Cartesian diagram in 4 quadrants, as the following picture.



**Figure 1.** Cartesian Diagram  
Sources: Martila and James (1977)

## 2.4 Economic Analysis And Terminal Management

Investment feasibility from the terminal development use investment criteria (Soeharto:1997) there are:

### 2.4.1. Net Present Value (NPV)

Net present value is criteria to calculating the difference between investment score present with investment score in futures.

$$NPV = \sum_{t=1}^n \frac{(B_t - C_t)^2}{(1 + i)^2} \tag{3}$$

Where :

Ct : Cost (Cost investment)

Bt : Benefit

I : Interest rate level

#### 2.4.1. Net Benefit Cost Ratio (BC Ratio)

Formula net benefit cost ratio:

$$BC/Ratio = \frac{\sum_{t=1}^n \frac{Bt - Ct}{(1+i)^t}}{\sum_{t=1}^n \frac{Ct - Bt}{(1+i)^t}} \quad (4)$$

Benefit score is get from terminal user charge while cost score is get from development cost and terminal maintenance.

#### 2.4.2. Internal Rate of Return (IRR)

Internal Rate of Return (IRR) is discount rate which could cause the high of NPV from a project is amount of zero or could cause BC ratio amount as one.

$$IRR = i_1 + \frac{NPV_1}{NPV_1 - NPV_2} (i_2 - i_1) \quad (5)$$

Where :

$i_1$ : score of first rate when NPV positive

$i_2$ : score of second rate when NPV negative

According to 3 (three) investment criterias if the value of  $NPV > 0$  score B/C ratio  $> 1$  and score  $IRR >$  deposit rate level, so that the project is feasible to implement. In the terminal management catalogue, Urban Sector Development Reform Project (USDRP : 2010) that the management operational a terminal is not regardless from the organize and task management which is a system and procedure commands route and responsibility in an organization. We need standard operational procedure and division basic task and also functional meeting in each official.

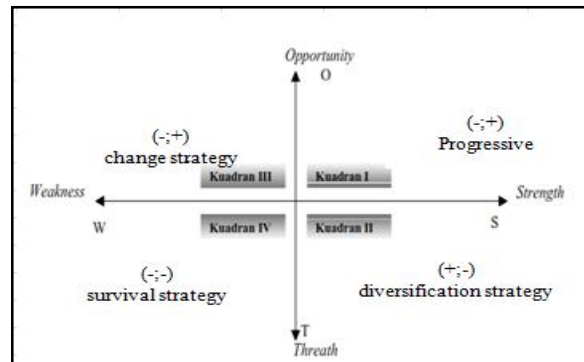
### 2.5. SWOT (Strength Weakness Opportunities Threats ) Analysis

Analysis SWOT (Rangkuti, 2005) is a condition analysis of internal or external an organization which in the next will use as basic to design strategy and programs. Internal analysis as include scoring to strength factors and weakness, and for the external analysis are includes opportunity and threats.

2.5.1. Internal and External analysis ( IFE & EFE matrix)

Internal Factor Evaluation (IFE) matrix use to help analysis factors in terminal with factors of strength and weakness, while External Factor Evaluation (EFE) matrix is matrix which use to help analysis factors in terminal and factors strategies like opportunities and threat. IFE & EFE formulating and calculate according to weight and rating which result a value. The value is resulting different score between strength and weakness in variable X and different score between opportunity and threat in variable Y.

2.5.2. SWOT Quadrant



**Figure 2. SWOT Quadrant**  
Sources: Freddy Rangkuti (2005)

3. Result And Description

3.4. Existing Terminal Technical Performance Analysis

- a. According to the location’s criteria type C in Minister Decree Number 31, 1995 about Road Transportation Terminal that Trayeman sub terminal location is compatible with terms but it need a regulation in fluent of exit-enter routes compatible in terminal needed.
- b. Terminal Facilities

**Table 4. Terminal Prime Facilities**

Prime Facilities Terminal type C KM 31/1995	Available
Arrival route	available
Departure route	available
Terminal office building	available
Passengers waiting rooms/courtyard	not available
Traffic sign and information route wall, fare and travel schedule	not available

Sources: Analysis results (2017)

And to the supporting facilities as follow:

**Table 5.** Terminal supporting facilities

Terminal supporting facilities type C KM 31/1995	Available
Toilet/ bathrooms	available
Mosque	available
Shop/ canteen	available
Unit healthy care	not available
Information and complaint rooms	not available
Telephone (pay phone / office)	not available
Deposit box	not available

Sources: Analysis results (2017)

#### c. Frequency of Service

Trayeman terminal is pass by 12 route vehicles with vehicle volume exit-enter are 577 vehicle a day with frequency of service 64.11 vehicles/ hour. The highest frequency of service is Slawi - Tegal route 19 vehicles/ hour and the lowest frequency of service is Lebaksiu - Cacaban route 0.78 vehicle/ hour.

