

THE ANALYSIS OF FLIGHT FREQUENCY ON ROUTE JAKARTA - ISTANBUL CONNECTING TO OTHER CITIES TO COVER MARKET DEMAND

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ABSTRACT

The purpose of this research is to analyse the flight frequency required for Turkish Airlines on 2018-2019. The problem of the research is the route of Jakarta-Istanbul that is used for Umrah and Leisure often have overbooked due to Turkish Airlines only provide one flight per day to carry all passengers. The methodology used quantitative descriptive analysis with the least square method to estimate the trend value that will be used as a tool to forecast the number of passengers. Seasonal variations in the data are regular upward or downward movements in a time series that tie to recurring events. The result of the data recorded in 2016 the average load factor reached by airlines of Turkey was 83.48%, aircraft seat capacity and inadequate and therefore cannot meet the demand of passengers, as well as using airline indicator calculation to analyse the flight frequency needs. It is resulted that the total passenger in 2018-2019 will increase, where in 2018 is in amount of 110.612 passengers and in 2019 is in amount of 125.645 passengers. Turkish Airlines needs to add 1 time flight frequency in a particular day on that route.

Keywords: Flight frequency, forecasting, demand potential

INTRODUCTION

One of the foreign airlines that operate in Indonesia and provide the International flight route is Turkish Airlines. Turkish Airlines is the foreign airline that serves many routes in across the world, such as Middle East, Europe, Africa, and America. Turkish Airlines provides services to various countries with one transit or so-called one-stop flight. As a result, the routes segment for Jakarta-Istanbul will be connected to the other cities. With the world's 4th largest flight network, Turkish Airlines flies to 242 international destinations in 116 countries. This country coverage is greater than any other airlines in the world. By 2016,

Turkish Airlines has rewarded by Skirtd as *The Best Airline in Europe* for last 6 years and *The Best Business Class Lounge Dining* for last 3 years. Turkish Airlines decide Istanbul as a transfer point on the global route, reduces flight time and introduces thre flexibility to use a variety of aircraft of diverse capacity. Using Istanbul Ataturk Airport as a hub enables Turkish Airlines to utilize a narrow body fleet, thus providing a considerable cost advantage and contributing to competitive superiority. In 2015, Istanbul Ataturk Airport has become the 3th busiest airport in Europe. Although the flight that offered by Turkish Airline is not the direct flight, but Turkish Airlines have a competitive advantage offering

free city tour for every passengers that transit in Istanbul. Accordingly, it affect to the increase of passenger's interest to use Turkish Airlines services. Because of that problem, today noted that the amount of available seat capacity offered by Turkish airline cannot adequate the seat number that requested by passengers, especially on Jakarta-Istanbul route. Whereas with many requests of seat, should be able to make more profit for Turkish airline. With the least amount of quota provided by Turkish airline can cause a loss of opportunity to fly more passengers. The description above shows that the market demand for Turkish Airlines services is increased continuously. Besides that, Turkish Airlines have to compete with many airlines that have international routes. Because of that, it is necessary to do the analysis of flight frequency needed by Turkish Airlines on Jakarta-Istanbul route, in order to get the maximum profit by optimize the operational. Especially today Turkish Airlines also sell flight routes for umra, and in 2016 has noted that the total umra passengers that use Turkish Airlines on routes Jakarta-Istanbul-Medina or Jakarta-Istanbul-Jeddah is in amount of 6391 passengers. This amount was affected enough to increase the total of passengers on Jakarta-Istanbul routes in 2016. Accordingly, in 2016 noted that the total all passengers either umra or leisure passengers that use Turkish Airlines on routes Jakarta-Istanbul is in the amount of 85.262 passengers, which is the majority of passengers is connecting passenger to Europe and Middle East routes, and this number increased by 34,75% compared to 2015 which is only as much as 63.273 passengers. Along with the increasing of passenger's interest numbers to use Turkish Airline services, cause a problem where the route of Jakarta-Istanbul that is used for Umra and Leisure often have overbooked, it is due to Turkish Airlines only provide one flight per day to carry all passengers. That's evidenced by the data recorded in 2016 which is the average of load

factor that reached by Turkish airline is 83,48%, frequently there are many seats that overbooked and load factor can reach 100% in a day. Because of that, there were several passengers that denied to on board and have to be transferred to other airline.

