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### **Is Udan Scheme Really Changing The Scenario Of Indian Civil Aviation?**

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#### **ABSTRACT**

Indian Civil Aviation is growing by leaps and bounds. As per Government of India (GoI) official records, the domestic passenger traffic registered a CAGR rate of 10.76% during the period 2007-08 to 2017-18 while the international passenger traffic grew at CAGR rate of 8.32% during the same period. Lion's share of its growth might be attributed to success of Low Cost Carriers in India. With the recent introduction of the 'Regional Connectivity Scheme' also known as UDAN Scheme, this growth rate is going to be phenomenal in coming years due to the inclusion of tier-2 and tier-3 cities in to the Air Connectivity network by making the air travel affordable to middle class common man. Study has been carried out at selected UDAN airports to examine the impact of UDAN scheme on Indian Civil Aviation Sector and concluded that due to success of operation at six airports out of selected seven airports and success of 18 routes out of 24 routes; the civil aviation scenario is definitely going to have a considerable improvement in near future if the scheme is continued with the same spirit. India is going to achieve inclusive growth and will be one in among the fastest growing aviation sectors across the world.

**KEYWORDS:** Affordable air fare, Air Connectivity, Indian Civil Aviation, Regional Connectivity, UDAN.

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## 1. INTRODUCTION:

This section briefly describes the current civil aviation scenario of India and its future growth prospects as forecasted by prominent international agencies and the theoretical framework required to understand the UDAN scheme.

**1.1 Air Transport:** Civil Aviation encompasses Air Transport such as commercial carriage by air, non-commercial flying such as private flying, commercial non-transport such as aerial crop dusting and surveying, Infrastructure such as airports and air navigation facilities and manufacturing such as aircraft, engines and avionics. Of all these, 'Air Transport' is the lead constituent of Civil Aviation<sup>1</sup>. The growth of air transport has been so phenomenal that distance is now measured in hours and not in miles. By this unit of measurement, there are no longer any 'far off lands'. Air Travel has brought distant countries as close to us as our neighbours. It has opened to the tourist vistas that once only the explorer knew. It has developed our business opportunities and broadened our markets. Its technical demands have called for new skills. It has brought more jobs. It has, in truth, created a world in which men live so close together that they cannot remain alien to one another much longer. And it has achieved in just over a century<sup>2</sup>. The Air Transport industry is the global network of commercial aircraft operators, airports, air navigation service providers and manufacturers of aircraft and their components. Safe, reliable, efficient and cost-effective air transport is an essential component for Sustainable Development.

As per the study conducted by ICAO<sup>1</sup> on 'Economic Benefits of Civil Aviation: Ripples of Prosperity', the output and employment multipliers of aviation are 3.25 and 6.10 respectively. This indicates that every \$100 spent on air transport contributes to \$325 worth of benefits and every 100 direct jobs in air transport result in 610 jobs in the economy as whole. In fact, the study attributes over more than 4.5% of the global gross domestic product to civil aviation.

**1.2 Current Air Transport Scenario of India:** Economic development 2016 Air Transport yearly monitor report of ICAO<sup>3</sup> reported that World passenger traffic grew by +6.3% in the year 2016, Domestic traffic demand in India and China continued to be strong, and grew at over +20.0% and +10.0%, respectively when compared YOY with 2015. As per the annual review of IATA<sup>4</sup> 2018, the composition of the world's top three increasing origin-destination (O-D) markets was unchanged from 2016, with the domestic markets of the China, USA and India once more ranking first, second and third respectively.

As per the Civil Aviation Statistics published in hand book of *a glimpse of aviation statistics of 2017-18*<sup>5</sup> by Director General of Civil Aviation (DGCA), GoI, the domestic passenger growth of

India registered a CAGR of 10.76% during the period 2007-08 to 2017-18 while the international passenger traffic grew at CAGR of 8.32% CAGR during the same period.

**1.3 Future Global Air Transport Scenario:** Air Transport Aviation Group (ATAG)<sup>6</sup> commissioned Oxford Economics, to estimate the aviation's sector global economic contribution in 2014 and how it might evolve over next two decades. As per this report, projected annual growth rate for international traffic for period of 2014-2034 for Asia Pacific region is estimated as 5.1%. As per the Boeing's Current Market Outlook (2017 – 2036) report<sup>7</sup>, economic and income growth in large emerging markets such as China and India have been primary drivers of global GDP growth and also demand for air travel. India's emergence as a high-growth economy has produced more than 20% passenger traffic growth per year in its domestic market. India is expected to become the third largest commercial aviation market by the early 2020s. The middle class in India grew from 80 million in 2000 to 135 million in 2016, an increase of nearly 70 percent.

As per IATA's 20-year Passenger Forecast<sup>8</sup> revealed in their press release no 62 of October 24, 2018 that present trends in air transport suggest passenger numbers could double to 8.2 billion in 2037. The Asia-Pacific region will drive the biggest growth with more than half the total number of new passengers over the next 20 years coming from these markets. Growth in this market is being driven by a combination of continued robust economic growth, improvements in household incomes and favourable population and demographic profiles. China will displace the United States as the world's largest aviation market (defined as traffic to, from and within the country) in the mid-2020s. India will take 3rd place after the US, surpassing the UK around 2024.

Air transport is very important for long distance travels and for connecting remote areas to the rest of the world.<sup>9</sup> Connectivity of regional and remote areas is having utmost important in a country like India where the operations are more or less concentrated at some major cities. Analysing the AAI's official statistics of domestic passengers of 2016-17<sup>10</sup>, the top 6 busiest airports in India – Delhi(DEL), Mumbai(BOM), Kolkata(CCU), Chennai(MAA), Bangalore(BLR) and Hyderabad(HYD) accounted for nearly 65% of total domestic passengers and the remaining airports accounted for the rest 35% of total domestic. If the next 12 busiest airports after the 6 busiest airports are also excluded, the remaining 57 airports accounted for less than 14% of total domestic traffic<sup>10</sup>.

**1.4 Government of India's UDAN Scheme:** An integrated Civil Aviation Policy 'National Civil Aviation Policy 2016 (NCAP 2016)'<sup>11</sup> has been brought out by the Ministry of Civil Aviation (MoCA), GoI on Jun16, 2016. Since independence, it is for the first time in the history of

Indian Civil Aviation such a policy was brought out. GoI said that the centre piece of the policy is to make regional air connectivity a reality and aims to take flying to the masses by making it affordable and convenient. GoI has proposed to introduce the Regional Connectivity Scheme (RCS)<sup>12</sup> in NCAP 2016. Accordingly, On Oct 21, 2016, the MoCA, GoI, took a major step towards making flying a reality for the small town common man by launching the much awaited 'RCS'(UDAN Scheme)in New Delhi on that day.