**Table 6.** Vehicle Route Pass by Trayeman's Terminal

No.	Route
1.	Slawi - Guci PP
2.	Slawi - Maribaya PP
3.	Slawi - Lik PP
4.	Banjaran - Balapulung PP (007)
5.	Balamoa - Lebaksiu PP (212)
6.	Dermasuci - Lebaksiu (55) PP
7.	Lingkar Kota Slawi
8.	Lebaksiu - Cacaban PP
9.	Slawi – Tegal PP
10.	Slawi - Jatibarang – PP
11.	Tegal - Bumiayu (AKDP)
12.	Tegal - Bumijawa (AKDP)

Sources: Analysis results (2017)

#### d. Passengers volume

Passengers in volume per hour is 74.44 passenger, while passengers drop volume 512 passenger a day with passengers drop volume an hour is 56.89 passenger.

#### e. Headway

The lowest headway is Slawi - Tegal route with headway 3.12 minute and the highest headway is Lebaksiu - Cacaban PP and Tegal - Bumiayu (AKDP) 77.14 minute.



f. Waiting time

The lowest passengers waiting time is Slawi - Tegal route with waiting time 1.56 minute and the highest waiting time is Lebaksiu - Cacaban PP and Tegal - Bumiayu (AKDP) 38.57 minute.

g. Traffic circulation

Traffic circulation modelled in calculated by queue FIFO (first in fist out) with the level of arrival ( $\lambda$ ) 33-90 vehicles/ hour, service level ( $\mu$ ) 120 vehicles/ hour, traffic intensity (P) 0.27-2.75, vehicle average in a system (n) 0.27-2.96 vehicles in queue (w). Its mean that arrival level is lower than service level. So long queue and waiting time in Trayeman sub terminal is low.

3.5. Customer Perception Analysis

3.5.1. Passenger perception

Passenger perceptions are depicted diagrammatically as follows :

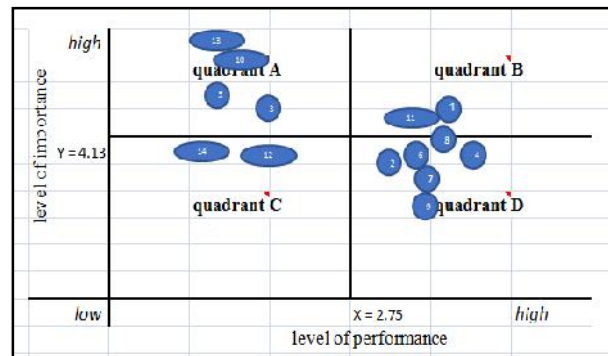


Figure 3. Cartesian Diagram Passengers Perception  
Sources: Analysis results (2017)

Table 7. Attribute Service Based on Passenger Perception

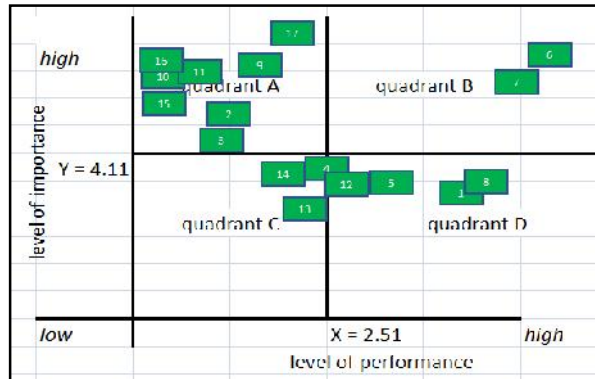
Quadrant	Service attribute's name
Quadrant A (Prime priorities)	Passenger waiting ting rooms (3) Traffic sign facilities and information wall (5) Route information and vehicles fare (10) Terminal courtyard (13)
Quadrant B (Keep the achievement)	Terminal cleanliness (1) Intensiveness exit route access (8) Loading facilities (11)
Quadrant C (Low priority)	Fluency of passenger circulation (12) Deposit box (14)
Quadrant D (Excessive)	Waiting time services (2) Toilet/ bathroom (4) Information/complaint rooms (6) Terminal official (7) Parking area (9)

