

ABSTRACT

In this paper, the Census Transportation Planning Package 2000 for the Delaware Valley region is described, analyzed, and evaluated, with special emphasis on the journey-to-work trip data, means of transportation, travel time, employed persons at work, employment, households, vehicle availability, and other data required for transportation planning. The evaluation of Parts 1 and 2 of CTPP 2000 indicated several errors in the data, which were corrected by DVRPC before the data were used in various transportation planning projects. Data disclosure rules made the zone-to-zone worker flow data by means of transportation totally useless.

Except for such data, CTPP 2000 data are generally accurate and useful for transportation and economic development studies. However, they should be reviewed and adjusted, if necessary, before they are utilized in transportation planning projects. Based on this evaluation, a set of eight recommendations regarding sample size, nonresponse and imputation, public relations and marketing, place of work coding, processing, data rounding, swapping, and disclosure threshold is proposed. Except for development of a 15 percent sub-sample to improve the accuracy of the responses to the long-form questionnaire, change to rounding rules, and elimination of disclosure threshold, these recommendations are completely consistent with those used by the Census Bureau in Census 2000. Almost all the CTPP 2000 errors can be avoided in the future, if these recommendations are implemented in the 2010 Census.

INTRODUCTION

In August 2003, the Delaware Valley Regional Planning Commission (DVRPC) received Part 1 of CTPP 2000, but Part 3 was not received until May 2004. Work on CTPP 2000 was initiated immediately to review and evaluate the data at the county, municipal, and TAZ levels for purposes of travel simulation and transportation planning studies. The purpose of this paper is to discuss briefly the experience of DVRPC with CTPP 2000, with special emphasis on the journey-to-work information and other socioeconomic information required for transportation planning. The errors found in the CTPP information are described and solutions are recommended.

USE OF CTPP 2000 AT DVRPC

- Analysis of worker flows and travel trends during the last 30 years.
- Calibration and validation of travel simulation and forecasting models. Analysis of transportation impacts on air-quality to demonstrate the conformity of transportation plans and programs.
- Development of a data file for workers and employment for the development of long range plans and highway and transit corridor studies.
- Development of regional job access and reverse commute transportation plans and services for welfare recipients and low income groups.
- Preparation of an environmental justice assessment for the region for disadvantaged groups.
- Provision of census data to public agencies and private companies.

EVALUATION OF CTPP 2000 DATA

Part 1 Data Evaluation

- Part 1 did not include the latest census changes from the Census Bureau's Count Question Resolution (CQR) program. The population of nine municipalities was changed significantly.
- The population counts (SF1, SF3, and CTPP) allocated a portion of the population of one TAZ to the wrong municipality and county.
- For an additional 38 municipalities, the difference between CTPP Part 1 and SF1 was very large (more than 30 persons). This error was corrected based on SF1.

Part 2 Data Evaluation

- Employed Persons at Work and Employment.** CTPP 2000 data account for the number of employed persons at work, not total jobs. The CTPP data did not account for absent workers, workers not included in the journey-to-work flows, or workers who had more than one job.
- Employment Sectors.** Some employment sectors are underestimated and some are overestimated significantly, probably because the CB has shifted from SIC to NAICS categories.
- Place of Work Coding.** The CB could not allocate the place of work correctly for some TAZs, especially in growing areas.
- Means of Transportation to Work and Travel Time.** The travel mode shares (18 modes) and travel times compare favorably with DVRPC highway and transit surveys except for some walk and subway trips.

COMPARISON OF CTPP 2000 POPULATION, EMPLOYED RESIDENTS, AND VEHICLE AVAILABILITY DATA WITH DVRPC ADJUSTED DATA

AREA UNIT	CTPP POPULATION			CTPP VEHICLES AVAILABLE		
	Raw ESTIMATE	Adjusted ESTIMATE	DIFFERENCE	Raw ESTIMATE	Adjusted ESTIMATE	DIFFERENCE
TRAFFIC ANALYSIS ZONE						
500	1,575	1,575	0	655	652	-3
1700	6,365	6,365	0	4,102	4,092	-10
MUNICIPALITY						
DOYLESTOWN TWP, PA	17,620	17,620	0	11,901	11,866	-35
LAWRENCE TWP, NJ	29,160	29,160	0	18,949	18,949	0
COUNTY						
PHILADELPHIA, PA	1,517,550	1,517,549	-1	550,043	545,611	-4,432
MERCER, NJ	350,760	350,752	-8	204,715	204,235	-480
TOTAL REGION	5,387,405	5,387,421	16	3,023,979	3,013,947	-10,032

CTPP 2000 EMPLOYED PERSONS AT WORK AND DVRPC 2000 PRELIMINARY AND FINAL EMPLOYMENT ESTIMATES

AREA UNIT	CTPP EMPLOYED PERSONS	DVRPC EMPLOYMENT ESTIMATES		DVRPC - CTPP % DIFF.	PRELIMINARY - FINAL % DIFF.
		PRELIMINARY	FINAL		
TRAFFIC ANALYSIS ZONE					
500	595	633	633	6.4%	0.0%
1700	2,760	3,050	2,982	10.5%	2.2%
MUNICIPALITY					
DOYLESTOWN TWP, PA	7,815	8,576	8,476	9.7%	1.2%
LAWRENCE TWP, NJ	21,510	25,819	25,419	20.0%	1.5%
COUNTY					
PHILADELPHIA, PA	660,095	741,397	741,397	12.3%	0.0%
MERCER, NJ	200,235	220,915	220,915	10.3%	0.0%
TOTAL REGION	2,449,108	2,717,851	2,717,851	11.0%	0.0%