ASTONJADRO: Jurnal Rekayasa Sipil

pISSN 2302-4240
eISSN 2655-2086

Volume 9, No. 2, Desember 2020, Halaman 117-131
DOI: 10.32832/astonjadro.v9i2.3293

EVALUATION OF THE PERFORMANCE OF JAK LINGKO URBAN PUBLIC TRANSPORT ON ROUTES 1, 2, 3, 4, 5, 6, 7, 8, 9, AND 10 OF PROVINSI DKI JAKARTA

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ABSTRACT

Evaluation of the performance of urban public transport Jak Lingko on routes 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 provinces in Jakarta. DKI Jakarta is a city with all its activities that require transportation to support the movement of its people, whether in the city or people around the border with the city area. Existing public passenger transportation must have good performance or service. This research was conducted to see the performance and service level of Jak Lingko transportation in 2020. In total there are 53 routes that must be evaluated in the DKI Jakarta Province, but for this research that will be evaluated are routes 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10, if you have obtained the performance results of Jak Lingko public transport then based on the minimum service standard method (SPM) Decree of the Director General 2002 and the SPM of the World Bank. The results of the analysis of these 10 routes found 4 routes in 2 indicators that need to be improved again or that do not meet the SPM parameters, the routes in question are the Jak 9, Jak 4, Jak 6 and Jak 7 routes. The headway indicator which is in the middle parameter of SPM Decree of the Director General of 2002, in the travel indicator does not meet the World Bank SPM, 3 more routes namely Jak 4, Jak 6 and Jak 7 which need to be improved again are in the travel indicators for SPM SK Dirjen 2002.

Key word: DKI Jakarta; evaluation; minimum service standard (SPM).

Received:	Revised:	Accepted:	Available online:
2020-08-03	2020-11-07	2020-11-10	2020-11-18

INTRODUCTION

DKI Jakarta is a city with all its activities requiring transportation to support the movement of its people, both those in the city and people around the border with the city area, public passenger transportation must have good performance or service. The increasing economic activity and development in DKI Jakarta, the need for travel will increase. Transportation problems are also increasing along with the increase in population each year. The rapid population growth is the main factor for the birth of new private vehicles operating in DKI Jakarta, to suppress the increasing growth of private vehicles, the DKI Jakarta government is currently carrying out major programs related to public transport integration, both service integration, management integration and payment integration (Ok-Otrip Final Report Guidelines, 2019).

As a follow-up to the traffic problem in DKI Jakarta, the local government conducted a trial of the Ok-Otrip program which operated in January 2018 and ended in September 2018, while in the same year the Ok-Otrip program changed its name to the jak Lingko program which means system integrated public transport. The evaluation of the jak Lingko service development plan needs to be carried out to improve and improve the performance of the route network and the integration of public transport services, as well as to achieve cost efficiency in the implementation of public transportation in DKI Jakarta.

The journey of people using motorized vehicles is influenced by the higher demand and the need for an increasing number of motorized vehicles to operate. This shows that motorized vehicles are an

effective medium for use as a means of transportation (Hana K, Juang A, 2019); Cicilia et al, 2019); (Syaiful S, Wahid N, 2020). This mode of transportation also affects road conditions as a means of supporting motorized vehicles to operate. The nicer and quieter the road will increase the speed of the vehicle (Syaiful S, Elvira Y, 2017).

RESEARCH METHODS

This research was conducted on Routes 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 of DKI Jakarta Province. The implementation of this research was started from 07: 00-09: 00 WIB for the morning, 12:00 hours - 14: 00 WIB for the afternoon part, 16: 00-18: 00 for the afternoon part for 3 (three) days a week, namely on Monday, Wednesday, and Saturday within 1 (one) full month.

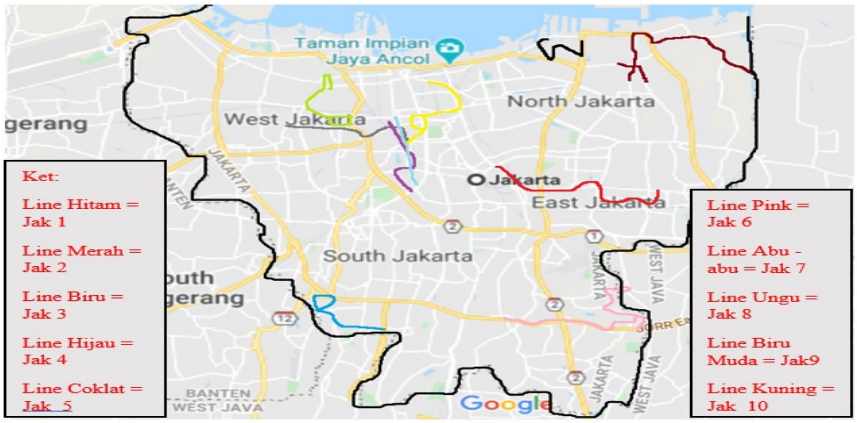

Figure 1. Map of the research location (Source: Processing results from google maps)

