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TOURISMO Final Conference

9th of June 2026

Valletta, Malta

Limassol: A Smart Pilot for Sustainable Visitor Management in the Heart of Limassol.
Rakis Pieridis-Development Agency of Lemesos LTD



Project Overview

Analysis period: 07 Jan 2026 – 30 May 2026

Pedestrian traffic collected from multiple locations

Goal: understand movement patterns and predict future traffic

Analysis includes forecasting and regression



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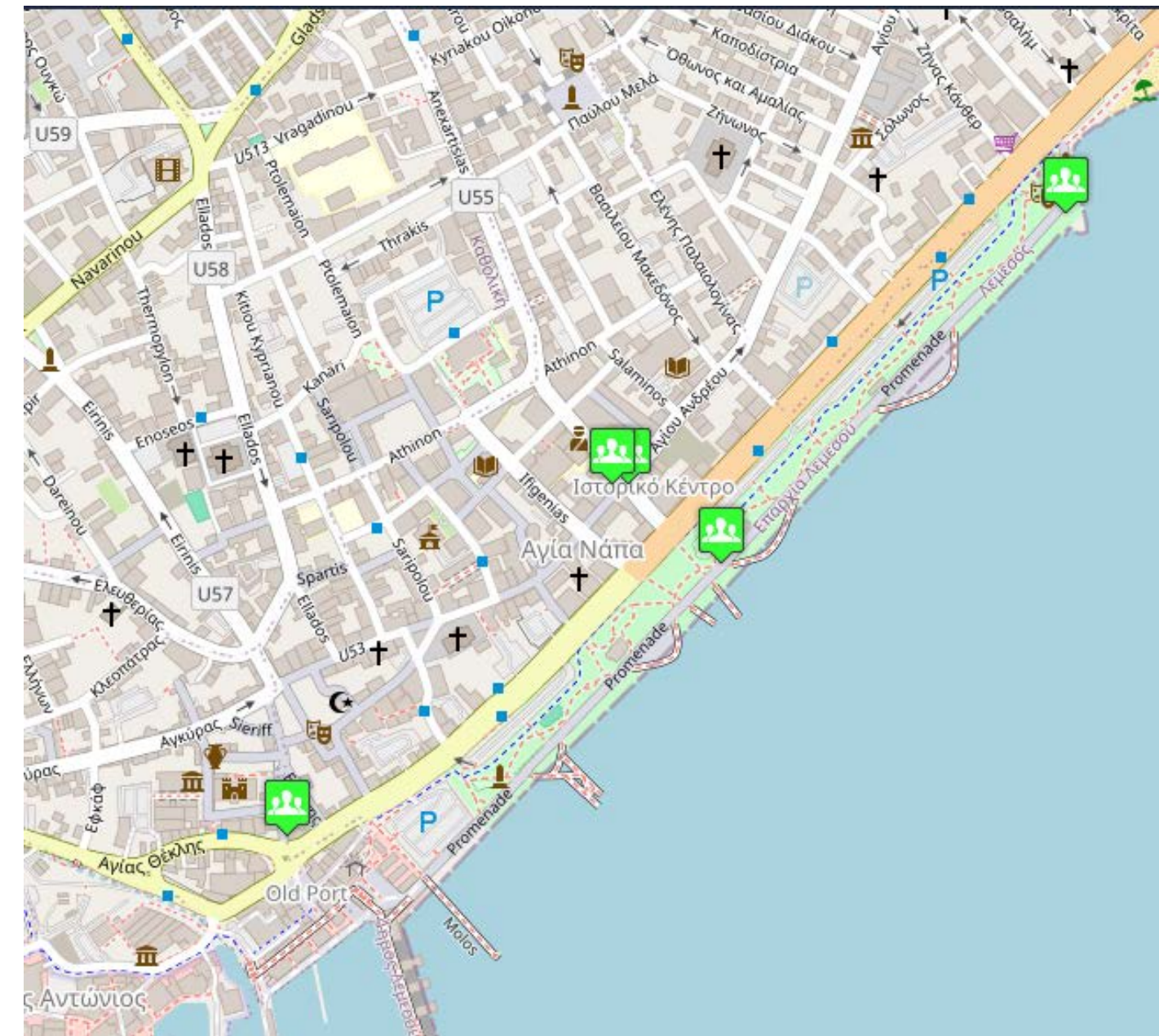


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Data Collection Network

Five monitoring locations were analyzed:

- ANEXARTISIAS
- AGIOU ANDREOU
- KASTRO
- MOLOS1
- MOLOS2



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Privacy and Data Protection/Advantages

- Improves safety and security along the seafront.
- Works effectively day and night, even in low-light conditions.
- Detects heat and movement instead of capturing detailed images.
- Does not record identifiable facial features, helping to protect privacy.
- Supports GDPR principles by limiting the collection of personal data to what is necessary for safety purposes.

