

## CASE STUDY

# RALEIGH-DURHAM AND PST EMPLOYMENT



## Case Study: Raleigh-Durham Builds on the Region's Strength in PST Industries

The Raleigh-Durham region in North Carolina is associated with the Research Triangle and a concentration of employment in science and technology. The area is bounded by the three tier one research universities that are within 25 miles of each other. Because of those schools' presence, education, innovation, and a culture of collaboration are key drivers of the area's development. The primary "Triangle region" consists of Durham, Orange and Wake counties. The wider Research Triangle region encompasses a 13-county area.

Raleigh-Durham International Airport (RDU) is roughly midway between the two cities, straddling Durham and Wake counties. The second largest airport in terms of passenger traffic in North Carolina (behind Charlotte Douglas International Airport), it was the 37<sup>th</sup> busiest in 2019 based on enplaned passengers, with nearly 7 million.

The Research Triangle Park (RTP) is the largest research park in North America and remains one of the most successful science parks across the globe. Stretching 7,000 acres across Durham and Wake counties, the park is home to over 250 businesses, ranging from Fortune 100 multinational Research & Development (R&D) operations to entrepreneurial-driven start-ups.

With the RTP, state capital, and major universities anchoring the area, the region features exceptional economic activities in the Professional, Scientific and Technical Services (PST) sector. Industries in the PST sector are defined based on the particular expertise and training of the services provider and include services as legal, accounting, architectural, engineering, and scientific research.

This region is included as a case study to illustrate the relation between growth in air service and increases in PST-related economic activity.

### Introduction to Metropolitan Region

The Raleigh-Durham-Cary Combined Statistical Area ("Raleigh-Durham" or the CSA) is the home to distinct urban clusters. Raleigh is the largest of the three areas and is the state capital of North Carolina. With a 2019 population of 2.1 million, the Raleigh-Durham region is well-educated, with 46.9 percent of adults holding bachelor's degree or higher. The median household income was \$73,654, and the per capita income was \$38,760. Both measures are about 10 percent.<sup>1</sup>

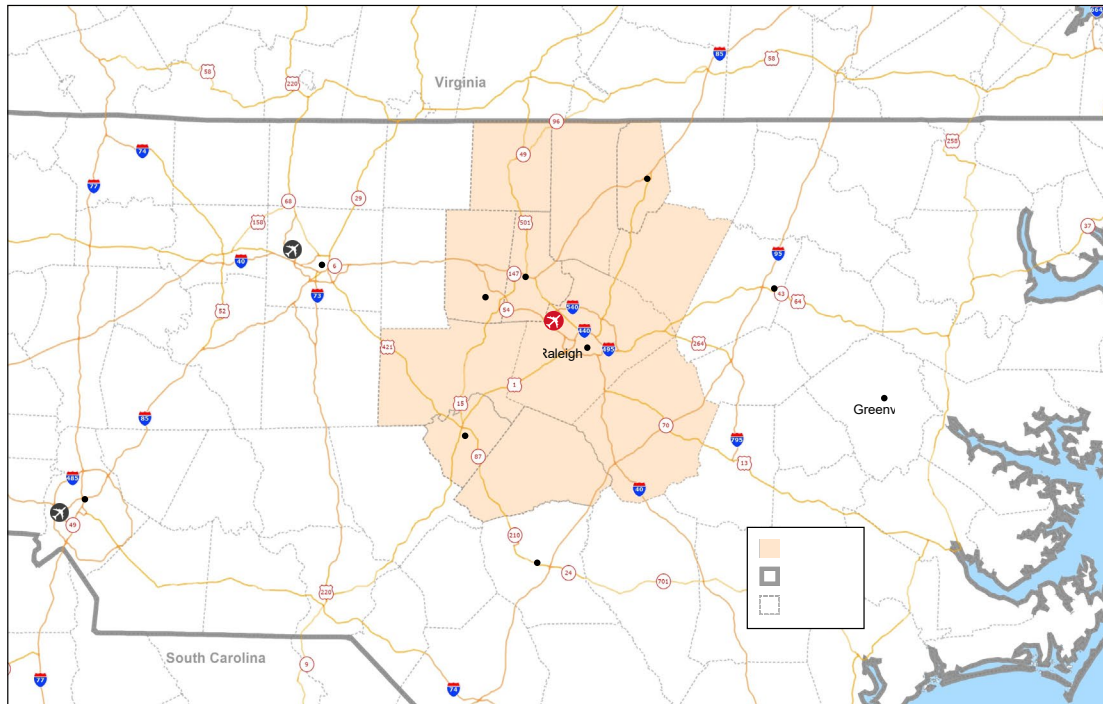
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<sup>1</sup> US Census Bureau 2019 1-Year Estimates.



The Raleigh-Durham area is rich in educational opportunities being home to several traditional universities, colleges, and for-profit institutions of higher education. Among the traditional colleges are North Carolina State University, North Carolina's largest university. The region's academic research network is enhanced by the presence of the University of North Carolina at Chapel Hill and by Duke University and North Carolina Central University in Durham. Other notable educational institutions include Shaw University, Campbell Law School, and William Peace University.<sup>2</sup> Figure 1-1 below shows a map of the Raleigh-Durham-Cary CSA Area.