The stages of this research are shown in the form of a flow chart as follows:

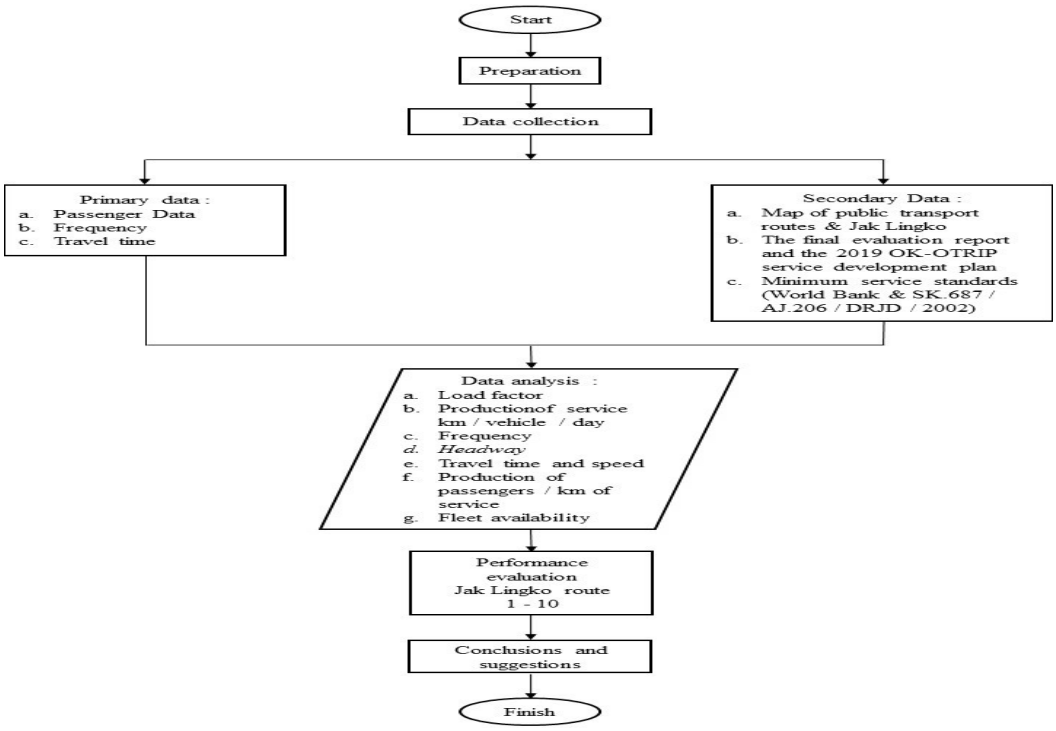

Figure 2. Research flow diagram

pISSN 2302-4240
eISSN 2655-2086

Volume 9, No. 2, Desember 2020, Halaman 117-131
DOI: 10.32832/astonjadro.v9i2.3293

RESULTS AND DISCUSSION

Passenger data

Collecting data by surveying the Jak Lingko transportation and recording the largest number of passengers in the transportation.

Table 1. Passenger data

Route Code	Department	Time	Passenger		
			Monday	**Wednesday**	**Saturday**
Jak 1	Tanjung Priok-Plumpang	Busy Morning	7	6	7
		Lunch break	6	4	5
		Busy Afternoon	8	7	7
		Average	**7**	**6**	**6**
Jak 2	Kampung Melayu-Duren Sawit	Busy Morning	9	7	9
		Lunch break	5	6	6
		Busy Afternoon	10	10	10
		Average	**8**	**8**	**8**
Jak 3	Lebak Bulus-Andara	Busy Morning	9	6	10
		Lunch break	6	5	5
		Busy Afternoon	8	5	9
		Average	**8**	**5**	**8**
Jak 4	Grogol-Tubagus Angke	Busy Morning	7	8	7
		Lunch break	3	4	4
		Busy Afternoon	9	10	8
		Average	**6**	**7**	**6**
Jak 5	Kampar-Rorotan	Busy Morning	10	10	10
		Lunch break	7	7	7
		Busy Afternoon	9	9	10
		Average	**9**	**9**	**9**
Jak 6	Kampung Rambutan-Pondok Gede	Busy Morning	8	9	10
		Lunch break	6	7	6
		Busy Afternoon	10	10	10
		Average	**8**	**9**	**9**
Jak 7	Tanah Abang-Tawakal	Busy Morning	6	7	10
		Lunch break	4	6	6
		Busy Afternoon	7	8	10
		Average	**6**	**7**	**9**
Jak 8	Roxy-Benhil	Busy Morning	8	6	9
		Lunch break	4	5	5
		Busy Afternoon	9	9	8
		Average	**7**	**7**	**7**
Jak 9	Roxy Mas-Karet	Busy Morning	10	10	10
		Lunch break	7	7	5
		Busy Afternoon	9	9	9
		Average	**9**	**9**	**8**
Jak 10	Tanah Abang-Kota	Busy Morning	10	10	10
		Lunch break	3	5	6
		Busy Afternoon	4	8	10
		Average	**6**	**8**	**9**

