

# **Hudson Valley Acupuncture Market Analysis**

A Comprehensive GIS-Based Market Assessment

New York City to Albany Corridor

Prepared Using ArcGIS Pro

December 2025

## Executive Summary

This report presents a comprehensive GIS-based market analysis identifying optimal locations for acupuncture services in the Hudson River Valley region of New York State. The analysis combines demographic data, consumer expenditure patterns, and psychographic segmentation to create a data-driven framework for market assessment.

## Key Findings

- **Yonkers** emerges as the #1 opportunity with an Opportunity Score of 75.3, combining moderate market potential (Index: 47.2) with the largest population base (211,513 residents).
- **Westchester County** leads all counties with a Market Size score of 50,644, representing the largest total addressable market in the region.
- The analysis identified **113 municipalities** (18 cities and 95 villages) across 10 Hudson Valley counties.
- **Tier 1 and Tier 2 markets** (Opportunity Score 50+) represent 313,354 residents across 3 municipalities.

## Methodology Highlights

The Acupuncture Market Potential Index was developed using four weighted components based on research identifying typical acupuncture user demographics: LifeMode psychographic groups (30%), educational attainment (25%), female population aged 35-64 (25%), and household income \$75K+ (20%). A secondary Opportunity Score balanced market potential with population size to identify commercially viable targets.

# Project Overview

## Objectives

The primary objectives of this market analysis were:

1. Identify geographic areas with the highest concentration of likely acupuncture consumers
2. Quantify market potential using demographic and psychographic variables
3. Balance market potential rates with population size to identify commercially viable locations
4. Provide actionable rankings for business location decisions

## Study Area

The analysis focused on the Hudson River Valley corridor from New York City to Albany, encompassing 10 counties along both sides of the Hudson River. This region was selected for its diverse mix of urban, suburban, and rural communities, as well as its proximity to major population centers.

### Hudson Valley Counties Included in Analysis

County	River Position	2020 Population
Westchester	East	1,009,447
Rockland	West	342,575
Putnam	East	96,616
Orange	West	410,196
Dutchess	East	295,043
Ulster	West	181,291
Columbia	East	61,174
Greene	West	46,968
Albany	West	315,064
Rensselaer	East	157,559

## Data Sources and Methodology

### Data Sources

The analysis utilized multiple authoritative data sources integrated through ArcGIS Pro's Enrich Layer tool:

#### Boundary Data

- **New York State GIS Clearinghouse:** County, city, town, and village boundaries (NAD 1983 UTM Zone 18N)
- **Feature Classes Created:** Counties (10), Cities (18), Towns (147), Villages (95)

#### Demographic Enrichment Variables

- **Population Totals:** Total population, population density
- **Income & Wealth:** Median household income, disposable income, income brackets (\$50K-\$200K+)
- **Health Insurance:** Coverage by type (employer, direct, Medicare, Medicaid) and age group
- **Consumer Expenditure:** Health and personal care spending (CEX data)
- **Gender by Age:** Female population in 5-year cohorts (focus on 35-64)
- **Educational Attainment:** High school, some college, associate's, bachelor's, and graduate degrees

#### Psychographic Data (Esri Tapestry Segmentation)

- **LifeMode Groups:** 12 lifestyle categories classifying consumer behavior and preferences
- **Key Segments:** Affluent Estates (L01), Upscale Avenues (L02), Uptown Individuals (L03)

### Acupuncture User Profile Research

The index methodology was informed by peer-reviewed research on acupuncture consumer demographics. According to analysis of National Health Interview Survey data, the typical acupuncture user profile includes:

- **Gender:** Female (69.6% of users)
- **Age:** 41-65 years (47.4% of users)
- **Education:** Some college or higher (57.1% have college education)
- **Ethnicity:** Non-Hispanic white (78.1%)
- **Health Status:** Very good to excellent self-reported health (60.8%)

## Index Methodology

### Acupuncture Market Potential Index (ACUP\_INDEX)

The Acupuncture Market Potential Index is a composite score measuring the concentration of likely acupuncture consumers in each geographic area. Higher scores indicate a greater proportion of the population matching the target demographic profile.

#### Index Component Weights

Component	Weight	Variables Used
LifeMode Groups	30%	Affluent Estates + Upscale Avenues + Uptown Individuals (% of HH)
Education	25%	Bachelor's + Graduate + Some College + Associate's (% of pop 25+)
Female 35-64	25%	Female population aged 35-64 as % of total population
Income \$75K+	20%	Households earning \$75K, \$100K, \$150K, \$200K+ (% of HH)

#### Market Size Score

The Market Size Score addresses a limitation of the rate-based index by incorporating absolute population. A small village with a high index but few residents represents a smaller total addressable market than a large city with a moderate index.

**Formula:** Market Size =  $(ACUP\_INDEX \times Population) / 1,000$

#### Opportunity Score

The Opportunity Score provides a balanced assessment combining market potential rate with market size, enabling direct comparison across municipalities of vastly different populations.