**Figure 1: The Raleigh-Durham-Cary Combined Statistical Area**



According to the U.S. Bureau of Economic Analysis (BEA), in 2019, the Raleigh-Cary MSA had a population of 1,390,785 ranked 42nd in the nation (out of 384 total). The region produced \$94.8 billion in current-dollar total GDP, making it the 41<sup>st</sup> ranked, up from 51<sup>st</sup> in 2009.<sup>3</sup> BEA reported that the Durham-Chapel Hill MSA had a 2019 population of 644,367, ranked 92nd in the nation. The region produced \$53.7 billion in current-dollar total GDP, making it the 61<sup>st</sup> ranked, up slightly from 2009.<sup>4</sup>

The region has undergone significant growth in population and employment since 2008. Table 1 summarizes the changes in key socio-economic characteristics for the period. As shown, from 2008 through 2019:

<sup>2</sup> VisitRaleigh.com

<sup>3</sup> <https://apps.bea.gov/regional/bearfacts/action.cfm>

<sup>4</sup> <https://apps.bea.gov/regional/bearfacts/action.cfm>



- a. Total population rose by over 400,000 (25 percent). By contrast, population for the state of North Carolina rose by 13 percent.
- b. Total employment increased by almost 300,000 (27 percent). Employment for the entire state of North Carolina grew by 14 percent.
- c. Average per capita income (nominal dollars) rose from \$43,070 to \$56,300 (31 percent). (In constant 2019 dollars, the increase was 7 percent.) Average per capita personal income (in nominal dollars) for the State of North Carolina rose less quickly, by 27 percent.
- d. The number of businesses operating in the region increased by 13,000 (28 percent).<sup>5</sup>

**Table 1: Change in Major Socio-Economic Variables, Raleigh-Durham 2008-2019** (data in 1,000s)

Raleigh-Durham-Cary, NC CSA	2008	2015	2019	2008-15		2015-19		2008-19	
				Chg	%	Chg	%	Chg	%
Population	1,670	1,923	2,080	253	15%	156	8%	409	25%
Total Employment	1,083	1,220	1,380	138	13%	160	13%	297	27%
Non-farm Employment	1,076	1,213	1,373	137	13%	160	13%	297	28%
Private Non-farm Employment	908	1,036	1,189	128	14%	153	15%	281	31%
Gov't Employment	168	177	184	9	6%	7	4%	17	10%
Income per Capita (\$)	\$43,068	\$48,935	\$56,306	\$5,867	14%	\$7,371	15%	\$13,238	31%
Number of Establishments	48	55	61	7	15%	6	11%	13	28%

Source: U.S. Bureau of Economic Analysis (BEA)

Note: All data are in 1,000s except for per capita income.

From 2008 to 2019, the population grew at an annual rate of 2.0 percent per year, reaching 2,079,687 in 2019. (By comparison, the U.S. population as a whole grew by 0.96 percent over the same period.) When compared to other metro areas, Raleigh-Durham was the 2<sup>nd</sup> fastest growing large metro region after Austin, TX. From 2010 through 2019, Austin grew by 29.8 percent, while Raleigh grew by 23 percent.

The region is relatively highly educated. Among the population aged 25 and over, 27.4 percent held Bachelor's degrees and another 19.5 percent held graduate or professional degrees. By comparison, among the entire state's population aged 25 and over, 20.5 percent held Bachelor's degrees and another 11.8 percent held graduate or professional degrees.

### Regional Economic Strengths

The region's economy is anchored by several large employment sectors. As the capital of North Carolina, the region has a significant public sector presence, including local, state, and federal employees. This also takes into account the large number of staff associated with education, especially because with the large public universities in the region.

<sup>5</sup> The BEA uses data from the U.S. Census Bureau on "establishments," which it defines as "An establishment is a single physical location at which business is conducted or services or industrial operations are performed. It is not necessarily identical with a company or enterprise, which may consist of one or more establishments. ... Establishment counts represent the number of locations with paid employees any time during the year." The count excludes government establishments except for certain situations, such as state-operated retail liquor stores, local government-owned/operated hospitals, and federally chartered credit unions.

<https://www.census.gov/programs-surveys/susb/about/glossary.html>



In the private sector, the large sectors (based on total employment in 2019) are professional, scientific, and technological (PST); health care; administrative and support services; and information technology. The table also highlights the extraordinary growth in employment in PST; finance and insurance; real estate; and arts, entertainment, and recreation. Employment in each of those sectors grew by 40 percent or more from 2008.

**Table 2: Changes in Employment by NAICS Sector, Raleigh-Durham, 2008-2019**

NAICS Sector	2008	2019	Change	
			#	%
<b>Private Sector Employment</b>				
Professional, scientific, and technical services	97,163	151,084	53,921	55%
Health care and social assistance	N/A	134,097	N/A	N/A
Retail trade	103,241	121,158	17,917	17%
Accommodation and food services	68,566	94,472	25,906	38%
Administrative services	70,222	91,080	20,858	30%
Construction	70,448	79,856	9,408	13%
Manufacturing	83,986	75,198	(8,788)	-10%
Other services (except government and gov't enterprises)	57,228	74,413	17,185	30%
Real estate and rental and leasing	47,517	66,372	18,855	40%
Finance and insurance	43,961	65,032	21,071	48%
Educational services	N/A	55,780	N/A	N/A
Wholesale trade	37,885	44,460	6,575	17%
Transportation and warehousing	N/A	39,266	N/A	N/A
Information	25,351	34,660	9,309	37%
Arts, entertainment, and recreation	20,715	34,401	13,686	66%
Management of companies and enterprises	13,374	15,147	1,773	13%
Public Sector Employment (Fed, State, Local, Military)	172,845	189,724	16,879	10%
<b>Total Employment</b>	<b>1,082,819</b>	<b>1,380,126</b>	<b>297,307</b>	<b>27%</b>

Source: BEA.

