

Census Data in Jobs–Housing Balance Studies: San Luis Obispo County, California

David Polley, *San Luis Obispo Council of Governments*

The San Luis Obispo County Jobs–Housing Balance Study was developed to analyze the relationship among jobs, housing, and work-related transportation for the small urbanized area encompassing San Luis Obispo County. The complexities of defining and quantifying the relationship between jobs and housing required extensive research and analysis of several issues. In this case study the important role that census data played in defining and quantifying this relationship is discussed. In addition, some of the limitations, problems, and problem solutions in working with census data are identified, and the important role of census data in planning for small Urbanized Areas is examined.

Like many metropolitan planning organizations (MPOs), the San Luis Obispo Council of Governments (SLOCOG) relies heavily on census data. SLOCOG serves as the council of governments, MPO, congestion management agency (CMA), regional transportation planning agency (RTPA), and census data affiliate for the county and seven cities of San Luis Obispo County. With all of its responsibilities, SLOCOG, like other agencies planning for small Urbanized Areas, utilizes census data to complete many of its tasks. The census provides a wealth of information covering various demographic topics and is used as one of the primary data sources to conduct analysis and plans at the sub-community, community, county, and Metropolitan Sta-

tistical Area (MSA) level. In many cases data are not available to small Urbanized Areas through any other source. Most national surveys focus on large metropolitan areas. High costs and other resource constraints limit a small area's ability to conduct detailed local surveys. Consequently, the census has become increasingly important in providing accurate, detailed information regarding many issues. For these reasons, the census is one of the most critical data sources available to small metropolitan areas.

SLOCOG was formed as an area planning council through a Joint Powers Agreement among the incorporated cities and the county of San Luis Obispo. In 1968 the area council was designated by the U.S. Department of Housing and Urban Development to provide area-wide planning for housing, sewer, and water, and subsequently became the RTPA for San Luis Obispo County. As a result of the finding by the Census Bureau that the city of San Luis Obispo and the adjacent unincorporated area attained a population of over 50,000, the area was designated an official Urbanized Area on July 1, 1992. At that time SLOCOG became the MPO and the CMA for the region.

In 1992, after the Urbanized Area designation and SLOCOG's designation as the county's MPO, the agency was established as the San Luis Obispo Region census data affiliate. As such, SLOCOG is responsible for responding to census questions, maintaining a collection of Census Bureau reference materials, participating in

the development of Census 2000, and other tasks that help to maintain and disseminate census data.

SLOCOG has provided assistance to many diverse agencies, including government, private, and nonprofit, and to the general public. These agencies have reported that they rely on the census data to receive state and federal funding, conduct planning, identify special needs groups, conduct market analysis, and fulfill additional mandated and nonmandated tasks. In addition to assisting others, SLOCOG relies on the data from the census to complete many of its own mandated and nonmandated programs and functions. A few of the functions and reports that have utilized census data include the following;

Regional housing needs assessment,
Regional profile report (1),
Community profiles and data summaries,
Urbanized Area analysis,
Regional Transportation Plan,
Congestion Management Plan,
Regional Traffic Model, and
Jobs–Housing Balance Study.

JOBS–HOUSING BALANCE STUDY: PROJECT SUMMARY

The San Luis Obispo County Jobs–Housing Balance Study is an example of a document produced by a small MPO that relies on the census data. Census data were considered and used in almost every facet of the study. This information was critical to the development of the methodology, the collection and analysis of data, and the development of the findings and strategies that conclude the study.

Purpose

The SLOCOG Jobs–Housing Balance Study was developed to examine the relationship among jobs, housing, and transportation. This relationship has received an increased amount of attention in San Luis Obispo County as changes in the pattern of development in the region have led to inequities between jobs and affordable housing in some areas. As development patterns and local land use policies have changed, many workers live and work in different communities. As a result, there has been an increase in commute distances and work-related travel, resulting in increased congestion throughout the county.

Concerned with the impacts of congestion on air quality, the region's Air Pollution Control District (APCD) recommended that SLOCOG conduct a study to

analyze the relationship between where workers live and where they work within the San Luis Obispo County region. From this recommendation, a Jobs–Housing Balance Study was designed and conducted to meet the following goals:

- To identify issues and recommend strategies that support balancing the economic environment and the supply of affordable housing within the San Luis Obispo County region, and
- To examine commute patterns, times, and means of transportation to work and recommend strategies to reduce the work-related vehicle miles traveled countywide.

Methodology

Defining Jobs–Housing Relationship

The jobs-housing relationship is one that is often difficult to define; consequently a number of approaches and methodologies are available. For example, many jobs-housing studies focus on a single ratio of jobs to workers living in an area. This ratio is meant to define the balance among jobs and housing and workers, with ratios of one job to one worker living in an area equating to a perfect balance. Although defining a jobs-housing balance with this direct ratio is an effective means of identifying a gross jobs-housing balance or imbalance, it ignores important causes and effects of the relationship.

