



Department of Motor Vehicles

2023 EDITION

WHAT ONONDAGA DRIVES?

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IST 719 Information Visualization - Prof. Christy Khouri

STORY

In 2023, Onondaga County's residents expressed their automotive preferences clearly, choosing spacious suburban models and favoring Chevrolet, indicative of a lifestyle that values comfort and brand reliability. The surge in new vehicle registrations underscores a robust market, while the dominance of renewals reveals a community invested in vehicle longevity. Let's peel back the layers of these trends to uncover what they suggest about the evolving relationship between Onondaga's drivers and their vehicles.

MOTIVATION

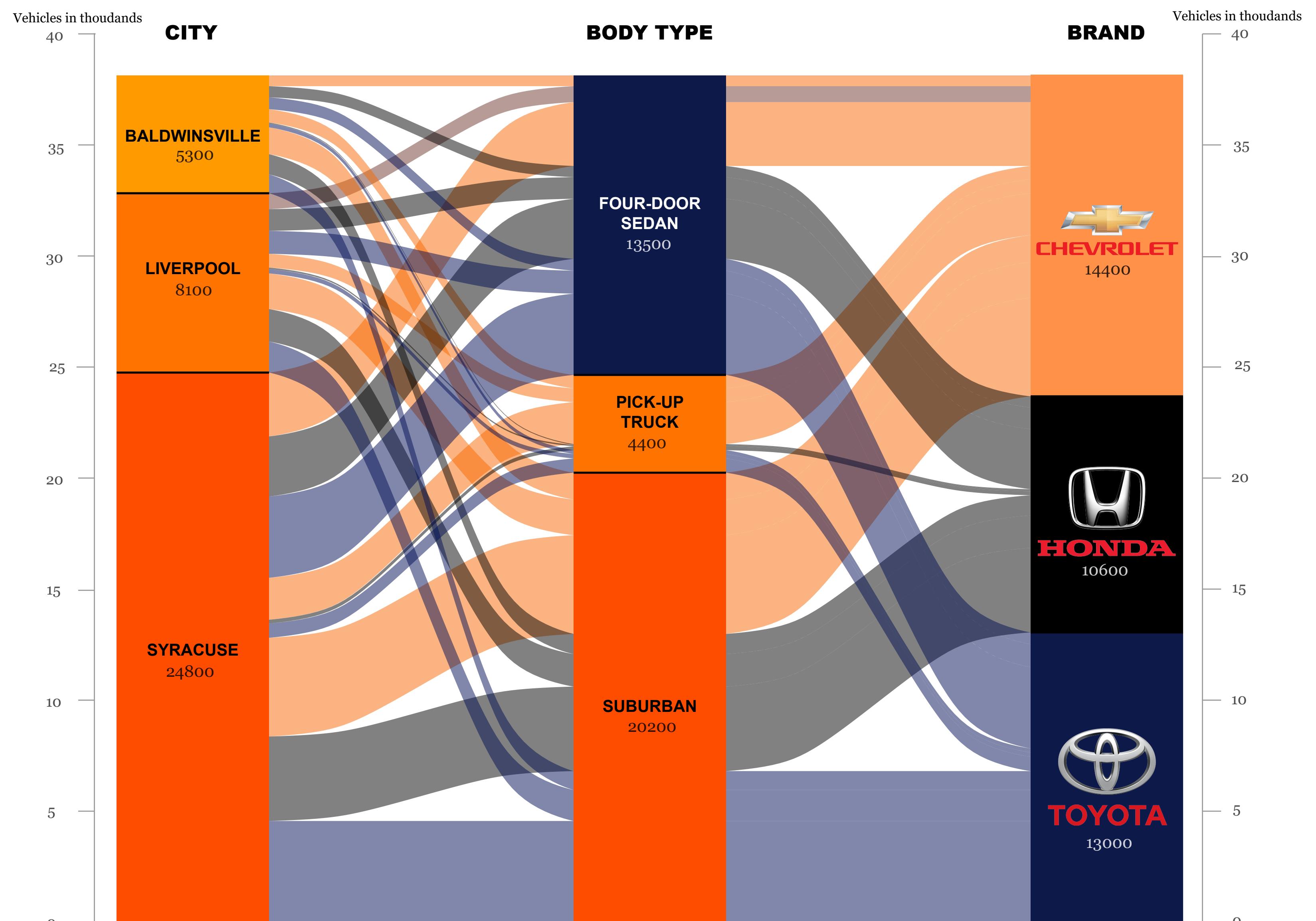
Transport planners, automotive dealers, and residents pondering their next vehicle purchase, motivated by the convenience of readily available repairs and spares, will be particularly captivated by this data. These insights not only shape transport infrastructure and commercial strategies but also help consumers align with the majority for practical benefits, which brings us to the core inquiry: What are the top 3 body types and brands in Onondaga County's top three cities?

