

INTRODUCTION

Riyadh, the capital of Saudi Arabia, relies heavily on cars for transportation. The Riyadh Metro, a major project aimed at reducing traffic and fuel usage, is nearing its launch. To ensure its success, this study evaluates its walkability and accessibility by comparing it with the metro systems of Dubai and Madrid, identifying strengths and areas for improvement to better serve the city’s needs.

OBJECTIVES

- 01
- Answer Questions: Provide detailed responses to the questions related to the analysis.
- 02
- Compare and Analyze: Conduct a comparative analysis to highlight key similarities and differences.
- 03
- Explain Results: Begin by presenting and discussing the outcomes obtained from the Exploratory Data Analysis (EDA).

DATA COLLECTION

- 01
- Google Maps extractor
- 02
- Foursquare API
- 03
- Folium Library
- 04
- Google Maps My Maps
- 05
- chat GPT and replit
- 06
- Haversine library

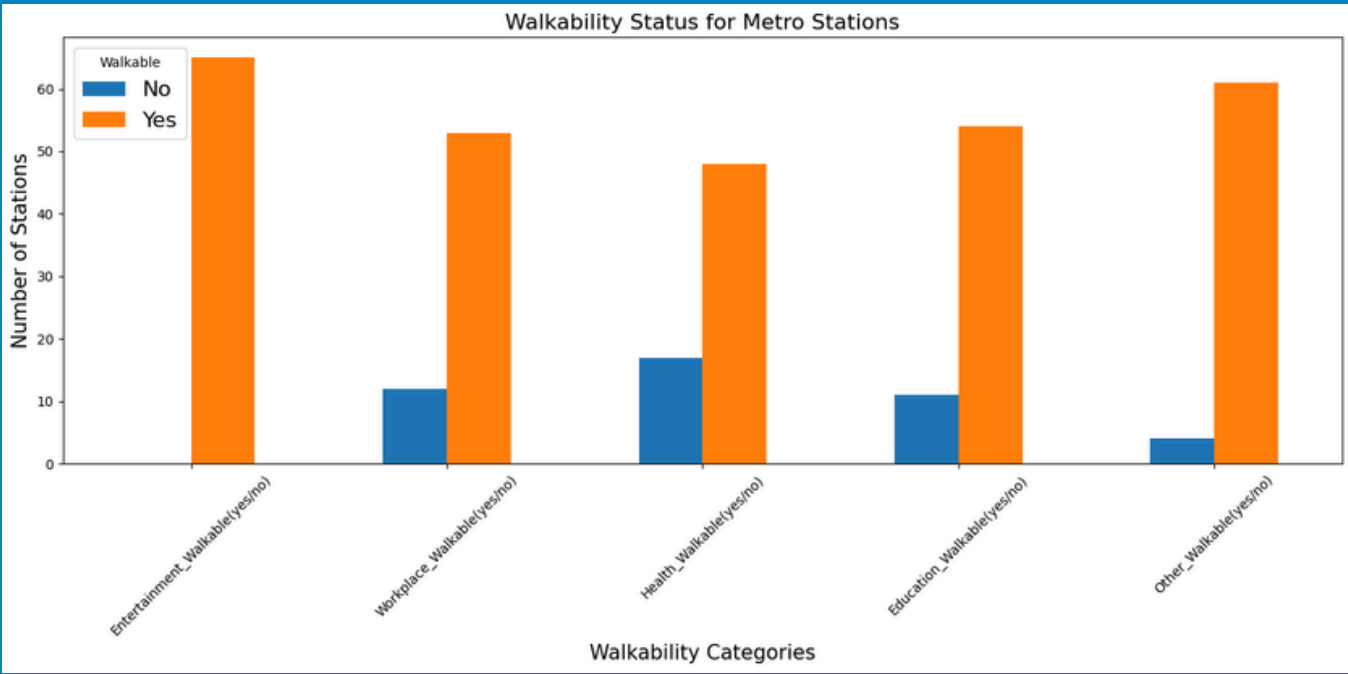
FINDINGS

- Riyadh Metro stations are considered very well distributed especially compared to Dubai’s very basic metro system
- The subset of data we gathered for Riyadh bus stations showed that many attractions have no nearby station meaning they are not well distributed considering many are not open yet.
- Dubai Metro: Demonstrates exceptional walkability through tourist areas and direct station-to-attraction connections.
- Madrid Metro: Excels in dense urban planning with stations placed close to key attractions, enhancing accessibility.