The name of the scheme is called the *Regional Connectivity Scheme (RCS)*. This scheme is popularly known as *UDAN* scheme. The word 'UDAN' is a Hindi word equivalent to the English word of 'Flight' and the acronym that was made in Hindi for that is '*Ude Desh Ka Aam Naagrik*'. 'Ude' means 'Rising', 'Desh' means 'Nation', 'Aam' means 'Common' and 'Naagrik' means 'Citizen' which makes the full meaning as 'Common Citizen of Rising Nation'. Inherent meaning of this statement is that 'Let the Common Citizen of the Country Fly'.

<sup>13</sup>UDAN is an innovative scheme to develop the regional aviation market. It is a market-based mechanism in which airlines bid for seat subsidies. This first-of-its kind scheme globally, will create affordable yet economically viable and profitable flights on regional routes so that flying becomes affordable to the common man even in small towns. India has the potential to be among the global top three nations in terms of domestic and international passenger traffic. It has an ideal geographical location between the eastern and western hemisphere, a strong middle class of about 300 millions Indians and a rapidly growing economy. Despite these advantages, the Indian aviation sector has not achieved the position it should have and by June 2016 (i.e. prior to announcement of UDAN Scheme) it is ranked 10th in the world in terms of number of passengers.

<sup>13</sup>The GoI has proposed to take flying to the masses by making it affordable and convenient. For example, if every Indian in middle class income bracket takes just one flight in a year on an average, it would result in a sale of 350 million tickets, a big jump from 70 million domestic tickets sold in 2014-15. This will be possible if the air-fares, especially on the regional routes are brought down to an affordable level. The reduction in costs will require concessions by the GoI, State Governments and Airport Operators. UDAN scheme talks primarily about Regional Air Connectivity and Remote Air Connectivity.

***Regional Air Connectivity:*** Provision of Air Transport Services to under-served and un-served markets (towns/cities) with potential, providing connectivity both within a Region as well as between Regions<sup>13</sup>.

**Remote Area Air Connectivity:** Provision of Air Transport Services to areas not adequately connected through surface transportation – including parts of the country with difficult terrain (hilly), separated by large water bodies (islands) and areas with security (including Left Wing Extremists related) concerns, to enable reliable transportation to the rest of the country<sup>13</sup>.

**‘Unservd’** airport means that any airport at which, there have been no scheduled commercial flights during the last two flight schedules approved by the DGCA<sup>13</sup>.

**‘Underserved’** Airport means that any airport which is not an Unnerved Airport and at which, there are no more than seven (7) scheduled commercial flight departures per week as per the latest flight schedule approved by the DGCA<sup>13</sup>.

As the Indian economy grows, consumption-led growth (when the consumption increases that leads to higher demand in the economy, this in turn will lead to higher output and hence higher growth) in populated metros is expected to spill over to hinterland areas. This is also expected to be on account of factors of production such as land, labour ...*etc* becoming costlier in the densely populated metro cities. In this scenario, air connectivity can provide required impetus to the economic growth of regional centres (towns/cities). In this context, one of the key objectives of NCAP 2016 is to “establish an integrated eco-system which will lead to significant growth of civil aviation sector, which in turn would promote tourism, increase employment and lead to a balanced regional growth”.<sup>13</sup>

NCAP 2016 also seeks to sustain and nurture a competitive market environment in the civil aviation sector. While it would be best for growth in the sector and establishment of regional air connectivity to materialize through open market mechanisms in terms of airlines assessing demand on various routes, developing networks through deployment of appropriate capacities & technologies, infrastructure developing in sync with demand... *etc*, it was felt that facilitating/stimulating regional air connectivity would be desirable from a public policy perspective and may need financial support, at least in the initial period, to trigger participation of players. It is in this context that NCAP 2016 provides for a Regional Air Connectivity Scheme.

The operation of the UDAN scheme is proposed to be through a market mechanism where operators will assess demand on routes; submit proposals for operating/providing connectivity on such route(s); seek Viability Gap Fund (VGF), if any, while committing to certain minimum operating conditions; and the same shall be finalized in interaction with other market participants as provided in the scheme<sup>14</sup>.

UDAN Scheme Objective: The primary objective of RCS is to facilitate/stimulate regional air connectivity by making it affordable. Promoting affordability of regional air connectivity is envisioned under RCS by supporting airline operators through concessions by GoI, State governments/UT, airport operators to reduce the cost of airline operations on regional routes/other support measures and financial support (viability gap funding or VGF) to meet the gap, if any, between the cost of airline operations and expected revenues on such routes.<sup>13</sup>

**1.5 Features of the UDAN Scheme<sup>13</sup>:** On behalf of GoI, Airports Authority of India (AAI) will act as a implementing agency and is responsible for undertaking the tasks and activities for implementing the scheme. Under this scheme, support shall be provided to Selected Airline Operator (SAO), i.e. to the Airline, in the form of Viability Gap Funding (VGF) and other concession/support offered by the GoI, respective State Governments and Airport Operators. Details of these concessions are follows:

1. Excise duty will be reduced to 2% on Aviation Turbine Fuel at UDAN Airports. At other airports this is 11%.
2. GoI fixed price of ₹2500/-(inclusive of all taxes) for UDAN seats for one hour flight journey.
3. Reduction of VAT (Value Added Tax) to 1% or less at UDAN airports.
4. Provision of minimum land at free of cost for extension and upgrade of the UDAN airport by respective state governments.
5. Provision of security and fire services free of cost at UDAN airports by respective state governments.
6. Airport operators shall not levy landing charges and parking charges and AAI shall not levy Terminal Navigation Landing Charges (TNLC) on UDAN flights and Route Navigational and Facilitation Charges (RNFC) will be at 42.50% of the current rates.
7. Provision for payment of VGF for each UDAN seat sold to the SAO as per the rate decided at the time of award of contract of route/network.

This scheme will be initially for a period of 10 years and will be subjected to be reviewed at periodic intervals. Tenure of the VGF is for a period of 3 years from the date of commencement of UDAN flight operations. However, it may be considered to extend up to 7 years depending on the prevailing situation. List of UDAN Airports as finalized in consultation with state governments will be published from time to time.

Fifty percent of seats in any UDAN flight called UDAN seats (subjected to minimum of 9 seats and maximum of 40 seats) is required to be sold at GoI fixed price so that common man can

able to buy and fly. Remaining fifty percent seats after selling the UDAN seats (Min 9 & Max 40) can be sold to the public at the applicable market rates based on the demand. The airfare cap that is decided by GoI for UDAN seat is currently fixed as ₹2500/-, that is indexed to inflation. The cap is decided based on the sector length. It varies for different stage lengths and for 1 hour, it is fixed as ₹2500/-and varies proportional to the flight time.