DATA DESCRIPTION

This comprehensive dataset encapsulates 193,055 records, spanning 14 columns, encapsulating the spectrum of vehicle registrations in Onondaga County for the year 2023. Core to our analysis are the variables 'City', 'Body Type', and 'Make'—key signifiers used to aggregate and categorize the data, revealing prevailing vehicle preferences across the region's diverse communities.

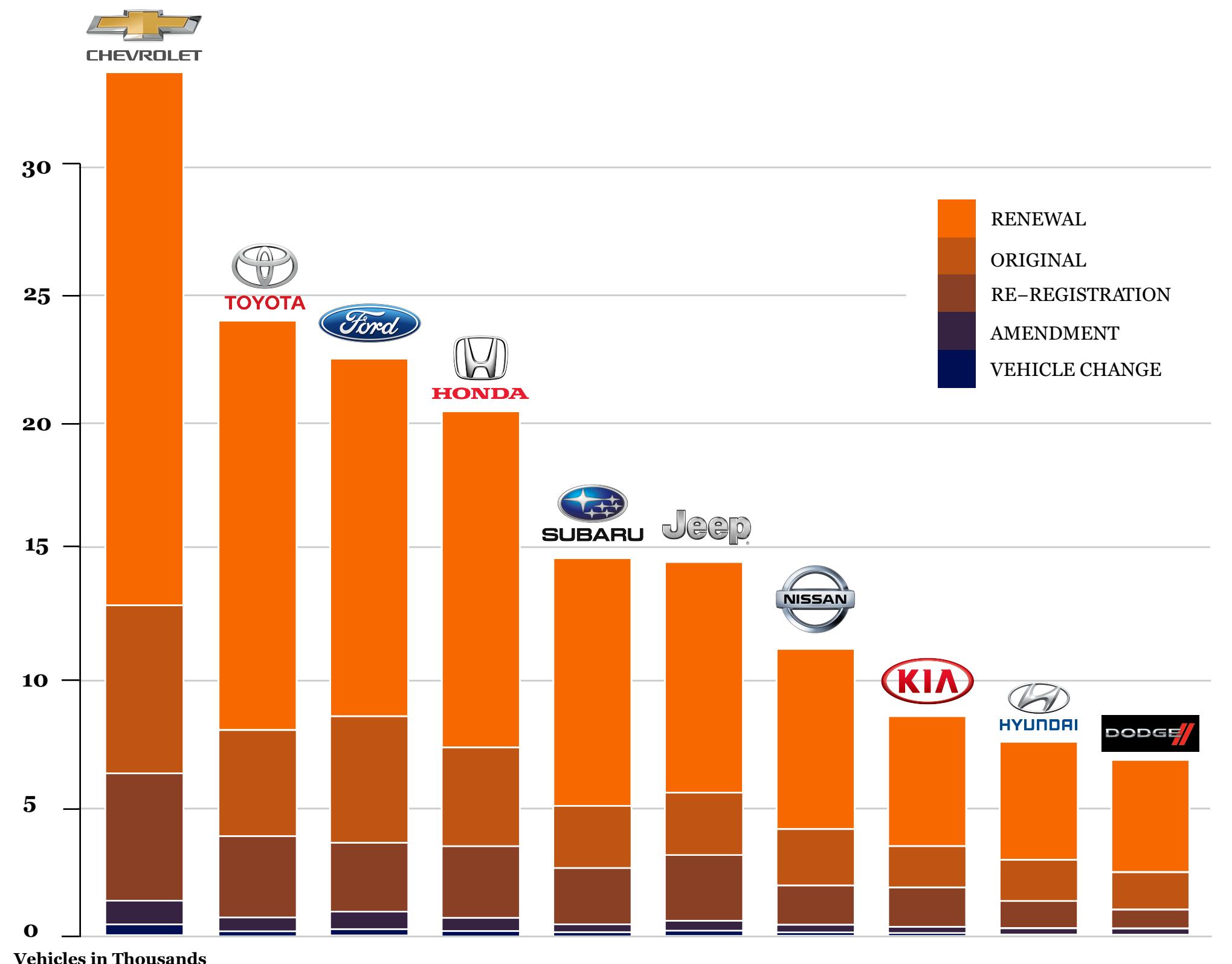
WHAT ARE THE TOP 3 BODY TYPES AND BRANDS IN ONONDAGA COUNTY'S TOP THREE CITIES?

