

A COMPARISON OF ESTIMATES OF STATEWIDE PLEASURE TRIP VOLUME AND EXPENDITURES DERIVED FROM TELEPHONE VERSUS MAIL SURVEYS

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Abstract: This paper compares estimates of pleasure trip volume and expenditures derived from a regional telephone survey to those derived from the TravelScope mail panel survey. Significantly different estimates emerged, suggesting that survey-based estimates of pleasure trip volume and expenditures, at least in the case of the two surveys examined, appear to be affected by methods of data collection. This in turn suggests that caution should be exercised in using such estimates to make important decisions in the tourism industry.

Introduction

Accurate estimates of pleasure trip volume and expenditures are fundamental to making sound investment, planning, policy, and marketing decisions in the tourism industry. In particular, such estimates are essential for monitoring changes in the magnitude of the tourism industry in a given state, and for comparing the economic significance of tourism versus other industries in a state.

Unfortunately, little definitive information exists about the accuracy of estimates currently in widespread use by the industry. To help remove at least some of this uncertainty, this paper compares estimates of pleasure trip volume and expenditures in Michigan derived from a regional telephone survey conducted by Michigan State University to those derived from the TravelScope mail panel survey conducted by the U.S. Travel Data Center (USTDC).

The specific estimates compared are the number of pleasure trips to Michigan that originated from each of the states of Illinois, Indiana, Michigan, Minnesota, Ohio, and

Wisconsin, and the expenditures in Michigan that occurred on these trips. According to the TravelScope survey, the above six states constituted an estimated 83% of Michigan's pleasure travel market in 1996.

Methods

The phone survey data were collected during each month of 1996 in a computer-assisted telephone interviewing laboratory maintained by the authors' unit. The survey population consisted of adults age 18 or older who permanently resided in Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin, or Ontario (Figure 1). The sample was a random digit-dial sample of household phone numbers in the region purchased from Survey Sampling, Inc. Interviewing occurred on weekday evenings and weekend afternoons. On the average, 494 interviews were completed each month. Up to three call-backs were made for each member of the designated sample. Interviewers randomly selected respondents within households by asking to "speak to the adult over 17 years old who will have the next birthday." Twenty-nine percent of eligible potential respondents refused the interview. The response rate, including partially-completed interviews, was 44%. The response rate, including only fully-completed interviews, was 35%. A test for possible nonresponse bias in the data revealed no statistically significant differences between the characteristics of 53 nonrespondents (other than refusals) and a subsample of 53 randomly selected respondents on 30 basic variables, including demographic and socioeconomic characteristics. Results were weighted to account for variations in response rates across the state and provincial boundaries of the region in such a manner that the resulting weighted sample conformed to the distribution of households in the six states and Ontario. Since the TravelScope survey covered only households in the U.S., responses obtained from Ontario residents were deleted from the phone survey data base for purposes of this paper.

Figure 1: Study Region of Telephone Survey



The TravelScope survey was a monthly, nationwide mail survey of a National Family Opinion panel. About 20,000 new households were contacted each month. The response rate was 69% (USTDC, 1996a). Data were weighted using the "household trip weights," "person-trip weights," and "projection weights" that were included in the TravelScope data base.

Definitions of "trip" and pleasure trip" were similar in the two surveys, but not identical. A "trip" was defined in phone survey interviews as "any overnight or day trip to a place at least 50 miles from your home, unless it was taken in commuting to work or school." In the mail survey, the questionnaire instructed respondents to report on up to three "pleasure or business" trips taken in a specific month "where you and/or other members of your household traveled 50 miles or more, one-way, away from home or spent one or more overnights."