For each UDAN seat sold at the GoI fixed price, the SAO is entitled to get the Viability Gap Fund (VGF) from the GoI. In order to pay the VGF for UDAN seats for the SAO, Regional Connectivity Fund (RCF) is created through the application of a levy on scheduled flights being operated within India. Respective state governments are also required to fund to the max of 20% to this fund. Guidelines have been made to ensure that RCF allocation is being useful for the growth of all regions of India (i.e. North, East, West, South and North Eastern Regions). Not more than of 30% of RCF fund is made available for any region. Similarly not more than 50% funds will not be granted to any single SAO while maintaining the region wise cap of 30%.

As Sustainability of operation is the key guiding principal to the UDAN scheme, to encourage the development of UDAN routes by SAO, maximum of 3 years exclusive period will be given to them to operate air transport services/flights on an UDAN route. No other operator is permitted to operate on this route till the expiry of 3 years.

**1.6 Implementation Procedure of the Scheme<sup>15</sup>:** This scheme is being implemented in phases. So far two rounds of biddings are over and third round is under preparation. Following is the outline procedure of the bidding.

1. AAI will release the indicative list of Unserved and Underserved Airports to be facilitated.
2. Interested scheduled airlines whosoever eligible as per the criteria mentioned in the Notice Inviting proposal (NIP)<sup>15</sup> will bid for the routes/networks by quoting the expected VGF for each UDAN seat.
3. Then AAI ask other players in the market to counter the proposal by bidding for the same route/network by quoting the expected VGF for each UDAN seat.
4. In the event that more than one Initial Proposal is received for the same UDAN Route or UDAN Network, only the applicant having the best Financial Bid shall have the right to Match (RTM Option) as provided in the Scheme document.
5. Taking the all other things being equal and all bidders are eligible, those whosoever quotes the lowest VGF will be the winner of the bid and he is allowed to enter in to the Selected Airline Operator Agreement (SAOA) and required to start the proposed operation within the six months of time from the award of contract.

**2. METHODOLOGY:** This section provides the information on Statement of the Problem, Objectives of the study, Need and Importance of the study, Hypotheses and Sampling technique.

**2.1 Need and Importance of the Study:** In India, limited research work is done in Aviation field either due to non-availability of educational institutes/Universities offering aviation courses or due to lack of adequate encouragement from Government or Non-Governmental Organizations in this field. So far, limited study was conducted in this field and lot more to explore where potential improvements can be made feasible provided systematic study is planned and corrective decisions are taken well in time.

**2.2 Statement of the Problem:** Government of India released the NCAP 2016. One of the objectives of NCAP 2016 is to ‘enhance regional connectivity through fiscal support and infrastructure development’. To achieve this objective, it is required to establish an integrated ecosystem which will lead to significant growth of the civil aviation sector. In this connection, it has been felt to evaluate the UDAN scheme implementation in Indian civil aviation sector and to assess whether UDAN scheme really change the scenario of India Civil Aviation.

**2.3 Objectives:** To be more precise, the study has undertaken the following objectives:

1. To find out the air traffic growth in terms of Passenger carried and Aircraft Movement due to UDAN scheme round one.
2. To examine whether the Air Travel has become really affordable for a middle class common man in India with the UDAN scheme.
3. To assess the overall performance of the UDAN scheme.

**2.4 Hypotheses:** Based on the examination of the data that is available in the various annual reports/statistics/other relevant data certain logical assumptions are made. The following working hypotheses are therefore postulated:

**Hypothesis 1:** One of the scheme objectives is to make the flying affordable to the middle class common man by capping the maximum air fare of ₹2500 per hour (up to 500 – 600 km distance). In all probability this scheme is not being utilized by the so called middle class common man.

**Hypothesis 2:** Selected Airline Operators are more interested to fill the NON-UDAN seats than UDAN seats as they can sell the NON-UDAN seats at market price without any GoI restrictions.



**2.5 Sampling:** GoI has notified 27 airports (19 Unserved and 09 Underserved) to be facilitated during UDAN round one. The researcher has chosen Seven UDAN airports (3 Unserved and 04 Underserved) across the length and breadth of the India from the UDAN Round one list for the subject study. List of these airports along with IATA code are: Shimla (SLV), Nanded (NDC), Kanpur (KNU), Shillong (SHL), Porbandar (PBD), Kadapa (CDP) and Gwalior (GWL). The secondary data that is collected from AAI has been used for analysing the objectives.

**3. RESULTS AND DISCUSSIONS:** Let us see the results and discussions as per objectives. Let us start with the first objective.

**3.1 To find out the air traffic growth in terms of Passenger Carried and Aircraft Movement due to UDAN scheme round one at selected UDAN Airports:**

In order to find out the increase in the passengers carried and aircraft movement in any selected airport, we need to compare the number of passengers carried at that airport for pre UDAN period and the post UDAN period. Similarly we need to compare the number of aircraft movements' pre and post UDAN period. From this comparison one can able to say the level of penetration of the scheme and its impact on the Air Traffic. So let us see these figures at the following selected UDAN implemented airports.

**3.1.1 Shimla Airport (SLV):**

**Table No 1 - Air Traffic Details to/from SHIMLA airport**

Airport Type	Unserved			
First UDAN Flight Commenced	April 27, 2017			
Type of Aircraft Deployed	ATR 42			
Airline	Alliance Air (9I)			
Routes Operated	Shimla/Delhi (SLV/DEL)			
	Delhi/Shimla (DEL/SLV)			
<b>COMPARISON OF PASSENGERS &amp; AIRCRAFT MOVEMENT (PRE UDAN AND POST UDAN SEASON)</b>				
	PASSENGERS CARRIED		AIRCRAFT MOVEMENTS	
	2017/2018	2016/2017	2017/2018	2016/2017
	POST UDAN	PRE UDAN	POST UDAN	PRE UDAN
MAY	1048	0	42	0
JUNE	853	12	42	04
JULY	743	02	36	06
AUG	595	13	32	02
SEPTEMBER	930	0	44	0
OCTOBER	365	0	52	0
NOVEMBER	982	0	50	0
DECEMBER	1068	13	62	06
JANUARY	1040	5	52	02
FEBRUARY	1204	0	52	0
MARCH	984	13	44	04
APRIL	1117	172	56	18

TOTAL	10929	230	564	42
AVER/MONTH	910.8	19.2	47	3.5
<b>Rate of increase (%)</b>	<b>4643.75</b>		<b>1242.85</b>	