Syracuse emerges as the city with the greatest volume of vehicles, exhibiting a strong inclination towards suburban body types. Baldwinsville, while having fewer vehicles overall, shows a balanced variety among popular body types. Liverpool displays a similar pattern to Syracuse but with a smaller scale of vehicle ownership. In terms of brand popularity across these cities, Chevrolet takes the lead, followed by Honda and Toyota, indicating a diverse yet specific brand loyalty among the residents. The intertwining lines suggest that while certain brands and body types are universally favored, each city has its unique automotive signature.



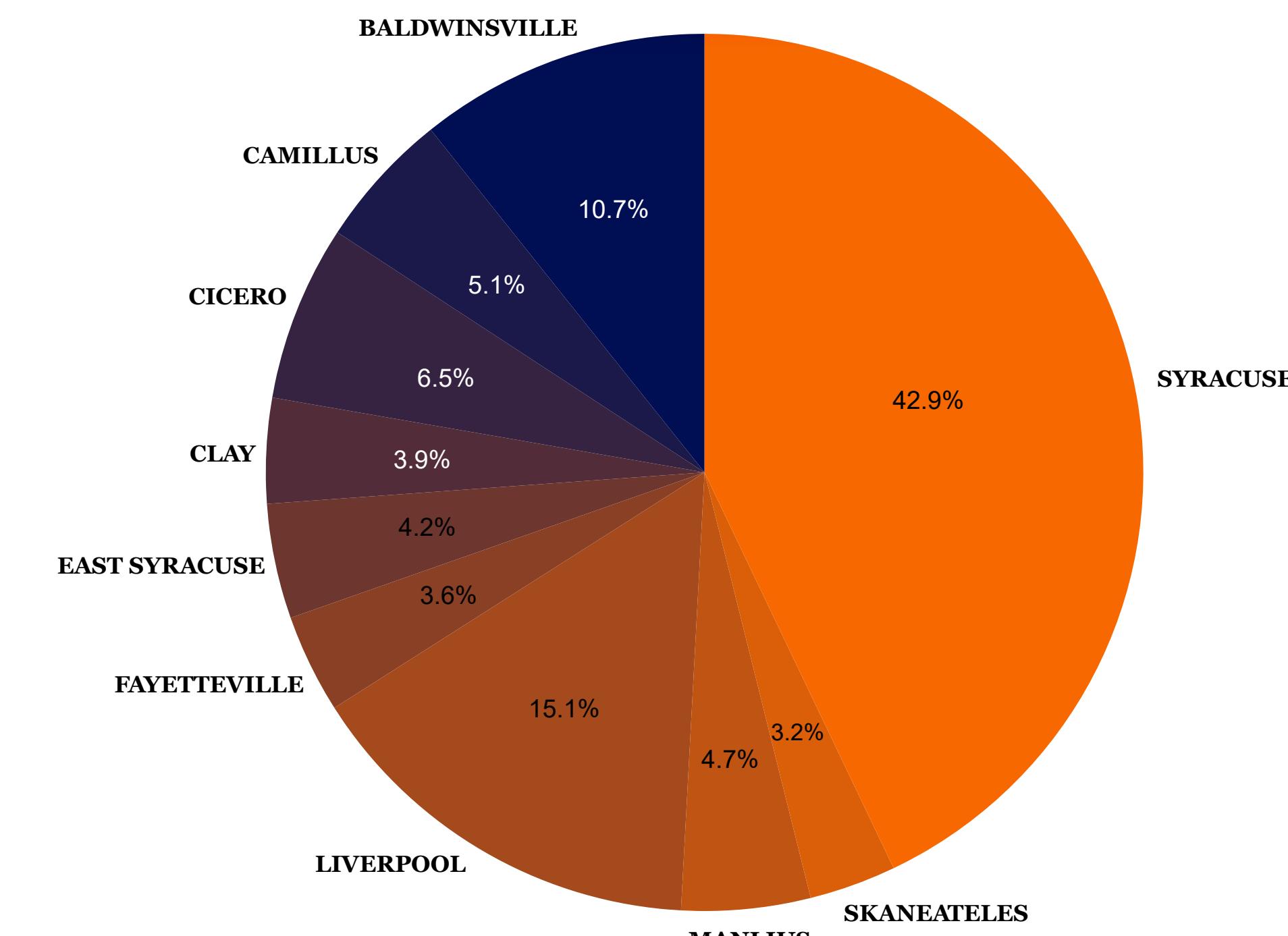
WHAT'S THE LEADING DMV TRANSACTION IN TOP BRANDS?