**Formula:** Opportunity Score =  $(\text{Normalized Index} \times 0.5) + (\text{Normalized Market Size} \times 0.5)$

Both components are normalized to a 0-100 scale before combination, ensuring equal influence regardless of the underlying value ranges.

# Results

## County-Level Analysis

At the county level, Westchester dominates in absolute market size due to its population exceeding 1 million residents. Albany County achieved the highest Index score (50.90), driven by strong education rates and favorable LifeMode distributions.

### Counties Ranked by Market Size

#	County	Population	Index	Market Size	Dominant LifeMode
1	Westchester	1,009,447	50.2	50,644	Premier Estates
2	Orange	410,196	47.6	19,529	Suburban Shine
3	Albany	315,064	50.9	16,037	Suburban Shine
4	Rockland	342,575	44.9	15,395	Family Prosperity
5	Dutchess	295,043	48.2	14,227	Suburban Shine

## City-Level Analysis

The city analysis revealed a significant reordering when population was factored in. Yonkers, despite ranking 64th by Index alone, emerged as the top opportunity due to its large population base.

### Top 10 Cities by Opportunity Score

#	City	Population	Index	Mkt Size	Opp Score	LifeMode
1	Yonkers	211,513	47.2	9,983	75.3	Urban Harmony
2	Albany	100,702	53.8	5,419	58.7	Tech Trailblazers
3	Troy	50,426	54.7	2,756	46.1	Metro Vibes
4	New Rochelle	82,454	48.1	3,967	46.0	Urban Harmony
5	White Plains	62,816	51.7	3,248	45.8	Tech Trailblazers
6	Middletown	30,596	57.8	1,769	44.2	Metro Vibes
7	Mount Vernon	73,197	47.5	3,475	42.9	Urban Harmony
8	Poughkeepsie	31,777	55.6	1,766	42.0	Metro Vibes
9	Newburgh	28,804	55.2	1,589	40.8	Urban Threads
10	Peekskill	25,523	54.4	1,388	39.0	Suburban Shine

## Village-Level Analysis

Village analysis revealed that several small communities with very high Index scores (e.g., Nassau at 73.1) were tempered by their limited populations. Larger villages like Ossining and Scarsdale emerged as stronger opportunities when market size was considered.

### Top 15 Villages by Opportunity Score

#	Village	County	Pop	Index	Opp Score	Med Income
1	Nassau	Rensselaer	1,139	73.1	50.3	\$86,018
2	Maybrook	Orange	3,120	71.7	49.7	\$93,463
3	Ravena	Albany	3,162	69.1	47.2	\$74,289
4	Millerton	Dutchess	881	68.1	45.4	\$79,699
5	Highland Falls	Orange	3,823	63.9	42.4	\$104,527
6	Brewster	Putnam	2,601	64.1	42.2	\$64,501
7	Ossining	Westchester	27,481	56.3	41.6	\$105,202
8	Scarsdale	Westchester	17,867	58.0	40.6	\$276,897
9	New Paltz	Ulster	7,627	60.1	39.8	\$64,129
10	Montgomery	Orange	3,773	61.1	39.7	\$100,104
11	Wappingers Falls	Dutchess	5,903	60.2	39.3	\$66,275
12	Irvington	Westchester	6,543	56.6	36.0	\$201,979
13	Bronxville	Westchester	6,570	56.2	35.6	\$218,736
14	Chester	Orange	3,976	56.8	35.5	\$115,417
15	Pelham Manor	Westchester	5,589	56.3	35.5	\$252,333

## Market Segmentation

Municipalities were segmented into four tiers based on Opportunity Score to facilitate strategic planning and resource allocation.

### Market Tier Summary

Tier	Score Range	Count	Total Population	Avg Med Income
Tier 1 - Prime	70+	1	211,513	\$83,386
Tier 2 - Strong	50-69	2	101,841	\$73,200
Tier 3 - Moderate	30-49	50	798,267	Various
Tier 4 - Low	<30	60	302,202	Various

## Rank Change Analysis

A key insight from this analysis is how dramatically rankings shifted when population was incorporated. The following municipalities experienced the largest positive changes, indicating that their large populations make them more attractive targets despite moderate index scores:

### Biggest Gainers (Index Rank → Opportunity Rank)

Municipality	Type	Index Rank	Opp Rank	Change
Yonkers	City	64	1	+63 positions
New Rochelle	City	58	7	+51 positions
Mount Vernon	City	62	11	+51 positions
White Plains	City	42	8	+34 positions
Albany	City	31	2	+29 positions

## Strategic Recommendations

### Top 20 Target Areas

Based on the combined analysis of market potential and population size, the following 20 municipalities represent the highest-value opportunities for acupuncture services in the Hudson Valley region:

1. **Yonkers** (City) – Opp Score: 75.3, Pop: 211,513
2. **Albany** (City) – Opp Score: 58.7, Pop: 100,702
3. **Nassau** (Village, Rensselaer) – Opp Score: 50.3, Index: 73.1
4. **Maybrook** (Village, Orange) – Opp Score: 49.7, Index: 71.7
5. **Ravena** (Village, Albany) – Opp Score: 47.2, Index: 69.1
6. **Troy** (City) – Opp Score: 46.1, Pop: 50,426
7. **New Rochelle** (City) – Opp Score: 46.0, Pop: 82,454
8. **White Plains** (City) – Opp Score: 45.8, Pop: 62,816
9. **Millerton** (Village, Dutchess) – Opp Score: 45.4, Index: 68.1
10. **Middletown** (City) – Opp Score: 44.2, Pop: 30,596
11. **Mount Vernon** (City) – Opp Score: 42.9, Pop: 73,197
12. **Highland Falls** (Village, Orange) – Opp Score: 42.4, Index: 63.9
13. **Brewster** (Village, Putnam) – Opp Score: 42.2, Index: 64.1
14. **Poughkeepsie** (City) – Opp Score: 42.0, Pop: 31,777
15. **Ossining** (Village, Westchester) – Opp Score: 41.6, Pop: 27,481
16. **Newburgh** (City) – Opp Score: 40.8, Pop: 28,804
17. **Scarsdale** (Village, Westchester) – Opp Score: 40.6, Med Income: \$276,897
18. **New Paltz** (Village, Ulster) – Opp Score: 39.8, Pop: 7,627
19. **Montgomery** (Village, Orange) – Opp Score: 39.7, Index: 61.1
20. **Wappingers Falls** (Village, Dutchess) – Opp Score: 39.3, Index: 60.2

### Strategic Approaches by Tier

#### Tier 1: Primary Market (Yonkers)

Yonkers represents a unique opportunity as the largest city in Westchester County. A single well-positioned practice could potentially serve over 200,000 residents. Consider multiple locations within the city to capture different neighborhoods, particularly those along the Metro-North commuter rail line.

#### Tier 2: Secondary Markets (Albany, Nassau)

Albany offers strong market potential in the Capital Region with excellent educational institutions and government employment. Nassau village, while small, represents an extremely concentrated target demographic that may support a specialized or boutique practice.

#### Tier 3: Regional Cluster Strategy

For the 50 municipalities in Tier 3, consider a regional approach rather than single-location focus. Cluster nearby villages and small cities into service areas, potentially using mobile services or satellite offices to efficiently cover multiple communities.

# Technical Appendix

## GIS Data Layers Created

### Feature Classes in Hudson Valley Demographics.gdb

Feature Class	Records	Description
Market_Area_Counties	10	Hudson Valley counties with enrichment
Market_Area_Cities_Enriched	18	Cities with demographic/psychographic data
Market_Area_Villages_Enriched	95	Villages with demographic/psychographic data
Market_Area_Towns	147	Towns (not enriched)
Market_Area_Municipalities	260	Combined towns, villages, cities
Acupuncture_Market_Analysis	123	Combined analysis table with rankings

## Key Fields Added

- **ACUP\_INDEX** (Double) – Composite market potential score
- **ACUP\_RANK** (Long) – Rank within layer by Index
- **MARKET\_SIZE** (Double) – Index × Population / 1000
- **MARKET\_SIZE\_NORM** (Double) – Normalized 0-100 scale
- **OPPORTUNITY\_SCORE** (Double) – Balanced potential + size score
- **OPPORTUNITY\_RANK** (Long) – Rank within layer by Opportunity
- **MARKET\_TIER** (Text) – Tier classification (1-4)

## ArcGIS Pro Credits Used

The Enrich Layer tool consumed approximately 104 credits for enriching 113 municipal features (18 cities + 95 villages) with 92 demographic variables. Credit formula: (Features × Variables) / 1,000 × 10.

## Python Scripts Developed

1. **list\_geodatabase\_contents.py** – Inventory geodatabase feature classes and fields
2. **extract\_hudson\_valley\_market\_area.py** – Extract 10 Hudson Valley counties and associated municipalities
3. **enrich\_hudson\_valley\_v2.py** – Batch enrich municipalities with demographic/psychographic data
4. **calculate\_acupuncture\_index.py** – Calculate ACUP\_INDEX composite score
5. **calculate\_market\_opportunity.py** – Calculate Market Size and Opportunity Scores
6. **export\_market\_analysis.py** – Export results to Excel and generate reports

## Coordinate System

All feature classes use NAD 1983 UTM Zone 18N (EPSG:26918), consistent with New York State GIS Clearinghouse standards.

## Conclusion

This GIS-based market analysis provides a data-driven foundation for strategic decision-making regarding acupuncture service locations in the Hudson Valley region. By combining demographic characteristics, consumer behavior patterns, and psychographic segmentation with population-weighted analysis, the methodology identifies commercially viable opportunities that balance market potential with market size.

The key finding—that Yonkers represents the highest-value opportunity despite a moderate Index score—demonstrates the importance of considering absolute market size alongside concentration metrics. Practitioners and investors should use these rankings as a starting point, supplemented by on-the-ground market research, competitive analysis, and site-specific evaluation.

The analytical framework developed here is replicable and can be adapted for other healthcare services or geographic regions. All data, scripts, and methodology are documented in the accompanying geodatabase and can be updated as new demographic data becomes available.

— *End of Report* —