

The Urban Transportation Planning Package as a General-Purpose Data Resource

ROLF R. SCHMITT

ABSTRACT

The 1980 Urban Transportation Planning Package was designed primarily to serve the needs of urban transportation planners; however, its tabulations provide a valuable data resource for planners and analysts in a wide variety of public and private organizations. Several illustrative applications are outlined, and implications are suggested for regional agencies and for the 1990 census.

The special set of tabulations from the 1980 census discussed throughout this Record is called the Urban Transportation Planning Package (UTPP) for reasons of history and sponsorship. The UTPP was developed in both 1970 and 1980 under the sponsorship of the U.S. Department of Transportation to provide data for transportation planners. This emphasis on transportation does not limit the value of the UTPP to planners and analysts in a wide range of other fields.

The variety of nontransportation uses of the UTPP has been discussed in meetings of the TRB Committee on Transportation Information Systems and Data Requirements and the Transportation Special Interest Group of the Urban and Regional Information Systems Association (URISA). Much attention in these meetings has been given to the UTPP as a salable data resource to help public agencies recoup the costs of purchasing the UTPP and perhaps even contribute to the agency's operating costs. Several possible nontransportation uses of the UTPP raised in these meetings are outlined in this paper, and some implications of the uses for regional agencies and the 1990 census are discussed.

NONTRANSPORTATION USES

The UTPP is an effective general-purpose data resource for three reasons. First, it provides a number of traditional census tabulations by place of residence for user-defined geography. Second, it provides tabulations of work-force characteristics at the place of work, which are not available for small geographical units in any other census product. Third, it provides tabulations about the population on the move between places of residence and places of work.

Place-of-Residence Tabulations

Part I of the UTPP tabulates many of the same demographic, social, and economic characteristics by place of residence as are found in several standard census products. The major improvement is that the user is not tied to the census tract as the geographical unit of analysis.

Census tracts are not always the best geographical unit of analysis when plans and studies are concerned with areas of homogeneous land use or population density. Census tracts are designed to divide a metropolitan area into neighborhoods of approximately the same size and, it is hoped, containing residential areas of similar socioeconomic characteristics. Linear features such as major streets, railroads, and rivers are typically used as census-tract boundaries because these features usually divide neighborhoods. Unfortunately, high-density residential developments and nonresidential land uses are generally found on both sides of these linear features. As a consequence, census-tract boundaries usually bisect high-density residential centers, business districts, and other areas of nonresidential land use.

Most transportation planning agencies use traffic analysis zones rather than census tracts to overcome this problem. Traffic analysis zones generally bound areas of similar land use and density by using minor streets between the corridors for zone boundaries. Although these zones are defined primarily for transportation studies and plans, they can also be used for other studies for which the density of residential population is an important factor. The UTPP can then be used to obtain tabulations by the more appropriate geography.

Place-of-Work Tabulations

The tabulations of the UTPP are especially important for the planner or researcher who is concerned with daytime population or with worker characteristics at the place of work. Even if the tendency of census tracts to divide nonresidential land uses is acceptable, none of the standard census products tabulates the numbers and characteristics of workers at the place of work.

The need to tabulate workers by place of work as well as place of residence is underscored in the paper by Fulton elsewhere in this Record on the procedure for estimating daytime population. In an illustrative application of the procedure, a census tract in Atlanta with 715 residents contains an estimated daytime population of 26,067. Providers of either public or private services that serve the daytime population would be significantly misled if they used the former statistic.

The ability to estimate daytime population makes the UTPP extremely valuable for marketing and location studies for retail outlets, banks, public facilities, and other services. The UTPP is also valuable for planning programs and services that are targeted to places of work. For example, a large number of programs exist to reduce social and health problems such as alcoholism at places of employment. Planners of employer-based alcoholism countermeasure programs need to know how many employees in each local jurisdiction are at risk in order to allocate resources. This can be roughly estimated by multiplying known nationwide or statewide alcoholism rates by occupation and industry times the number of workers in the local area in the same occupation and

industry class. The UTPP provides the needed work-force tabulations at the jurisdiction level and even at the census tract level if desired.