Source: Compiled based on Secondary Data taken from AAI

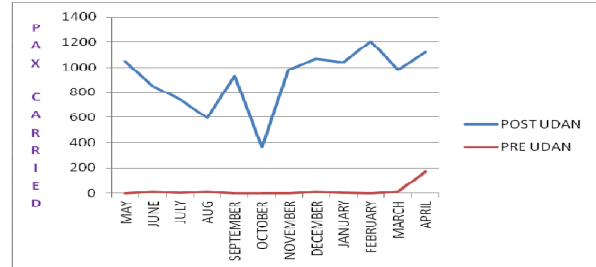
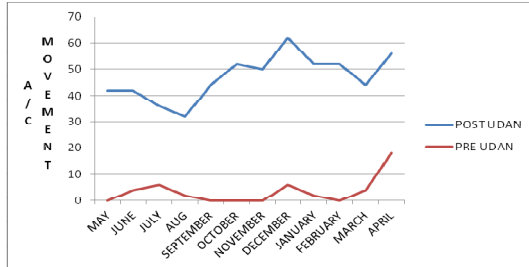


Exhibit No1 - Monthwise Passenger and Aircraft Movement at SLV Airport

### 3.1.2 Nanded Airport (NDC):

Table No 2 - Air Traffic details to/from NANDED airport

Airport Type	Unservd			
First UDAN Flight Commenced	April 27, 2017 to/from HYD & Nov 16, 2017 to/from BOM			
Type of Aircraft Deployed	ATR 72			
Airline	True Jet (2T)			
Routes Operated	Hyderabad/Nanded (HYD/NDC)			
	Nanded/Hyderabad (NDC/HYD)			
	Mumbai/Nanded (BOM/NDC)			
	Nanded/Mumbai (NDC/BOM)			
<b>COMPARISON OF PASSENGERS &amp; AIRCRAFT MOVEMENT (PRE UDAN AND POST UDAN SEASON)</b>				
	PASSENGERS CARRIED		AIRCRAFT MOVEMENTS	
	2017/2018	2016/2017	2017/2018	2016/2017
	POST UDAN	PRE UDAN	POST UDAN	PRE UDAN
MAY	2198	0	54	0
JUNE	1940	0	54	0
JULY	1930	0	58	0
SEPTEMBER	2513	0	62	0
OCTOBER	2279	0	56	0
NOVEMBER	2095	0	56	0
DECEMBER	2712	0	62	0
JANUARY	7295	0	134	0
FEBRUARY	8738	06	164	02
MARCH	8435	0	136	0
APRIL	8788	0	144	0
AUG	8499	269	138	10
TOTAL	57422	275	1118	12
AVER/MONTH	4785.17	22.92	93.17	1.0
<b>Rate of increase (%)</b>	<b>20777.70</b>		<b>9217</b>	

Source: Compiled based on Secondary Data taken from AAI

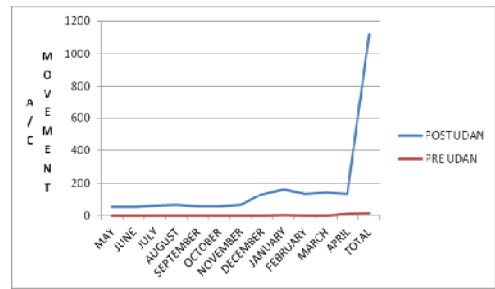
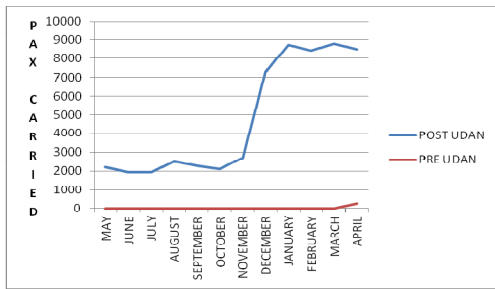


Exhibit No 2 - Monthwise passengers carried and Aircraft Movement at NDC Airport

3.1.3 Kanpur Airport (KNU)

Table No 3 - Air Traffic details to/from KANPUR airport

Airport Type	Unserviced			
First UDAN Flight Commenced	July 03, 2018			
Type of Aircraft Deployed	Q 400			
Airline	Spice Jet (SG)			
Routes Operated	Delhi/Kanpur (DEL/KNU) Kanpur/Delhi (KNU/DEL)			
<b>COMPARISION OF PASSENGERS &amp; AIRCRAFT MOVEMENT (PRE UDAN AND POST UDAN SEASON)</b>				
	PASSENGERS CARRIED		AIRCRAFT MOVEMENTS	
	2018	2017	2018	2017
	POST UDAN	PRE UDAN	POST UDAN	PRE UDAN
JULY	4020	0	70	0
AUGUST	4042	0	70	0
SEPTEMBER	4036	0	64	0
OCTOBER	10888	0	108	0
TOTAL	22986	0	312	0
AVER/MONTH	5746.5	0	78	0

Source: Compiled based on Secondary Data taken from AAI

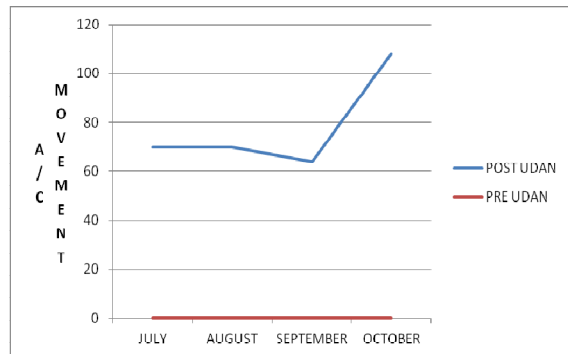
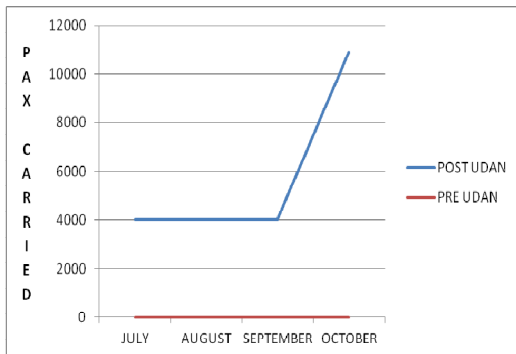


Exhibit No 3 - Monthwise passengers carried and Aircraft Movement at KNU Airport

3.1.4 Shillong Airport (SHL):

Table No 4 - Air traffic details to/from SHILLONG airport

Airport Type	Underserved
First UDAN Flight Commenced	May 01, 2018
Type of Aircraft Deployed	Beech Craft 1900D
Airline	Air Deccan (DN)

