International Journal of Social Sciences and Management Review

Volume: 02, Issue: 03 "May-June 2019"

ISSN 2582-0176

THE FEASIBILITY OF OPERATIONAL AND COMMERCIAL ASPECTS OF B737-500 AIRCRAFT FOR JAKARTA-BANYUWANGI-JAKARTA ROUTE OPERATED BY PT. NAM AIR

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ABSTRACT

Banyuwangi region in East Java Indonesia has developed to be a world-class tourist destination. It has developed tourism supporting sectors such as infrastructure, investment and manufacturing. This is an opportunity NAM Air can take advantage to bridge inter-regional relations by providing air connectivity, namely air transportation services, opening the Jakarta-Banyuwangi-Jakarta route using B737-500 aircraft. The purpose of this study is to determine the feasibility of operational and commercial aspects of the Jakarta-Banyuwangi-Jakarta route. The analysis in this study uses a qualitative descriptive method, while the data collection methods are observation, library data, and interviews. The results of this study indicate that there is a need to develop Banyuwangi airport infrastructure, increase B737-500 aircraft utilization and increase the market capacity so that the flight routes continue to exist sustainably supporting the government programs, while still achieving the company's goal.

Keywords: Infrastructure development, market capacity and aircraft utilization.

1.0 INTRODUCTION

People use transportation from the place of origin to the destination to do their activities, e.g. in education, business, vacation, religious activity or other activities. Thus, they may start selecting and identifying the effectiveness and efficiency of transportation modes to be used to arrive at a certain destination. One of them is aircraft.

Indonesia is a very wide archipelago country with geographically spreading locations of its islands, making the inter-island distances far enough. Thus, transportation mode using aircraft is still the prima donna in the demand for long distance inter-island, domestic, as well as international transportation. This is in line with the economic growth of Indonesia's regions which influences the traffic of people travelling using air transportation mode, with no exception of Banyuwangi region.

The Ministry of Tourism of the Republic of Indonesia has developed 10 priority destinations of tourism as "New Balis" and has determined three main programs in 2017, namely

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ISSN 2582-0176

digitalization, homestay, and connectivity. These programs are to support the new branding of 10 main tourism destinations as sub-brands to align with the master brand of Wonderful Indonesia; one of them is the sub-brand of "The Majestic Banyuwangi".

NAM Air is a subsidiary of Sriwijaya Air group takes participation in supporting the air connectivity which encourages tourists to visit Banyuwangi. However, NAM Air also needs to consider its business development and the achievement of company's objectives by obtaining maximum load factor and big market capacity in order to continuously maintain the existence of that route.

Now, Banyuwangi airport has runway as long as 1,850 meters with the runway characteristics of Pavement Classification Number (PCN) 39 F/C/T and the airport category "C". Thus, it is clear that the runway of Banyuwangi airport is fairly restricted in its length (runway length) and strength (pavement). In order to support the tourism development in Banyuwangi while achieving the company's target, the company needs to analyze whether the route is feasible from the operational and commercial points of view if using B737-500 aircraft.

2.0 RESEARCH METHOD

The data collection is carried out by directly visiting the research object in the field. This primary data will be studied to analyze the selected topic and the field research is performed in the forms of observation, documentation study, and interview.
The method of data analysis used in this study is descriptive qualitative where the qualitative research is based on the philosophy of positivism which is used for studying an object in its natural condition (as the opposite of experiment) where the researcher is the key instrument; the data analysis is inductive/qualitative; and the result of qualitative research emphasizes more on the meaning rather than on the generalization.
In this study, the authors use data analysis tools commonly used in the commercial aviation, namely:

1. Payload Allowable Calculation based on Aircraft Structure to calculate:
   a) MZFW (Maximum Zero Fuel Weight)
   b) MTOW (Maximum Take Off Weight)
   c) MLW (Maximum Landing Weight)

2. Aircraft Performance to calculate:
   a) Operational Take-Off Weight based on Runway Strength which is called Pavement Classification Number (PCN).
   b) Operational Take-Off Weight based on Runway Length, including Field Length Limit (FL) and Climb Limit (CL)

3. Route Analysis consisting of payload, average load factor, trip fuel and block fuel.
4. Data analysis technique using descriptive qualitative method.