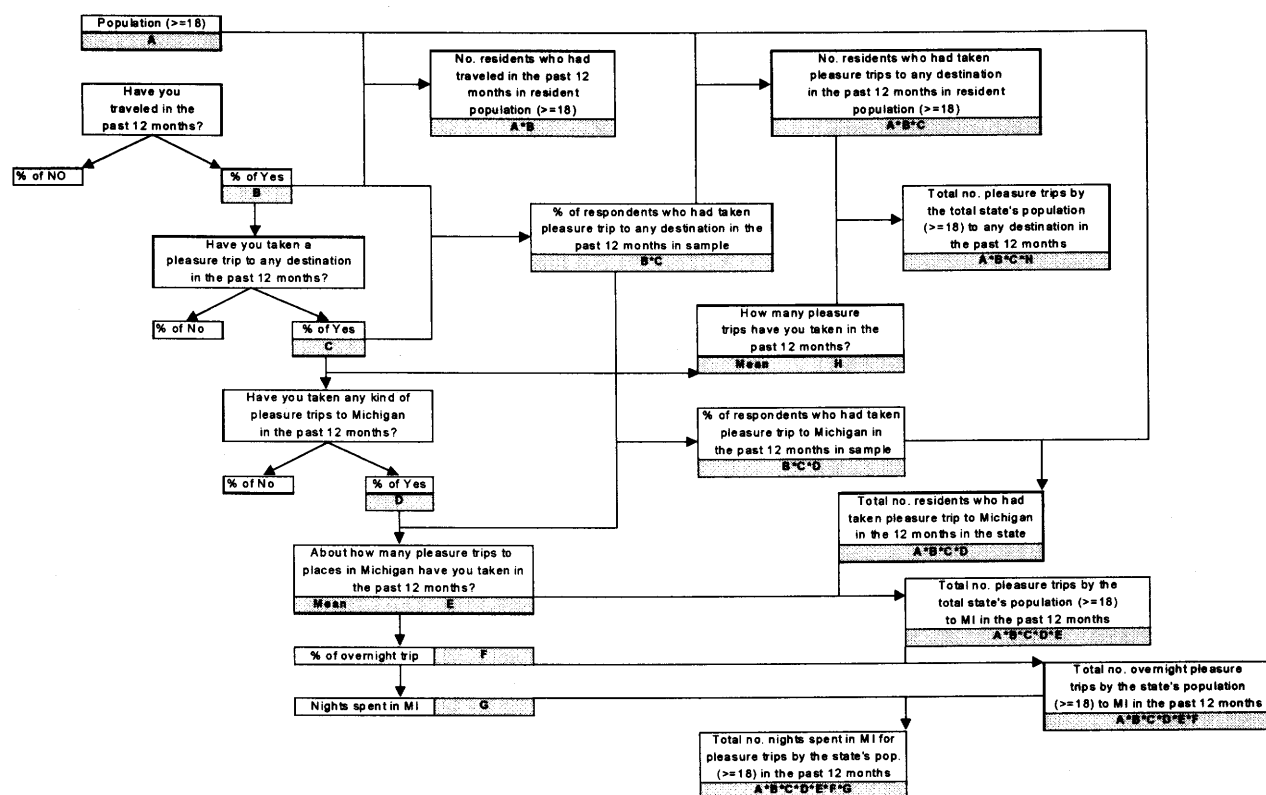
A "pleasure trip" was defined in phone survey interviews as "any overnight or day trip to a place at least 50 miles from your home that was made for your enjoyment, including vacations, weekend getaways, shopping trips, and trips to visit friends or relatives." In the case of the mail survey, "pleasure trips" were operationally defined by the authors as trips taken for the primary purpose of visiting friends or relatives, outdoor recreation, entertainment, or business/pleasure. Only 3% of trips to Michigan were in

the latter category.

To the obtain the data necessary to estimate pleasure trip volume and expenditures, phone survey interviewees were first asked whether they had taken any kind of trip during the past 12 months. Those who had were then asked whether they had taken a pleasure trip during the past 12 months. Those who had were asked the main destination of the most recent such trip. Respondents who had taken a pleasure trip to Michigan during the past 12 months were asked to report the party size and total expenditures in Michigan associated with the most recent such trip. They were also asked to report how many pleasure trips to Michigan they had taken during the past 12 months.

In the mail survey, respondents were first asked whether they and/or other members of their household had taken any kind of trip during the previous month. Those who had were then asked to report information on up to three of these trips, including the primary and secondary purposes of trip(s), the number of household members traveling (adults and children), whether it was a group tour, up to three states or countries visited on trip(s), key cities/places visited in each state/country, number of nights spent in various types of accommodations, trip activities participated in, and trip expenditures in each state or country.

Figure 2. Estimation of pleasure trip volume using telephone survey data.