Routes Operated	Shillong/Agartala (SHL/IXA)			
	Agartala/Shillong (IXA/SHL)			
	Shillong/Dimapur (SHL/DMU)			
	Dimapur/Shillong (DMU/SHL)			
<b>COMPARISON OF PASSENGERS &amp; AIRCRAFT MOVEMENT (PRE UDAN AND POST UDAN SEASON)</b>				
	PASSENGERS CARRIED		AIRCRAFT MOVEMENTS	
	2018	2017	2018	2017
	POST UDAN	PRE UDAN	POST UDAN	PRE UDAN
MAY	1817	2207	78	50
JUNE	1145	1074	48	40
JULY	840	972	36	48
AUGUST	995	948	58	46
SEPTEMBER	1149	1131	54	40
OCTOBER	1284	937	46	34
TOTAL	7230	7269	320	258
AVER/MONTH	1205	1211.5	53.33	43
<b>Rate of increase (%)</b>	<b>-0.536</b>		<b>24.023</b>	

Source: Compiled based on Secondary Data taken from AAI

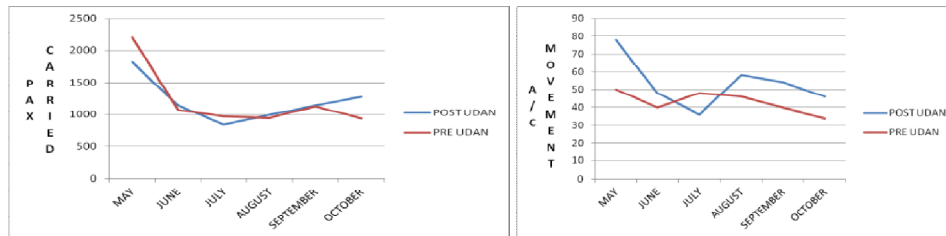


Exhibit No 4 - Monthwise Passengers carried Aircraft Movement at SHL Airport

### 3.1.5 Porbander Airport (PBD)

Table No 5 - Air Traffic details to/from PORBANDER airport

Airport Type	Underserved			
First UDAN Flight Commenced	July 10, 2017			
Type of Aircraft Deployed	Q 400			
Airline	Spicejet (SG)			
Route Operated	Mumbai/Porbander (BOM/PBD)			
<b>COMPARISON OF PASSENGERS &amp; AIRCRAFT MOVEMENT (PRE UDAN AND POST UDAN SEASON)</b>				
	PASSENGERS CARRIED		AIRCRAFT MOVEMENTS	
	2017/2018	2016/2017	2017/2018	2016/2017
	POST UDAN	PRE UDAN	POST UDAN	PRE UDAN
JULY	3,218	187	104	24
AUGUST	4,637	222	124	26
SEPTEMBER	4,319	183	126	25
OCTOBER	4,678	195	128	28
NOVEMBER	4,938	165	138	25
DECEMBER	4,858	180	126	27
JANUARY	5,051	329	100	48
FEBRUARY	4,345	825	98	110
MARCH	4,499	919	98	120
APRIL	3,992	746	86	91
MAY	4,866	467	128	55
JUNE	4,323	441	118	53
TOTAL	<b>53,724</b>	<b>4,859</b>	1,374	632

AVER/MONTH	4,477	404.92	114.5	52.67
<b>Rate of increase (%)</b>	<b>1005.66</b>		<b>117.39</b>	

Source: Compiled based on Secondary Data taken from AAI

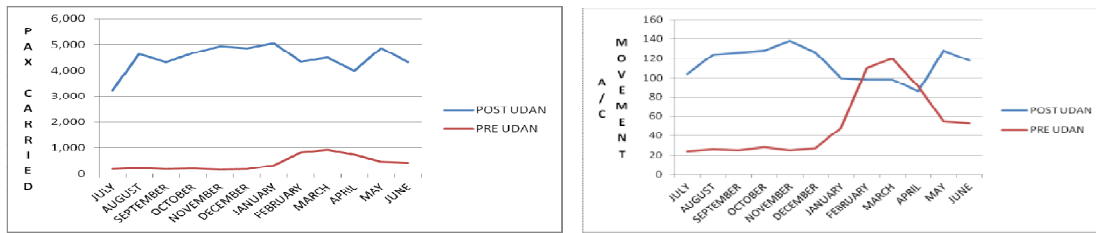


Exhibit No 5 - Monthwise Passenger Carried and Aircraft Movement at PBD Airport

### 3.1.6 Kadapa Airport (CDP)

Table no 6 - Air Traffic details to/from Kadapa airport

Airport Type	Underserved			
First UDAN Flight Commenced	April 27, 2017			
Type of Aircraft deployed	ATR 72			
Airline	True Jet (2T)			
Route Operated	Hyderabad/Kadapa (HYD/CDP)			
	Kadapa/Hyderabad (CDP/HYD)			
	Chennai/Kadapa (MAA/CDP)			
	Kadapa/Chennai (CDP/MAA)			
	Vijayawada/Kadapa (VGA/CDP)			
<b>COMPARISON OF PASSENGERS &amp; AIRCRAFT MOVEMENT (PRE UDAN AND POST UDAN SEASON)</b>				
	PASSENGERS CARRIED		AIRCRAFT MOVEMENTS	
	2017/2018	2016/2017	2017/2018	2016/2017
	POST UDAN	PRE UDAN	POST UDAN	PRE UDAN
MAY	2854	1041	58	48
JUNE	2483	394	56	34
JULY	2848	206	63	32
AUGUST	3218	335	65	14
SEPTEMBER	2627	154	60	20
OCTOBER	2388	214	60	18
NOVEMBER	3261	270	82	20
DECEMBER	4422	72	110	06
JANUARY	4927	0	124	0
FEBRUARY	5064	6	112	5
MARCH	8709	4	188	2
APRIL	8799	41	184	2
TOTAL	51600	2737	1162	201
AVER/MONTH	4300	228.083	96.833	16.750
<b>Rate of increase (%)</b>	<b>1785.28</b>		<b>478.11</b>	

