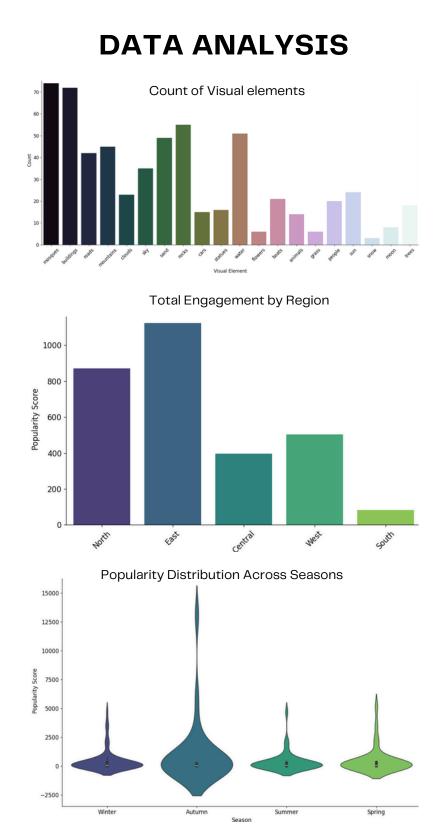# آفاق Afaq

INTRODUCTION

Saudi Arabia offers rich natural beauty and culture, yet many destinations remain overlooked. This project analyzes Flickr images and metadata to uncover hidden gems, reveal seasonal trends, and highlight visual features that promote sustainable tourism.
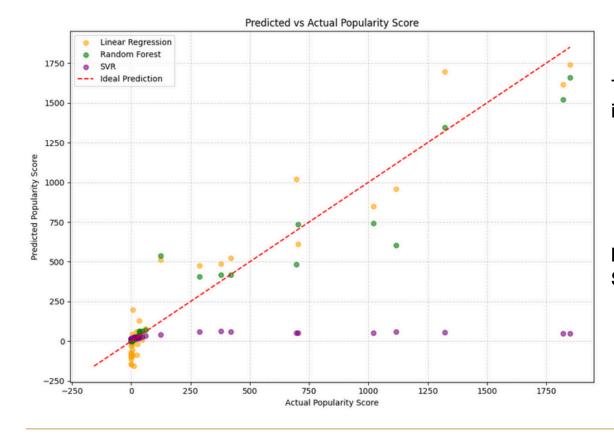
OBJECTIVES

- Which attractions in Saudi Arabia deserve more attention based on public photo data?

- How does destination popularity change by season?

- What time of day draws the most photo engagement?

- Which visual elements appear most in popular photos?

- What destination types do visitors prefer most?

- Which region shows the highest tourism appeal in photos?

DATA COLLECTION

آفاق Afaq

flickr
API INTEGRATION

3. Extracted visual/sentiment features using Afaq

2. Retrieved using Flickr API

1. 199 public photos from 5 Saudi regions

DATA ANALYSIS

Count of Visual elements

Total Engagement by Region

Popularity Distribution Across Seasons

MODELS AND FINDINGS

Predicted vs Actual Popularity Score

The regression models were developed to predict the Popularity Score, helping identify high engagement tourism content in Saudi Arabia.

- Linear Regression (baseline)
- Random Forest Regressor
- Support Vector Regressor (SVR)

Evaluated using Mean Absolute Error (MAE), Mean Squared Error (MSE), Root Mean Squared Error (RMSE), and R^2 Score

Random Forest Regressor performed best, with RMSE = 576.70 and R^2 = 0.93. It captured over 93% of engagement variance, making it effective for identifying high-interest tourism content and guiding promotion strategies in Saudi Arabia.

CONCLUSION

In conclusion, this study demonstrated the value of using public photo data to uncover tourism engagement patterns across Saudi Arabia. Results showed that autumn had the highest engagement overall, particularly in the northern, eastern, and central regions. Daytime photos received more interactions in most regions, except for the western region, where nighttime photos were more popular. Mountain, coastal, and historical landscapes stood out as the most appealing, driving higher engagement. Among all regions, the eastern region had the highest tourism appeal based on photo interactions, followed by the northern region, while the southern region had the lowest engagement, highlighting opportunities for targeted promotion.