

# Exploring the Cosmos :- Analysing ISRO's Mission Launches with Power BI Report.

## Report Objectives :-

This report provides an indepth analysis of ISRO's space missions focusing on various key metrics and trends. The dashboard was designed to be simple, elegant and easy to read, allowing stakeholders to quickly grasp the insights presented.

The report covers the following aspects :-

- Total missions and success rate
- Orbit types
- Applications of missions.
- Launch Vehicles
- Year wise trend analysis.

## Key Metrics :-

The key metrics section summarizes the overall performance of ISRO's missions. These metrics provide a snapshot of the data and highlight the organization's success in space explorations:

- Total missions : 102

This represents the total no. of space missions launched by ISRO.

- Successful missions : 95

This indicates the number of missions that were successful, demonstrating ISRO's high success rate in its space endeavors.



- **Unsuccessful launches :** =

This indicates the number of missions that did not achieve their objective. It helps to contextualize the success rate and areas for potential improvement.

- **Number of launch vehicles :-** 102

This metric provides insight into the number of different launch vehicles utilized by ISRO, indicating the variety and capability of its launch technology.

- **Types of orbits :-** =

This metric showcases the diversity in the types of orbits targeted by ISRO's missions, reflecting the organization's versatility in deploying satellites for various purposes.

## Visuals And their Explanations :-

### 1. Total missions by Year and Mission Status :-

- **Purpose :-** This visual is a line chart that depicts the trends of ISRO mission launches over the years, showing how many missions were launched each year and their status (Successful or Unsuccessful).

- **Analysis :-** The line chart highlights key periods of activity and growth for ISRO. Peaks in the chart indicate years with higher number of launches, which may correspond to significant projects or advancements in ISRO's capabilities.

- **Visual type :-** Line chart - Selected for its ability to clearly show trends over time.



## Mission Status by Orbit type :-

- **Purpose** :- This pie chart visualizes the distribution of missions based on the types of orbits they targeted, as well as the status of these missions.
- **Analysis** :- The pie chart provides a clear understanding of how different orbit types contribute to ISRO's overall mission portfolio. It also indicates the success rates for each orbit type, which can be valuable for strategic planning.
- **Visual type** :- Pie chart - ideal for showing the proportions of different orbit types and their associated mission status.

## 3. Total missions by orbit type and launch vehicle :-

- **Purpose** :- This visual is a stacked bar chart that analyzes the relationship between orbit types and launch vehicles used for these missions.
- **Analysis** :- By analyzing this chart, one can see the compatibility of different launch vehicle with various orbit type. This information can be critical for future mission planning and vehicle development.
- **Visual type** :- Stacked Bar Chart - Chosen to compare different orbit types while showing the contribution of each launch vehicle.



#### 4. Applications of Missions :-

- **Purpose** :- This line chart visualises the primary application of ISRO's missions, such as Earth Observation, Planetary Exploration and others.
- **Analysis** :- The chart provides insights into ISRO's strategic priorities by showing how to focus on different applications has evolved.
- **Visual type** :- Line chart - Used to track changes in mission applications over time.

#### 5. Launch mission Analysis by Year :-

- **Purpose** This donut chart breaks down the number of applications, the count of launch vehicles, and the total missions by year.
- **Analysis** :- The chart is useful for comparing the volume of different mission applications year by year; offering insights to how ISRO's mission portfolio has expanded or shifted focus over time.
- **Visual type** :- Donut Chart - Selected for its ability to show proportions within categories over time.

#### Conclusion :-

This report, based on the ISRO's Space Mission Analysis, effectively distills complex data into an accessible format. By using clear visuals and concise explanations, the dashboard provides a comprehensive overview of ISRO's space mission activities.