Source: Compiled based on Secondary Data taken from AAI

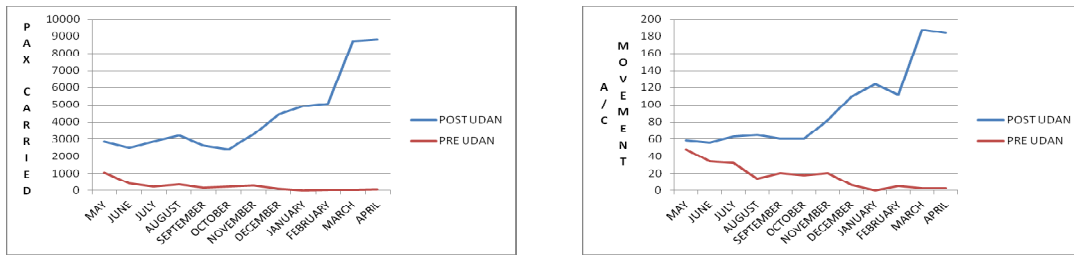


Exhibit No 6 - Monthwise Pasenger Carried and Aircraft Movement at CDP Airport

3.1.7 Gwalior Airport (GWL)

Table No 7 - Air Traffic details to/from GWALIOR airport

Airport Type	Underserved			
First UDAN Flight Commenced	May 31, 2017			
Type of Aircraft Deployed	ATR 72/ ATR 42			
Airline	Alliance Air (9I)			
Route Operated	Gwalior/Delhi (GWL/DEL)			
	Gwalior/Indore (GWL/IDR)			
	Indore/Gwalior (IDR/GWL)			
<b>COMPARISION OF PASSENGERS &amp; AIRCRAFT MOVEMENT (PRE UDAN AND POST UDAN SEASON)</b>				
	PASSENGERS CARRIED		AIRCRAFT MOVEMENTS	
	2017/2018	2016/2017	2017/2018	2016/2017
	POST UDAN	PRE UDAN	POST UDAN	PRE UDAN
JUNE	1,986	1,210	52	28
JULY	1,859	1,539	60	30
AUGUST	2,014	1,153	60	30
SEPTEMBER	1,444	1,142	55	34
OCTOBER	2,625	1,418	58	38
NOVEMBER	2,502	1,549	62	30
DECEMBER	2,716	1,129	62	24
JANUARY	2,441	1,356	59	26
FEBRUARY	2,272	1,490	62	42
MARCH	2,140	1,727	58	39
APRIL	2,494	1,537	58	37
MAY	2,142	1,712	52	36
TOTAL	<b>26,635</b>	<b>16,962</b>	<b>698</b>	<b>394</b>
AVER/MONTH	<b>2219.58</b>	<b>1413.5</b>	<b>58.167</b>	<b>32.83</b>
Rate of increase (%)	<b>57.027</b>		<b>77.176</b>	

Source: Compiled based on Secondary Data taken from AAI

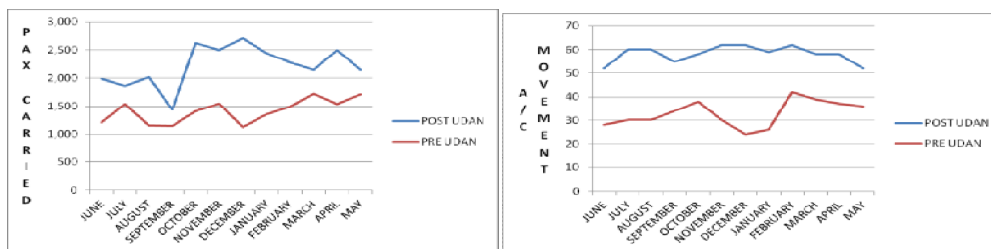


Exhibit No 7 - Monthwise Passengers Carried and Aircraft Movement at GWL Airport Overall Passenger Carried & Aircraft Movement Matrix

Sn	Airline(IATA Code)	Airport (IATA Code)	Passenger Increment	A/C Movement Increment
01.	9I	SLV	46.4 Times	12.4 Times
02.	2T	NDC	20.78 Times	92 Times
03	SG	KNU	57.46 Times	78 Times
04.	DN	SHL	- 0.536 Times	24 Times
05.	SG	PBD	10 Times	1.17 Times
06.	2T	CDP	17.85 Times	4.78 Times
07.	9I	GWL	0.57 Times	0.77 times

Source: Prepared based on above tables 1 to 7

### 3.2 To examine whether the Air Travel in India has become really affordable for a middle class common man with the UDAN scheme.

One of the main objectives of the UDAN scheme is to make the Air Travel affordable to middle class common man in India. This is being done by ceiling the maximum price of the UDAN seat price by the GoI. That means each flight being operated from the UDAN airport; fifty percent of seats (subjected to minimum 9 seats and maximum 40 seats) are set apart for the reduced fare as decided by the GoI. As of now this price is decided as ₹2500/- For these UDAN seats, Airlines gets Viability Gap Funding (VGF) from the GoI as decided at the time of finalisation of the bidding process. Remaining NON-UDAN seats can be sold by the airlines as per the market demand without any restrictions from the GoI.

Example: If any airline is operating from UDAN airport on UDAN route with aircraft capacity of 80 seats. In this 80 seats, airline should sell first 40 seats at the rate decided by the GoI (i.e. ₹2500/- is for one hour flight) and remaining 40 can be sold by them as per the market price, without any restrictions from GoI.

So, in order to verify whether this scheme is being implemented in its true letter and spirit, the price of the UDAN tickets and NON-UDAN tickets sold by the airlines needs to be compared. Same was carried out in the following table. Whatever the routes operated from the selected seven airports are taken into consideration for analysis.

In this exercise, flights are considered up to Sept 23, 2018 from the date of commencement (which is varied from Airport to Airport) as the data beyond this date is not available.

**Table No 8 - Comparison of UDAN Seats vis-a-vis Non UDAN Seats & UDAN Fare vis-a-vis NON-UDAN Fare**

Route	Total flights operated	Total Number of Seats Sold			Fare	
		UDAN Seats (%)	NON-UDAN Seats (%)	Total	UDAN Fare (₹)*	Max Non UDAN Fare (₹)** (More by^)
SLV/DEL	321	3192(73)	1182(27)	4374	1970	18000(9.14)
DEL/SLV	322	5634(58)	4033(42)	9667	1970	18000(9.14)
HYD/NDC	484	16456(80)	4109(20)	20565	1730	4655(2.69)
NDC/HYD	484	1773(73)	6133(27)	22906	1730	4655(2.69)
BOM/NDC	308	11081(63)	6527(37)	17608	2580	9999(3.88)

NDC/BOM	309	11124(61)	7094(39)	18218	2580	12000(4.65)
HYD/PNY	392	15324(57)	11574(43)	26898	3137	7599(2.42)
PNY/BOM	392	15323(61)	9880(39)	25203	2904	8321(2.87)
DEL/KNU	82	1640(68)	4165(72)	5805	2322	7644(3.29)
KNU/DEL	82	1640(29)	4047(71)	5687	2322	8165(3.52)
SHL/IXA	7	37(88)	5(12)	42	1670	-
IXA/SHL	7	27(68)	13(32)	40	1670	-
SHL/DMU	7	1(100)	0(0)	1	1830	-
DMU/SHL	7	1(50)	1(50)	2	1830	-
BOM/PBD	432	8621(28)	22648(72)	31269	2327	12189(5.24)
HYD/CDP	497	17763(68)	8516(32)	26279	1980	6500(3.28)
CDP/HYD	497	17748(67)	8553(33)	26301	2060	4798(2.33)
MAA/CDP	305	10538(81)	2433(19)	12971	1730	2698(1.56)
CDP/MAA	306	10932(75)	3648(25)	14580	1820	4999(2.75)
VGA/CDP	206	7395(72)	2875(28)	10270	2060	7000(3.40)
CDP/VGA	206	7401(67)	3585(33)	1086	1980	4999(2.52)
GWL/DEL	203	6794(78)	1965(22)	8759	1880	3500(1.86)
GWL/IDR	205	4684(99)	58(01)	4742	2570	2580(1.0)
IDR/GWL	205	5135(97)	169(03)	5304	2570	2580(1.0)
Grand Total	6255	195264(63)	113213(37)	308477		