3.0 RESEARCH FINDINGS AND DISCUSSIONS

A. Analysis of the Influence of Runway Length and Runway Strength on the Take-Off Weight Operation of B737-500 Aircraft for the BWX-CGK Route.

1. Analysis of the CGK-BWX Route

a. Take Off Weight (TOW) based on Runway Strength

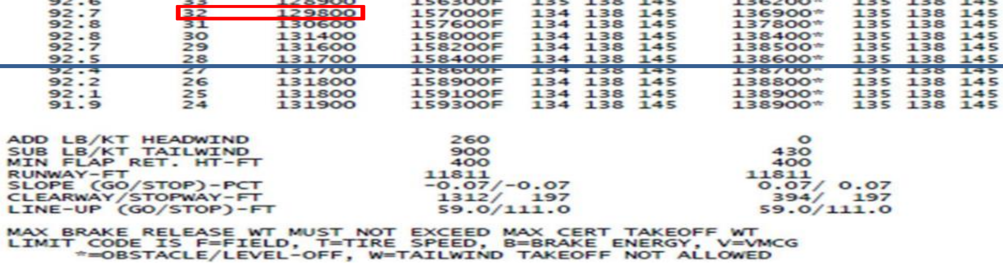
CGK RWY 07L -25R PCN
114 R/D/W/T

OTOW = 60.781 kg + [(72)/(22)] x (28.122 kg)
OTOW = 60.781 kg + [(3.272)] x (28.122 kg)
OTOW = 60.781 kg + 92.015 kg
OTOW = 152.796 kg

2. Take-Off Weight (TOW) Based on Runway Length

$$OTOW = MTOW + \left[\frac{PCNact\text{-}ACNmax)}{(ACNmax\text{-}ACNmin)}\right] X\ (MTOW - DOW)$$

$$OTOW = 60.781\ kg + \left[\frac{(114 - 42)}{(42 - 20)}\right] X\ (60.781\ kg - 32.659\ kg)$$



92.7	32	129800	157000F	134	138	145	136900*	135	138	145
92.8	31	130600	157600F	134	138	145	137800*	135	138	145
92.8	30	131400	158000F	134	138	145	138400*	135	138	145
92.7	29	131600	158200F	134	138	145	138500*	135	138	145
92.5	28	131700	158400F	134	138	145	138600*	135	138	145
92.4	27	131700	158600F	134	138	145	138700*	135	138	145
92.2	26	131800	158900F	134	138	145	138800*	135	138	145
92.1	25	131800	159100F	134	138	145	138900*	135	138	145
91.9	24	131900	159300F	134	138	145	138900*	135	138	145

ADD LB/KT HEADWIND	260	0
SUB LB/KT TAILWIND	900	430
MIN FLAP RET. HT-FT	400	400
RUNWAY-FT	11811	11811
SLOPE (GO/STOP)-PCT	-0.07/-0.07	0.07/ 0.07
CLEARWAY/STOPWAY-FT	1312/ 197	394/ 197
LINE-UP (GO/STOP)-FT	59.0/111.0	59.0/111.0

MAX BRAKE RELEASE WT MUST NOT EXCEED MAX CERT TAKEOFF WT
LIMIT CODE IS F=FIELD, T=TIRE SPEED, B=BRAKE ENERGY, V=VMCG
*=OBSTACLE/LEVEL-OFF, W=TAILWIND TAKEOFF NOT ALLOWED

Figure 1 : Runway Analysis Sriwijaya Ai

3. Landing Weight (TOW) based on Runway Strength

BWX RWY 08-26
PCN 39 F/C/X/T

$$OTOW = MTOW + \left[\frac{(PCNact\text{-}CNmax)}{(ACNmax\text{-}CNmin)} \right] X\,(MTOW - DOW)$$

$$OTOW = 60.781\,kg + \left[\frac{(39 - 37)}{(37 - 17)} \right] X\,(60.781\,kg - 32.659\,kg)$$

OTOW = 60.781 kg + [(2)/(20)] x (28.122 kg)

OTOW = 60.781 kg + [(0.1)] x (28.122 kg)

OTOW = 60.781 kg + 2812.2 kg

OTOW = 63.593 kg

4. Payload calculation for the CGK-BWX Route

Payload = {(MLW + Trip Fuel)} – {(DOW + B.F)}

Payload ={(49.895kg+3655kg)}–{(32.926kg+7389kg)}

Payload = {(53.550 kg)} - {(40.315 kg)}

Payload = 13.235 kg

If the weight is converted into the number of passengers with the assumption that the standard body weight (SBW) is 90 kg (including 20 kg free baggage), thus:

$$\text{Number of passengers} = \frac{\text{Maximum Payload}}{\text{Standard Body Weight}}$$

$$\text{Number of passengers} = \frac{13.235\,kg}{90\,kg}$$

Number of passengers = 147 persons

The number of passengers who can be accommodated for the CGK-BWX route is as many as 147 persons or LF = 100%.