Note: Figures will not sum to total because employment in smallest sectors and those where data were suppressed are not shown.

### Focus on Changing Economic Activity in Professional, Scientific and Technical Services (PST)

The Raleigh Durham area is home to a diverse economy, with significant concentrations in a few key industries. Primary drivers of these industries stem from an impressive supply of well-educated and innovative talent and a strong collaborative environment between academia, government, and industry. Some of the main focus industries include Life Sciences, Advanced Manufacturing, IT & Technology, and Clean Tech/Smart Grid which provide a strong network of economic development linkages across each industry.<sup>6</sup>

<sup>6</sup> Wake County Economic Development



The Professional, Scientific and Technical services (PST) drive a substantial amount of air traffic. Major PST subsectors include but are not limited to:

- Legal services
- Accounting, Tax Preparation, Bookkeeping, and Payroll Services
- Architectural, Engineering, and Related Services
- Management, Scientific, and Technical Consulting Services
- Scientific Research and Development Services (e.g., Physical, Engineering, and Life Sciences, nanotechnology, Biotechnology, Research and Development in the Social Sciences and Humanities)

Based on NAICS employment in Table 2, the PST sector has had the most robust job growth from 2008-2019 compared to other sectors, growing at an annual rate of 4.1 percent.<sup>7</sup>

### Economic Clusters

The U.S. Cluster mapping project provides additional insight into the region's economic strength. The region featured 11 traded clusters in 2016 (the latest available data), with the largest by employment being distribution and e-commerce, education, livestock, information technology (IT), and biopharma.<sup>8</sup>

- In the Biopharma cluster, over 14,700 individuals were employed in 2016, and the region had a location quotient of 6.19. The cluster includes biopharmaceutical products, biological products, and diagnostic substances. The CSA ranks in the top 10 nationally in each of those areas. The Economic Development Partnership of North Carolina (EDPNC) notes that the state's biotechnology industry includes 730+ companies and over 66,000 employees. It claims that in terms of total employment, the state is first in the U.S. in bio manufacturing and pharma manufacturing, and that the biotech cluster has grown 25 percent since 2010.<sup>9</sup>
- The IT Cluster includes software publishing and semiconductors, process and laboratory instruments, electronic components, and computers and peripherals. EDPNC states that North Carolina's technology industry grew at twice the rate of the national average between 2013 and 2017, that the Raleigh-Durham area was ranked 10<sup>th</sup> nationally among top tech markets, and that Forbes magazine ranked Raleigh the #2 tech hub in the country.<sup>10</sup>
- The Education and Knowledge Creation Cluster covers employment at the colleges and universities, research organizations, and training programs. This includes R&D in biotechnology; the physical, engineering, and life sciences; and social science and humanities. The CSA has high employment specialization in these matters, with research organizations ranked in the nation's top 10.

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<sup>7</sup> Bureau of Economic Analysis

<sup>8</sup> [https://www.clustermapping.us/region/economic/raleigh\\_durham\\_cary\\_nc/cluster-portfolio](https://www.clustermapping.us/region/economic/raleigh_durham_cary_nc/cluster-portfolio)

<sup>9</sup> <https://edpnc.com/industries/biotech-pharmaceuticals/>

<sup>10</sup> <https://edpnc.com/industries/information-technology/>



## Overview of the Airport and Its Services

Raleigh Durham International Airport (RDU) is North Carolina's second largest commercial airport based on passengers, serving over 14 million passengers in 2019. Classified by the Federal Aviation Administration (FAA) as a medium hub, RDU is the primary international hub for nearly half the State of North Carolina and serves as one of this region's most influential economic engines.

The airport is governed by the Raleigh-Durham Airport Authority, established by the North Carolina General Assembly in 1939. The Airport Authority is a local government responsible for the development, operation, and maintenance of RDU and has played a central role in the growth of the Research Triangle Region.<sup>11</sup>

The RDU catchment area reaches roughly 4 million people. Beyond the immediate CSA, RDU serves as the main airport for residents in the eastern half of North Carolina and from southern Virginia southward to the South Carolina border.<sup>12</sup> Smaller airports such as Roanoke (ROA) and Greensboro (GSO) leak traffic to RDU. Charlotte Douglas International Airport (CLT), a major hub for American Airlines, is the main airport RDU loses traffic to due to its strong international connectivity.



Another way to consider the economic activity within the catchment area is to examine business activity within a given drive time from the airport. The figure below illustrates the area within a 60-minute drive from RDU and highlights the PST-related activities within that radius.