Renewals dominate DMV transactions, signaling strong brand loyalty, particularly for Chevrolet, Toyota, and Honda owners. Subaru and Jeep stand out for their notable share of new registrations, highlighting a dynamic market for brand-new vehicles.



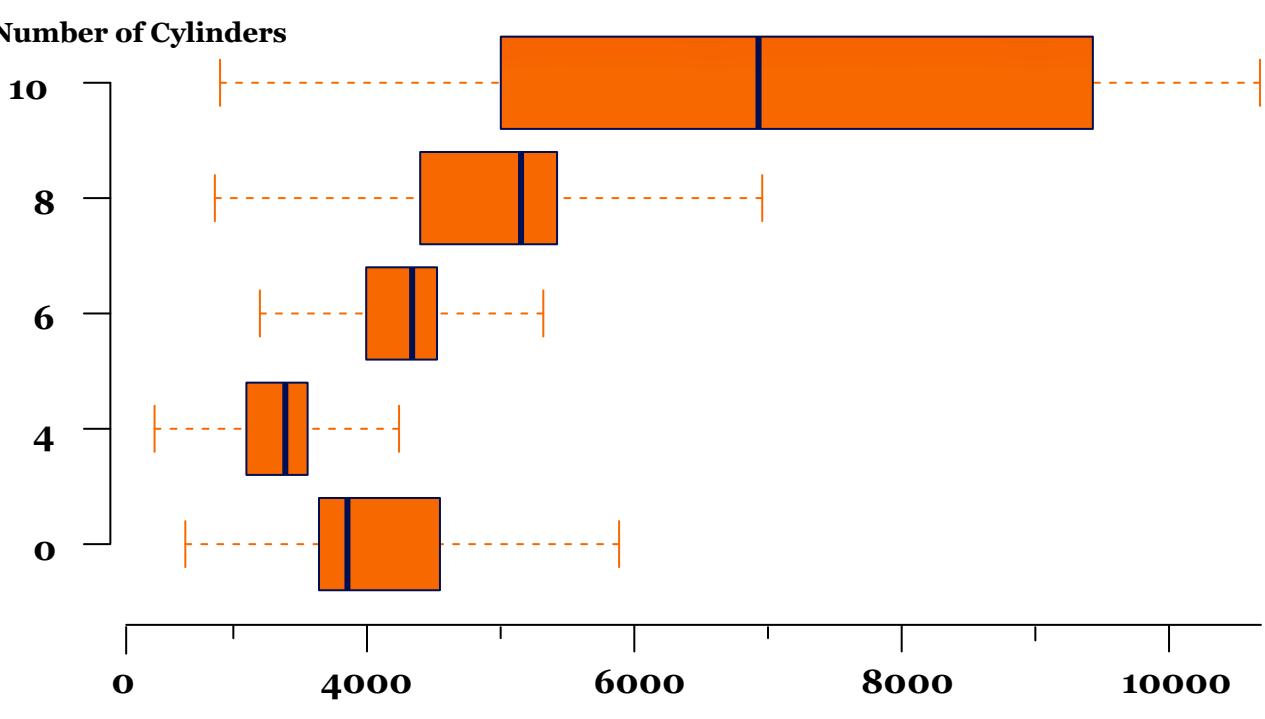
TOP 10 CITIES OF ONONDAGA BY DMV TRANSACTIONS

Syracuse leads the way with over 40% of DMV transactions, a reflection of its urban prominence, while Fayetteville and Baldwinsville also show significant activity, hinting at their growing automotive markets within Onondaga County.



