Spatial Data Analysis of the *Kazakhstan Defense Enterprise Directory, 1995*

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OBJECTIVE

> Analyze and visualize defense enterprises in post-Soviet Kazakhstan to uncover strategic patterns.

DATASET INFORMATION

- Comprehensive coverage of over 37 defense enterprises transitioning to civilian markets.
- Directory provides detailed profiles, addresses, and business focuses.

VISUALS

- **Kepler.gl:**
  - Advanced filtering and layering based on 'Focus' classification.
  - Maps illustrate strategic clusters of enterprises.
- **Google My Maps:**
  - Simple user-friendly mapping of geographic distribution.

METHODS

- Used ChatGPT to extract structured data:
  - **Fields**: Name of Enterprise, Address, Primary Business, Conversion Projects, Contacts, Key Technologies.
- Enhanced dataset with a 'Focus' classification:
  - **Categories**: Civilian, Military, Hybrid, Unclassified.
- Geocoded addresses using the "Geocode by Awesome Table" extension.
- Visualized data using Kepler.gl and Google My Maps.

FINDINGS AND INSIGHTS

- **Strategic Placement of Military Enterprises:** Concentrated along the northern border with Russia.
- **Distribution of Civilian Enterprises**: Wide distribution aligns with higher population density.
- **Hybrid Enterprises**: Reflecting adaptability and industrial transitions.

REFLECTIONS

- **Challenges:**
  - Limited text extraction accuracy required manual data validation.
  - Classification nuances needed refinement for 'Hybrid' enterprises.
- **Takeaways:**
  - Visualization revealed strategic geographic patterns and highlighted policy impacts.
  - Collaboration between AI and human intervention improved data quality.

FUTURE DIRECTIONS

- Incorporate additional data layers (e.g., economic performance, and demographic trends).
- Explore the impact of regional policies on Kazakhstan's economic strategies.

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