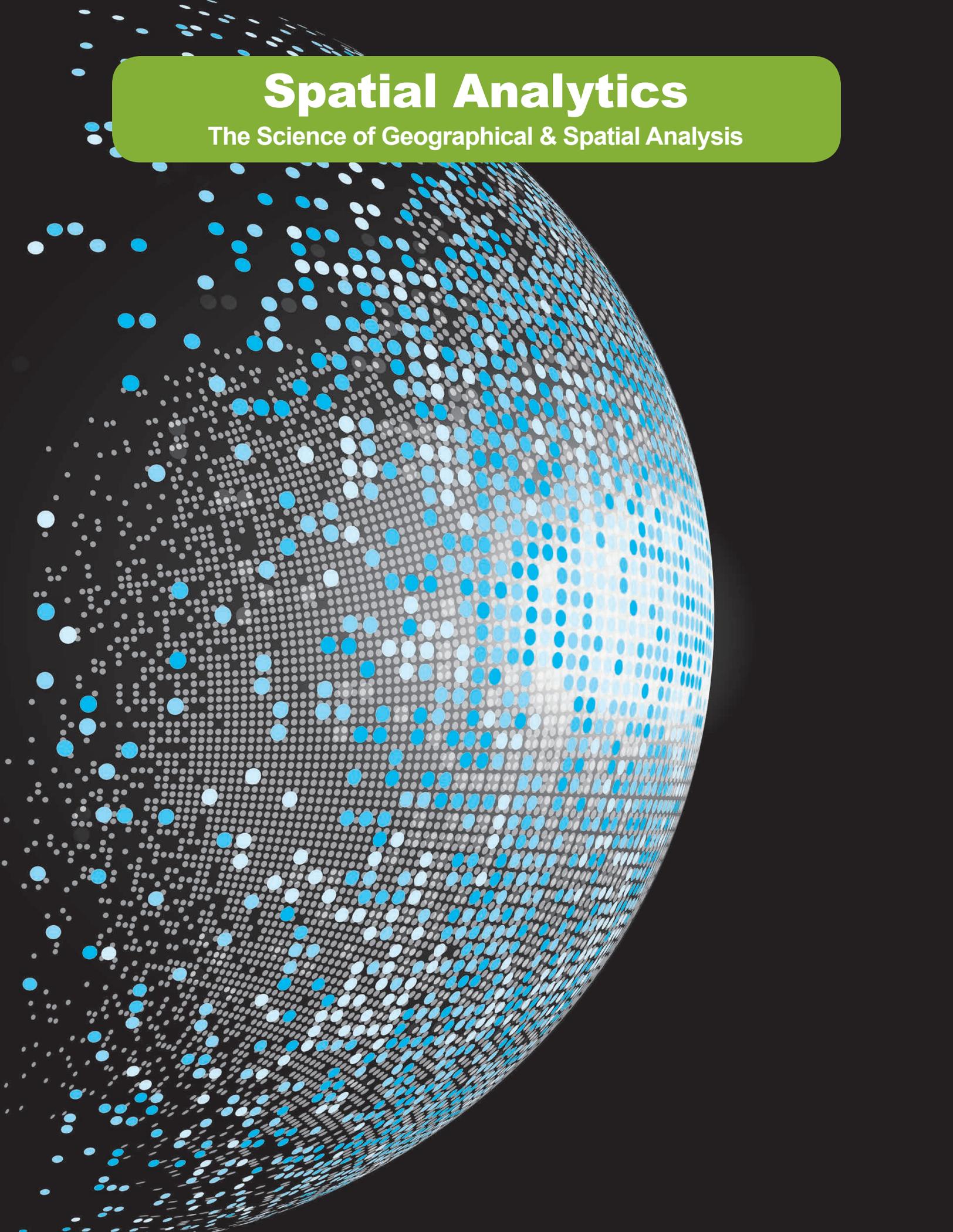


Spatial Analytics

The Science of Geographical & Spatial Analysis



Spatial Analytics

Spatial Analytics is the analysis of business and marketing variables as they relate to geographic space and time.

There is a geographic, or spatial dimension, to virtually all business and marketing activities. In the hands of talented analysts, Geographical Analytics and GIS (Geographical Information Systems) can help companies:

- Improve advertising media mix and media targeting.
- Optimize distribution systems (How many distribution centers? Dealers? In what locations?).
- Evaluate and optimize the performance of sales organizations? Who is underperforming? Who is overperforming? What are optimal sales quotas?
- Model and analyze brand performance down to the Census Block Group (CBG).
- Guide direct marketing campaigns down to the CBG level.
- Determine optimal locations for new retail stores, restaurants, banks, schools, or medical facilities, etc.
- Optimize the number of retail units for a given geographic area to maximize sales and/or profits.
- Plot market potential for a new product or brand down to the CBG level.



- Predict the type and mix of retail entities to maximize sales revenue for a given shopping center or mall.
- Understand the geodemographic and economic variables driving growth of a particular industry, category, brand, or retail entity.
- Optimize the locations of parks, city services, libraries, and the delivery of governmental services.