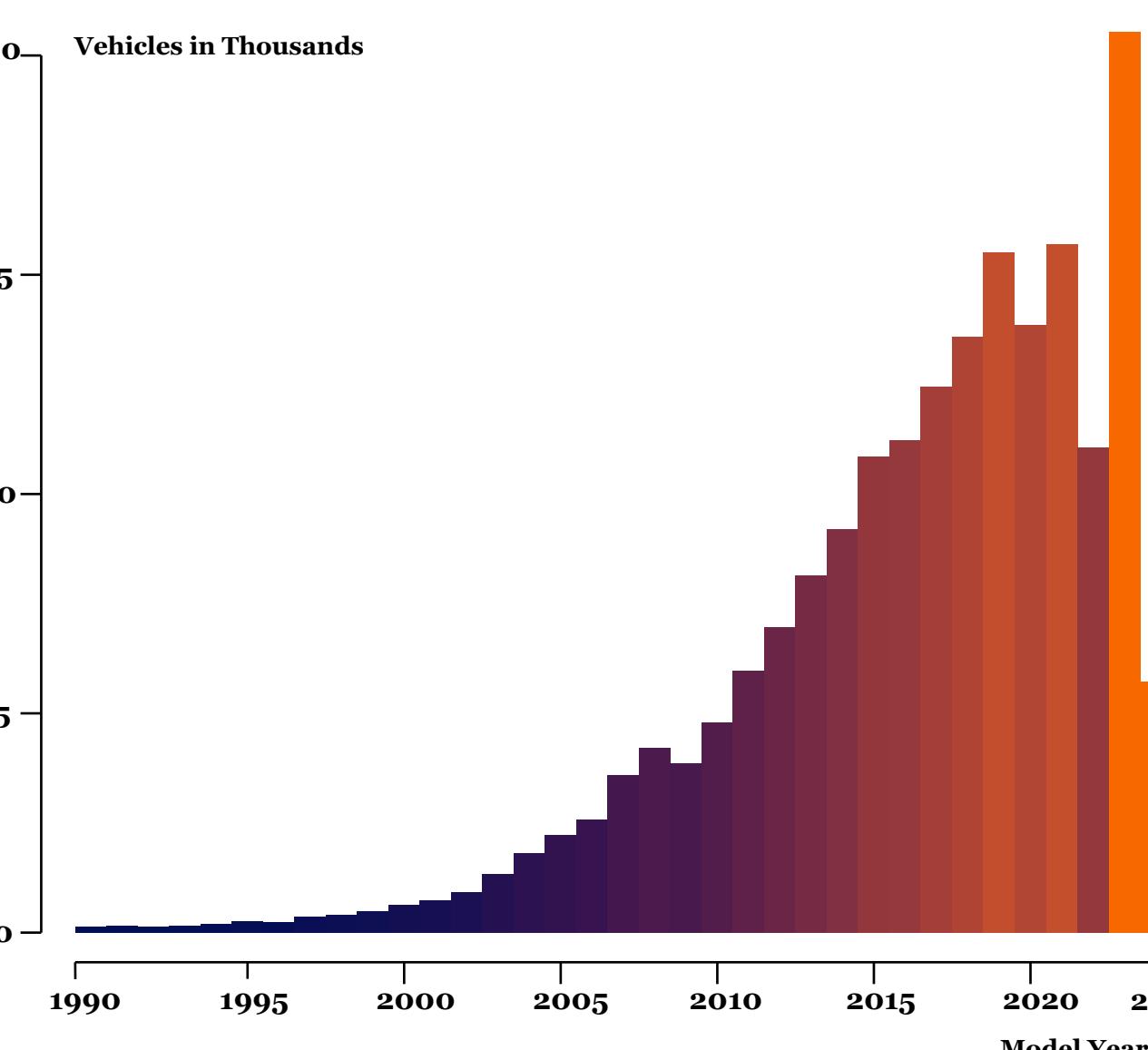
VEHICLE WEIGHT DISTRIBUTION BY ENGINE SIZE

DMV data reveals electric vehicles (0 cylinders) span a wide weight range, while heavier weights are linked to vehicles with higher cylinder counts, particularly those with 10 cylinders.