B. Market Capacity Analysis of the CGK-BWX Route

CGK - BWX								
2017	FLIGHT	PAX		L/F	SALABLE	INFANT	BAGG	CARGO
		C - CLASS	Y - CLASS	PAX	SEAT			
JUN	15	58	1.583	92,09%	1.782	61	11.473	54
JUL	30	119	3.120	90,86%	3.565	51	22.127	1.307
AUG	38	137	3.520	80,89%	4.521	46	22.226	4.294
SEP	55	73	4.447	68,93%	6.557	43	28.163	21.180
OCT	45	77	3.995	76,06%	5.354	37	23.963	23.618
NOV	55	158	4.949	77,92%	6.554	48	32.993	24.170
DEC	63	116	5.695	78,73%	7.381	79	34.686	26.953

CGK - BWX								
2018	FLIGHT	PAX		L/F	SALABLE	INFANT	BAGG	CARGO
		C - CLASS	Y - CLASS	PAX	SEAT			
JAN	53	49	4.511	72,06%	6.328	55	29.718	20.630
FEB	44	41	3.914	75,03%	5.271	47	21.912	21.221
MAR	52	52	4.720	76,58%	6.231	46	27.846	26.444
APR	51	37	4.616	76,12%	6.113	44	25.380	23.905

C. Market Capacity Analysis of the CGK-BWX Route

CGK - BWX								
2017	FLIGHT	PAX		L/F	SALABLE	INFANT	BAGG	CARGO
		C - CLASS	Y - CLASS	PAX	SEAT			
JUN	15	58	1.583	92,09%	1.782	61	11.473	54
JUL	30	119	3.120	90,86%	3.565	51	22.127	1.307
AUG	38	137	3.520	80,89%	4.521	46	22.226	4.294
SEP	55	73	4.447	68,93%	6.557	43	28.163	21.180
OCT	45	77	3.995	76,06%	5.354	37	23.963	23.618
NOV	55	158	4.949	77,92%	6.554	48	32.993	24.170
DEC	63	116	5.695	78,73%	7.381	79	34.686	26.953

CGK - BWX								
2018	FLIGHT	PAX		L/F	SALABLE	INFANT	BAGG	CARGO
		C - CLASS	Y - CLASS	PAX	SEAT			
JAN	53	49	4.511	72,06%	6.328	55	29.718	20.630
FEB	44	41	3.914	75,03%	5.271	47	21.912	21.221
MAR	52	52	4.720	76,58%	6.231	46	27.846	26.444
APR	51	37	4.616	76,12%	6.113	44	25.380	23.905

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ISSN 2582-0176

From the result of the calculation for CGK-BWX sector above, some conclusions can be made as follows:

1. Based on the Runway Strength of Soekarno-Hatta airport, the aircraft can take off with maximum Take-Off Weight 58.740 kg.
2. Based on the Runway Length of Soekarno-Hatta airport, in the OAT 32℃, dry condition and zero wind the aircraft can carry the take-off weight as many as 58.876 kg limited by climb limit.
3. Based on the Runway Strength of Banyuwangi airport, the aircraft can perform landing with maximum landing weight as many as 49.895 kg
4. Based on the calculation of payload allowable based on aircraft performance and payload allowable based on aircraft structure, then the payload allowable for the CGK-BWX route is 13.235 kg limited by Maximum Landing Weight where the Load factor is 100%.
5. Based on the data of load factor NAM Air during the operation from June 2017 to April 2018, the average load factor for the CGK-BWX route is as many as 78,66% and, thus, the achievement of market capacity has not been as expected yet.

D. Analysis of the Influence of Runway Length and Runway Strength on the Take-Off Weight Operation of B737-500 aircraft for the BWX-CGK Route.

