

## Content

Demographic Dimensions is a modeling database at the block group and higher levels of geography that is useful in creating statistical models, site signature reports, and general executive summary information. Unlike discrete neighborhood classification systems, Demographic Dimensions provides continuous measurement scores across the dominant demographic components that differentiate neighborhoods.

Demographic Dimensions is based on the well-known data reduction tool of Principal Components Analysis, in which the common patterns found within a large number of variables are reduced to a core set of discriminating factors. By analyzing several hundred separate demographic variables at the block group level, sixteen dominant factors were identified. Together, these factors provide insights into the core dimensions of neighborhood differentiation.

The Dimensions database is normally provided as a set of continuous variables which are minimally auto correlated and have a mean of zero and unit variance. For graphic site signature charts, a consistent scale of 0 – 1000 is available.

Factors are useful in a broad spectrum of applications, including:

### Direct Marketing

Demographic Dimensions, when used in conjunction with MOSAIC and other targeting tools, can yield significant improvements in direct marketing results. By fine-tuning a MOSAIC profile, sub-groups of MOSAIC segments can be targeted effectively.

### Model Development

Dimensions are minimally correlated and are therefore very suitable for use in the construction of sales performance and site location models. Statistical models developed using Factors tend to be less prone to prediction error as a result of multicollinearity.

### Neighborhood Description

Factors can be used to effectively describe the dominant characteristics of neighborhoods for use in demographic reporting systems. Site “signatures” are easily defined and analyzed, since each of these factors is independent and reflect the dominant neighborhood differentiators.

## **Methodology**

Several hundred input variables were used in the analysis, which are summarized below by type of variable and source year. Note that in many cases, both average (or median) and distribution data were used (e.g. median age, % population age < 18, etc.). In most cases, with the exception of the housing characteristics tables, these were for estimates for 2003 rather than Census only.

### **Geographic Characteristics**

- Urban core / urban fringe / rural Census classification
- Metropolitan status (e.g. metro, non-metropolitan area)

### **Housing Characteristics**

- Units in structure (e.g. single family detached, apts 20+) Dwelling age
- Tenure
- Vacant dwellings by reason (e.g. seasonally vacant)
- Boarded up status (boarded up / not boarded up)
- Owner occupied dwellings by value
- Households by rent
- Dwellings by number of rooms
- Dwellings by heating type
- Dwellings by water service and sewage service

### **Household Characteristics**

- By type (family, non-family)
- By size of household
- By structure (e.g. married couple w children)
- By age of householder
- By length of residence (e.g. < 1 year, .... 10+ years)

### **Population Characteristics**

- Recent and historical growth (1970-2000)
- Projected growth (2000-2010)
- Density
- Age
- Sex
- Race
- Hispanic origin
- Detailed Hispanic Origin (e.g. Mexico, Puerto Rico)
- Marital status
- Highest level of education
- Language spoken at home (% Spanish, % Asian)
- School enrolment (public versus private)
- Number of vehicles available

### **Labor Force**

- Employment status (e.g. employed, unemployed)
- Industry
- Occupation
- Employment of women with children (2000 only)
- Unemployment rate
- Travel time to work (2000 only)
- Means of transportation to work (2000)

### **Income**

- Sources of income (e.g. social security, wage and salary)
- Households by income
- Households by disposable income
- Households by net worth
- Households by income growth (1990-2000)
- Households by income by age of householder

The SPSS principal components analysis module was used, with varimax rotation in order to maximize variable loading on each factor. Correlation between factors is minimal but non-zero in the resulting solution.

### **Dimensions Variables**

#### **01 Affluence**

Affluence is the single most important neighborhood discriminator and is most highly skewed. Affluence includes more than just income – it also reflects net worth, home ownership, and housing value and size.

#### **02 Family Status**

Family status, or household structure, is the second most important neighborhood differentiator. Ranging from areas populated with lone householders to married couple families with children, this factor varies most dramatically over the metropolitan scale.

#### **03 Occupational Status**

This factor measures the distinction between blue collar and white-collar occupations and lifestyles. Suburban, upscale neighborhoods of executives and professionals are contrasted with the blue-collar neighborhoods of smaller industrial towns and inner cities.

#### **04 Aging**

This important factor correlates highly with both the median age of residents and the percentage of residents over the age of 65. Residents in areas with high positive scores are most likely to be retired and receiving Social Security benefits, and often live alone. Residents in areas with high negative scores are likely to be young adults, often single, without children.

#### **05 African-American**

Areas with high scores consist of neighborhoods that are predominantly African-American. This factor tends to vary both at a metropolitan scale and regionally, with strong concentrations in the deep south and in the industrial cities of the northeast.

#### **06 Mexican-American**

The growth of the largely Mexican origin Hispanic population drives this increasingly important discriminating factor, which scores highest in the southwest states bordering Mexico.

#### 07 Housing Style

This factor relates to the continuum of neighborhoods from single-family dwellings through dense high-rise apartment complexes.

#### 08 Agricultural Dominance

Once the dominant discriminating factor of American life, the farm – non-farm dichotomy has been minimized with the wave of urbanization during the last century. High scores tend to occur in the generally rural states of the upper Great Plains and in the agricultural areas of Central California.

#### 09 College Campuses

Areas with high scores on this factor are the distinctive neighborhoods on and around college campuses. These neighborhoods have a high percentage of young adults who have never been married, are enrolled in school, and may live in college dormitories.

#### 10 Growth and Stability

Reflects the continuum between areas of rapid growth and change and stable, older neighborhoods. This factor highlights change areas both within metropolitan areas and at a national scale.

#### 11 Seasonal Areas

Measuring the degree to which dwellings in the area are seasonally vacant, this factor is highest in the summer vacation areas of the Great Lakes and New England, the winter vacation areas of the Rocky Mountains, and on the non-urban coastlines of California and Florida.

#### 12 Native American

Reflecting the distribution of Native Americans, this factor tends to be highest in the plains and southwest states, as well as Alaska.

#### 13 Asian-American

Areas with high scores consist of neighborhoods that are predominantly Asian. Geographic variability is both at a metropolitan scale and regionally, with strong concentrations on the west coast and Hawaii.

#### 14 Institutional

Areas scoring high on this factor are related to institutional land use – including both correctional facilities and long term care hospitals.

#### 15 Language Barriers

Scores on this factor are high in areas where recent immigrants, often unable to speak English, have settled. Reflecting recent immigration trends, Spanish tends to be spoken in these neighborhoods.

#### 16 Military

Areas scoring high on this factor include both military bases and the nearby youthful and mobile neighborhoods that house military personnel.