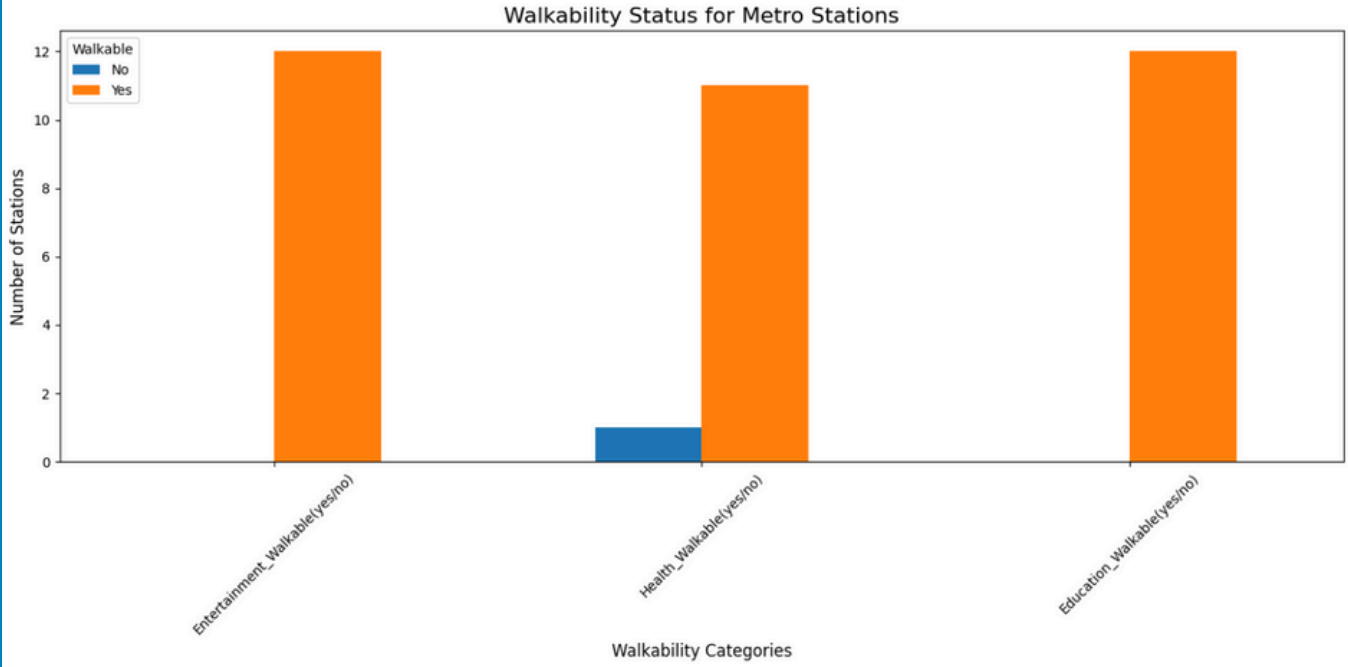
CONCLUSION

The Riyadh Metro has the potential to significantly improve urban mobility by reducing traffic, fuel consumption, and car reliance. A comparison with Dubai and Madrid's metro systems highlights the need for better bus station proximity to key attractions and enhanced pedestrian infrastructure. Drawing from Madrid's integrated transit networks and Dubai's walkable station design, Riyadh can adopt best practices to create a sustainable and efficient metro system that aligns with its urban development goals.