1. Analysis of the BWX-CGK Route

a. Take-Off Weight (TOW) based on Runway Strength

BWX RWY 08-26
PCN 39 F/C/X/T

$$OTOW = MTOW + \left[\frac{(PCNact\text{-}CNmax)}{(ACNmax\text{-}CNmin)} \right] X\,(MTOW - DOW)$$

$$OTOW = 60.781\text{ kg} + \left[\frac{(39 - 37)}{(37 - 17)} \right] X\,(60.781\text{ kg} - 32.659\text{ kg})$$

OTOW = 60.781 kg + [(2)/(20)] x (28.122 kg)

OTOW = 60.781 kg + [(0.1)] x (28.122 kg)

OTOW = 60.781 kg + 2812.2 kg

OTOW = 63.593 kg

b. Take-Off Weight (TOW) based on Runway Length

RUNWAY ANALYSIS — BOEING 737-500W 20K WET

NAM AIR

ELEVATION 105 FT SLIPPERY .20 MU — BWX (WADY)

*** FLAPS 15 *** AIR COND AUTO ANTI-ICE OFF — BLIMBING SARI

BANYUWAGI,IDN

737-500W-20K CFM56-3-B1 — DATED 12-MAY-2017

A INDICATES OAT OUTSIDE ENVIRONMENTAL ENVELOPE

MAX BRAKE RELEASE WT-LB, LIMIT CODE AND TAKEOFF SPEEDS FOR ZERO WIND

TAKEOFF N1	OAT DEG C	CLIMB LIMIT	** RWY 08 ** WEIGHT	V1	VR	V2	** RWY 26 ** WEIGHT	V1	VR	V2
90.8	53	101900	96600*	105	116	123	96600*	105	116	123
90.9	52	102900	97700*	105	117	124	97700*	105	117	124
91.0	51	103700	98600*	106	118	125	98600*	106	118	125
91.1	50	104500	99500*	107	118	125	99500*	107	118	125
91.2	49	105400	100500*	107	119	126	100500*	107	119	126
91.3	48	106300	101600*	108	120	127	101600*	108	120	127
91.4	47	107200	102700*	109	120	127	102700*	109	120	127
91.5	46	108100	103800*	110	121	128	103800*	110	121	128
91.6	45	109000	104800*	111	122	129	104800*	111	122	129
91.7	44	109900	106000*	112	122	129	106000*	112	122	129
91.8	43	110800	107100*	113	123	130	107100*	113	123	130
91.9	42	111700	108300*	114	124	131	108300*	114	124	131
92.0	41	112500	109300*	114	124	132	109300*	114	124	132
92.1	40	113300	110400*	115	125	132	110400*	115	125	132
92.2	39	114200	111500*	116	126	133	111100F	116	126	133
92.3	38	115000	112600*	117	126	134	111800F	116	126	133
92.4	37	115900	113600*	118	127	134	112400F	117	126	134
92.5	36	116800	114400F	118	128	135	113100F	117	127	134
92.6	35	117700	115000F	119	128	135	113700F	118	127	134
92.6	34	118600	115800F	119	128	136	114700F	118	128	135
92.7	33	119500	116400F	120	129	136	115300F	119	128	135
92.7	32	120400	117000*	120	129	136	115900F	119	128	136
92.8	31	121300	117600*	120	129	137	116500F	120	129	136
92.9	30	122100	118300F	121	130	137	117100F	120	129	136
92.7	29	122300	118800F	121	130	137	117600F	121	129	137
92.6	28	122300	118900*	122	130	137	117800F	121	129	137
92.4	27	122400	118900*	122	130	137	118000F	121	130	137
92.3	26	122500	119000*	122	130	137	118100F	121	130	137
92.1	25	122500	119000*	122	130	138	118300F	121	130	137
92.0	24	122600	119100*	122	130	138	118500F	121	130	137
91.8	23	122600	119100*	122	130	138	118600F	122	130	137
90.6	15	123000	119500*	122	131	138	119500*	122	131	138

	RWY 08	RWY 26
ADD LB/KT HEADWIND	0	0
SUB LB/KT TAILWIND	940	900
MIN FLAP RET. HT-FT	1000	1000
RUNWAY-FT	6070	6070
SLOPE (GO/STOP)-PCT	-0.20/-0.20	0.20/ 0.20
CLEARWAY/STOPWAY-FT	0/ 0	0/ 0
LINE-UP (GO/STOP)-FT	59.0/111.0	59.0/111.0