Sources: Analysis results (2017)

According to the Table 7 the service attribute include in quadrant A and C are in mutual service attribute which need more attention because of the big half passengers do not satisfied with terminal service.

3.5.2. Driver perception

Driver perceptions are depicted diagrammatically as follows :



**Figure 4.** Cartesian diagram of driver perception  
Sources: Analysis results (2017)

**Table 8.** Summary of Quadrant and Service Attribute According to Driver Perception

Quadrant	Service attribute's name
Quadrant A (Prime Priorities)	Availability of arrival's area (2)
	Availability of departure (3)
	Vehicle schedule (9)
	Information systems and traffic sign (10)
	Exit-enter access (11)
	Trader's market (15)
	Courtyard condition
Quadrant B (keep the achievement)	Terminal's location
	Passengers in terminal
Quadrant C (Low priorities)	Representative of transportation's organization (13)
	Official traffic sign (14)
Quadrant D (Excessive)	Withdrawal of user charges (1)
	Parking waiting time (4)
	Terminal security (5)
	Terminal controller officer (8)
	Terminal supporting facilities (12)

Sources: Analysis results (2017)

According to Table 8, mutual service attribute include in quadrant A and C as mutual service attribute which need to more attention because of drivers do not satisfied with those services.

### 3.3 Problems Recommendation

#### 3.3.1. Rooms Need Technical Analysis And Terminal Facilities

**Table 9.** Rooms Needs and Terminal Facilities According to Survey's Result

No	Needs	Area's needed (m <sup>2</sup> )
A	<b>Prime Facilities</b>	
	Arrival routes	773.89
	Departure routes	-
	Waiting rooms	215.74
	Office	36
	Traffic sign/information wall	-
B	<b>Supporting facilities</b>	
	Mosque	7.08
	Bathrooms/ toilet	31.35
	Shop/ canteen	129.44
	Green park	-
	User charge room	10.89
Total of prime and supporting facilities		1,254.9

Sources: Analysis results (2017)

Total of prime and supporting facilities needed are 1,254.39 m<sup>2</sup>. For vehicle circulation 25% is 313.60 m<sup>2</sup>, passenger circulation 15% is 188.16 m<sup>2</sup>, so the wide of terminal rooms and facilities needed is 1,756.15 m<sup>2</sup> with the available area 3,000 m<sup>2</sup> its mean that the expansion of terminal Trayeman still could accommodating the vehicle activities and usage of vehicles.

#### 3.3.2. Economic Properness Cash Flow Calculate

Cash flow analysis calculate with counting construction cost and financials total multiplied discount factors. Its caused money rate in the future will reduce comparing with money rate as the discount factors.  $P = F (1+i)^{-n}$  (Kadariah : 2001).

Construction coast and maintenance in the first year is Rp. 1,315,000,000 and the advantages value of terminal user charge is Rp. 315,505,000/year while obtained:

##### a. Net Present Value (NPV)

$$\begin{aligned} \text{NPV} &= \text{Benefit} - \text{Cost} \\ &= 3,476,394,129 - 3,318,701,449 \\ &= 157,692,680 \text{ (positive value)} \end{aligned}$$

##### b. Benefit/ Cost (B/C Ratio)

$$\begin{aligned} \text{B/C R} &= \text{Benefit} / \text{Cost} \\ &= 3,476,394,129 / 3,318,701,449 \\ &= 1.05 \text{ (B/C Ratio} > 1) \end{aligned}$$

In complete information could watch in Table 10, as follow:

**Table 10.** Calculate terminal cash flow

Year	Construction Cost (Rp.)	Operational Maintenance (Rp.)	Total Cost (Rp.)	Total Benefit (Rp.)
0	1,115,000,000		1,115,000,000	
1		200,000,000	187,793,427	296,248,826
2		200,000,000	176,331,857	278,167,912
3		200,000,000	165,569,818	261,190,528
4		200,000,000	155,464,618	245,249,322
5		200,000,000	145,976,167	230,281,053
6		200,000,000	137,066,824	216,226,341
7		200,000,000	128,701,243	203,029,428
8		200,000,000	120,846,238	190,637,961
9		200,000,000	113,470,646	179,002,780
10		200,000,000	106,545,207	168,077,728
11		200,000,000	100,042,448	157,819,463
12		200,000,000	93,936,571	148,187,289
13		200,000,000	88,203,353	139,142,994
14		200,000,000	82,820,050	130,650,699
15		200,000,000	77,765,305	122,676,713
16		200,000,000	73,019,066	115,189,401
17		200,000,000	68,562,503	108,159,062
18		200,000,000	64,377,937	101,557,805
19		200,000,000	60,448,767	95,359,441
20		200,000,000	56,759,406	89,539,382
		<b>Total</b>	<b>3,318,701,449</b>	<b>3,476,394,129</b>

Sources: Analysis results (2017)

c. Internal Rate Return (IRR)

**Table 11.** Calculating of Internal Rate Return

Year	Construction Costs (Rp.)	Maintenance Cost (Rp.)	Total Cost (Rp.)	Total Benefit (Rp.)	Total Net (Rp.)	i1 6,5%	i2 8,25%
1	2	3	4	5	6	7	8
0	1,115,000,000		1,115,000,000		1,115,000,000	1,115,000,000	1,115,000,000
1		-200,000,000	-200,000,000	315,505,000	115,505,000	108,455,399	106,702,079
2		-200,000,000	-200,000,000	315,505,000	115,505,000	101,836,055	98,570,049
3		-200,000,000	-200,000,000	315,505,000	115,505,000	95,620,709	91,057,782
4		-200,000,000	-200,000,000	315,505,000	115,505,000	89,784,704	84,118,044
5		-200,000,000	-200,000,000	315,505,000	115,505,000	84,304,886	77,707,200
6		-200,000,000	-200,000,000	315,505,000	115,505,000	79,159,517	71,784,942
7		-200,000,000	-200,000,000	315,505,000	115,505,000	74,328,185	66,314,034
8		-200,000,000	-200,000,000	315,505,000	115,505,000	69,791,723	61,260,078
9		-200,000,000	-200,000,000	315,505,000	115,505,000	65,532,135	56,591,296
10		-200,000,000	-200,000,000	315,505,000	115,505,000	61,532,521	52,278,333
11		-200,000,000	-200,000,000	315,505,000	115,505,000	57,777,015	48,294,072
12		-200,000,000	-200,000,000	315,505,000	115,505,000	54,250,718	44,613,462
13		-200,000,000	-200,000,000	315,505,000	115,505,000	50,939,641	41,213,360
14		-200,000,000	-200,000,000	315,505,000	115,505,000	47,830,649	38,072,388
15		-200,000,000	-200,000,000	315,505,000	115,505,000	44,911,408	35,170,797
16		-200,000,000	-200,000,000	315,505,000	115,505,000	42,170,336	32,490,344
17		-200,000,000	-200,000,000	315,505,000	115,505,000	39,596,560	30,014,174
18		-200,000,000	-200,000,000	315,505,000	115,505,000	37,179,868	27,726,720
19		-200,000,000	-200,000,000	315,505,000	115,505,000	34,910,674	25,613,598
20		-200,000,000	-200,000,000	315,505,000	115,505,000	32,779,976	23,661,522
						157,692,680	(1,745,726)

Sources: Analysis results (2017)

Internal Rate Return (IRR) resulted by entering interest rate level  $i_1 = 6.5\%$ /year and  $i_2 = 8.25\%$ /year (*trial & error*),  $NPV_1 = \text{Rp. } 157,692,680,-$  and  $NPV_2 = - \text{Rp. } 1,745,726,-$  (*minus sign*) in equality :

$$IRR = i_1 + \frac{NPV_1}{NPV_1 - NPV_2}(i_2 - i_1)$$

$$IRR = 6,5\% + \frac{157.692.680}{157.692.680 - (-1.745.726)}(8,25\% - 6,5\%)$$

IRR = 8.23 % , its mean that rating payback an investment with interest rate  $i = 6.5\%$ /year is 8.23%.