**General
Data
Protection
Regulation**



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Locations of thermal cameras



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Traffic Analysis Methodology

Combined all monitoring
points into a single indicator
(Total Traffic)

- Created temporal features:
- Hour of day
- Day of week
- Month
- Weekend
- 4-hour time zones



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Analytics

Objectives of Data Analysis

To identify traffic trends, peak hours, and unusual events.

- Peak traffic periods
- Relationships between locations
- Clusters of similar days



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Traffic by Day



Saturday and Sunday had the highest pedestrian activity



Weekdays still show strong movement because of work and shopping



Tuesday had the lowest overall traffic



Weekend activity is more concentrated during evening hours



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Peak Hours

Highest activity observed between 16:00 – 20:00

Evening movement is significantly higher than early morning

Peak hours are important for events and staffing

Traffic decreases after 20:00



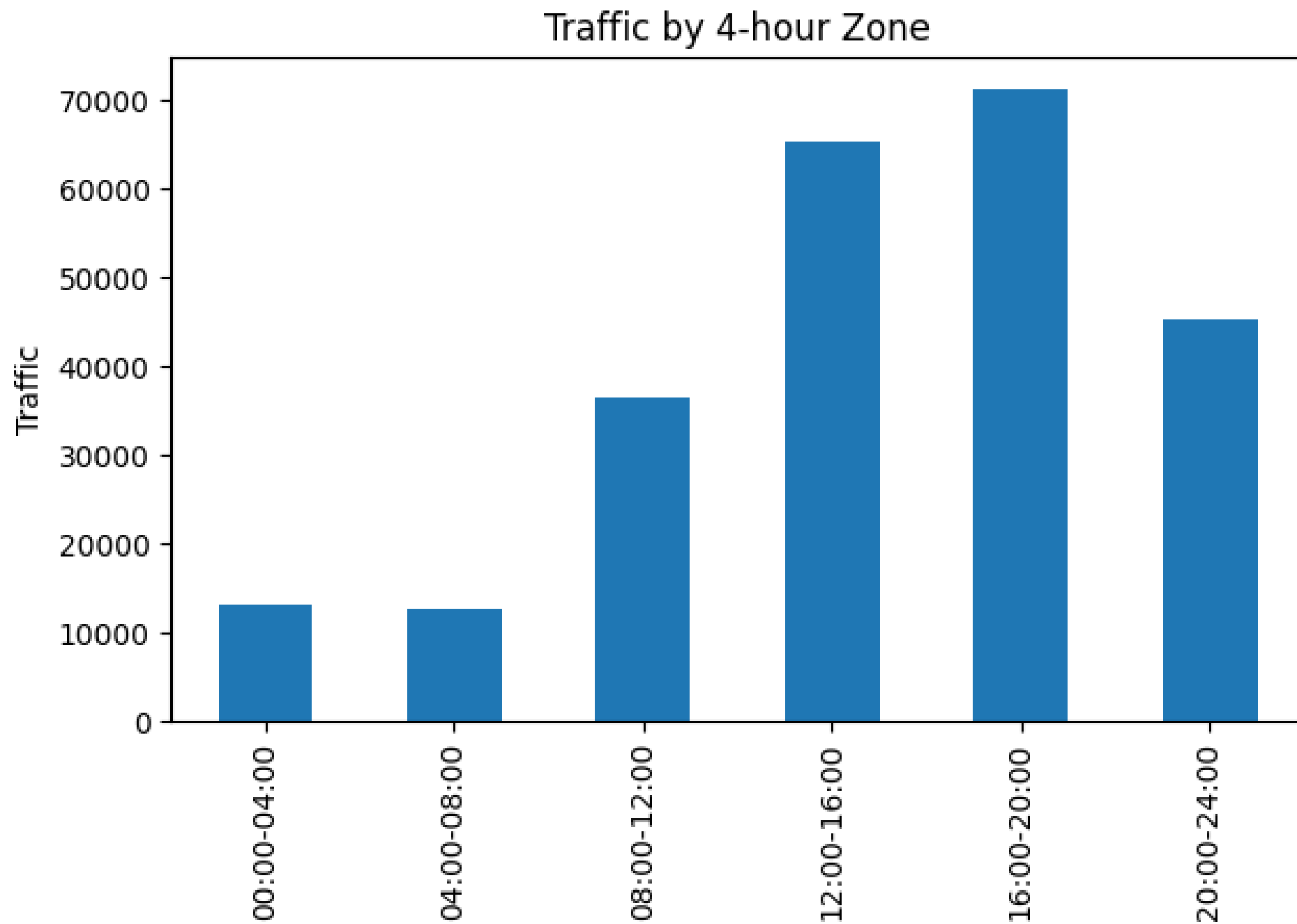
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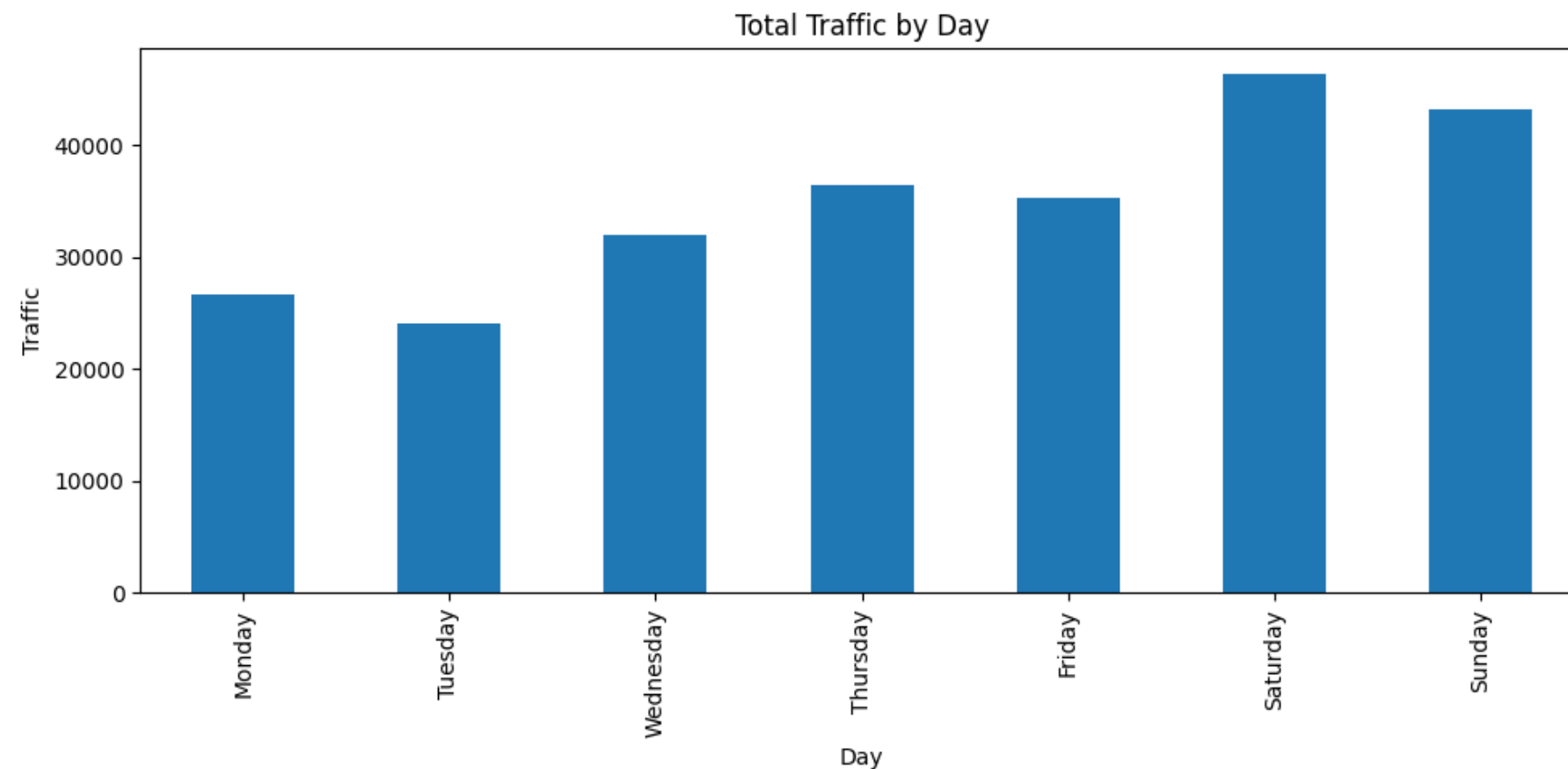
Peak-hour regression