Service performance

The analysis of the survey results for several performance indicators can be described in full as follows:

a. Load factor

an example of calculating *load factor* is: Lf $= \frac{Pnp}{C} X\ 100\ \%$ $= \frac{7}{10} X\ 100\ \%$ $= 70\ \%$

Table 2. Load factor

Route Code	Department	Time	*Load Factor* (%)		
			Monday	**Wednesday**	**Saturday**
Jak 1	Tanjung Priok-Plumpang	Busy Morning	70	60	70
		Lunch break	60	40	50
		Busy Afternoon	80	70	70
		Average	**70**	**56.7**	**63.3**
Jak 2	Kampung Melayu-Duren Sawit	Busy Morning	90	70	90
		Lunch break	50	60	60
		Busy Afternoon	100	100	100
		Average	**80**	**76.7**	**83.3**
Jak 3	Lebak Bulus-Andara	Busy Morning	90	60	100
		Lunch break	60	50	50
		Busy Afternoon	80	50	90
		Average	**76.7**	**53.3**	**80**
Jak 4	Grogol-Tubagus Angke	Busy Morning	70	80	70
		Lunch break	30	40	40
		Busy Afternoon	90	100	80
		Average	**63.3**	**73.3**	**63.3**
Jak 5	Kampar-Rorotan	Busy Morning	100	100	100
		Lunch break	70	70	70
		Busy Afternoon	90	90	100
		Average	**86.7**	**86.7**	**90.0**
Jak 6	Kampung Rambutan-Pondok Gede	Busy Morning	80	90	100
		Lunch break	60	70	60
		Busy Afternoon	100	100	100
		Average	**80**	**86.7**	**86.7**
Jak 7	Tanah Abang-Tawakal	Busy Morning	60	70	100
		Lunch break	40	60	60
		Busy Afternoon	70	80	100
		Average	**56.7**	**70.0**	**86.7**
Jak 8	Roxy-Benhil	Busy Morning	80	60	90
		Lunch break	40	50	50
		Busy Afternoon	90	90	80
		Average	**70.0**	**66.7**	**73.3**
Jak 9	Roxy Mas-Karet	Busy Morning	100	100	100
		Lunch break	70	70	50
		Busy Afternoon	90	90	90
		Average	**86.7**	**86.7**	**80**
Jak 10	Tanah Abang-Kota	Busy Morning	100	100	100
		Lunch break	30	50	60
		Busy Afternoon	40	80	100
		Average	**56.7**	**76.7**	**86.7**

Based on the average value per route in Table 2, the load factor shows that the Jak Lingko route of Jak 5 (Kampar-Rorotan) has the highest average load factor of 90.0%, while the Jak 3 route (Lebak Bulus-Andara) has the lowest average load factor of 53.3%.

The Jak 5 route has a load factor with the highest average of 90.0%, it is because of the survey results of passenger data for the three busy times (morning busy, midday busy, and evening busy) this route

ASTONJADRO: Jurnal Rekayasa Sipil
pISSN 2302-4240
eISSN 2655-2086
Volume 9, No. 2, Desember 2020, Halaman 117-131
DOI: 10.32832/astonjadro.v9i2.3293

on the day. Saturday has the highest attractiveness and generation of other Jak routes. Whereas on the Jak 3 route, why does it have a load factor with the lowest average load of 53.3%, it is because of the survey results of passenger data in the three busy times (morning busy, afternoon busy, and afternoon busy) This route on Wednesday has the lowest attractiveness and generation of other Jak routes.

b. Production of service km per vehicle per day

Table 3. Production of service km per vehicle / day

No	Route	Total Fleet	Production Km / day	Km / Unit / Day
1	Jak 1 (Tanjung Priok-Plumpang)	20	3,336	167
2	Jak 2 (Kampung Melayu-Duren Sawit)	21	3,451	164
3	Jak 3 (Lebak Bulus-Andara)	17	3,063	180
4	Jak 4 (Grogol-Tubagus Angke)	19	2,702	142
5	Jak 5 (Kampar-Rorotan)	28	4,699	168
6	Jak 6 (Kampung Rambutan-Pondok Gede)	28	5,114	183
7	Jak 7 (Tanah Abang-Tawakal)	23	3,485	152
8	Jak 8 (Roxy-Benhil)	9	1,330	148
9	Jak 9 (Roxy Mas-Karet)	6	950	158
10	Jak 10 (Tanah Abang-Kota)	36	5,066	141

The Jak Lingko small bus service itself, the production target km / unit / day is 200 km. Based on this target and the results of the performance analysis in Table 3, of the 10 operating routes, no route can meet the production target, while the route with the highest km / unit / day production is Jak 6 (183 km), while the lowest production is Jak 10 (141 km).