### 3.4 SWOT Analysis

**Table 12.** Result of SWOT Analysis Trayeman sub Terminal

	Internal Strategy Factor	Weight	Rating	Weight x Rating
<b>Strength (S)</b>				
1	Terminal location near from market	0.125	4	0.50
2	Accessibilities	0.075	3	0.23
3	Pass by 12 route	0.075	3	0.23
4	Bathrooms/ toilet	0.05	2	0.10
5	Wide parking area	0.05	3	0.15
6	Office building and officer	0.05	2	0.10
Total				1.60
<b>Weakness</b>				
1	Terminal courtyard	0.05	3	0.15
2	Traffic circulation	0.05	4	0.20
3	Waiting rooms condition	0.10	4	0.40
4	Arrival & departure route condition	0.05	3	0.15
5	Disturbing by trader in terminal area	0.05	3	0.15
6	Traffic and information wall	0.08	4	0.30
7	Standar Operation Prosedur	0.05	4	0.20
8	The low human resources	0.05	4	0.20
Total				1.75
<b>Total Strength – Total Weakness (X)</b>				<b>-0.15</b>
	External Strategy Factors	Weight	Rating	Weight x Rating
<b>Opportunities</b>				
1	Raising district economic	0.20	4	0.80
2	Public transportation order	0.15	3	0.45
3	Vehicle fare is cheaper than own transportation	0.05	4	0.20
4	Development market planning	0.05	3	0.15
5	Development of highway and train planning	0.05	3	0.15
6	Vehicle subvention	0.05	4	0.20
Total				1.95

Threats				
1	The growth of own transportation very high	0.05	1	0.05
2	On line vehicle	0.15	1	0.15
3	Relocation terminal	0.05	4	0.20
4	Supporting budget to rehabilitation terminal's facilities	0.05	2	0.10
5	Low quality of vehicle's service	0.05	1	0.05
6	Vehicle not enter terminal	0.10	2	0.20
Total		1		0.75
<b>Total Opportunities – Total Threats (Y)</b>				<b>1.20</b>

Sources: Analysis results (2017)

According to Table 12. SWOT analysis resulting different value between total of strength and weakness -0.15 in variable X and different value of opportunities threat 1.20 in variable Y. Score of variable X and Y could watch in SWOT quadrant as follow.

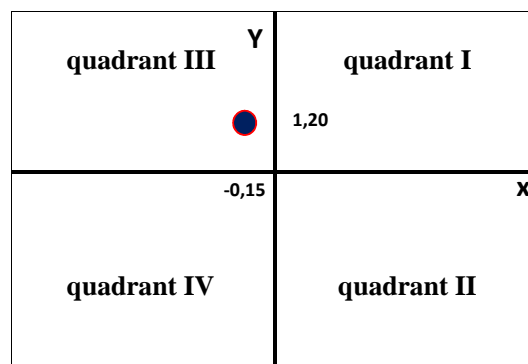


Figure 5. Cartesian's diagram of SWOT analysis  
Sources: Analysis results (2017)

Position of Figure 5 is sign that the organization which is weak but has big opportunities, recommended to change the strategy, its mean an organization must change the old strategy to catch the opportunities and improve the performances. With the optimal strategy as follow:

Table 13. SWOT Strategy

	Strength (S)	Weakness (W)
	<ol style="list-style-type: none"> <li>1. Terminal location near from market</li> <li>2. Accessibilities</li> <li>3. Pass by 12 route</li> <li>4. Bathrooms/ toilet</li> <li>5. Wide parking area</li> <li>6. Office building and officer</li> </ol>	<ol style="list-style-type: none"> <li>1. Terminal courtyard</li> <li>2. Traffic circulation</li> <li>3. Waiting rooms condition</li> <li>4. Arrival &amp; departure route condition</li> <li>5. Disturbing by trader in terminal area</li> <li>6. Traffic and information wall</li> <li>7. Standar operation procedure</li> <li>8. The low human resource</li> </ol>