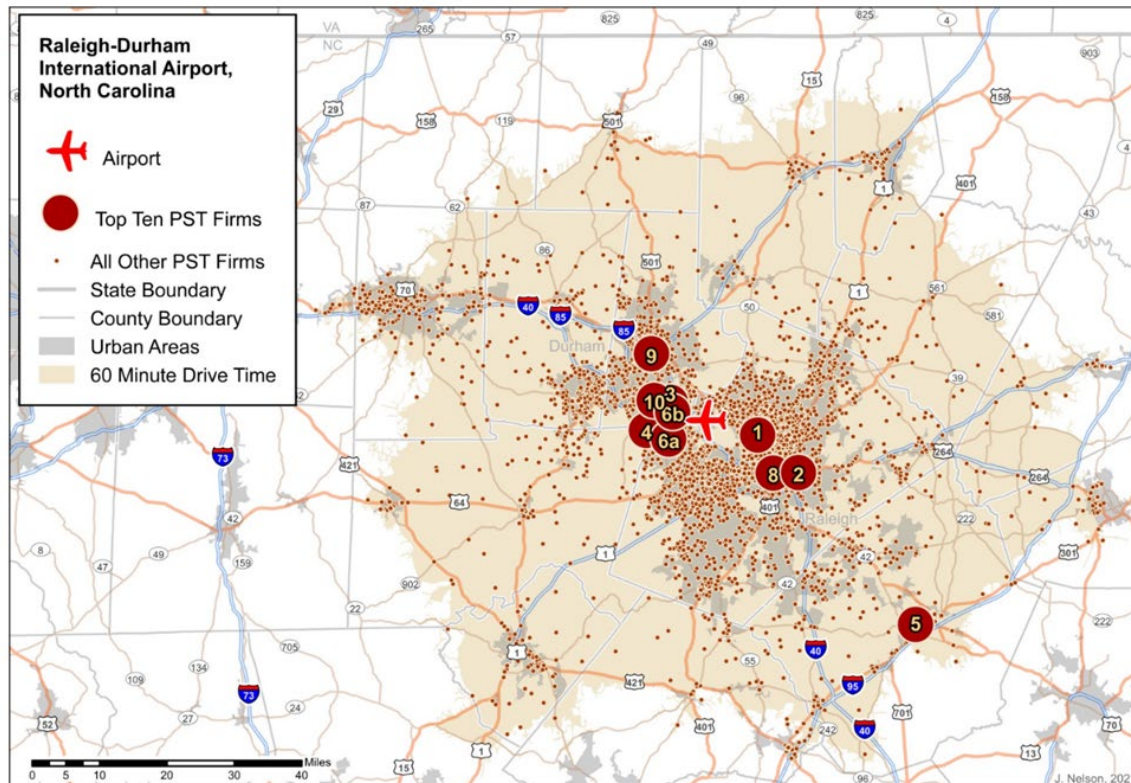
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<sup>11</sup> Raleigh-Durham International Airport

<sup>12</sup> Researchtriangle.org



**Figure 2: Spatial Distribution of Professional, Scientific, and Technical Service Firms (NAICS 54) in the RDU Airport One-Hour Drive Time Trade Area**



Source: ESRI Business Analyst

Key highlights of socio-economic activity within the 60-minute drive of the airport:

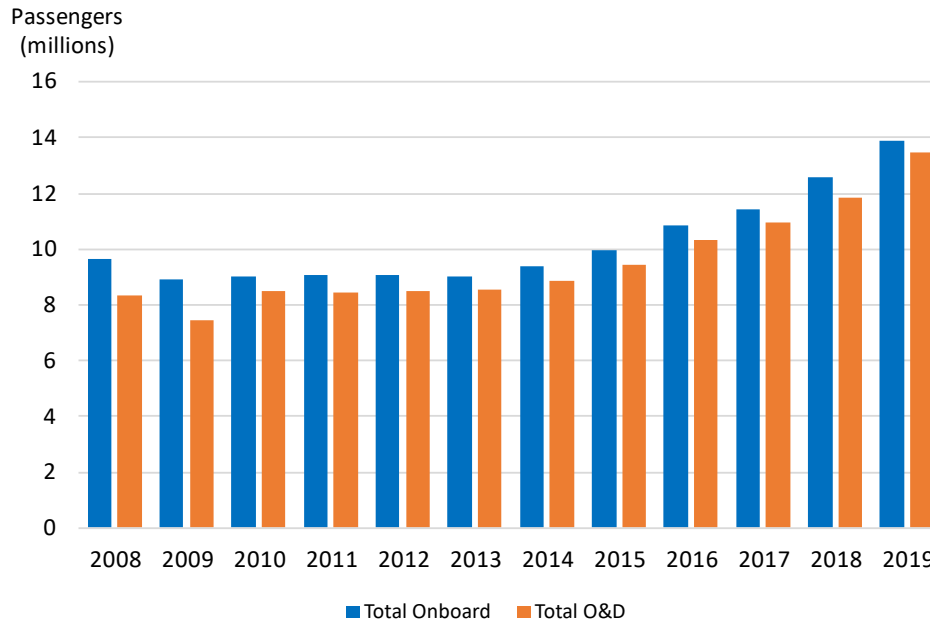
- The total estimated 2019 population was 2.3 million. Of that, about 1.5 million (63 percent) were considered “working age” (between the ages of 18 and 64).
- The region supported over 82,000 businesses employing over 1 million. In terms of major industry sectors (defined by NAICS codes), the largest based on total employment was PST with nearly 86,000, followed by Manufacturing (over 71,000 employees) and Finance, Insurance, and Real Estate (“FIRE”) with nearly 60,000.
- A large percentage of the total population is relatively highly educated. Of the total, 26.9 percent held a Bachelor’s degree and another 17.7 percent held a Graduate or Professional degree.

### Changes in Air Service

Passenger activity at RDU has grown significantly since 2008. After declining slightly following the Great Recession through 2013, the airport reported steady increases in both total passengers and local (origin and destination, O&D) activity. While connecting itineraries are possible given the overall volume of aircraft operations, the airport is principally a facility that serves local traffic, so O&D traffic represents the majority of total traffic. Passenger traffic reached an all-time high in 2019.



**Figure 3: Growth in Total and O&D Passenger Activity 2008-2019** (millions of passengers)



Source: US DOT O&D Summary Report.

