CAPSTONE PROJECT 1

ANALYSIS OF AIRLINE PASSENGER SATISFACTION OVER AIRLINES SERVICES

PASSENGER SATISFACTIONS PLAYS A HUGE ROLE IN THE REPUTATION OF THE AIRLINE ORGANIZATION.

TO EFFICIENTLY ACQUIRING MORE PASSENGERS, IT IS IMPERATIVE TO UNDERSTAND THE PASSENGER SATISFACTION OVER AIRLINES SERVICES.
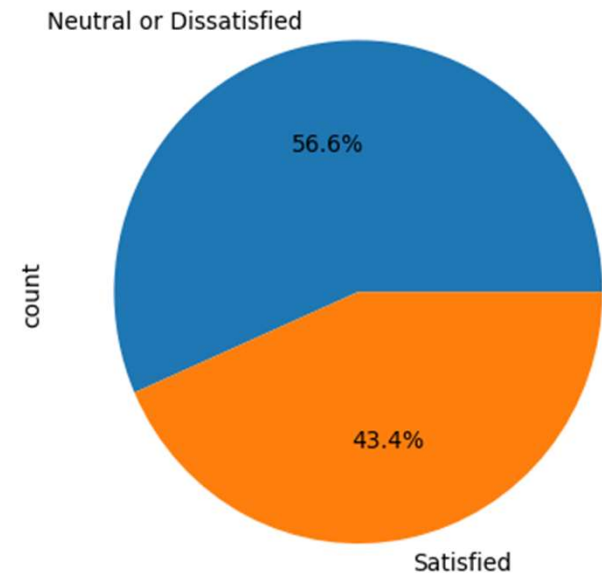
DATA SOURCE

KAGGLE

LINK : HTTPS://WWW.KAGGLE.COM/DATASETS/MIKHAIL1681/AIRLINE-QUALITY-RATINGS?RESOURCE=DOWNLOAD

PASSENGER SATISFACTION PERCENTILE FOR THE GIVEN DATA

The passenger satisfaction rate, calculated at 43.4% from the provided data, indicates that out of every hundred passengers, approximately 43 expressed satisfaction with the airline services.

Passenger satification proportion in the dataset

BASIC ANALYSIS

```
]:  import pandas as pd
    import matplotlib.pyplot as plt
    import seaborn as sn
    df = pd.read_csv("Airline Quality Ratings.csv")
    df.info()

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 129880 entries, 0 to 129879
Data columns (total 24 columns):
 #   Column                          Non-Null Co
---  ------                          ----------
 0   ID                              129880 non-
 1   Gender                          129880 n
```

- THE DATASET CONSISTS OF 24 COLUMNS AND 129488 RECORDS.

- NO NULL VALUES AND DATA IS CLEAN

- SATISFACTION COLUMN IS NOMINAL DATA.

- IN-FLIGHT ENTERTAINMENT COLUMN IS ORDINAL DATA
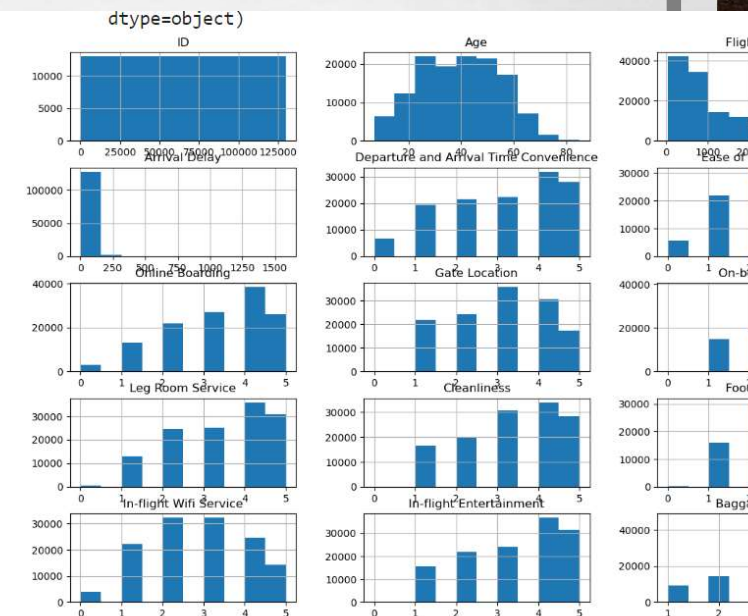


```
In [7]:  df.describe()
```
Out[7]:

	ID	Age	Flight Distance	Departure Delay	Arrival Delay	Departure and Arrival Time Convenience	Ease of Online Booking	
count	129880.000000	129880.000000	129880.000000	129880.000000	129487.000000	129880.000000	129880.000000	1298
mean	64940.500000	39.427957	1190.316392	14.713713	15.091129	3.057599	2.756876	
std	37493.270818	15.119360	997.452477	38.071126	38.465650	1.526741	1.401740	
min	1.000000	7.000000	31.000000	0.000000	0.000000	0.000000	0.000000	
25%	32470.750000	27.000000	414.000000	0.000000	0.000000	2.000000	2.000000	
50%	64940.500000	40.000000	844.000000	0.000000	0.000000	3.000000	3.000000	
75%	97410.250000	51.000000	1744.000000	12.000000	13.000000	4.000000	4.000000	

WHY PASSENGER SATISFACTION?

Prioritizing passenger satisfaction is essential for airlines to build strong customer relationships, stay competitive, and sustain long-term success in the dynamic aviation industry.

STATISTIC

- NULL HYPOTHESIS (HO): THERE IS NO SIGNIFICANT RELATIONSHIP BETWEEN PASSENGER SATISFACTION AND IN-FLIGHT ENTERTAINMENT AIRLINE SERVICE.

- ALTERNATE HYPOTHESIS (HA): THERE IS A SIGNIFICANT RELATIONSHIP BETWEEN PASSENGER SATISFACTION AND IN-FLIGHT ENTERTAINMENT AIRLINE SERVICE.

- **THE NULL HYPOTHESIS (H0) FOR THE CHI-SQUARED TEST :** THERE IS NO SIGNIFICANT ASSOCIATION BETWEEN PASSENGER SATISFACTION AND IN-FLIGHT ENTERTAINMENT AIRLINE SERVICES.

```
]:    # Apply the chi-squared test
      chi2, p_value, dof, expected =

      # Print the results
      print("Chi-squared statistic:'
      print("P-value:", p_value)
      print("Degrees of freedom:", c
      print("Expected frequencies ta
      print(expected)

Chi-squared statistic: 23071.602
P-value: 0.0
Degrees of freedom: 5
```

CONCLUSION

THE ANALYSIS OF AIRLINE PASSENGER SATISFACTION OVER IN-FLIGHT
ENTERTAINMENT SERVICES
USING THE AIRLINE QUALITY RATINGS DATASET HAS PROVIDED VALUABLE INSIGHTS
INTO THE RELATIONSHIP BETWEEN PASSENGER SATISFACTION AND THIS SPECIFIC
ASPECT OF AIRLINE SERVICES.

THE RESEARCH AIMED TO DETERMINE IF THERE WAS A STATISTICALLY SIGNIFICANT
ASSOCIATION BETWEEN PASSENGER SATISFACTION AND IN-FLIGHT ENTERTAINMENT
SERVICES, WITH THE NULL HYPOTHESIS STATING THAT THERE WAS NO SIGNIFICANT
RELATIONSHIP, AND THE ALTERNATIVE HYPOTHESIS PROPOSING THE EXISTENCE OF
A SIGNIFICANT RELATIONSHIP.

CONCLUSION

THROUGH THE CHI-SQUARE TEST FOR INDEPENDENCE, IT WAS FOUND THAT THE P-VALUE WAS EXTREMELY LOW (P < 0.05), INDICATING A STATISTICALLY SIGNIFICANT ASSOCIATION BETWEEN PASSENGER SATISFACTION AND IN-FLIGHT ENTERTAINMENT SERVICES. THIS SUGGESTS THAT IN-FLIGHT ENTERTAINMENT PLAYS A CRUCIAL ROLE IN INFLUENCING PASSENGER SATISFACTION LEVELS.

IN CONCLUSION, THE FINDINGS UNDERSCORE THE SIGNIFICANCE OF IN-FLIGHT ENTERTAINMENT SERVICES IN SHAPING PASSENGER SATISFACTION AND EMPHASIZE THE IMPORTANCE FOR AIRLINES TO PRIORITIZE AND INVEST IN THIS ASPECT OF THEIR OFFERINGS TO ENSURE A POSITIVE PASSENGER EXPERIENCE AND MAINTAIN A COMPETITIVE EDGE IN THE AVIATION INDUSTRY