

Japan in Numbers – Economic and Cultural Analysis

Documentation

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Introduction

The 'Japan in Numbers' project is an interactive Power BI report combining economic and cultural data to evaluate Japan's accessibility and attractiveness. It focuses on three main areas: currency exchange (JPY/PLN), cost of living in major cities, and global popularity of the Japanese language.

Business Problem

Due to economic volatility and growing cultural interest in Japan, individuals and businesses require reliable analysis of:

- JPY/PLN exchange rate fluctuations and their impact on travel/imports
- Comparative cost of living in major Japanese cities
- Popularity of the Japanese language across countries (relevant for schools, embassies, educators)

Data Used

Data Sources:

- Currency: JPY/PLN monthly data from NBP
- Living Costs: Numbeo (Tokyo, Osaka, Kyoto)
- Language Popularity: Google Trends, JLPT Statistics

Main Data Columns:

- Year, Month
- Exchange rate values
- Average prices (transport, housing, food, education)
- Language popularity index (0–100 scale)

Data Preprocessing

- Currency data was cleaned and transformed into monthly format. Living cost data was averaged by city and expense category. Language popularity index was based on relative values from Google Trends. A common date dimension table was created to integrate time-based analysis.

Solution Approach

- Data modeling: 3 fact tables (currency, cost, language) linked with a shared calendar table
- DAX measures:
 - Exch_Avg = AVERAGE(Currency[JPY/PLN])
 - Lang_YoY_MaxGrowth = MAXX(...)
 - Cost_Avg_JPY = AVERAGE(Costs[Value])
- Dashboards: Each topic is represented by a separate page with KPIs, charts, and maps
- Filtering: By year, city, cost category

Report Overview

Dashboard 1 – JPY/PLN Exchange Rate:

- Visuals: Line chart, YoY % change, KPI (highest, lowest, average rate)
- Insight: 2022 had the lowest rate (0.0243), encouraging travel/import

Dashboard 2 – Cost of Living:

- Cities: Tokyo, Osaka, Kyoto
- KPI: Average cost of living (¥), most/least expensive city
- Visuals: Bar charts, donut charts, expense breakdown
- Insight: Tokyo – highest housing prices, Osaka – highest childcare costs

Dashboard 3 – Japanese Language Popularity:

- Visuals: World map, trend line chart, KPI (top YoY growth)
- Top 3 countries: Nepal, Myanmar, Philippines
- Insight: Nepal ranks 100/100 in interest index

Benefits and Insights

- For travelers: Report aids in travel cost planning
- For analysts: Tracks economic shifts and currency impact
- For educators/institutions: Identifies new markets interested in Japanese language
- For companies: Supports operational cost evaluation and market expansion strategies

Conclusion

The 'Japan in Numbers' report delivers cohesive, interactive insights combining economic and cultural perspectives. Power BI enables quick data interpretation and informed decision-making through clear visuals and KPIs. It serves tourists, investors, and educational institutions alike.