All routes 1-10 are below the production target (200 km) because the production km per day is low on all routes so it has an impact on km / units / day, so it is necessary to increase the production km per day on all routes 1-10, so that km / units / day can meet the production target (200 km).

c. Frequency

Table 4. Frequency

Route Code	Department	Time	Frequency		
			Monday	Wednesday	Saturday
Jak 1	Tanjung Priok-Plumpang	Busy Morning	38	36	33
		Lunch break	24	25	30
		Busy Afternoon	34	35	33
		Average	**32**	**32**	**32**
Jak 2	Kampung Melayu-Duren Sawit	Busy Morning	26	26	22
		Lunch break	20	19	23
		Busy Afternoon	23	24	24
		Average	**23**	**23**	**23**
Jak 3	Lebak Bulus-Andara	Busy Morning	25	24	21
		Lunch break	17	16	19
		Busy Afternoon	21	23	23
		Average	**21**	**21**	**21**
Jak 4	Grogol-Tubagus Angke	Busy Morning	39	40	35
		Lunch break	31	27	33
		Busy Afternoon	35	38	37

Route Code	Department	Time	Frequency		
			Monday	Wednesday	Saturday
		Average	**35**	**35**	**35**
Jak 5	Kampar-Rorotan	Busy Morning	26	23	19
		Lunch break	19	19	22
		Busy Afternoon	21	24	25
		Average	**22**	**22**	**22**
Jak 6	Kampung Rambutan-Pondok Gede	Busy Morning	27	25	21
		Lunch break	17	19	23
		Busy Afternoon	24	25	25
		Average	**23**	**23**	**23**
Jak 7	Tanah Abang-Tawakal	Busy Morning	24	22	21
		Lunch break	18	18	21
		Busy Afternoon	21	23	21
		Average	**21**	**21**	**21**
Jak 8	Roxy-Benhil	Busy Morning	15	15	12
		Lunch break	12	11	13
		Busy Afternoon	12	13	14
		Average	**13**	**13**	**13**
Jak 9	Roxy Mas-Karet	Busy Morning	10	10	10
		Lunch break	10	10	10
		Busy Afternoon	10	10	10
		Average	**10**	**10**	**10**
Jak 10	Tanah Abang-Kota	Busy Morning	43	39	34
		Lunch break	30	35	38
		Busy Afternoon	38	37	39
		Average	**37**	**37**	**37**

Based on Table 4, it is known that the service that the Jak Lingko route of Jak 10 (Tanah Abang-Kota) has the highest average frequency value of 37 vehicles, while the service with the lowest average frequency is the Jak 9 route (Roxy Mas-Karet). as many as 10 vehicles. The Jak 10 route has the highest average frequency value with as many as 37 vehicles, that is because on the Jak 10 route (Tanah Abang-Kota) there is the largest textile market in Southeast Asia especially since this market has been around since 1735, and also passes through KRL stations and destinations finally to downtown Jakarta. Route 9 has the lowest average frequency value with as many as 10 vehicles, that is because maybe there is still a low number of enthusiasts on that route so the frequency value is low compared to other routes.

d. Headway

an example of calculating Headway is: H = $\frac{1}{f}$, 1 = 60 minute

= $\frac{60}{f}$, because of the observations of the clock 07.00-09.00, it is obtained:

= $\frac{120}{f}$ = $\frac{120}{3,8}$ = 3,15 ≈ 3,2 minute

Table 5. Headway

Route Code	Department	Time	*Headway* (menit)		
			Monday	Wednesday	Saturday
Jak 1	Tanjung Priok-Plumpang	Busy Morning	3.2	3	3.6
		Lunch break	5	4.8	4.0
		Busy Afternoon	3.5	3.4	3.6
		Average	**3,9**	**3.9**	**3.8**
Jak 2	Kampung Melayu-Duren Sawit	Busy Morning	5	5	5.5
		Lunch break	6.0	6.3	5

pISSN 2302-4240
eISSN 2655-2086

Volume 9, No. 2, Desember 2020, Halaman 117-131
DOI: 10.32832/astonjadro.v9i2.3293