LITERATURE REVIEW

Management is a science and art, which means management as knowledge which organized and sistematic, and consists of theories and principles, as well as management is an art that is highly dependant on the people who run them (Wiludjeng, 2007). Meanwhile, Fahmi (2012) stated that management is a science that studies comprehensively about how to direct and manage people with different backgrounds with the goal to achieve the desiredgoal. According to Griffin (2005) management is a series of activities (including planning and decision making, organizing, leadership, and control) were directed at organizational resourcces (human, financial, physical, and information) in order to achieve the organizationals goals in a way that is effective and efficient. Nasution (2008) explained that transportation is a human activity and the movement of goods from point of origin to point of destination. The process of transportation is the movement from the place of origin, where the activities of transport begins, to the destination, where the transport activities terminated. Supply can be defined as amount of products or services that will be produced by producers during a given time period and in a given market. According to Salim (2013) each mode of transport has the nature, characteristics and different technical aspects which will affect transport services that offered by the carrier. The service providers should pay attention to satisfy the transportation service user that related to: security, accuracy, regularity, comfort, speed, enjoyment, and satisfaction. In the air transportation, the supply can be : routes offered, available aircraft, and frequency of

flight. VA sigh et.al (2008) stated that many airlines industries faced a difficult financial and has profit margin well below many other industries due to the demand is constantly fluctuates but the supplies are relatively fixed. Accordingly, it's difficult to manage the capacity effectively if there is any lack of flexibility in supply. According to Kotler and Keller (2009) marketing associated with identifying and meeting the needs of people and communities. American Marketing Association defines marketing as an organizational function and a set of processes for creating, communicating, and submit values to customers and managing customer relationships in ways that can give benefit to the organization and its stakeholders. According to Shaw (2007) marketing is the process of management to identify, anticipate, and satisfy the customer requirements which are profitable. According to Kotler and Armstrong (2008) marketing is a process where companies create value for the customer and build strong. Relationships with customers with the aim to get value from customers in return. Shaw (2007,) stated that "an airline which is to apply the principles of marketing successfully needs a thorough knowledge of current and potential markets for its service" Nasution (2008) has a statement that the market covered in the development of the air transport system is consists of existing demand and potential demand. According to Rander and Heizer (2011) forecasting is the art and science of predicting future events, which require the retrieval of historical data and project it into the future with some form of mathematical models. Based on the time horizon, the forecast grouped into 3 categories that are: short-term forecasting that defined as the forecast that has maximum period 1 year, but is generally less than 3 months, medium-term forecasting that defined as the forecasting which has a period of 3 months up to 3 years, and long-term forecasting that defined as the forecasting which has a period more than 3 years. According to Undang-undang Republik Indonesia Nomor 1 Tahun 2009 (2009) flight route is the path of aircraft from the airport of origin to destination airport through a predetermined flight path. According to Massoud (2004) flight schedule is a timetable which contains about when the aircraft will fly and where it was going. Offers flight schedule was based on market demand forecasting, availability of manpower, aircraft availability, rules and regulations, as well as behaviour competing airlines. Flight frequency is especially important for business travellers since they are generally more time-sensitive than leisure travellers. An airline with several flights between two cities has a greater probability of meeting a travelers' schedule than an airline with only a few flights (Vasigh et.al, 2008, p.57). According to Wiley (2016) frequency is how often the airline operate flights on the selected route. Accordingly, the writer can state that frequency is how many times the flight is conducted by an airline from origin to destination in certain period. According to Wiley (2016) load factor is the ratio of production of the airline traffic, where the load factor will represent how much the proportion of output / production of an airline that is sold or consumed. Load factor can also be defined as the total of passengers divided by the amount of seats on the aircraft (flight). According to Massoud (2004) "load factor is the average parentage of aircraft seats which are filled with passengers". Brueckner and Zhang (2000) identified that flight frequency is higher in a Hub-and-Spoke network than in a fully-connected network, the higher flight frequency allows airline to charge a higher fare to local passenger, and airlines provides excess flight frequency relative to the social optimum. Stated that population, income, and runway length contribute to the increased in flight frequency and aircraft size. An increase in proportion of population people with age under 25 years old and the managerial workers, and also in household have affected