Instead of focusing on a single ratio, the SLOCOG Jobs–Housing Balance Study concentrates on three topics to define the jobs and housing relationship. These topics, organized as chapters in the report (2), are housing, employment and economic factors, and transportation. A thorough analysis of each topic was conducted by breaking each one down into several subtopics. The subtopics were chosen on the basis of their ability to help define where and why workers live and work where they do. Some examples of the subtopics covered in the study are residential growth, commute times, income levels of workers, housing costs, and jobs.

The study was able to pursue this methodology because of the data available through the Census Bureau. Detailed data from the census were available for all three of the major focus areas of the study. In many cases census data were added directly into the study as subtopics under the main focus areas. Without the census data the thorough analysis would not have been possible because of excessive costs related to developing such data, and the study would have had to be conducted in an entirely different manner.

Although the census provides a wealth of data, it did not give a complete picture of the jobs-housing relation-

ship. Supplementary data sources were examined to fill areas in which additional information was needed. There were also cases in which census data differed from values presented in other reliable data sources. In these cases the various sources would be compared and the most accurate data (or both) were used.

An example of census data that were supplemented with additional sources was housing value data. When census data (based on owner's estimations of the value) were compared with actual sales data, the census data appeared to be overstated. To remedy this, a private data base derived from county assessors' records was consulted and compared with the census values.

Defining Geographic Areas

Because census data played such an important role in examining the jobs-housing relationship, it was important that the geographic boundaries used in the study be compatible with the census. This was fairly simple because the census provides data at several geographic levels of detail.

County-level census data showed an almost perfect balance between the number of workers and jobs in the region. The near-perfect balance and additional census data showing that over 90 percent of the region's workers were employed within the county focused interest on examining intracounty as opposed to intercounty relationships.

To study the intracounty relationships, the county was broken down into regions with boundaries based on planning areas previously established in the region's Congestion Management Plan and Regional Transportation Plan. These areas were defined on the basis of the natural geographic characteristics of the county and the natural clustering of communities. It was important that the Jobs-Housing Balance Study continue to use these planning areas to ensure consistency with the previously conducted plans; however, the defined boundaries were inconsistent with the designated census areas.

To make the planning area boundaries more consistent with the census areas, planning areas were subdivided, with the study concentrating on cities and Census Designated Places (CDPs) because they are where the majority of the region's residents live and work and they have census-defined boundaries. Breaking the county down to this level of detail allowed the study to utilize census data and the census Topologically Integrated Geographic Encoding and Referencing (TIGER) File. The TIGER File and census attribute data were imported into geographic information system (GIS) software to map, graph, and analyze various characteristics and relationships in the county. When the cities and CDPs did not provide enough detail, block-group and tract-level analysis was conducted. The data from the cities, CDPs, block groups, and tracts were then aggregated to the planning area level, where most of the analysis was focused.

Census Data Used in Study

The study report devotes a chapter to each of the major topics—housing, employment and economics, and transportation. Each chapter begins with an introduction that lists the demographic topics that are presented in the chapter. Included with the list of topics are a definition of how each of the issues affects the jobs-housing relationship and an explanation of how the data are presented in the study.

Following the introduction, each chapter was divided into four sections, one for each of the planning areas in the region. In these sections, data and statistics are compiled for the subtopics listed in the chapter introductions. At the end of each of the sections key findings are summarized, highlighting the main issues identified in the section.

The following is a listing of the topics covered in each chapter:

- **Housing:** This chapter focuses on 10 issues relating to housing, including housing stock, limitations on residential growth, new construction, projected buildout, vacancy status, overcrowding, overpayment for housing, special needs groups, median house price, and total housing units sold. (See Table 1 for a description of each of these topics.)
- **Employment and Economics:** This chapter focuses on nine issues relating to employment and economics, including total jobs, workers living and working in the area, total workers, workers per household, place of work, workers by occupation, workers by industry, and household and family income. (See Table 2 for a description of each of the topics.)
- **Transportation:** This chapter focuses on five issues relating to transportation, including origin and destination of planning-area workers, travel time to work, total workers, mode of transportation, and vehicle occupancy. (See Table 3 for a description of each of the topics.)

Findings

The findings of the analysis are presented in two ways: by individual planning area and by comparisons between planning areas.

Individual Planning Areas

Evaluating the findings by individual planning areas required bringing all of the key issues for each of the areas together. In the previous chapters, the data were presented by topic and examined on the basis of the chapter focus (housing, employment and economics, transportation). In evaluating the data by planning area,

TABLE 1 Housing Issues

Item	Description	Source
Housing Stock	Identifies the number of housing units located by type and describes the increase in total units between the years 1980 and 1990.	1990 Census
Limitations on Residential Growth	Summarizes the government imposed limitations on residential growth.	General Plans & Growth Management Ordinances
New Construction	Lists the number of single-family and multi-family housing units built and permitted.	City & County Building Permit Data, US Department of Commerce Current Construction Reports
Projected Buildout	Estimates the amount of additional residential growth (housing units and population) planned.	General Plans
Vacancy Status	Examines the number of occupied and vacant units.	1990 Census
Overcrowding	Identifies the number of households with more than one person per room and two persons per room.	1990 Census
Overpayment for Housing	Examines the number of households paying over 30% of their income on housing owner and renter occupied.	1990 Census
Special Needs Groups	Identifies the number of households with residents over 65, single parent households, and large families.	1990 Census
Median House Price/Contract Rent	Estimates the median house price and contract rent for housing units.	1990 Census, TRW Redi Property Data (3)
Total Units Sold	Estimates the housing units sold.	TRW Redi Property Data (3)

the relevant data were brought together to define relationships among housing, transportation, and employment for each area and allow each of the planning areas to be studied individually. Through this analysis, the relationship between the number of jobs and workers, the types of workers living in the area, income levels of the various workers, housing affordability, and other key issues were examined for each of the planning areas.