The number of nonstop markets served grew, as did the number of flights to major markets. In 2008, RDU had service (defined as 50 flights in a year or more) to 45 destinations. In 2019, it had service to 57. RDU's 2019 international service included two European destinations -- London Heathrow Airport (LHR), and Paris Charles De Gaulle Airport (CDG) -- along with Cancun (CUN) Mexico and multiple Caribbean locations: San Jose (SJU), Montego Bay (MBJ), Punta Cana (PUJ), Nassau (NAS), and Freeport (FPO). Transborder service to Canada included Toronto Pearson (YYZ) and Montreal Trudeau (YUL).

In addition, the number of flights to major markets rose significantly, notably expanding connectivity to western markets such as Denver, Los Angeles, San Francisco, and Seattle from 2009 to 2019:

- Austin: +114
- Baltimore: +937
- Boston: +309
- Chicago O'Hare: +915
- Dallas Love Field: +432
- Denver: +1,277
- Detroit: +329
- Fort Lauderdale: +711
- Houston Hobby: +410
- Los Angeles: +840
- Miami: +165
- Minneapolis: +560

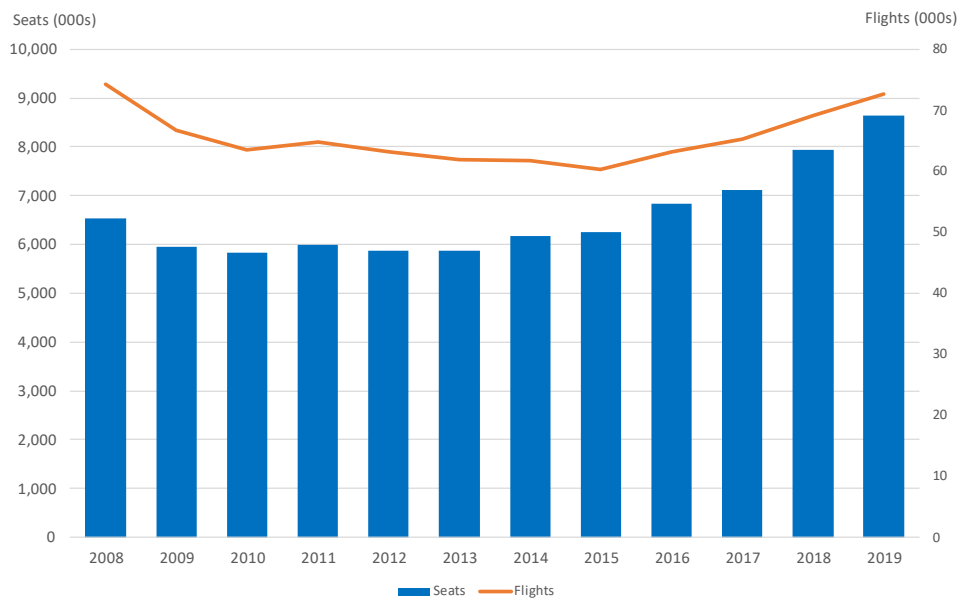




- Montreal Dorval: +210
- New York Newark: +756
- Orlando: +503
- Paris De Gaulle: +317
- San Francisco: +939
- San Juan: +158
- Seattle/Tacoma: +713
- Tampa: +787
- Trenton: +172
- West Palm Beach: +118

Figure 4 shows the growth in the amount of capacity offered at RDU, in terms of both total flights and seats available for sale. From 2008 to 2019, the number of available seats rose by 2.1 million (32 percent), equivalent to an extra 5,800 seats per day. The number of flights declined by just over 1,600 (2 percent), or 5 less flights per day. Average aircraft size (seats per departure) rose from 88 to 119.<sup>13</sup>

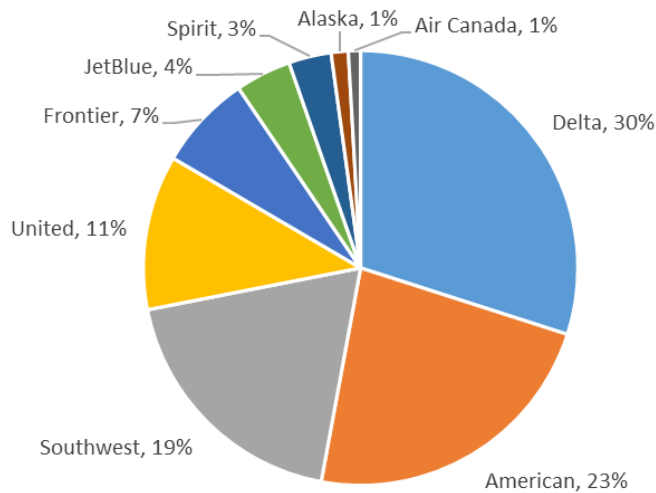
**Figure 4: Changes in Capacity Offered 2008-2019**



Source: Diio Schedules

Since Delta classified RDU as a “focus city,” the airport has become one of the carrier’s largest non-hub centers of operations. Delta leads all airlines in passenger market share at 30 percent. American captures 23 percent of the market, and Southwest and United comprise 19 percent and 11 percent, respectively.