to the increase of flight frequency. The result also explained that airport with long runways is more capable to have more aircraft movements. Pakan (2013) found out that the movement of passengers, goods, and mail in North Maluku are rely on air transport, where the percentage of load factors on the pioneers route in North Maluku are around 60-100%, and the additional of that the total passengers carried in every year is always increase. Accordingly, the flight frequency of pioneer routes in North Maluku are need to be added. Suhaedi et.al (2016) identified that, in 2012 PT Indonesia Air Asia need to add more flight frequency on route Jakarta-Yogyakarta-Jakarta, where it is caused by 3 things that are : the condition of competition among airlines become tight, the market share of Indonesia Air Asia in 2011 is small (13%), and the forecasting result of total passenger on Jakarta-Yogyakarta-Jakarta in 2012 is increase. Based on the results of previous studies above, it can be concluded that Hub-and-Spoke network has a higher flight frequency, where the flight frequency is influenced by several factors, such as the increased income, the increase in proportion of population people with age under 25 years old and the managerial workers, the increase of total passengers carried and high percentages level of load factors, and the competition among many airlines. Meanwhile, the current condition that Turkish Airline has are: it has a hub-and-spoke network, namely from Jakarta-Istanbul connecting to other cities with only 1 frequency within a day, the increasing of income growth per capita Indonesia, the high level percentage of Turkish Airlines load factor in last 2 years namely around 65-100%, and with the current competition among airlines to gain more market share in Indonesia. As a result, based on the condition above, the writer will conduct a study about the needs of flight frequency of Turkish Airlines, where the result of this study is to

determine whether Turkish Airlines need to add flight frequency or not.

METHODOLOGY

This research is conducted at Jakarta in Turkish Airlines head quarters Kuningan Jakarta. This research is held for 3 months, start from September until December 2016. The research using descriptive analysis with quantitative approach, according to Kothari (2004) quantitative approach is the research that based on the measurement of quantity or amount and it can be applied on phenomenon that can be expressed in terms of quantity. In other hand, for discussing and analyse the problem the writer uses descriptive method. Descriptive method is defined as a method to describe the facts, characteristic, and relationship between phenomena investigated in systematic, factual, and accurate. The result takes multiple steps to conduct the research, that are data collection, data processing and analysis, preparation of reports as well as take conclusions. This process is performed in order to obtain the objective result of research. The data collection of this research is done by observation, interviews, and literature studies (J Simarmata & Ikhsan, 2017). The analyse data are trend linear, seasonal index, and airline indicator. The sample of this research is the passengers of Turkish Airline on Jakarta – Istanbul route in 2013-2016. Data Analysis Technique by trend linear with the Least Square method will be used as a tool to forecast the number of passenger, Seasonal variations in the data is the regular movement either increasing or decreasing in a certain period of time, which is associated with recurrent events. The seasonal index require the adjustment of forecasting trend's line. This calculation will be used as a standard of total passengers that filled in every flights, if SLF (%) (Seat Load

Factor) is not known yet, The total of flight frequency, analysis frame work.