Tabulations by Origin-Destination Pair

Some public agencies and private organizations are particularly interested in the population that is on the move between home and work. Some tabulations by the combination of home and work are available for large jurisdictions in the Census Bureau's subject reports but can be obtained for smaller areas or with substantial cross tabulations only through the UTPP.

UTPP tabulations by origin-destination (OD) pair are particularly valuable for three types of applications:

1. Marketing studies for services geared to the rush-hour commuter. Characteristics of the commuting population by areas where the commute is in progress are especially valuable to radio stations.
2. Location of emergency facilities and services on a congested network. The travel-time tabulations in the UTPP can be used to determine rush-hour accessibility to needed facilities and services.
3. Regional impacts of local policies. The most obvious example is to use the cross tabulations in Part II of the UTPP to analyze the characteristics and geographical distribution of workers who are subjected to a commuter tax in one jurisdiction of the region.

These applications can be made with UTPP tabulations directly or by combining the UTPP with a traffic assignment model.

IMPLICATIONS FOR REGIONAL AGENCIES

Councils of governments, regional planning commissions, metropolitan planning organizations, regional transportation studies, and other regional agencies have long been a major source of information on the metropolitan areas that they serve. As planning funds and program responsibilities have declined, the informal role of regional agencies as information brokers has become one of the main surviving reasons for existence in many cases. Because of its diverse range of applications, the UTPP can greatly enhance this role. The UTPP can also support the other regional planning functions that remain.

Several of the larger regional agencies have begun using the UTPP as a salable data resource to recover the costs of purchasing and processing the package. For example, the Southern California Association of Governments (SCAG) has embarked on a major effort to develop reports and maps from the UTPP and to market those products aggressively to prospective buyers. The Atlanta Regional Commission (ARC) also sells its information resources, but ARC emphasizes its geoprocessing and computerized map-

ping services over the sale of reprocessed census files. Regional agencies such as SCAG and ARC hope to recover some or all of their costs through the sale of UTPP tabulations and other products and in some cases provide a new revenue source for the agency.

Most agencies that have become data vendors have been concerned at some point with possible reactions by consultants and other private vendors of data. According to representatives of several regional agencies, this concern has generally subsided for two reasons. First, many clients of regional agencies are too small for a private vendor to service profitably. Second, consulting firms are frequently consumers of the regional agency's data and prefer to have the regional agency reprocess the census data so that the consultant can have inexpensive and quick access to the data without having to buy the package.

The marketing of the UTPP by regional agencies provides more than a revenue source to offset the agency's current costs. It broadens the UTPP's base of constituents by making a much wider spectrum of local planners and analysts aware that the UTPP is valuable beyond the transportation community. This constituency can share the costs of purchasing the UTPP, make more complete use of the UTPP's tabulations, and provide the political and financial base necessary to purchase and support the 1990 UTPP.

The experience of regional agencies as data vendors is limited at present. Of the few agencies that are attempting this activity now, most are in the larger metropolitan areas, and none have had the UTPP long. There is practically no equivalent activity at the state level, even though several state departments of transportation purchased the UTPP for the entire state or for the metropolitan areas within the state. The UTPP is surprisingly not a major product of most State Data Centers, which were set up between the states and the Census Bureau to disseminate census data to the public.

CONCLUSIONS

The importance of establishing a constituency for the UTPP beyond the transportation community is underscored by the planning process that has already started for the 1990 census. The \$1 billion cost of the 1980 census may grow to \$4 billion by 1990, and the Census Bureau is obviously interested in ways to reduce costs and share the financial burden. If a census question or product is perceived by the bureau to be of interest to a limited number or variety of users, the user community may be asked to share the item's cost or reduce the item's scope.

Clearly, the UTPP turns the journey-to-work questions of the 1980 census into a valuable information base for a diverse and large community of users. The transportation community must encourage the expansion of this constituency so that the UTPP remains a cost-effective data resource for all users in the next decade.