<sup>13</sup> Diio Schedules

**Figure 5: Passenger Market Share 2019**

Source: US DOT O&D Summary Report

North Carolina ranked 16<sup>th</sup> among states in total tons of air freight cargo moved in 2019 carrying over 1.1 million tons totaling over \$23 billion in value. RDU ranked 3<sup>rd</sup> in the state behind moving 251,300 tons, which accounted for 23 percent of the state's total cargo, behind Piedmont Triad International Airport (GSO) and Charlotte Douglas International Airport (CLT).<sup>14</sup>

### Analysis of Changes in Air Service and Economic Activity

RDU's O&D traffic is highly correlated with total local employment. Figure \_ summarizes how changes in total O&D traffic have aligned with changes in regional employment. The line indicates a simplified linear relationship between the two. As total regional employment increases, total O&D increases. The correlation coefficient between the two is 0.907. The chart does not demonstrate causation; that is, it is not evident whether rising total employment levels leads to more air traffic, or whether more air traffic leads to more total employment.

<sup>14</sup> North Carolina Department of Transportation



**Figure 6: Relationship between Regional Employment and Total O&D Passenger Traffic**

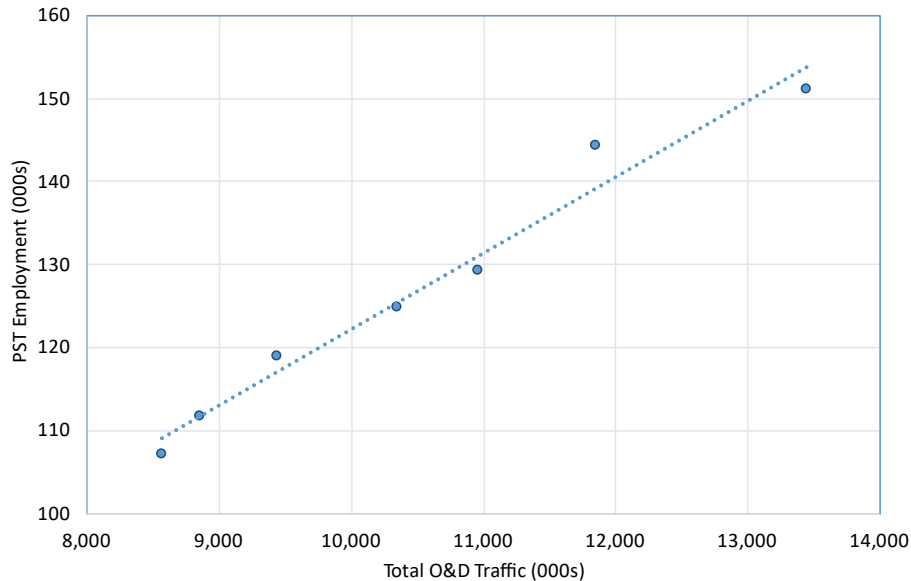


Figure 7 isolates changes in O&D traffic against changes in employment in industry sectors that have a relatively higher propensity to fly than others. Those sectors include PST, information technology; FIRE; PST; management of companies, administrative and support services, educational services, and health care. As with the analysis of air traffic and total employment, the correlation of changes in air service and these “aviation-reliant” industries is also very high: 0.96. Data are available only for the years 2013-2019 because those for prior years was suppressed to protect confidentiality. Again, the two variables move together: Increases in one correspond with increases in the other. No causality is proven.



**Figure 7: Relationship between Total O&D Passenger Traffic and Employment in Aviation-Reliant Industries**

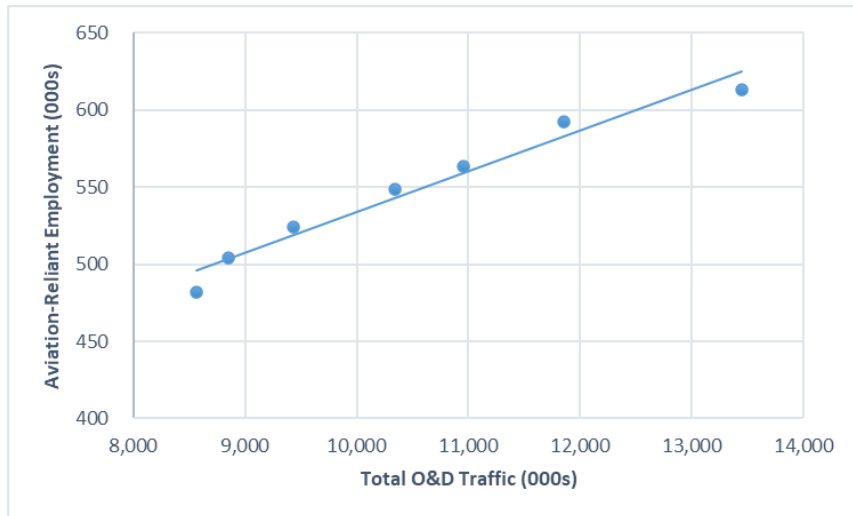
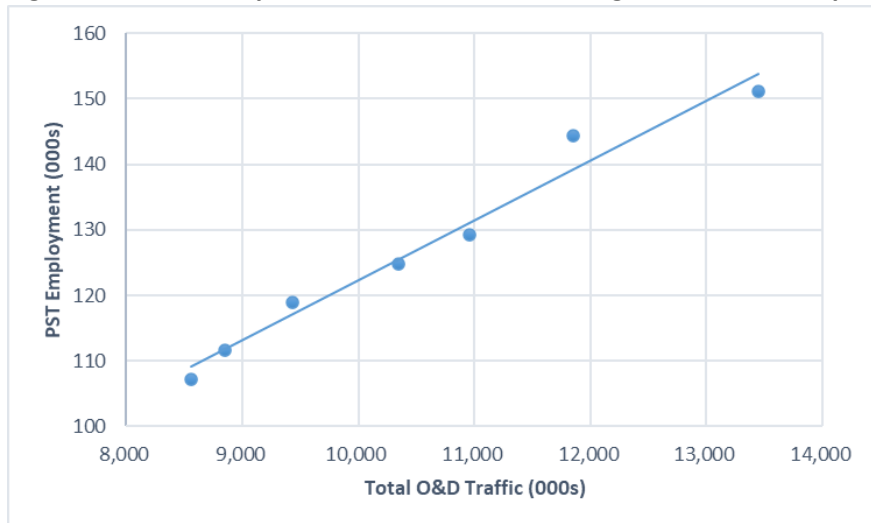