- The 4-hour zone analysis indicates that traffic activity is significantly higher from midday to evening.
- The 16:00–20:00 period shows the highest traffic levels, followed by the 12:00–16:00 period.



Weekend vs Weekday behavior



- Weekdays generate higher overall traffic volumes due to the larger number of recorded observations. However, weekends show higher average traffic levels, indicating more concentrated traffic activity during active periods.
- Weekdays generate higher overall traffic volumes (154,564) because they include a much larger number of recorded observations (6,342 intervals). In contrast, weekends have lower total traffic (89,520) but a higher average traffic level per observation (37.9 compared to 24.4).

Category	Total	Average
Weekday	154,564	24.4
Weekend	89,520	37.9



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Monthly Trends

- January recorded the highest traffic levels
- March also showed strong movement
- April and May had lower recorded traffic
- Seasonality patterns can support forecasting



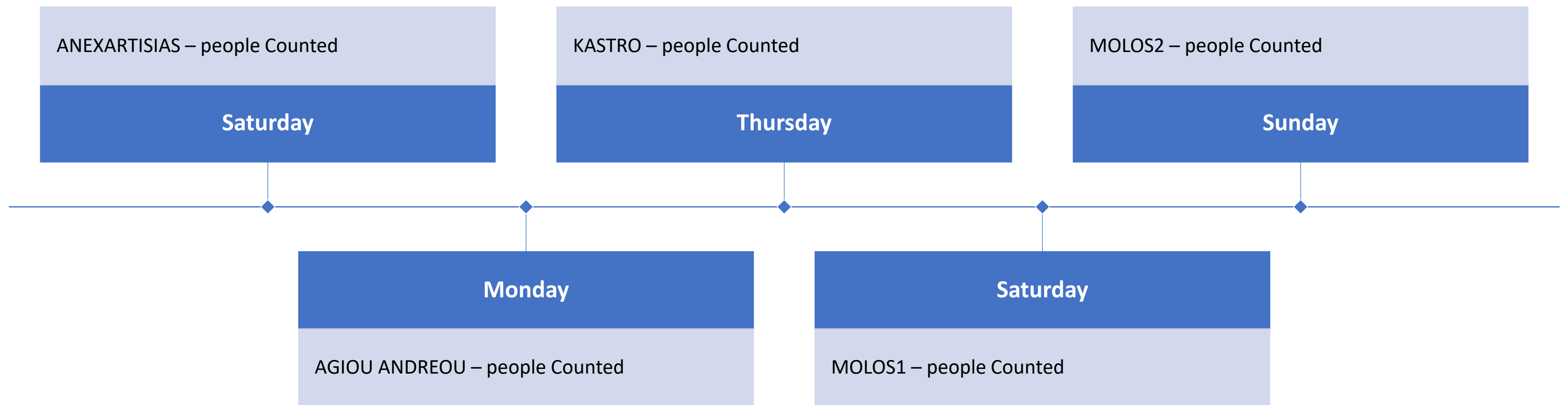
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Location-Top Day



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Spatial lag analysis

- The strongest traffic relationship was found between MOLOS1 and MOLOS2, indicating connected movement between nearby waterfront areas within 15–30 minutes. Weaker but noticeable links were also observed between KASTRO and AGIOU ANDREOU.
- KASTRO ↔ AGIOU ANDREOU show weaker correlations (~ 0.33)