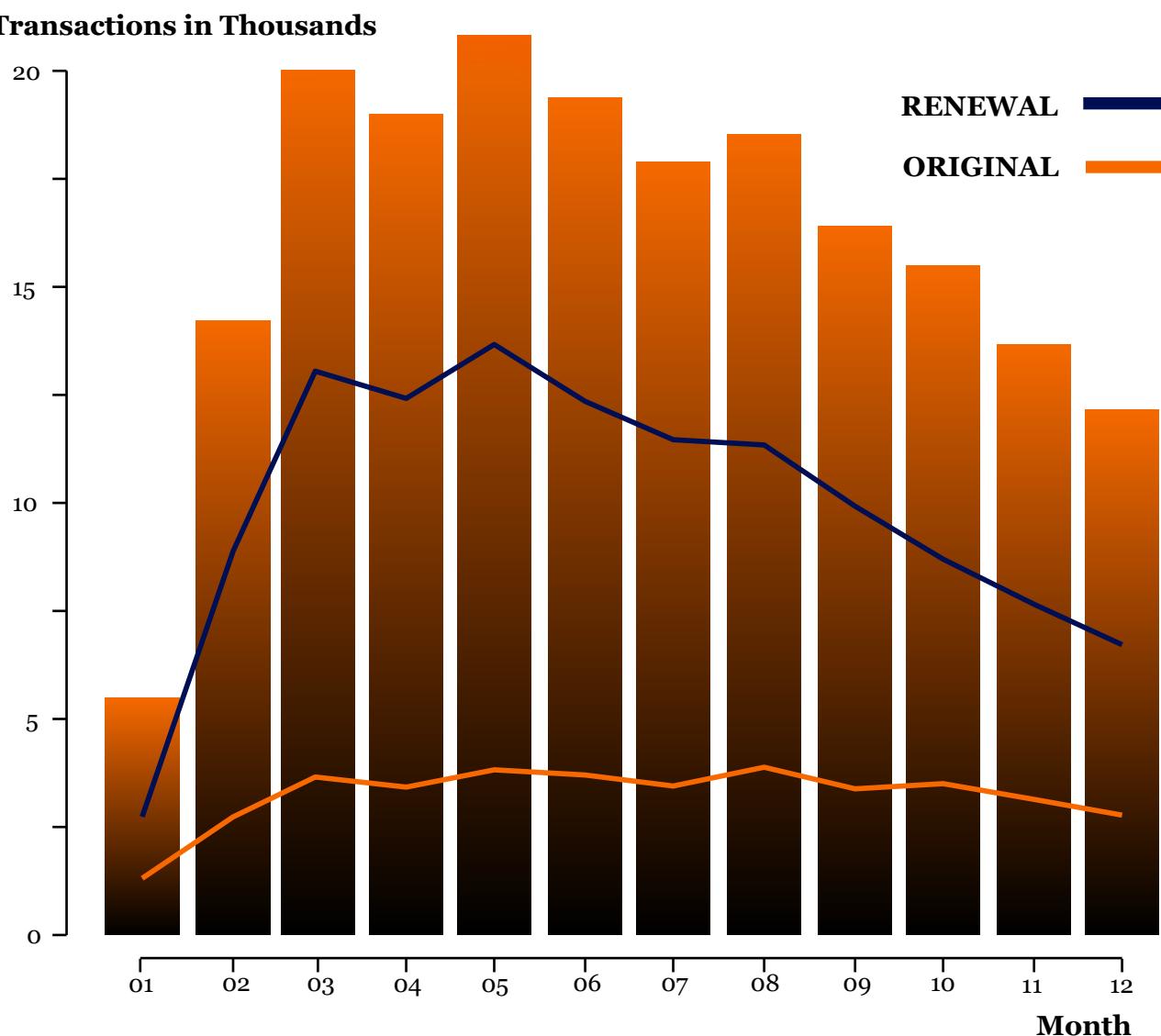
VEHICLE MODEL YEAR DISTRIBUTION

Registrations in 2023 lean sharply towards newer models, suggesting a decline in older vehicle retention.



HOW DO ECONOMIC CYCLES REFLECT IN DMV?

Mid-year DMV renewals spike in sync with economic highs, as steady new registrations suggest year-round market stability.



DATA SOURCE

NY State DMV Transactions: data.ny.gov/Transportation/Department-of-Motor-Vehicles-Registration-Transact/s2dd-yksa/about_data (Filtered Registration Class: PASSENGER, Residence County: ONONDAGA, Effective Dates: 01/01/2023 to 01/01/2024)

GitHub Repository: github.com/skumbham/IST_719_NYDMV_Onondaga_Analysis

Required R Packages: ggplot2 | dplyr | maps | plotrix | RColorBrewer | treemapify