RESULTS AND DISCUSSION

A. The Condition of Traffic Potential Demand of Turkish Airlines

The increasing of the Indonesian economy in recent years is a matter that will give good impact for the business climate in Indonesia. According to Badan Pusat Statistik (BPS), the economic growth in 2016 amounted to 5.02%, where growth was higher than the previous year 2015 which amounted to 4.88%. With increasing economic growth has an impact on higher business activity in Indonesia. Especially for the current business scope is not conducted only inside the country but its scope has been to various countries around the world. Besides the increasing of business activity, the increasing of economic will affect on the income of each Indonesian people, was recorded in 2016 Indonesian gross domestic product (GDP) per capita reached Rp 47,96 million or USD 3,605.1. This cause many Indonesian people want to travel abroad to do holidays. The increasing of income per capita would also make Indonesia people who majority is muslim has the ability to perform umra worship. In 2016, it was noted that the number of pilgrims that perform umra are in amount of 818 thousand people, this number was increased which is in 2015 the number of pilgrims that performs was 717 thousand people. Facing the reality of the matter, of course all activities abroad need an effective and efficiency' transportation facilities to support and facilitate the intended travel. One type of transportation that currently high demand is air transport, this is because air transport is believed to be one of the modes of transportation that is safe and fastest compared to other modes of transport. In 2016 it was noted that the number of passengers traveling abroad by air amounted to 14.8 million passengers and this number increased to 8.16% compared with 2015. The growth of

number of airlines passengers in Indonesia, especially on international flight from year to year was experienced ups and downs, but in 2016 the number of passengers departing on international flight has increased significantly. The number of international flight passengers in 2012 amounted to 11,665,581 passengers where the number is increased by 13.84% compared to the year 2011, in 2013 the number of passengers on international flights decreased by 23.41% to 8.93516 million, in the year 2014 the number of passengers on international flights experienced a significant increase compared to the year 2013 which is an increase of 62.41% to be at 14.51172 million passengers, by 2015 the number of passengers on international flights amounted to 10,334,554 and this number decreased by 28.78 % compared to 2014, in the year 2016 the number of passengers on international flights return increased to 14,828,232 and this number increased 43.48 compared to 2015. Seeing the condition of the number of passengers on international flights are fluctuate, it will certainly have an impact in which the increasing of competition among airlines to gain more market share in Indonesia (Juliater Simarmata, Keke, Veronica, Silalahi, & Benková, 2017). In 2016, Indonesia has increased the economy, it can be assumed that in the years ahead the number of requests on International flights will continue to rise and this will make Indonesia as the market that has good potential for the airline including Turkish Airlines. As an airline which has been crowned as The Best Airline in Europe for 6th years in a row at Skytrax World Airline Awards, make Turkish Airlines as the leading player in the global airlines industry. Accordingly, for this time Turkish Airlines has been chosen by traveler as their media transport to travel abroad, especially to Europe and Middle East. Turkish Airlines conduct this program as a compensation to their passengers in order to make them enjoy with their connecting time. The existing of this city tour

program has been proven can increase the ticket sold of Turkish Airlines in Indonesia. Moreover, the current level of Indonesia's economy is increase so it affect to many people that want to do travel abroad, either for do business, umra, or just for holiday. These traveler is people who will be a potential demand for Turkish Airlines.

As mentioned above, the potential demand Turkish Airlines consists of :