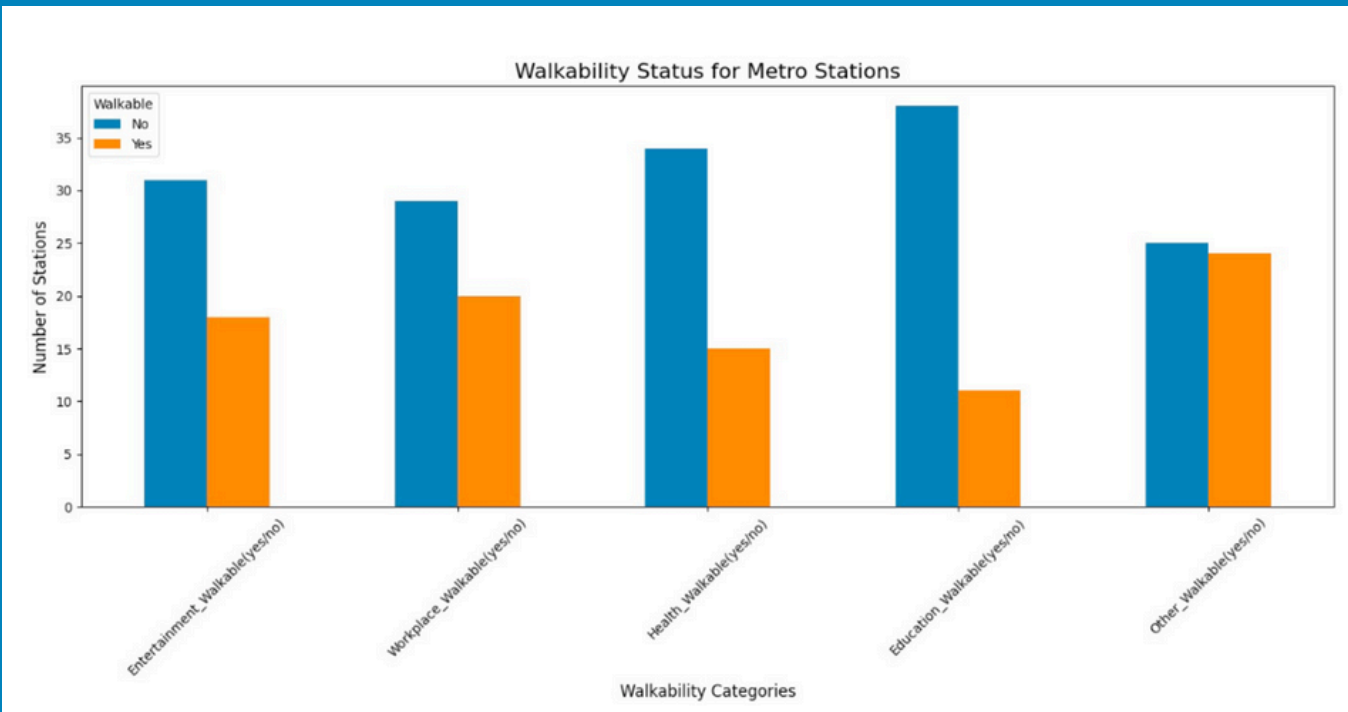
DATA ANALYSIS



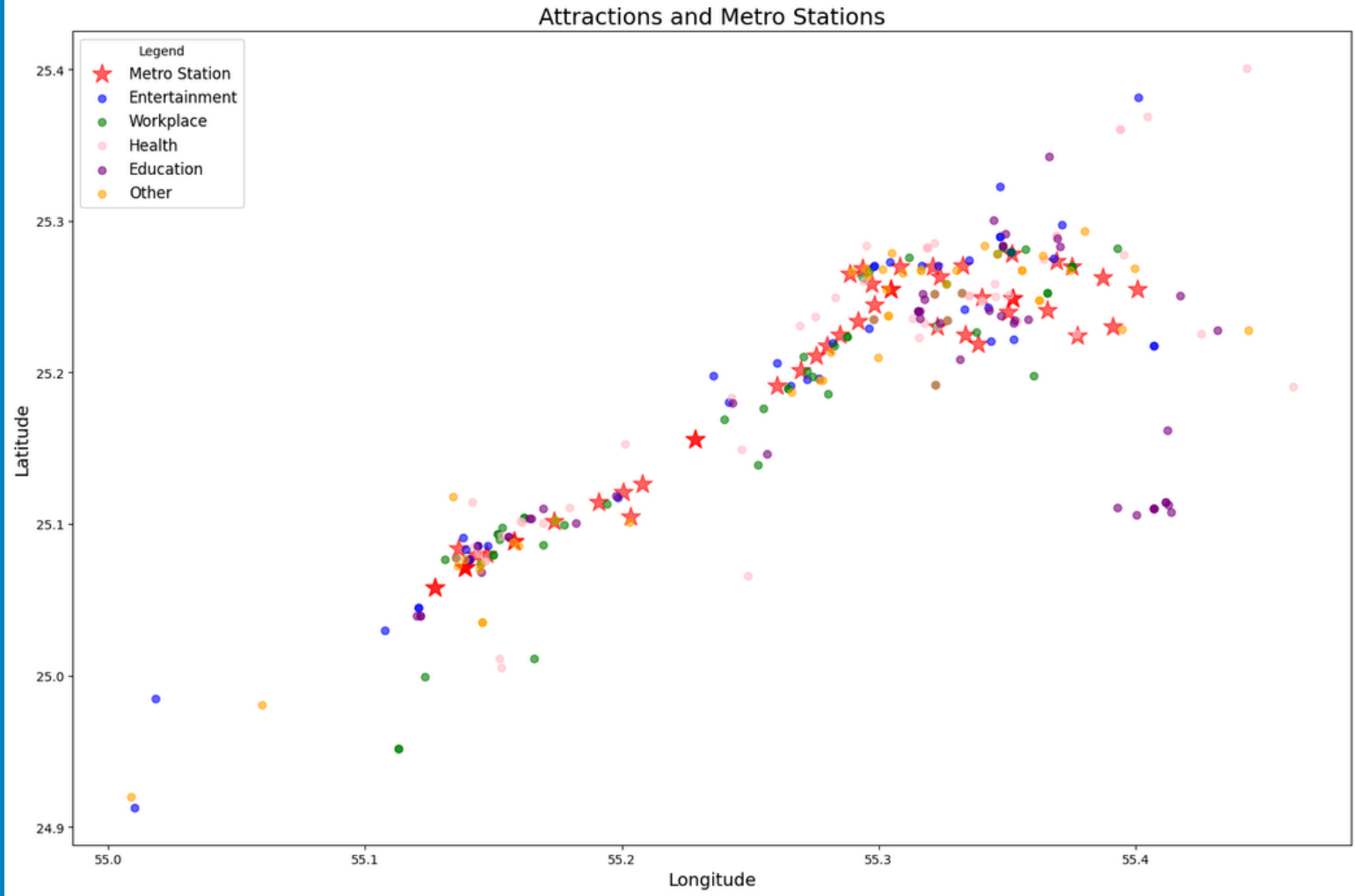
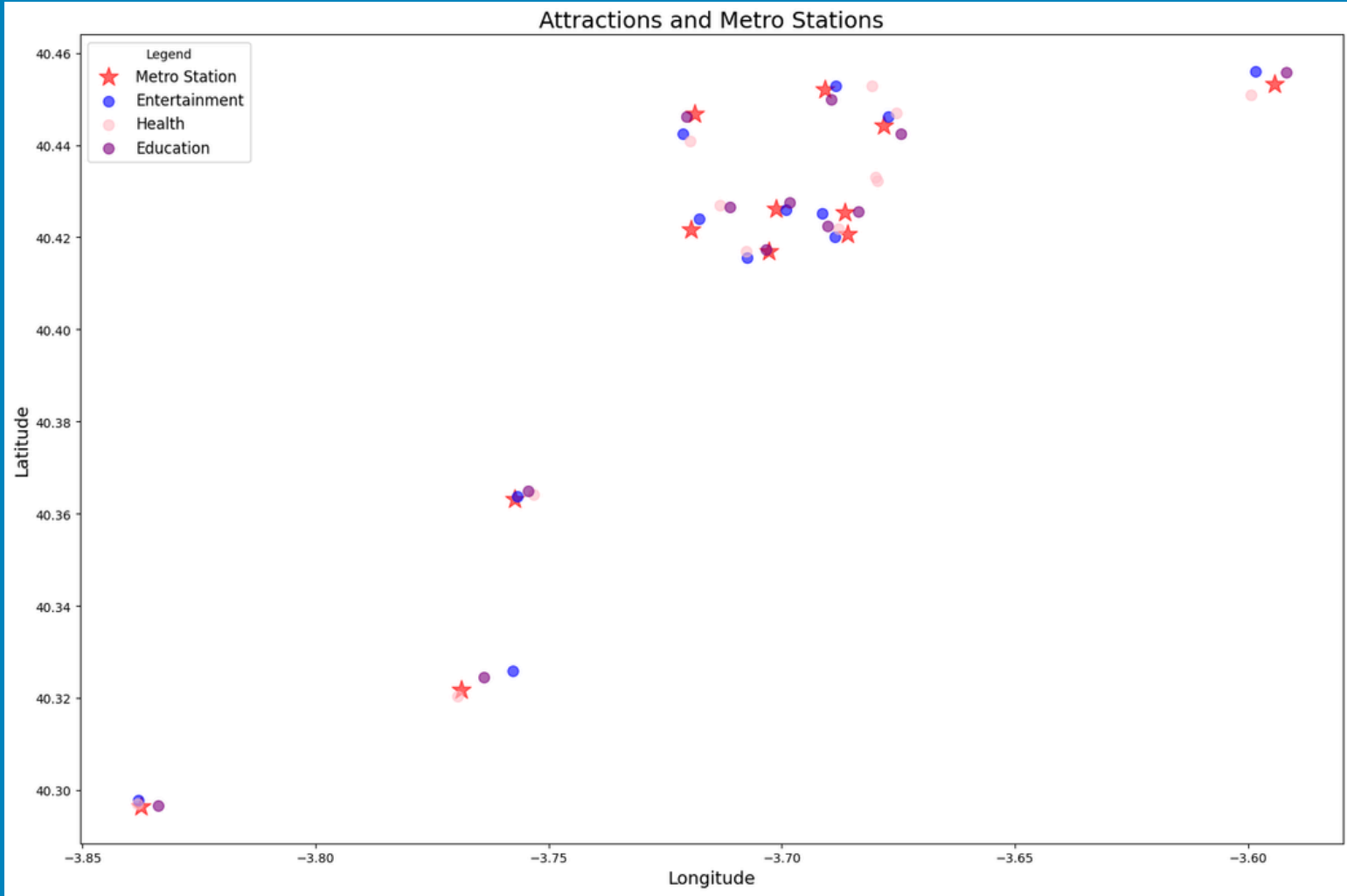