Route Code	Department	Time	*Headway* (menit)		
			Monday	**Wednesday**	**Saturday**
		Busy Afternoon	5	5.0	5.0
		Average	**5.3**	**5.3**	**5**
Jak 3	Lebak Bulus-Andara	Busy Morning	4.8	5	6
		Lunch break	7	8	6
		Busy Afternoon	6	5	5
		Average	**5.9**	**5.9**	**5.7**
Jak 4	Grogol-Tubagus Angke	Busy Morning	3.1	3.0	3.4
		Lunch break	3.9	4	3.6
		Busy Afternoon	3.4	3.2	3
		Average	**3.5**	**3.5**	**3.4**
Jak 5	Kampar-Rorotan	Busy Morning	5	5	6
		Lunch break	6	6	5.5
		Busy Afternoon	6	5.0	4.8
		Average	**5.5**	**5.5**	**5.5**
Jak 6	Kampung Rambutan-Pondok Gede	Busy Morning	4.4	4.8	6
		Lunch break	7.1	6	5
		Busy Afternoon	5.0	4.8	4.8
		Average	**5.5**	**5.3**	**5.2**
Jak 7	Tanah Abang-Tawakal	Busy Morning	5.0	5.5	6
		Lunch break	6.7	6.7	6
		Busy Afternoon	6	5	6
		Average	**5.8**	**5.8**	**6**
Jak 8	Roxy-Benhil	Busy Morning	8.0	8.0	10
		Lunch break	10	11	9.2
		Busy Afternoon	10	9.2	9
		Average	**9.3**	**9.4**	**9.3**
Jak 9	Roxy Mas-Karet	Busy Morning	12	12	12
		Lunch break	12	12	12
		Busy Afternoon	12	12	12
		Average	**12**	**12**	**12**
Jak 10	Tanah Abang-Kota	Busy Morning	3	3	4
		Lunch break	4.0	3.4	3.2
		Busy Afternoon	3.2	3.2	3
		Average	**3.3**	**3.2**	**3.3**

Based on the average value per route in Table 5, the Jak Lingko route of Jak 9 (Roxy Mas-Karet) is 12 minutes, and the lowest is on the Jak 10 (Tanah Abang-Kota) route of 3.2 minutes. The Jak 9 route has the highest Headway value, it is because the frequency value on the Jak 9 route is low, so the frequency value is closely related to the Headway value. Likewise, the Jak 10 route has the lowest Headway value, it is because the frequency value on the Jak 10 route is high and it is clarified again, if the Headway value is high then the frequency value is automatically low, and if the Headway value is low then the frequency value is automatically high.

e. Travel time and speed

Table 6. Travel time

Route Code	Department	Time	Travel time		
			Monday	**Wednesday**	**Saturday**
Jak 1	Tanjung Priok-Plumpang	Busy Morning	58	62	60
		Lunch break	86	92	90
		Busy Afternoon	81	71	75
		Average	**75**	**75**	**75**
Jak 2	Kampung Melayu-Duren Sawit	Busy Morning	82	92	102
		Lunch break	140	125	117
		Busy Afternoon	102	107	105
		Average	**108**	**108**	**108**
Jak 3	Lebak Bulus-Andara	Busy Morning	76	81	86
		Lunch break	128	113	110
		Busy Afternoon	90	100	98
		Average	**98**	**98**	**98**
Jak 4	Grogol-Tubagus Angke	Busy Morning	79	70	60
		Lunch break	50	55	70
		Busy Afternoon	66	70	65
		Average	**65**	**65**	**65**
Jak 5	Kampar-Rorotan	Busy Morning	102	105	110
		Lunch break	184	182	170
		Busy Afternoon	170	169	176
		Average	**152**	**152**	**152**
Jak 6	Kampung Rambutan-Pondok Gede	Busy Morning	105	100	115
		Lunch break	187	182	172
		Busy Afternoon	140	150	145
		Average	**144**	**144**	**144**
Jak 7	Tanah Abang-Tawakal	Busy Morning	92	108	112
		Lunch break	170	152	150
		Busy Afternoon	140	142	140
		Average	**134**	**134**	**134**
Jak 8	Roxy-Benhil	Busy Morning	59	69	75
		Lunch break	101	103	96
		Busy Afternoon	83	71	72
		Average	**81**	**81**	**81**
Jak 9	Roxy Mas-Karet	Busy Morning	51	56	65
		Lunch break	99	88	77
		Busy Afternoon	60	66	68
		Average	**70**	**70**	**70**
Jak 10	Tanah Abang-Kota	Busy Morning	99	101	104
		Lunch break	140	135	130
		Busy Afternoon	112	115	117
		Average	**117**	**117**	**117**

Based on Table 6, it is known that the Jak 5 route (Kampar-Rorotan) has the highest average travel time of 152 minutes and for the lowest route Jak 4 (Grogol-Tubagus Angke) with an average of 65 minutes, based on the results of a field survey on the Jak 5 route has the highest average travel time (152 minutes) because it is because the Jak 5 route has the farthest (route length), so the travel time from origin to destination takes a long time. Meanwhile, the Jak 4 route, which has the lowest average travel time (65 minutes), is because the Jak 4 route has the shortest route length, so the travel time from origin to destination does not require a long time.

an example of calculating Travel time is: $K = \frac{J}{W} = \frac{14{,}74}{58}$,

pISSN 2302-4240
eISSN 2655-2086

Volume 9, No. 2, Desember 2020, Halaman 117-131
DOI: 10.32832/astonjadro.v9i2.3293

where the travel time (W) is still in minutes, it must be converted into hours.

$$= \frac{14,74}{(58/60)} \qquad = \frac{14,74}{0,97} = 15,19 \approx 15 \text{ km / hour}$$