- 1) The first potential demand comes from the business traveler who will do business abroad which usually well do excursions, so for them that will make a business trip to Europe or to the Middle East can be a potential demand for Turkish Airline. Turkish Airline can provide a route from Indonesia to Europe or the Middle East with one transit in Turkey as well as providing free city tour in Istanbul, of course this will attract the business traveler where they can make a business trip at the same time with a city tour for free in Istanbul. 2) The second potential demand that will be found by Turkish Airline comes from umra. Where the umra passengers can visit for free tour in Turkey before continuing the trip to Jeddah or Madinah. It has been proven to increase the demand for flights Umra of Turkish Airlines, where in 2016 the number of passengers who bought tickets for route destination of Jeddah or Madinah increased to 11 034, while previously in the year 2015 the number of passengers who bought tickets for the purpose of umra just as much as 7044. This shows that the Indonesia

umra pilgrims which is predicted will continue to rise each year would provide a potential demand for Turkish Airlines. 3) The third potential demand of Turkish Airlines comes from the traveler with the intention of the holiday. The demand potential of leisure passengers is very strong, since Turkey is a country which is strategically located, where the leisure traveler can reach other countries near Turkey easily. Moreover, they will be able to do a free city tour of Istanbul, this certainly will increasingly attract the leisure traveler to fly by Turkish Airlines.

Considering the transportation business has a very tight competition, of course many other airlines also provide the same destination with Turkish Airlines, such as Qatar Airways, Emirates, Etihad, and Saudi Airlines, but with the complimentary touristanbul program and with the achievement from the Skirted World Airline Awards for 6th consecutive years have become added value for the Turkish Arline to get more market in Indonesia. Moreover, today there is no domestic carrier that offers routes from Jakarta to Turkey, it is very beneficial for Turkish Airline to obtain more market in Indonesia.

The Forecasting of Total Passenger on Jakarta-Istanbul route of Turkish Airlines 2018-2019

In the last 4 years, it was noted that the number of passenger of Turkish Airlines has experienced a significant increase for the years 2015 and 2016

Table IV.1 Total Passenger's Turkish Airlines Jakarta-Istanbul Route in 2013-2016

Year	Total Passengers	Growth
2013	44.194	-
2014	41.476	-5,92%
2015	63.788	53,43%
2016	85.692	34,34%

Source : PT Angkasa Pura II (data processed by writer)

From the table IV.1 above shows that in shows the number of flight frequency or the 2014 the number of Turkish Airline passengers total of flight in each month, the total number decreased slightly compared to the year 2013 of seats available is the obtained from the in the amount of 5.92% while in 2014 the multiplication of seats available and the number of passengers Turkish Airline Jakarta frequency, seat sold is the number of is as much as 41.576 passengers, while in 2013 passengers that transported by Turkish as many as 44.194 passengers. In 2015 the Airlines, seat load factor (SLF) is the average number of Turkish Airline passengers percent of aircraft seats that filled by experienced a significant increase that to as passengers or commonly called by passenger many as 63.788 passengers and this number load factor that is obtained from the division increased by 53.43% compared to 2014. In between the seat sold and the total seat 2016 the number of Turkish Airline passengers available. It can be seen that the level of SLF also experienced a good increase, where the Turkish Airline in last 2 years is many exceed number of passengers in 2016 increased the standard leve of SLF of an airline that is 34.34% to 85.692 passengers. The number of 70-75%, which in August 2015, March, April, passengers that has been described above is the August, and September 2016 the level SLF of total number of passengers Turkish Airlines Turkish Airlines has reached 90%, even after with route from Jakarta to Istanbul and will be the Turkish Airlines added the capacity of connected to other various countries aircraft, the level of SLF in October-December destinations. Seeing the number of Turkish 2016 is still reached more than 80%. With the Airline passengers that continue to have a result of SLF that almost always exceed 70%, significant increase in the last 2 years it will the writer believe that Turkish Airlines need certainly give the potency that the Turkish the addition of flight frequency on Jakarta – Airline passengers will continue to increase in Istanbulroute.