\*Is decided by the GoI; \*\* Is decided by Airline based on the market forces

^ Max Non UDAN Fare is more by number of times when compared with UDAN Fare

Source: Compiled based on Secondary Data taken from AAI

### 3.3 To assess the overall performance of the UDAN scheme.

To study this objective, data published by the AAI up to Sept 23, 2018 has been taken in to account. As the first flight was commenced from Apr 27, 2017, this period is approximately for 1 year 5 months (71 weeks). Let us see how the selected UDAN Airports, UDAN Routes and selected airlines have performed during first round.

#### Examining of the ASK versus RPK

In Aviation Industry, to find out the performance of an airline, one need to check the key operational and revenue parameters. Those are ASKM, RPKM and PLF.

**Available Seat Kilometre (ASKM):** One available seat-kilometer means that one seat is flown on one kilometer. In order to get the Available Seat Kilometre of the route, multiply the sector distance with the maximum no of seats available for sale. To get the ASKM for airline, one need to get the sum of the products obtained by multiplying the number of seats available for sale on each flight stage by the corresponding stage distance.

**Revenue Passenger Kilometres (RPKM)** shows the number of kilometres travelled by fare paying passengers. It is calculated as the number of revenue passengers multiplied by the total distance travelled. Airlines try to match their supply (ASKMs) with the market demand (RPKMs). RPKMs give airline management a clear indication of the demand in a given market. To support RPKM improvement, airlines add more seats or increase capacity.



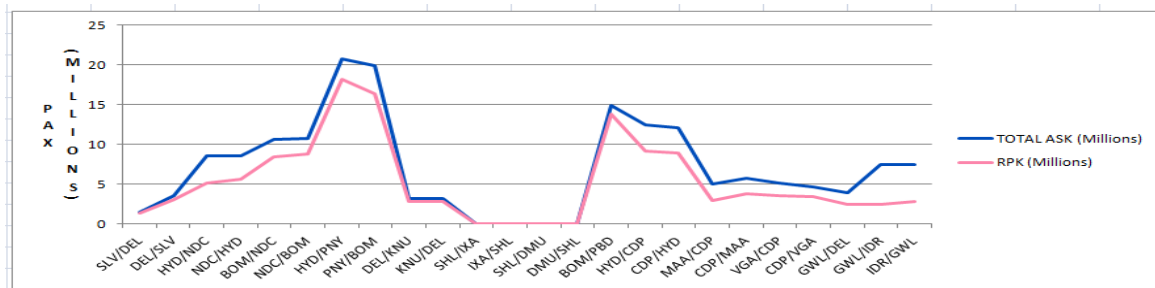
**Passenger Load Factor (PLF):** RPKM divided by ASKM

So by examining the Passenger Load Factor (RPKM/ASKM), we can comment the performance of an airline. So these figures have been computed in the following table for all UDAN routes from the selected UDAN airports.

**Table No 9 – Computation of ASK, RPK and PLF**

Route	Dist(Km)	Max Seats /FLT	ASK/ FLT	Total FLTS OPTD	Total ASK (Millions)	Total SEATS SOLD	RPK (Millions)	PLF (%)
SLV/DEL	313	15	4695	321	1.507095	4394	1.375322	91.26
DEL/SLV	313	35	10955	322	3.52751	9667	3.025771	85.78
HYD/NDC	246	72	17712	484	8.572608	20565	5.05899	59.01
NDC/HYD	246	72	17712	484	8.572608	22906	5.634876	65.73
BOM/NDC	480	72	34560	308	10.64448	17608	8.45184	79.40
NDC/BOM	480	72	34560	309	10.67904	18218	8.74464	81.89
HYD/PNY	678	78	52884	392	20.730528	26898	18.23684	87.97
PNY/BOM	650	78	50700	392	19.8744	25203	16.38195	82.43
DEL/KNU	489	78	38142	82	3.127644	5805	2.838645	90.76
KNU/DEL	493	78	38454	82	3.153228	5687	2.803691	88.91
SHL/IXA	239	18	4302	7	0.030114	42	0.010038	33.33
IXA/SHL	239	18	4302	7	0.030114	40	0.00956	31.75
SHL/DMU	282	18	5076	7	0.035532	1	0.000282	0.79
DMU/SHL	282	18	5076	7	0.035532	2	0.000564	1.59
BOM/PBD	441	78	34398	432	14.859936	31269	13.78962	92.80
HYD/CDP	347	72	24984	497	12.417048	26279	9.118813	73.44
CDP/HYD	337	72	24264	497	12.059208	26301	8.863437	73.50
MAA/CDP	228	72	16416	305	5.00688	12971	2.957388	59.07
CDP/MAA	260	72	18720	306	5.72832	14580	3.7908	66.18
VGA/CDP	346	72	24912	206	5.131872	10270	3.55342	69.24
CDP/VGA	313	72	22536	206	4.642416	10986	3.438618	74.07
GWL/DEL	278	70	19460	203	3.95038	8759	2.435002	61.64
GWL/IDR	519	70	36330	205	7.44765	4742	2.461098	33.05
IDR/GWL	519	70	36330	205	7.44765	5304	2.752776	36.96
<b>Overall</b>			<b>577480</b>	<b>6266</b>	<b>169.211793</b>	<b>308497</b>	<b>125.7339</b>	<b>74.31</b>

Source: Computed based on Secondary Data taken from AAI



**Exhibit No 8 - Comparison of ASK and RPK Routewise**

**4. CONCLUSIONS:** As was done in the previous sections, let us draw the conclusions also as per the order of objectives.

**4.1 To find out the air traffic growth in terms of Passenger Carried and Aircraft Movement due to UDAN scheme round one at selected UDAN Airports:** Out of selected 7 UDAN Airports, 6

airports have shown positive growth of passengers. Only airport that was recorded negative growth was SHL. This airport has shown negative growth of passengers carried (-0.536%) despite the rise in aircraft movement (24%). Remaining all other airports has shown positive growth both in passengers carried and aircraft movement.