MAX BRAKE RELEASE WT MUST NOT EXCEED MAX CERT TAKEOFF WT OF 129499 LB

LIMIT CODE IS F=FIELD, T=TIRE SPEED, B=BRAKE ENERGY, V=VMCG

Figure 2: Runway Analysis NAM Air

c. Landing Weight (TOW) based on Runway Strength

CGK RWY 07L – 25R PCN 114
R/D/W/T

$$OTOW = MTOW + \left[\frac{(PCNact\text{-}CNmax)}{(ACNmax\text{-}CNmin)}\right] X\,(MTOW - DOW)$$

$$OTOW = 60.781\,kg + \left[\frac{(114 - 42)}{(42 - 20)}\right] X\,(60.781\,kg - 32.659\,kg)$$

OTOW = 60.781 kg + [(72)/(22)] x (28.122 kg)

OTOW = 60.781 kg + [(3.272)] x (28.122 kg)

OTOW = 60.781 kg + 92.015 kg

OTOW = 152.796 kg

d. Payload calculation for the CGK-BWX Route

Payload = OTOW – (DOW + Block Fuel)

Payload = 52.298 kg – (32.926 kg + 8208 kg) Payload = 52.298 kg – 41.134 kg

Payload = 11.164 kg

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If the weight is converted into the number of passengers with the assumption that the standard body weight (SBW) is 90 kg (including 20 kg free baggage), thus:

$$\text{Number of passengers} = \frac{\text{Maximum Payload}}{\text{Standard Body Weight}}$$

$$\text{Number of passengers} = \frac{11.164 \text{ kg}}{90 \text{ kg}}$$

Number of passengers = 124 persons

The number of passengers who can be accommodated for the BWX-CGK route is as many as 124 persons or Load Factor (LF) = 95%.

2. Market Capacity Analysis of the BWX-CGK Route

BWX - CGK								
2017	FLIGHT	PAX		L/F	SALABLE	INFANT	BAGG	CARGO
		C - CLASS	Y - CLASS	PAX	SEAT			
JUN	15	36	1.188	68,61%	1.784	30	7.313	250
JUL	30	132	3.212	93,62%	3.572	84	27.197	2.289
AUG	38	88	3.372	76,35%	4.532	46	21.537	2.066
SEP	56	67	4.573	69,35%	6.691	40	18.896	1.889
OCT	45	80	4.246	80,71%	5.360	50	30.643	7.231
NOV	55	133	5.140	80,39%	6.559	142	39.782	5.724
DEC	62	75	5.572	76,19%	7.412	69	39.736	3.661

BWX - CGK								
2018	FLIGHT	PAX		LOAD	SALABLE	INFANT	BAGG	CARGO
		C - CLASS	Y - CLASS	FACTOR	SEAT			
JAN	53	48	4.759	75,93%	6.331	82	34.961	10.441
FEB	44	29	3.914	74,73%	5.276	19	11.308	4.692
MAR	52	55	4.511	73,21%	6.237	52	29.591	6.789
APR	44	99	4.936	82,30%	6.118	44	32.466	10.186

From the result of calculation for CGK-BWX sector, some conclusions can be made as follows:

a. Based on the Runway Strength of Banyuwangi airport, the aircraft can take off with maximum Take-Off Weight as many as 58.740 kg.
b. Based on the Runway Length of Banyuwangi, at OAT 33°C, with flaps 15, wet/worst condition and zero wind, the aircraft can carry Take-Off Weight as many as 52.298 kg limited by field length.
c. Based on the Runway Strength of Soekarno Hatta airport, the aircraft can perform landing with maximum landing weight as many as 49.895 kg
d. Based on the calculation of payload allowable based on aircraft performance and payload allowable based on aircraft structure, then the payload allowable for the BWX-CGK route is as many as 11.164 kg limited by Runway Length, where the Load Factor can only be filled until just 95%.
e. Based on the data load factor NAM Air during its operation from June 2017 until April 2018, the average load factor for CGK-BWX is as many as 77.40% and thus the achievement of market capacity has not been as expected.

E. Analysis of CGK-BWX-CGK Route Using B737-500 Aircraft based on the Assumption of Market Capacity and Increased Load Factor.

The following is the cost structure of B737-500 aircraft per hour.