SLF the number of frequency and seat load factor that served per month. In the seat available coloms describes the number of seat available or the aircraft capacity to transport the passenger, where in 2015 – October 2016 Turkish airline used Airbus 330-300 which has 2 kind of capacities : 250 and 289 seats, and starting 30 October 2016 Turkish Airlines uses Boeing 777-300ER with capacity 349 seats to carry the Jakarta-Istanbul passengers, the frequency column

The forecasting of Flight Frequency needed of Turkish Airlines on Jakarta – Istanbul route in 2018 –2019

Certainly Turkish Airlines need more available seats to carry the passengers in 2018 and 2019, accordingly it is necessary to conduct the calculation of frequency needed on Jakarta- Istanbul route in 2018 and 2019. The forecasting of flight frequency needed will be done with the same pattern that is within each month. The calculation of flight

frequency in 2018 and 2019 require the historical data of seat load factor (SLF) of Turkish Airline on Jakarta – Istanbul route. The averages result of seat load factor (SLF) has obtained from the previous calculation where the average seat load factor in Jakarta – Istanbul route was 74%. the flight schedule than can be applied by Turkish Airlines, where that table consists of core schedule and additional schedule. Core schedule is the schedule that has been owned by Turkish Airlines for all season, where the flight frequency is performed on every day. Additional schedule is the new schedule flight that made by writer as an additional of frequency, where Turkish Airlines can do the flight by performing the adjustment between core schedule and additional schedule, where for additional schedule the flight frequency in 1 day will be done accordance with the days which have been elected on the table above. As example, for May 2018 the core flight operates on day 1,2,3,4,5,6,7 and the additional flight operates on day 4,6, so in a week the flight will be conducted 1 times in a day on 1,2,3,5,7 and 2 times in a day on 4 and 6. In addition to preparing a flight schedule, the flight frequency planning should also pay attention on the issue of the aircraft utility that will be used, therefore, it's necessary to have a conception of aircraft rotation that will operate on that route. Based on the table IV.16 above, the writer will provide the aircraft rotation of Turkish Airlines, this aircraft rotation will consists of 2 kind of flight, namely core flight and additional flight, as for the aircraft rotation of Turkish Airline. Based on table of aircraft rotation above, it can be seen that Turkish Airlines need 4 aircraft to carry the passenger on year 2018 and 2019. Those aircraft will be used for core flight and additional flight. Where the aircraft 1 and 2 is used to serve core flight, aircraft 1 was scheduled to fly from Jakarta-Istanbul in every Monday, Wednesday, Friday, and Sunday, in other hand aircraft 2 was scheduled to fly from Jakarta-Istanbul in every Tuesday, Thursday, and Saturday. As a result of the combination between aircraft 1 and 2 will obtain the daily flight frequency, namely on day1,2,3,4,5,6,7. In other hand, aircraft 3 and 4 are the new additional aircraft that will be used on the additional flight. Based on flight schedule and aircraft rotation which have been made by writer on table IV.16 and table IV.17, aircraft 3 was scheduled to fly from Jakarta – Istanbul every Tuesday, Thursday, Saturday and it will be operated start on March 2018. In other hand, the aircraft 4 was scheduled to fly from Jakarta to Istanbul every Friday and Sunday and it will be operated start on August2019. In the end, it can be identified that in 2018 and 2019 Turkish airline needs to add 1 more flight frequency, and the flight schedule with additional flight frequency. The potential demand of Turkish Airline is affected by 3 factors, that are the growth of Indonesia Economic, the condition of the current competition, and the service of Turkish Airline it self. Accordingly, due to those factors Turkish Airline has 3 potential demands, that are from business traveler, leisure traveler and umrapassengers. The forecasting of total passengers on 2018 – 2019 by using the adjustment of trend and seasonal index resulted the fluctuate growth of passengers in each month. The total passengers forecasting on route Jakarta – Istanbul in 2018 will increase 28% become in amount of 110.612 passengers and in 2019 will increase 46% become in amount of 125.645passengers. The forecasting of flight frequency needs on route Jakarta – Istanbul in 2018 – 2019 resulted the fluctuate growth in each month. To cover the market demand in 2018 and 2019, Turkish airlines need to add 1 time flight frequency accordance with the schedule that has been made.

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