Table 7. Travel speed

Route Code	Department	Time	Travel speed		
			Monday	**Wednesday**	**Saturday**
Jak 1	Tanjung Priok-Plumpang	Busy Morning	15	14	10
		Lunch break	9	10	13
		Busy Afternoon	12	12	13
		Average	**12**	**12**	**12**
Jak 2	Kampung Melayu-Duren Sawit	Busy Morning	14	12	8
		Lunch break	9	10	13
		Busy Afternoon	10	11	12
		Average	**11**	**11**	**11**
Jak 3	Lebak Bulus-Andara	Busy Morning	12	15	10
		Lunch break	9	8	12
		Busy Afternoon	12	10	11
		Average	**11**	**11**	**11**
Jak 4	Grogol-Tubagus Angke	Busy Morning	13	12	10
		Lunch break	7	9	10
		Busy Afternoon	10	9	10
		Average	**10**	**10**	**10**
Jak 5	Kampar-Rorotan	Busy Morning	15	11	11
		Lunch break	7	7	11
		Busy Afternoon	11	15	11
		Average	**11**	**11**	**11**
Jak 6	Kampung Rambutan-Pondok Gede	Busy Morning	12	11	10
		Lunch break	8	9	10
		Busy Afternoon	10	10	10
		Average	**10**	**10**	**10**
Jak 7	Tanah Abang-Tawakal	Busy Morning	14	10	7
		Lunch break	8	10	12
		Busy Afternoon	8	10	11
		Average	**10**	**10**	**10**
Jak 8	Roxy-Benhil	Busy Morning	17	16	13
		Lunch break	7	8	10
		Busy Afternoon	12	12	13
		Average	**12**	**12**	**12**
Jak 9	Roxy Mas-Karet	Busy Morning	16	15	14
		Lunch break	9	11	12
		Busy Afternoon	14	13	13
		Average	**13**	**13**	**13**
Jak 10	Tanah Abang-Kota	Busy Morning	15	14	13
		Lunch break	8	7	9
		Busy Afternoon	10	12	11
		Average	**11**	**11**	**11**

Based on the average value per route in Table 7, the Jak 9 (Roxy Mas-Karet) route has the highest average travel speed of 13 km / hour and for the lowest route, Jak 4 (Grogol-Tubagus Angke), Jak 6 (Kampung Rambutan-Pondok Gede), and Jak 7 (Tanah Abang-Tawakal) with an average speed of 10 km / hour.

f. Production of passengers / km of service

Table 8. Production of passengers / km of service

No	Route	Total Fleet	PNP / KM
1	Jak 1 (Tanjung Priok-Plumpang)	20	1.08
2	Jak 2 (Kampung Melayu-Duren Sawit)	21	0.83
3	Jak 3 (Lebak Bulus-Andara)	17	1.00
4	Jak 4 (Grogol-Tubagus Angke)	19	0.85
5	Jak 5 (Kampar-Rorotan)	28	0.87
6	Jak 6 (Kampung Rambutan-Pondok Gede)	28	0.86
7	Jak 7 (Tanah Abang-Tawakal)	23	0.93
8	Jak 8 (Roxy-Benhil)	9	0.52
9	Jak 9 (Roxy Mas-Karet)	6	0.36
10	Jak 10 (Tanah Abang-Kota)	36	0.48

Based on the data in Table 8, it shows that there is only 1 route out of 10 routes that has a passenger parameter value per km that is above or touches 1.08. The route in question is the Jak 1 route (Tanjung Priok-Plumpang) with 1.08 pnp / km. and 9 more routes are below 1,08.

e. Fleet availability

an example of calculating Fleet availability is: $K = \frac{CT}{H} = \frac{75}{4} = 18{,}75$ and %SGO $= \frac{K}{Ta}$ x $fA = \frac{18{,}75}{20}$ x 100 %

Table 9. Fleet availability

No	Route	Number of fleets / cycle time	Total fleet	%SGO
1	Jak 1 (Tanjung Priok-Plumpang)	18.75	20	94%
2	Jak 2 (Kampung Melayu-Duren Sawit)	20.38	21	97%
3	Jak 3 (Lebak Bulus-Andara)	16.61	17	98%
4	Jak 4 (Grogol-Tubagus Angke)	18.57	19	98%
5	Jak 5 (Kampar-Rorotan)	27.64	28	99%
6	Jak 6 (Kampung Rambutan-Pondok Gede)	26.18	28	94%
7	Jak 7 (Tanah Abang-Tawakal)	22.33	23	97%
8	Jak 8 (Roxy-Benhil)	8.62	9	96%
9	Jak 9 (Roxy Mas-Karet)	5.83	6	97%
10	Jak 10 (Tanah Abang-Kota)	35.45	36	98%

Based on the SGO value in Table 9, it is known that Jak 5 (Kampar-Rorotan) has the highest value reaching 99%, while the lowest is on the Jak 6 route (Kampung Rambutan-Pondok Gede) with a value of 94%.