SLV Passengers have increased 46 times and Aircraft Movement increased more than 12 times. NDC Passengers have increased more than 20 times and Aircraft Movement 92 times. KNU Passengers have increased more than 57 times and Aircraft Movement 78 times. PBD Passengers have increased 10 times and Aircraft Movement has become more than double. CDP Passengers have increased more than 17 times and Aircraft Movement more than 4 times and GWL Passengers have increased by 57% and Aircraft Movement increased by 77%.

**4.2 To examine whether the Air Travel in India has become really affordable for a middle class common man with the UDAN scheme:** On examining the 24 routes from the 7 selected UDAN Airports, it is revealed that total of 308,477 seats has been sold during 1 year 5 months (to be precise, 71 weeks). Out of this 195,264 seats (63%) have been sold at the price of ₹2500/- (inclusive of all taxes) as decided by the GoI. Remaining 113,213 seats (37%) were sold at the market price as per the prevailing market demand. On close scrutiny, it was revealed that market price has risen to more than 9 times of the GoI fixed price (happened for SLV one of the best India tourist destination on DEL/SLV& SLV/DEL routes). Other routes have also been sold from double the price of GoI fixed price to more than 5 times of it. Only exception is again for SHL Airport on SHL/IXA& IXA/SHL and SHL/DMU& DMU/SHL routes. In these routes there were no sales under non UDAN category. There were very poor loads even in UDAN seats, to the extent of one passenger out of maximum of 18 seats available on flight. Another exception is GWL/DEL and IDR/GWL routes wherein the PLF are 33 and 37 and non UDAN seats have also been sold at almost at the price of UDAN fares. Overall out of 24 routes, on 18 routes, middle class common man got benefitted from the UDAN fare.

**4.3 To assess the overall performance of the UDAN scheme:** Any airline tries to maximise their loads so the gap between RPKM and ASKM is minimised as much as possible so that their flights might operate at almost full loads. On computation of ASKM, RPKM and PLF again on 24 routes of the selected 7 airports, it revealed that the range of PLF was ranging from 33% to 92%, barring the SHL/DMU& DMU/SHL route in which the PLF is almost 0 % and 1% respectively. 16 routes have performed well as their PLF was more than 60%. These routes being new in the market, during the initial period of one year or so, the more than 60% PLF has to be considered good. Other

two stations almost touched the 60% PLF (HYD/NDC was 59.01 and MAA/CDP was 59.07). Other four routes which were not done well were SHL/IXA (33.33%) IXA/SHL (31.75%), GWL/IDR (33.05%) & IDR/GWL (36.96%). Last two routes which showed disastrous performance were SHL/DMU and DMU/SHL as their passenger load factor recorded only 0 % and 1% respectively. These flights were commenced operations from May 01, 2018, and operated for 21 weeks until Sept 23, 2018. Out of 21 weeks, number of flights operated on these routes was only 7 each. Due to poor loads flights were operated only first two weeks and later on withdrawn.

**4.4** With regard to Hypotheses considered before the study carried out is turned to be incorrect. As per Hypothesis 1, middle class common man is not getting benefitted is the assumption before study. However study proved that 63% of the seats have been sold at GoI fixed price i.e. middle class common man's price. Hypothesis 2 assumed that airlines show interest on selling the NON-UDAN seats. On examining the seats sold, it is revealed that SAOs are abiding by the Guidelines issued by the GoI and selling first the UDAN seats and followed by NON-UDAN seats.

## **5. REFERENCES:**

1. Economic Contribution of Civil Aviation ripples of prosperity by ICAO page no 1 (<https://www.icao.int/sustainability/Documents/EconContribution.pdf>)
2. R. N. Kaul, 1985, Dynamics of Tourism, A Trilogy, Vol III Transportation and Marketing, Sterling Publishers Pvt Ltd, Page no 504
3. Economic development 2016 Air Transport yearly monitor report of ICAO page 1 ([https://www.icao.int/sustainability/Documents/Yearly%20Monitor/YearlyMonitor\\_2016.pdf](https://www.icao.int/sustainability/Documents/Yearly%20Monitor/YearlyMonitor_2016.pdf))
4. Annual review of IATA 2018 Page 12 (<https://www.iata.org/publications/Documents/iata-annual-review-2018.pdf>)
5. Handbook on Civil Aviation Statistics a glimpse of aviation statistics.....2017-18 page no 5 (<http://dgca.nic.in/reports/hand-ind.htm>)
6. Aviation Benefits Beyond Borders 2016 by Air Transport Aviation Group (ATAG) page no 7 ([https://www.aviationbenefits.org/media/149654/abbb2016\\_global-summary\\_web.pdf](https://www.aviationbenefits.org/media/149654/abbb2016_global-summary_web.pdf))
7. Boeing's Current Market Outlook (2017 – 2036) report page No 8 (<http://www.boeing.com/resources/boeingdotcom/commercial/market/current-market-outlook-2017/assets/downloads/2017-cmo-6-19.pdf>)
8. IATA's Press release no 62 of October 24, 2018 on 20-year Passenger Forecast page 2 (<https://www.iata.org/pressroom/pr/Pages/2018-10-24-02.aspx>)

9. Discussion Paper 2011-13: Svein Bråthen – OECD/ITF 2011 Air Transport Services in Remote Regions page 6 (<https://www.oecd-ilibrary.org/docserver/5kg9mq3xcrxx-en.pdf?expires=1545107411&id=id&acname=guest&checksum=EB0A7246701181ACB44C9A4968A8D094>)
  10. AAI Traffic Data of 2016-2017 available on (<https://www.aai.aero/en/business-opportunities/aai-traffic-news>)
  11. National Civil Aviation policy 2016 available on ([http://www.civilaviation.gov.in/sites/default/files/Final\\_NCAP\\_2016\\_15-06-2016-2\\_1.pdf](http://www.civilaviation.gov.in/sites/default/files/Final_NCAP_2016_15-06-2016-2_1.pdf))
  12. PI Bureau, India (<http://pib.nic.in/newsite/printrelease.aspx?relid=161400>)
  13. Regional Connectivity Scheme 2.0 of Sept 2017 (<http://www.civilaviation.gov.in/rcs>)
  14. ICAO Working paper reference no A39-WP/133 EC/12 of Mar 08, 2016([https://www.icao.int/Meetings/a39/Documents/WP/wp\\_133\\_en.pdf](https://www.icao.int/Meetings/a39/Documents/WP/wp_133_en.pdf))
  15. Regional Connectivity Scheme (RCS) Notice Inviting Proposal (<http://www.civilaviation.gov.in/regionalconnectivityschemerccs/regional-connectivity-scheme-rccs-notice-inviting-proposal>)
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