

Telangana Tourism Data Analysis

2016-2019

Project Overview

- **Objective:** Analyze tourism trends in Telangana using historical visitor data (2016–2019).
- **About Dataset:** Dataset contains two files holding domestic visitors and foreign visitors data.
- Dataset contains over 1500+ rows and key columns like district , date , month , year and visitors.

Top 10 districts that have the highest number of domestic visitors overall (2016 - 2019)

Query:

```
select
  district,
  sum(visitors) as visitors_count
from domestic_visitors
group by district
order by visitors_count
desc limit 10;
```

Result:

district	visitors_count
Hyderabad	83900960
Rajanna Sircilla	41763276
Warangal (Urban)	30726603
Yadadri Bhongir	26893080
Bhadradi Kothagudem	21600962
Medak	20542639
Jayashankar Bhoopalpally	19632865
Mahbubnagar	17180118
Nirmal	13315796
Jagtial	11303514

- Hyderabad recorded the highest number of domestic tourists among all districts in Telangana.

Top 3 districts based on compounded annual growth rate (CAGR) of visitors between (2016 - 2019)

Query:

```
with x as
  (select district,year,sum(visitors) as visitors_in_2016 from domestic_visitors where year=2016 group by district),
y as (select district,year,sum(visitors) as visitors_in_2019 from domestic_visitors where year=2019 group by district)

select x.district,x.visitors_in_2016 ,y.visitors_in_2019,
ROUND((POWER(y.visitors_in_2019 / x.visitors_in_2016,1.0/3)-1)*100,2) AS CAGR_pct from x
join y on x.district=y.district where x.visitors_in_2016 >0 order by CAGR_pct desc limit 3;
```

Result:

district	visitors_in_2016	visitors_in_2019	CAGR_pct
Mancherial	7802	269810	225.8
Warangal (Rural)	19400	353500	163.15
Bhadradi Kothagudem	889030	12817737	143.39

- Mancherial had the highest growth rate in tourist visits (225.8%) despite starting with a relatively low base.
- CAGR – Compound Annual Growth Rate . CAGR depicts how much an investment or business has grown over a specific period, on average

Bottom 3 districts based on compounded annual growth rate (CAGR) of visitors between (2016 - 2019)

Query:

```
with x as
(select district,year,sum(visitors) as visitors_in_2016 from domestic_visitors where year=2016 group by district),
y as
(select district,year,sum(visitors) as visitors_in_2019 from domestic_visitors where year=2019 group by district)

select x.district,x.visitors_in_2016 ,y.visitors_in_2019,
ROUND((POWER(y.visitors_in_2019 / x.visitors_in_2016, 1.0 / 3) - 1) * 100, 2) AS CAGR_pct
from x join y on x.district=y.district where x.visitors_in_2016 >0 order by CAGR_pct limit 3;
```

Result:

district	visitors_in_2016	visitors_in_2019	CAGR_pct
Karimnagar	9167468	77491	-79.63
Nalgonda	5858461	140918	-71.13
Warangal (Urban)	25788035	1795230	-58.86

- Karimnagar experienced the steepest decline in tourists visits , dropping by over 99% .
- Warangal(Urban) district is also showing sharp declines.

Peak and low season months for Hyderabad based on the data from 2016 to 2019 for Hyderabad district

Query:

```
with monthly_visitors as
(select month,sum(visitors) as visitors_count from domestic_visitors where district="Hyderabad" group by month),

low_month as
(select "Low Season" as season_type,month,visitors_count from monthly_visitors order by visitors_count limit 1),

peak_month as
(select "Peak_Season" as season_type,month,visitors_count from monthly_visitors order by visitors_count desc limit 1)

select * from low_month
union
select * from peak_month
```


Result:

season_type	month	visitors_count
Low Season	February	5014430
Peak_Season	June	16897783

- June is identified as the peak season for tourism in Hyderabad, drawing over 16.8 million visitors.
- February, in contrast, is part of the low season, with around 5 million visitors.
- Government can plan well for peak seasons and boost low seasons by introducing new events.