<p style="text-align: center;"><b>Opportunities (O)</b></p> <ol style="list-style-type: none"> <li>1. Raising district economic</li> <li>2. Public transportation order</li> <li>3. Vehicle's fare is cheaper than own transportation</li> <li>4. Development market planning</li> <li>5. Development of highway and train planning</li> <li>6. Vehicle subvention</li> </ol>	<p>Strength in point 1-7 are effort and enhance, so with opportunities in point 1-6 can be support in enhancement of Trayeman's terminal utilization in the next time</p>	<p>Weakness in point 1-8 minimalism and effort to regulate/ repair to opportunities the advantaging of Trayeman's terminal in the next time</p>
<p style="text-align: center;"><b>Threats (T)</b></p> <ol style="list-style-type: none"> <li>1. The growth of own transportation very high</li> <li>2. On line vehicle</li> <li>3. Relocation terminal</li> <li>4. Supporting budget to rehabilitation terminal's facilities</li> <li>5. Low quality of vehicle's service</li> <li>6. Vehicle not enter terminal/unofficial terminal</li> </ol>	<p>Strength in point 1-7 effort to minimalism threat. The strength can be consideration in government policy related threat point 1-6</p>	<p>Weakness in poin 1-8 effort to get priorities handling while the strength can be minimalism</p>

Sources: *Analysis results (2017)*

#### 4. Summary And Suggestion

##### 4.3. Summary

Based on to the result of analysis, it can be concluded as follows:

- a. Technical performance of Trayeman Sub Terminal in Tegal Regency in this time have not fully meet the standards of the facility requirements and the extent of land as stipulated in the Minister of Transportation Decree Number KM 31/1995 and Study of Directorate General of Land Transportation in 1994. However, the number of facility requirements and the size of the land based on the criteria is in accordance already with the current transportation demand because still able to accommodate the activity of the vehicle and serve the user of the transportation service.
- b. Quality of terminal service based on passenger perception by using *Importance Performance Analysis (IPA)* analysis method obtained value of X satisfaction level is 2.75 and the value of importance Y is 4.13 so it is necessary to improve the quality of passenger waiting room service, shipping facilities and information boards, route line information and freight rates, condition of the courtyard / terminal road, smooth passenger circulation and place passenger goods.
- c. Quality of terminal service based on passenger perception/crew transportation which obtained by using *Importance Performance Analysis (IPA)* analysis method obtained value of X satisfaction level is 2.51 and the value of importance Y is 4.11 so it is

necessary to improve the quality of existing services such as arrival / departure area, timer / scheduling of freight fleets, information Systems and shelter, incoming and outgoing terminal access, presence of market traders, condition of road / terminal terminal of organda representative office at terminal and traffic arrangement by officer.

- d. According to calculating 3 (three) investment criteria to optimize sub terminal Trayeman obtained values for NPV + (positive) Rp 157,692,680, B/C Ratio > 1 is 1.05 and IRR 8.23% (it is greater than the current BI rate) with an investment range of 20 (twenty) years, then it can be concluded that sub terminal optimization project is feasible to implement.
- e. According to result of SWOT analysis Trayeman Sub Terminal obtained SWOT quadrant with value of variable X is -0.15 and variable Y is 1.20. This position sign that the Trayeman terminal has the weakness but also has big opportunities for the future, recommendation are given to changing the strategy with recommendation as follow:
  - 1) Enhance the main facilities and supporting facilities terminal;
  - 2) Enhance the quality of terminal vehicles services;
  - 3) Supporting the Financial;
  - 4) Restriction on the use of private vehicle;
  - 5) Controlling unofficial terminal;
  - 6) Controlling online transportation;
  - 7) Enhance amount and compensation officer;
  - 8) Legality and Standard Operation Procedure of Terminal are clear and measurable.

#### **4.4. Suggestion**

- a. Prioritize the Trayeman sub-terminal arrangement program in order to improve the quality of public services;
- b. To separate the terminal activity with market activity it is necessary to establish the terminal authority area by making a terminal guardrail;
- c. Legalize the existence of the terminal by formulating the rules of the Decree of the Regent about the type and location of the terminal in Tegal regency;
- d. Management and traffic engineering needs to be done in market and terminal areas, and parking arrangements, and operational hours of loading and unloading of goods transport.
- e. Against the results of this study, for better calculation results need to include other variables such as saving passengers time value, cost of fuel savings, reduction of pollution costs, and improving the economic welfare of surrounding communities to calculate the value of the benefits of terminal development / optimization.



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