Figure 8 isolates changes in O&D traffic against employment in PST only. As above, the correlation of changes in air service and PST employment is also very high: 0.97. Data are available only for the years 2013-2019 because those for prior years was suppressed to protect confidentiality. Again, the two variables move together: Increases in one correspond with increases in the other. No causality is proven.

**Figure 8: Relationship between Total O&D Passenger Traffic and Employment in PST**



## Connectivity

High quality transportation – of all modes -- is a prerequisite for sustained economic growth and for maintaining economic competitiveness. *International* competitiveness is driven by productivity growth which is underpinned by trade, foreign investment and innovative activity, all of which are facilitated by connectivity via commercial aviation.



“Connectivity” generally means the ability to reach a wide range of places in a short amount of time. Connectivity creates efficiencies that make firms more productive, which in turn attracts more high-flying businesses that have their choice of locations and starts a virtuous cycle of economic growth.

Connectivity can be quantitatively measured in a variety of ways; the figure below summarizes the growth in connectivity at RDU between 2008 and 2019 using a method developed by the International Air Transport Association (IATA). The IATA connectivity index estimates the quality of air service at an airport based on the degree of service to other airports with the largest and most diverse route networks, as a proxy for how accessible the local economy is to the rest of the world.<sup>15</sup> The *change* in RDU’s connectivity index or score is charted below, by indexing the score against 2008 levels for comparison.

The growth in new destinations as well as increased capacity to major markets have manifested into a robust, continuous improvement in air connectivity provided by RDU to the regional economy over the past several years. While RDU was not immune to the impact of the Great Recession – connectivity dropped below 2008 levels for several years with the loss of nonstop service to several destinations and an overall reduction in capacity to most major hubs – the airport’s connectivity has since recovered and grown. Connectivity fully recovered to 2008 levels by 2015, then proceeded to grow by a total of +36 percent (or an average rate of +8 percent per annum) between 2015 and 2019. This growth was driven in large part by expanded connectivity to western hubs like Denver, Los Angeles, San Francisco, and Seattle, as well as the introduction of service to Paris (CDG) in 2016. Expanded service to these destinations have a particularly profound impact on improved connectivity given the scope and degree of onward service that they offer; every additional seat to these leading hubs will improve connectivity for RDU by a higher margin, relative to added capacity to smaller or less connected airports.

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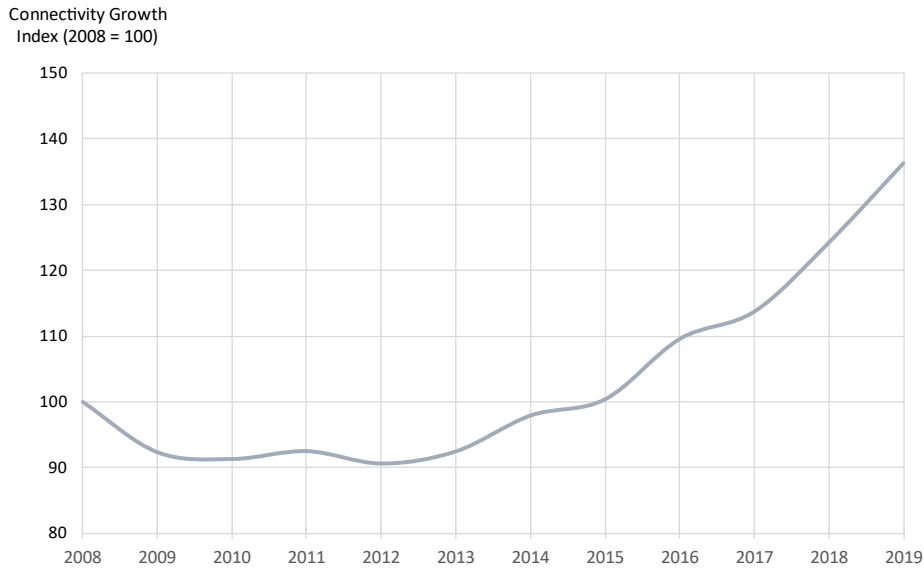
<sup>15</sup> The IATA connectivity index measures the number and size of destinations served, as well as the frequency of service to each destination and the number of onward connections available from those destinations. Service to airports with the highest total seat capacity (e.g., ATL) receive the highest weighting. Thus, the index recognises that connections to major global gateways provide greater global connectivity than connections to the same number of spoke ends.

The formula for the index is calculated as follows:

$$\frac{[\text{Number of destinations} \times \text{Weekly Frequency} \times \text{Seats per flight}] \times \text{Weighted by the Size of the Destination Airport}}{\text{Scalar factor of 1000}}$$



**Figure 9: RDU Connectivity Growth Index (2008=100)**



Note: Chart shows the IATA Connectivity Index for RDU, indexed against 2008 (2008 = 100).

Source: InterVISTAS analysis of Innovata schedule data from Diio Mi.