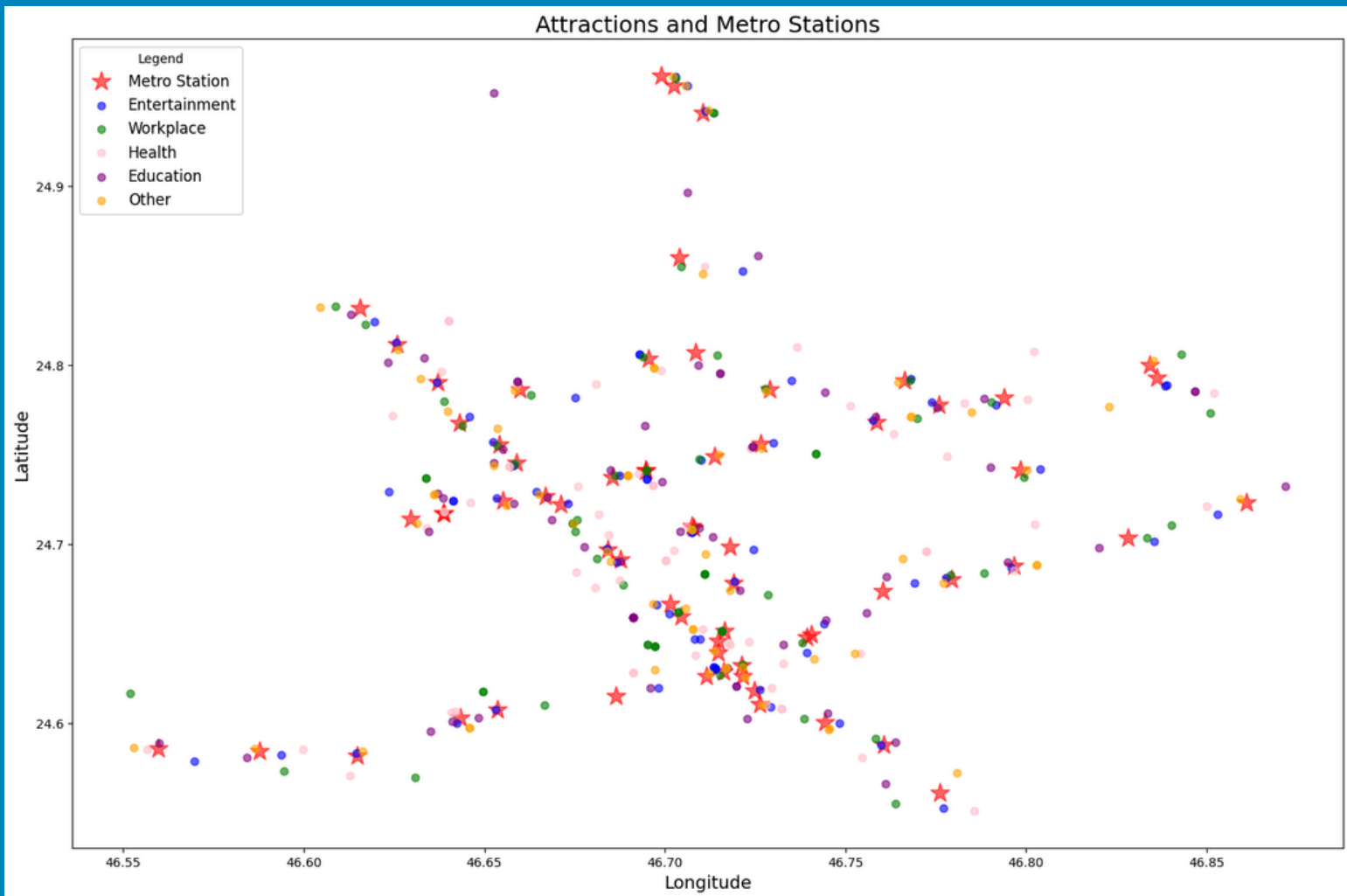
Walkability Status for Riyadh Metro Stations



Walkability Status for Madrid Metro Stations



Walkability Status for Dubai Metro Stations



Visualizing the metro stations and different attrctions with radius 2000m on map