Referring to the data of flight achievement of B737-500 for CGK-BWX-CGK route in April 2018, the load factor is as many as 82.30% so that the TOC (Total Operating Cost) is $ 5,211.62 per hour, assuming that the aircraft utilization per month is 250 hours. By assuming the profit margin is 10%, the selling price will be $ 5,732.78 per hour and the selling price/seat hour will be $ 44.10. Thus, it can be known that the BEP (Break Even Point) of the seat that must be achieved for this route is as many as 118 seats or 91% of the total 130 seats (Load Factor 100%). The data existing on the table above shows that the load factor of B737-500 for CGK-BWX-CGK route in April is 82.30% (107 pax). So, it is known that the load factor on this route is less than the BEP as many as 91% (118 pax). In the condition with such TOC and BEP, then it can be said that B737-500 aircraft for CGK-BWX-CGK route is still unfeasible to fly. In the other word, if the aircraft is operated for this route it will result in a potential loss for the company unless it can achieve the load factor more than 91% with the average price per pax is at $ 44.10 or Rp 611,711 per hour flight.

International Journal of Social Sciences and Management Review

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ISSN 2582-0176

COST STRUCTURES BOEING 737-500 PER HOUR

Expressed in USD, APRIL 2018

FUEL	=	Rp	10,290
ROE	=	Rp	13,871

DESCRIPTIONS	COST / HOUR USD	COST / HOUR USD	COST / HOUR USD
A. DIRECT OPERATING COST :	200 HOURS	250 HOURS	300 HOURS
AIRCRAFT	445.00	356.00	296.67
CREW	202.16	161.72	179.69
MAINTENANCE	1,255.00	1,255.00	1,255.00
AIRCRAFT INSURANCE	233.33	186.67	155.56
FUEL	2,410.97	2,410.97	2,410.97
ROUTE NAV.FEE	139.76	139.76	139.76
LANDING FEE	22.18	22.00	21.88
PARKING FEE	27.45	27.45	27.45
GROUND HANDLING	67.50	54.00	45.00
CREW TRAINING	9.08	7.26	6.05
CATERING	146.25	117.00	97.50
SUB TOTAL	**4,958.67**	**4,737.83**	**4,635.53**
B. INDIRECT OPERATING COST : DOC x 10%	495.87	473.78	463.55
TOTAL OPERATING COST	**5,454.54**	**5,211.62**	**5,099.08**
T O C / SEAT HOUR	***41.96***	***40.09***	***39.22***
MARGIN 10%	545.45	521.16	509.91
Selling Price per Hour	**5,999.99**	**5,732.78**	**5,608.99**
Selling Price per Seat Hour	***46.15***	***44.10***	***43.15***
PERCENTAGES OF FUEL COST	**44.20%**	**46.26%**	**47.28%**

Based on the calculation of Flight Plan, PT. NAM Air determines the block time for CGK – BWX route = 1 hour 40 minutes or 1.67 hours, then the average price of a ticket is 1.67 × Rp 611,711 = Rp 1,021,557 per pax. Whereas the block time for BWX – CGK route = 1 hour 45 minutes or 1.75 hours, then the average price of a ticket is 1.75 × Rp 611,711 = Rp 1,070,494 per pax. Based on the calculation of average ticket price, which is equal to the middle class of each sector of CGK – BWX – CGK, it is less competitive compared with the ticket price for CGK–SUB–CGK route where Surabaya is located near Banyuwangi and can become alternative substitution.

Therefore, if the utilization of B737-500 aircraft is optimal it can lower the TOC, as seen in the table above, influencing the selling price per seat hour to be lower. It means the price will be cheaper and more competitive. With a competitive price, an airline will potentially obtain higher market capacity. In the other hand, however, the recent growth of passengers still fluctuates since the CGK-BWX-CGK is one of the new routes making the growth of

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ISSN 2582-0176

passengers is unpredictable. Nevertheless, based on the analysis result of each sector, i.e. the operation of CGK- BWX-CGK route with average load factor as many as 78.03%, the company needs to make more maximum efforts.