Jak Lingko service level towards SPM

The performance that can be obtained from the survey that has been carried out will be compared with the SPM of public transportation, so that it will be known whether the performance of the 10

pISSN 2302-4240
eISSN 2655-2086

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Jak Lingko transportation is in accordance with the public transport standards by the World Bank and the Decree of the Director General of Hubdat No.SK.687 / AJ.2006 / DRJD / 2002 concerning Technical Guidelines for Public Passenger Transport in Urban Areas on Fixed and Regulated Routes with the parameters being load factors, headway, travel speed, and fleet availability.

a. Load factor

Table 10. SPM comparison load factor

No	Route	Description	Unit	Result	Parameter SPM SK Dirjen 2002			Information	SPM *World Bank*	Information
				analysis	less	moderate	good			
1	Jak 1	*Load faktor*	%	70.0	>100	70 - 100	<70	Moderate	70%	Fulfill
2	Jak 2	*Load faktor*	%	83.3	>100	70 - 100	<70	Moderate		Fulfill
3	Jak 3	*Load faktor*	%	80.0	>100	70 - 100	<70	Moderate		Fulfill
4	Jak 4	*Load faktor*	%	73.3	>100	70 - 100	<70	Moderate		Fulfill
5	Jak 5	*Load faktor*	%	90.0	>100	70 - 100	<70	Moderate		Fulfill
6	Jak 6	*Load faktor*	%	86.7	>100	70 - 100	<70	Moderate		Fulfill
7	Jak 7	*Load faktor*	%	86.7	>100	70 - 100	<70	Moderate		Fulfill
8	Jak 8	*Load faktor*	%	73.3	>100	70 - 100	<70	Moderate		Fulfill
9	Jak 9	*Load faktor*	%	86.7	>100	70 - 100	<70	Moderate		Fulfill
10	Jak 10	*Load faktor*	%	86.7	>100	70 - 100	<70	Moderate		Fulfill

The load factor indicator from Table 10 shows the results of the analysis of the entire Jak Lingko route on the Jak 1-10 route, and can be compared with the SPM Decree of the Director General of 2002 regarding the administration of public transportation in urban areas on fixed and regular routes, for the whole of the Jak 1-10 route. 10 is in medium parameter. This means that the analysis results on the entire route are in the standard value of 70-100%.

The entire Jak 1-10 routes have all met the World Bank SPM, so the conclusion from the comparison with the SPM SK Dirjen 2002 and the World Bank SPM on the entire Jak 1-10 routes, there are no routes that are in less parameter or that produce information that does not meet.

b. Headway

Table 11. SPM comparison Headway

No	Route	Description	Unit	Result	Parameter SPM SK Dirjen 2002			Information	SPM *World Bank*	Information
				analysis	less	moderate	good			
1	Jak 1	*Headway*	minute	3.9	>15	10 - 15	<10	Good	1 - 12	Fulfill
2	Jak 2	*Headway*	minute	5.3	>15	10 - 15	<10	Good		Fulfill
3	Jak 3	*Headway*	minute	5.9	>15	10 - 15	<10	Good		Fulfill
4	Jak 4	*Headway*	minute	3.5	>15	10 - 15	<10	Good		Fulfill
5	Jak 5	*Headway*	minute	5.5	>15	10 - 15	<10	Good		Fulfill
6	Jak 6	*Headway*	minute	5.5	>15	10 - 15	<10	Good		Fulfill
7	Jak 7	*Headway*	minute	5.8	>15	10 - 15	<10	Good		Fulfill
8	Jak 8	*Headway*	minute	9.4	>15	10 - 15	<10	Good		Fulfill
9	Jak 9	*Headway*	minute	12.0	>15	10 - 15	<10	Moderate		Fulfill
10	Jak 10	*Headway*	minute	3.32	>15	10 - 15	<10	Good		Fulfill

The headway indicator from Table 11 shows the results of the analysis of the entire Jak Lingko route on the Jak 1-10 route, and can be compared with the SPM Decree of the Director General of 2002

regarding the administration of public transportation in urban areas on fixed and regular routes, for the whole route is in good parameters , except for the Jak 9 route which is in Medium parameters. This means that the Jak 9 route is at a standard value of 10-15 minutes, and other routes are at a standard value of <10 minutes.

The entire Jak 1-10 routes have all met the World Bank SPM, so the conclusion is that the comparison with the SPM SK Dirjen 2002 and the World Bank SPM on the entire Jak 1-10 route, there are no routes that are in deficient parameters or that produce information that does not comply, although there are one route that is in the medium parameter (Jak 9).