Comparisons Between Planning Areas

In addition to examining the relationship between the key issues in the individual planning areas, comparisons were drawn between the planning areas. This analysis compared areas with job-housing balances and imbalances, areas from which and to which workers commute, how long commuters are traveling, where the

TABLE 2 Employment and Economic Issues

Item	Description	Source
Total Jobs	Estimation of the total jobs.	1992 Economic Census, 1990 Census Transportation Planning Package (4, 5)
Workers Residing and Working by Planning Area	Compares the numbers of workers living and working in each area.	1990 Census & Census Transportation Planning Package (4)
Total Workers	Identifies the number of workers living in each area.	1990 Census
Workers Per Household	Determines the ratio between number of workers and household in 1980 and 1990.	1980 & 1990 Census
Place of Work	Identifies the number and percentage of workers that work in the same community that they live in.	1990 Census
Workers By Occupation	Provides a breakdown of workers occupations by the areas in which they reside.	1990 Census
Workers By Industry	Provides a breakdown of workers industry of employment by the areas in which they reside.	1990 Census
Household & Family Income	Identifies the total very low, low, median, and above median households and families are found in each of the planning area.	1990 Census

TABLE 3 Transportation Issues

Item	Description	Source
Origin/Destination	Identifies the origins and destination of workers broken down by the origin of commute and destination of commute.	1990 Census Transportation Planning Package (4)
Travel Time	Examines the amount of time it takes workers to commute.	1990 Census
Total Workers	Identifies the number of workers living in each area.	1990 Census
Mode of Transportation	Examines the different modes used by workers to commute to work.	1990 Census
Vehicle Occupancy	Analyzes the change in vehicle occupancy between the 1980 and 1990 Census.	1980 & 1990 Census (6)

different income and special needs groups are focused, and how workers commute between the areas.

Strategies

On the basis of relationships identified in the findings of the final report (2), a number of strategies were developed to help reduce the imbalances between jobs and housing throughout the region. One of the key findings from the study was that a jobs-housing balance is only one of several factors that affect congestion and the negative impacts of congestion. Consequently, the strategies identified in the study went beyond focusing solely on housing and jobs, and concentrated also on transportation, land use, and planning. Strategies were presented both regionally and specifically to individual planning areas. Many of these strategies concentrated more on improving multimodal transportation and reducing congestion than on creating a balance between jobs and housing.

Problems Encountered Using Census Data

The census provided the most complete and comprehensive data source available to conduct the Jobs-Housing Balance Study. However, focusing on census data for the study did have some drawbacks. The data were not always the most reliable or the most accurate. To deal with that difficulty, additional data bases were utilized. Using the census also placed limitations on the study because the census is only conducted once every 10 years. This limitation will hold off the next update until after the 2000 census or will require the use of projections and estimates if the same methodology is to be used.

Another issue arose while working with the CTPP. San Luis Obispo County was not designated an Urbanized Area or MSA until 1992. Because of this, the CTPP data were not analyzed at the traffic analysis zone

(TAZ) level for the region, which is one of the most useful tools in defining the commute patterns of workers. Lack of CTPP data at the TAZ level forced the study to focus on community-level data, which, although useful, left many unanswered questions in the rural areas of the county.

CONCLUSION

The Jobs-Housing Balance Study could have been conducted without the census but to do so would have required a different methodology. By using census data, the study was able to provide a detailed view of the relationship among jobs, housing, and work-related travel. Without the census, the study probably would have focused directly on the relationship between jobs and housing using a ratio to define balance and imbalance in the communities in the region. Relying on the census data in such a complete manner did have some drawbacks with regard to the ability to update the study. However, utilizing the data as the study did provided a more complete and comprehensive assessment of the region's jobs-housing relationship.

REFERENCES

1. Rodgers, P., and J. O'Connor. *1992 Regional Profile*. San Luis Obispo Council of Governments, 1992.
2. Polley, D.A. *1995 Jobs Housing Balance Study*. San Luis Obispo Council of Governments, 1995.
3. *New Homeowner Inventory Counts*. TRW REDI Property Data, 1993.
4. *Census Transportation Planning Package*. Bureau of Transportation Statistics, U.S. Department of Transportation, 1990.
5. *Economic Census*. Bureau of the Census, U.S. Department of Commerce, 1992.
6. *Census for Population and Housing*. Bureau of the Census, U.S. Department of Commerce, 1980 and 1990.