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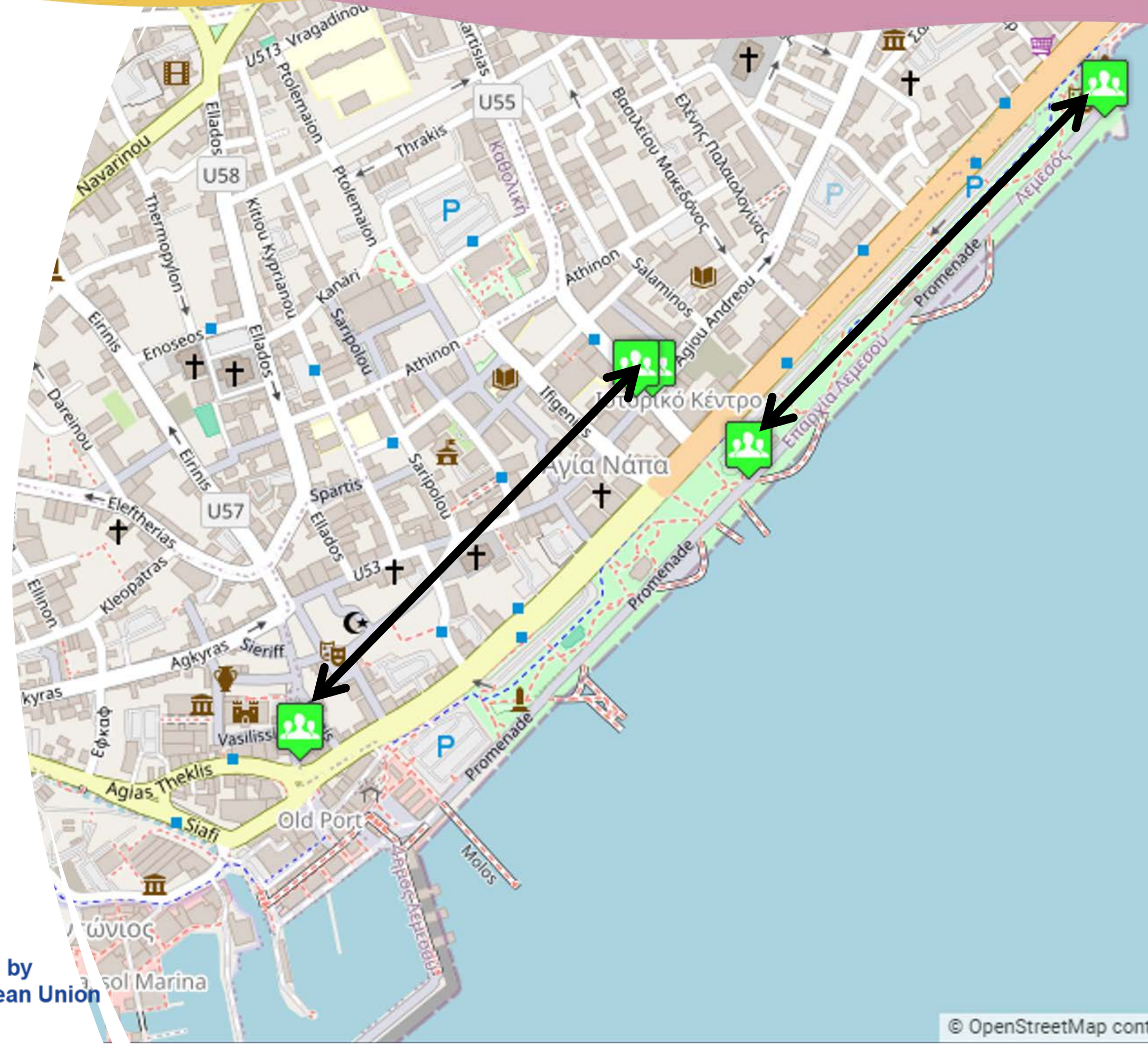
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Correlation between locations

- Strongest correlation: MOLOS1 ↔ MOLOS2 (up to 0.58 at 15 minutes) Indicates connected pedestrian flows along the seafront
- KASTRO ↔ AGIOU ANDREOU show weaker correlations (~0.33)



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Conclusions



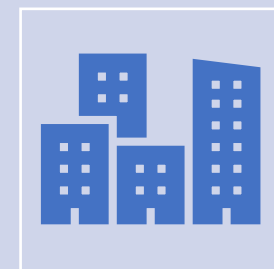
Results can support event planning



Useful for cleaning and operational scheduling



Can help businesses understand customer movement



Supports tourism and Smart City initiatives



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Making
the **Mediterranean**
Green Transition
happen