### Connecting Air Service and Changing Regional Economic Activity

RDU has not typically involved the community in its air service development goal creation. They choose instead to inform the community of its goals based on the strategy it develops internally and with consultants. This is a process which is ever-changing, and RDU is striving to create a model in which they identify the needs of the community prior to developing our air service development strategy. RDU's Director of Air Service Development relies heavily on data analysis to drive the identification and prioritization of air service development goals for the coming 5-10 period. When pitching to airlines about markets, in addition to a strong traffic base, RDU aims to look deeper into the industries connecting markets and turn to the community to understand what is driving business and business travel.

The regional economy and business base are closely interrelated with RDU's air service development goals. The booming technology business community is bringing people to live and work in the area in addition to creating a leisure/VFR connectivity component. Business travel is comprised of roughly 20 percent at RDU, and companies are continuing to invest and expand in the Raleigh-Durham area and generating travel.

### Regional Stakeholders and Air Service Interests

RDU's communications team and CEO coordinate all external outreach to community stakeholders. They believe in forging relationships with local partners and aim to capture the community sentiment in terms of air service needs.



Two of the key regional stakeholder organizations are the Research Triangle Regional Partnership (RTRP) and the Economic Development Partnership of North Carolina (EDPNC).

- The Research Triangle Regional Partnership (RTRP) is an economic development organization committed to the 12 core counties located in Central North Carolina surrounding the Raleigh-Durham area. The RTRP's efforts focus on five target industries:
  - Advanced manufacturing (e.g., medical devices, automotive and aerospace components, military or agricultural equipment, and advanced materials.)
  - Agriculture technology
  - CleanTech (e.g., smart grid technologies, smart metering and expanding renewable energy technologies)
  - Life Sciences. More than 500 companies employing 24,000 workers with an average salary of over \$140,000 are in the region.
  - Technology. This includes software developers, hardware manufacturers, and telecommunication companies. Some of the fastest growing segments in the Triangle are in fields such as analytics, nanotechnology, Internet of Things, photonics, and wearables.
  
- The EDCNP is a nonprofit public-private partnership that works with the North Carolina Department of Commerce on economic development and tourism. With a board composed of business leaders, it focuses on recruiting new businesses to the state, supporting the needs of existing businesses, connecting exporters to global customers, helping small business, and attracting tourists and visitors.

The EDPNC promotes activity in 14 industry groups. Noting that the state was once known mostly for tobacco and textiles, the state has evolved to become a major location for knowledge-based industries. Included among those are biotechnology and information technology.

The EDPNC also touts five major attributes for attracting and retaining business: Workforce and education (e.g., colleges and universities, large numbers of military personnel based in the state who leave the service with specialized skills), business climate (e.g., legal and regulatory environment), incentives (e.g., grants and tax incentives), quality of life (cost of living, health care, climate, outdoor recreation, etc.), and infrastructure. The infrastructure component features the state's airports and the domestic and international connectivity provided. Air service positively contributes to the regional quality of life. The vibrant regional economy and robust air service offering helps retain local talent and attract and retain investment in the region.

RDU works with local organizations such as the chamber of commerce, the local convention and visitor bureaus (Visit Raleigh, Discover Durham, the Economic Development Partnership of NC, and Raleigh Economic Development & Innovation) to connect with corporate organizations. RDU also goes directly to companies and reaches out to their leadership teams. When there is an obvious need for air service, companies will contact the Chamber and ask how to get service to a particular market. When airlines



realized that RDU was one of the fastest growing markets with a higher-than-average mean income and an abundance of unserved markets, they initiated routes from RDU without much prodding from the airport itself. Delta's decision to name RDU a focus city did not come as a result of RDU's marketing, but rather the airline seeing the strategic opportunity in the data and launching a number of point-to-point (non-hub) markets. Many market pushes have come from the community in the past, where the community communicates that business ties exist and there is a want or need for the service. One example is RDU's efforts to target non-stop service to China (prior to the pandemic), with many economic development organizations leading that push.

### Communicating the Airport's Economic Impact

The State of North Carolina published an economic impact assessment of its network of 72 publicly owned airports in January 2021 covering operations for the calendar year 2019.<sup>16</sup> in January 2021. The report summarizes the economic impacts generated by the state's public airports and the many assets that support the aviation and aerospace sector.

The report found that RDU accounted \$15.15 billion in total economic output in RDU, \$518.3M of state and local taxes, \$3.5B in personal income, and 99,335 jobs. The analysis included the impacts of on-airport contributions (jobs, income, and spending by tenants such as airlines, rental car companies and airport security), airport capital projects and operations (construction, facility maintenance and operational services), and the impact of visitors.<sup>17</sup>

The airport suggests that analyses on the possible economic impact that new air service (e.g., the economic impact of a new nonstop international flight, including the generation of tax revenues to local and state governments) may have more credibility, and be more influential, if completed or sponsored by organizations separate from the airport. Analyses like those could be useful to help convince businesses and other organizations to invest in efforts to attract new air service.

The airport uses economic impact for different audiences in a variety of ways. Convention & Visitors Bureaus (CVBs) are generally interested in economic impact data specific to visitors – i.e., visiting passenger numbers, estimated spend, etc. Other economic development organizations might be interested in the overall economic impact of the airport in terms of the capital it produces directly or indirectly. Alternatively, political stakeholders are principally interested in tax revenues and jobs.

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<sup>16</sup> North Carolina Department of Transportation (NC DOT), North Carolina: The State of Aviation, What Aviation Means to Our Economy, 2021 <https://www.ncdot.gov/>

<sup>17</sup> Ibid.