c. Travel speed

Table 12. SPM comparison Travel speed

No	Route	Description	Unit	Result analysis	Parameter SPM SK Dirjen 2002			Information	SPM *World Bank*	Information
					less	moderate	good			
1	Jak 1	Travel speed	Km / hour	12	< 5	6 - 10	>10	Good	10 - 12 Km/hour	Fulfill
2	Jak 2	Travel speed	Km / hour	11	< 5	6 - 10	>10	Good		Fulfill
3	Jak 3	Travel speed	Km / hour	11	< 5	6 - 10	>10	Good		Fulfill
4	Jak 4	Travel speed	Km / hour	10	< 5	6 - 10	>10	Moderate		Fulfill
5	Jak 5	Travel speed	Km / hour	11	< 5	6 - 10	>10	Good		Fulfill
6	Jak 6	Travel speed	Km / hour	10	< 5	6 - 10	>10	Moderate		Fulfill
7	Jak 7	Travel speed	Km / hour	10	< 5	6 - 10	>10	Moderate		Fulfill
8	Jak 8	Travel speed	Km / hour	12	< 5	6 - 10	>10	Good		Fulfill
9	Jak 9	Travel speed	Km / hour	13	< 5	6 - 10	>10	Good		Slower
10	Jak 10	Travel speed	Km / hour	11	< 5	6 - 10	>10	Good		Fulfill

The travel speed indicator from Table 12 shows the results of the analysis of the entire Jak Lingko route on the Jak 1-10 route, and can be compared with the SPM SK Dirjen 2002 regarding the administration of public transportation in urban areas in fixed and regular routes, for the Jak 4, Jak 6 route. and Jak 7 are in moderate parameters, while for routes Jak 1, Jak 2, Jak 3, Jak 5, Jak 8, Jak 9, and Jak 10 are in good parameters. This means that for routes Jak 4, Jak 6 and Jak 7 are at standard values of 6-10 km / hour, and routes for Jak 1, Jak 2, Jak 3, Jak 5, Jak 8, Jak 9, and Jak 10 are in standard values> 10 km / hour.

All Jak 1-10 routes have met the World Bank SPM, except for the Jak 9 route producing slower information, because these routes experience traffic congestion resulting in delays in travel speed, so the conclusion is from a comparison with SPM SK Dirjen 2002 and SPM World Bank On the entire Jak 1-10 routes, there are no routes that are in less parameter or that produce information that does not meet (slower), although the Jak 9 route produces slower information because the results of the analysis exceed the standard value of 10-12 Km / hour.

d. Fleet availability

ASTONJADRO: Jurnal Rekayasa Sipil

pISSN 2302-4240
eISSN 2655-2086

Volume 9, No. 2, Desember 2020, Halaman 117-131
DOI: 10.32832/astonjadro.v9i2.3293

Table 13. SPM comparison Fleet availability

No	Route	Description	Unit	Result	Parameter SPM SK Dirjen 2002			Information	SPM *World Bank*	Information
				analysis	less	moderate	good			
1	Jak 1	Fleet availability	%	94%	<80	80-89	90-100	Good	80-90%	Fulfill
2	Jak 2	Fleet availability	%	97%	<80	80-89	90-100	Good		Fulfill
3	Jak 3	Fleet availability	%	98%	<80	80-89	90-100	Good		Fulfill
4	Jak 4	Fleet availability	%	98%	<80	80-89	90-100	Good		Fulfill
5	Jak 5	Fleet availability	%	99%	<80	80-89	90-100	Good		Fulfill
6	Jak 6	Fleet availability	%	94%	<80	80-89	90-100	Good		Fulfill
7	Jak 7	Fleet availability	%	97%	<80	80-89	90-100	Good		Fulfill
8	Jak 8	Fleet availability	%	96%	<80	80-89	90-100	Good		Fulfill
9	Jak 9	Fleet availability	%	97%	<80	80-89	90-100	Good		Fulfill
10	Jak 10	Fleet availability	%	98%	<80	80-89	90-100	Good		Fulfill

Fleet availability indicators from Table 13, the analysis results obtained from the entire Jak Lingko route on the Jak 1-10 route, and can be compared with the SPM SK Dirjen 2002 concerning the administration of public transportation in urban areas in fixed and regular routes, for the whole route is in the parameter good, this means that the results of the analysis on the entire route are at a standard value of 9-100.

All Jak 1-10 routes have met the World Bank SPM, so the conclusion from the comparison with the SPM SK Dirjen 2002 and the World Bank SPM on the entire Jak 1-10 routes, there are no routes that are under parameters or that produce information that does not meet.

CONCLUSION

Based on the results and discussion that have been described, the following conclusions can be drawn: The performance results of Jak Lingko public transport on route 1-10 have seven indicators, namely: load factor, production of service km per vehicle per day, frequency, headway, vehicle time and speed, passenger production / service km, and fleet availability. The seven indicators produce an average value per route which can be seen which route has the largest analysis value and the smallest analysis value. The results of the Jak Lingko service level on the SPM SK Dirjen 2002 and the SPM World Bank. There are 4 indicators (load factor, headway, travel speed, fleet availability) and almost entirely there are no routes that are in deficient parameters or that produce information that does not meet, except for the travel speed indicator there is 1 (one) route, namely the Jak 9 route (Roxy Mas-Karet) which did not meet the SPM World Bank. This is because the results of the analysis exceed the standard value of 10-12 Km / hour.

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Volume 9, No. 2, Desember 2020, Halaman 117-131
DOI: 10.32832/astonjadro.v9i2.3293

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