**Top & bottom 3 districts with high
domestic to foreign tourist ratio**

Query:

```
with visitors_domestic as
(select district,sum(visitors) as total_domestic from domestic_visitors group by district),

visitors_foreign as
(select district,sum(visitors) as total_foreign from foreign_visitors group by district),

visitors_ratio as(
select d.district,d.total_domestic,f.total_foreign,round(d.total_domestic/nullif(f.total_foreign,0),2) as domestic_to_foreign_ratio
from visitors_domestic d join visitors_foreign f on d.district=f.district),

top_districts as
(select 'Top' as category,district,total_domestic,total_foreign,domestic_to_foreign_ratio from visitors_ratio
order by domestic_to_foreign_ratio desc limit 3),
bottom_districts as (select 'Bottom' as category,district,total_domestic,total_foreign,domestic_to_foreign_ratio from visitors_ratio
where total_foreign>0 order by domestic_to_foreign_ratio limit 3)

select * from top_districts
union all
select * from bottom_districts;
```

Result:

category	district	total_domestic	total_foreign	domestic_to_foreign_ratio
Top	Nirmal	13315796	2	6657898
Top	Jangaon	826280	2	413140
Top	Adilabad	7321575	32	228799.22
Bottom	Hyderabad	83900960	1044898	80.3
Bottom	Warangal (Rural)	819162	306	2677
Bottom	Mulugu	1819800	575	3164.87

- A higher ratio means the district seems almost only domestic tourism.
- A lower ratio suggests the district has a more balanced or stronger foreign tourism.

**Top & bottom 5 districts based on
population to tourist footfall
ratio in 2019**

Query:

```
with visitors_2019 as (  
  select district, sum(visitors) as total_visitors from (  
    select district ,visitors from domestic_visitors where year=2019  
    union all  
    select district ,visitors from foreign_visitors where year=2019) as visitors_table  
  group by district  
,  
  
ratio as(  
  select v.district, v.total_visitors, rp.residential_population,  
    round(v.total_visitors/nullif(rp.residential_population,0),4) as footfall_ratio  
  from visitors_2019 v  
  join residential_population rp on rp.district = v.district  
)  
-- excluding 0 visitors cities  
select 'Top' as category, district, total_visitors, residential_population, footfall_ratio  
  from (select * from ratio order by footfall_ratio desc limit 5) as top5  
union all  
select 'Bottom' as category, district, total_visitors, residential_population, footfall_ratio  
  from (select * from ratio where total_visitors>0 order by footfall_ratio limit 5) as bottom5;
```

Result:

category	district	total_visitors	residential_population	footfall_ratio
Top	Rajanna Sircilla	16832897	552037	30.4923
Top	Bhadradi Kothagudem	12817737	1153105	11.1158
Top	Medak	5452570	767428	7.105
Top	Mulugu	1820375	294671	6.1777
Top	Nirmal	3816778	709418	5.3802
Bottom	Narayanpet	5	566875	0
Bottom	Kamareddy	534	974227	0.0005
Bottom	Peddapalli	16581	795332	0.0208
Bottom	Nizamabad	46334	1571022	0.0295
Bottom	Komaram Bheem Asifabad	19189	515812	0.0372

- Footfall ratio = Population/Total Tourist Footfall
- Where Total Tourist Footfall =domestic + foreign tourists

**Projected number of domestic and foreign tourists
in Hyderabad in 2025 based on the growth rate
from previous years**

Query:

```
with visitors_data as(
  select
    (select sum(visitors) from domestic_visitors where year=2016 and district="Hyderabad" ) as domestic_2016,
    (select sum(visitors) from domestic_visitors where year=2019 and district="Hyderabad" ) as domestic_2019,
    (select sum(visitors) from foreign_visitors where year=2016 and district="Hyderabad" ) as foreign_2016,
    (select sum(visitors) from foreign_visitors where year=2019 and district="Hyderabad" ) as foreign_2019
),
growth_rates as (
  SELECT
    domestic_2016, domestic_2019,
    ROUND(POWER(domestic_2019 * 1.0 / domestic_2016, 1.0 / 3) - 1, 4) as CAGR_domestic,
    foreign_2016, foreign_2019,
    ROUND(POWER(foreign_2019 * 1.0 / foreign_2016, 1.0 / 3) - 1, 4) as CAGR_foreign
  FROM visitors_data
).
```

```
projection as (  
  SELECT  
    domestic_2019,  
    ROUND(domestic_2019 * POWER(1 + CAGR_domestic, 6)) AS projected_domestic_2025,  
    foreign_2019,  
    ROUND(foreign_2019 * POWER(1 + CAGR_foreign, 6)) AS projected_foreign_2025  
  FROM growth_rates  
)  
  
SELECT * FROM projection;
```