4.0 CONCLUSIONS

Based on the discussion on the feasibility of commercial aspect for B737-500 aircraft, the authors conclude as follows:

1. Based on the feasibility analysis of the operational aspect of B737-500 aircraft for the CGK-BWX route operated by PT NAM Air, this route basically has a payload as expected by the company so it can be said that the aircraft for the CGK-BWX route is feasible to fly.
2. Based on the feasibility analysis of the operational aspect of B737-500 aircraft for the BWX-CGK route operated by PT NAM Air, it can be known that the performance of B 737-500 aircraft is still unfeasible. In this route the load which can be carried is only passenger, whereas cargo cannot be carried. This is because the condition of Banyuwangi airport infrastructures is less supportive thus influencing the aspect of aircraft operation, including a big number of loads cannot be carried in this route.
3. Based on the feasibility analysis of the operational and commercial aspects of B737-500 aircraft for the CGK-BWX-CGK route, it is seen that the route is still unfeasible because the load factor or the load to be carried cannot exceed the BEP (Break Even Point) which influences the Total Operating Cost (TOC), making the price high and not competitive. This can also influence the company's market capacity to decrease and make loss for the company.

Based on the above conclusions, the authors give some suggestions as follows:

1. Subsidy from Local Government

It is necessary to develop the infrastructures of Banyuwangi airport so that the utilization of B737-500 aircraft for the CGK-BWX-CGK route can have maximum payload—ability to carry passengers and cargo. The infrastructure development can be done by lengthening the runway of Banyuwangi airport in order to fulfill the company's future expectation. This program will surely need not little fund for initial implementation and maintenance as well as for bigger scale development in the next stage. Therefore, sustainable commitment is required.

2. Increasing Aircraft Utilization

NAM Air needs to increase the utilization of B737-500 aircraft to be more than 250 hours so that the TOC will be lower. The aircraft should fly as frequently as possible, starting from the first flight as early as possible in the morning where the schedule is still commercially feasible and the last flight to be scheduled to

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end at midnight. Turnaround should be as quick as possible every time the aircraft has a transit to ensure minimum time spent in an airport so that the selling price per seat hour will become more competitive and obtain wider coverage of market capacity.

3. Market Penetration and Development

The effort PT NAM Air as its business strategy to increase the market capacity of the Jakarta-Banyuwangi-Jakarta route is market penetration by more proactively promoting its product in unique and creative ways. It also needs to build better cooperation with travel agents to sell tickets at a more competitive price by providing the travel agents with more promising commission incentives from each ticket sold.

5.0 REFERENCES

- Boeing Commercial Airplanes. 2007. *737 Airplane Characteristics for Airport Planning.* United States of America.
- Decree of Transportation Minister of the Republic of Indonesia Number 29, 2014 on Technical and Operational Standard Manual for the Regulation of Civil Aviation Safety, Runway, and Other Supporting Facilities.
- Federal Aviation Administration (FAA). 2016. *Pilot's Handbook of Aeronautical Knowledge*. 2016. New York United States: Federal Aviation Administration.
- International Civil Aviation Organization (ICAO). 2013. *Aerodrome Design and Operations Sixth Edition.* ICAO. Annex 14 Volume I
- Kotler, Philip, Keller, Kevin Lane, Sabran, Bob, Adi, Maulana, dan Sri Hayati, Yayat. 2009. *Manajemen Pemasaran Edisi 13*. Jakarta: Erlangga
- Radnoti, George. 2002*. Profit Strategies for Air Transportation*. United States: McGrawHill
- Regulation of Transportation Minister of the Republic of Indonesia Number 126, 2005 on the Mechanism of Formulation for Calculating and Establishing Upper and Lower Limit Rates for Passengers of Economy Class Service of Domestic Commercial Scheduled Air Transport.
- Regulation of Transportation Minister of the Republic of Indonesia Number 51, 2014 on the Mechanism of Formulation for Calculating and Establishing Upper and Lower Limit Rates for Passengers of Economy Class Service of Domestic Commercial Scheduled Air Transport.
- Samuel, H and Foedjiawati. 2005. Pengaruh Kepuasan Konsumen terhadap Kesetiaan Merek. *Jurnal Manajemen dan Kewirausahaan* Vol 7 No 1 pp. 74-82

Volume: 02, Issue: 03 "May-June 2019"

ISSN 2582-0176

- Suharno, Hadi. 2015. *Manajemen dan Perencanaan Bandar Udara Edisi Kedua.* Jakarta: Raja Grafindo Persada.

- The Law of the Republic of Indonesia Number 1, 2009 on Aviation

- Wiley, John and Sons. 2009. *The Global Airline Industry First Edition*. England: John Wiley & Sons

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