Types of Spatial Analytic Data

The primary types of data maintained by Decision Analyst in its geographical analytic database include:

- Age of household head
- Household income
- Ethnicity
- Education
- Presence of children
- Type of housing
- Age of housing
- Household medical conditions
- Consumption of various products
- Usage of various services
- Transportation variables
- Media usage
- Employment
- Weather variables
- Economic variables

In total, more than 3,000 variables make up Decision Analyst's geographical analytic database.

Geographical Analytic Database

Geographical Analytics begins with Decision Analyst's large database of demographic and economic variables down to the Census Block Group (CBG) level. There are approximately 220,000 CBGs in the United States; each contains an average of ~600 households.

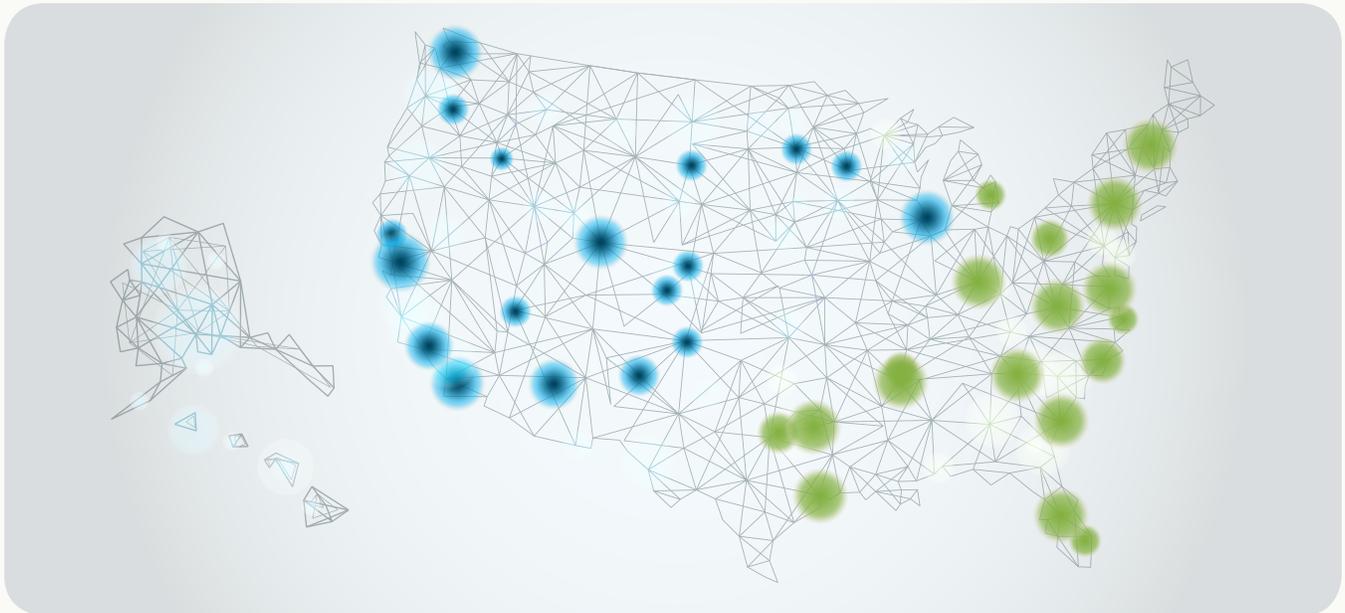
The U.S. Government publishes thousands of demographic and economic variables that can be modeled down to the CBG level. Decision Analyst maintains all of this data in its own database and overlays that database with secondary data from many different sources and with its own survey data modeled to the CBG level. A company's or brand's customer data and research data are the final data overlays. Customer street addresses can be linked to CBGs and all of the data associated with a given CBG. After final data quality-assurance processes and procedures, the database is ready for the serious work of geoanalysis.

Geographical Analytic Methods

The objectives of a geoanalysis largely determine the statistical or mathematical methods used. Major techniques include:

- Predictive modeling
- Data mining
- Fusion of survey and secondary data
- Geographic heat mapping
- Projection of KPI's onto map polygons
- Interactive mapping apps
- Spatial autocorrelation econometrics
- Data Translation (eg., CBG to zip code)
- Gravity modeling
- Competitor location analytics





GeoMapping

Geospatial analyses are often portrayed via color-coded maps. The color shadings reveal patterns and trends that would otherwise be almost impossible to detect. Geomapping models can be linked to Google Maps so that states, metro areas, cities or individual neighborhoods can be color coded to illustrate patterns and analytic outcomes.

Why Decision Analyst?

Decision Analyst's emphasis on advanced analytics to solve business problems and create marketing opportunities spans more than three decades. In addition to its geographical analytics capabilities, the firm offers an array of mathematical and statistical methods to help companies better understand their markets and their customers. Advanced analytics methods are supplemented with sophisticated survey-based research and leading-edge qualitative methods to create a powerful analytic toolkit to help companies better navigate the future.



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