Result:

domestic_2019	projected_domestic_2025	foreign_2019	projected_foreign_2025
13802362	4803892	319300	1215696

**Projected revenue for Hyderabad in 2025 based
on average spend per tourist (approximate data)**

Foreign Tourist: 5,600

Domestic Tourist: 1,200

Query:

```
with visitors_data as(
  select
    (select sum(visitors) from domestic_visitors where year=2016 and district="Hyderabad" ) as domestic_2016,
    (select sum(visitors) from domestic_visitors where year=2019 and district="Hyderabad" ) as domestic_2019,
    (select sum(visitors) from foreign_visitors where year=2016 and district="Hyderabad" ) as foreign_2016,
    (select sum(visitors) from foreign_visitors where year=2019 and district="Hyderabad" ) as foreign_2019
),

growth_rates as (
  SELECT
    domestic_2016, domestic_2019,
    ROUND(POWER(domestic_2019 * 1.0 / domestic_2016, 1.0 / 3) - 1, 4) as CAGR_domestic,
    foreign_2016, foreign_2019,
    ROUND(POWER(foreign_2019 * 1.0 / foreign_2016, 1.0 / 3) - 1, 4) as CAGR_foreign
  FROM visitors_data
),
```

```
projection as (  
  SELECT  
    domestic_2019,  
    ROUND(domestic_2019 * POWER(1 + CAGR_domestic, 6)) AS projected_domestic_2025,  
    foreign_2019,  
    ROUND(foreign_2019 * POWER(1 + CAGR_foreign, 6)) AS projected_foreign_2025  
  FROM growth_rates  
)  
  
revenue_projection AS (  
  SELECT  
    projected_domestic_2025,  
    projected_foreign_2025,  
    projected_domestic_2025 * 1200 AS domestic_revenue_2025,  
    projected_foreign_2025 * 5600 AS foreign_revenue_2025,  
    projected_domestic_2025 * 1200 + projected_foreign_2025 * 5600 AS total_revenue_2025  
  FROM projection  
)  
  
SELECT * FROM revenue_projection;
```

Result:

projected_domestic_2025	projected_foreign_2025	domestic_revenue_2025	foreign_revenue_2025	total_revenue_2025
4803892	1215696	5764670400	6807897600	12572568000

Which district has the highest potential for tourism growth and what actions government can take?

- From our analysis Hyderabad district has the highest potential for tourism growth with over 800M+ domestic visitors itself.
- It is one of those few cities which is known for its touristic places and its IT infrastructure.

Actions:

- Improve online presence on global tourist platform
- Enhance Tourist Safety

Cultural / Corporate Events to boost tourism

- a. What kind of events the government can conduct?**
- b. Which month(s)?**
- c. Which districts?**

a. What kind of events the government can conduct?

- Heritage and Traditional Events showcasing Telangana diverse culture.
- Global summits and Conferences.
- Film Festivals

b. Which month(s)?

- Heritage and Traditional Events showcasing Telangana diverse culture.
 - In India most festivals fall in Q3(July-September) and Q4(October-December).
 - Rakshabandhan, Ganesh Chaturdhi etc are major festivals in Q3
 - Navrati,Dusshera,Diwali etc are major festivals in Q4
 - As Q4 festivals are celebrated mostly in all states of india and are well known globally . This would be the best time for conducting such events as they will attract foreigners who generate more revenue than domestic visitors.
 - Hence the best months to conduct Heritage and Traditional Events would be October to December.

- Global summits and Conferences.
 - The best months to conduct these kind of events would be February- early March as these months offers decent weather and easier for international and domestic attendees.

a. Which districts?

- Hyderabad would be a good choice to conduct events as it has addresses highest tourism among all other districts.

Dubai has made itself a business hub and enjoys massive business tourism. Can Hyderabad emulate the Dubai model?

Dubai:

- Has Global Connectivity
- Business Friendly Policies
- Luxury + Lifestyle
- Good Infrastructure

Hyderabad:

- Has Global Connectivity
- Less Flexible Policies
- Culture + Cuisine
- Good Infrastructure
- Global Business hubs

Differences:

- Dubai's Tourism replicates luxury while Hyderabad's Tourism is mostly historical, technology and affordable.
- Dubai offers flexible policies while Hyderabad has less flexible policies.

Conclusion:

Hyderabad can't fully replicate the Dubai model, but it can emulate the business tourism as it has both history and technology.

THANK YOU