The unit of analysis in the phone survey was the respondent; the unit of analysis in the mail survey was the trip. The phone survey findings presented below pertain to the 5,928 respondents who completed interviews during the 1996 calendar year; the mail survey findings pertain to the 72,989 trips taken by respondents who returned a questionnaire during the 1996 calendar year.

Estimates of pleasure trip volume and expenditures derived from each survey were made according to the procedures portrayed in Figures 2-4. Results from the individual surveys are presented in Tables 1 and 2 and compared in Tables 3 and 4.

Figure 3. Estimation of aggregate pleasure trip expenditures in Michigan using telephone survey data.

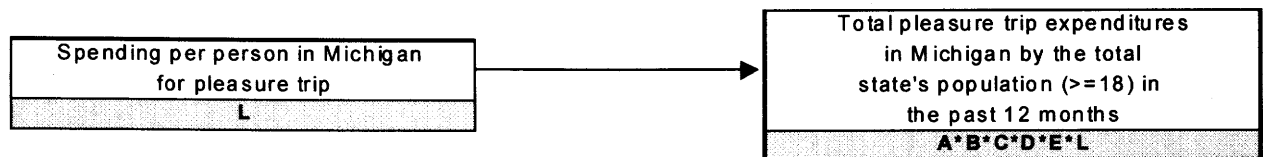


Figure 4. Estimation of pleasure trip volume using mail survey data.

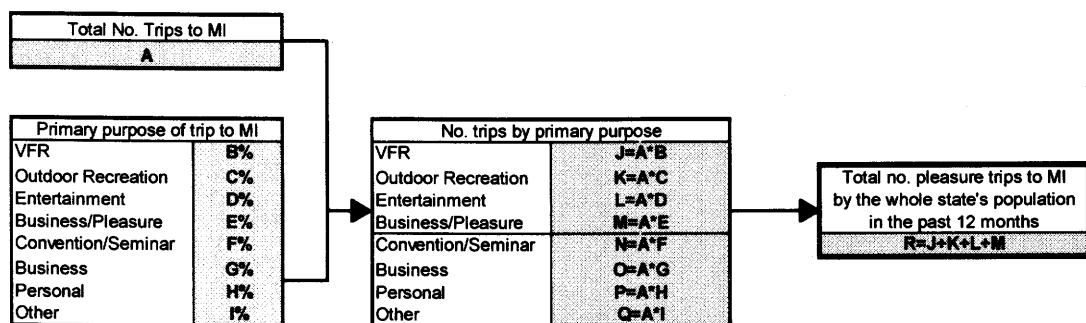


Table 1. Estimated pleasure trip volume and expenditures in Michigan by state of origin, as estimated by the 1996 telephone survey.

State of Origin	Population Over 17 (1996) ^a	Took Trip in Past 12 Months	Took Pleasure Trip in Past 12 Months	Pct. of Pleasure Trips Destined for MI	Avg. No. Pleasure Trips to MI Taken in Past 12 Months	Estimated Number of Pleasure Person-Trips to MI	Estimated Expenditures/Pleasure Person-Trip
	A	B	C	D	E	F=A*B*C*D*E	G
IL	8,756,222	<u>n=1,176</u> 68.8%	<u>n=690</u> 92.7%	<u>n=632</u> 5.9%	<u>n=95</u> 3.41	3,084,994	<u>n=89</u> \$162.86
IN	4,277,825	<u>n=585</u> 65.8%	<u>n=347</u> 93.6%	<u>n=312</u> 6.5%	<u>n=79</u> 2.63	1,829,298	<u>n=73</u> \$113.43
MI	7,011,023	<u>n=956</u> 72.2%	<u>n=614</u> 92.1%	<u>n=555</u> 42.4%	<u>n=373</u> 5.48	18,317,994	<u>n=341</u> \$131.59
MN	3,370,567	<u>n=466</u> 76.2%	<u>n=326</u> 96.1%	<u>n=306</u> 2.9%	<u>n=25</u> 1.91	405,427	<u>n=23</u> \$301.17
OH	8,257,069	<u>n=1,146</u> 68.8%	<u>n=732</u> 95.6%	<u>n=667</u> 4.8%	<u>n=117</u> 1.99	1,956,158	<u>n=105</u> \$182.93
WI	3,767,547	<u>n=515</u> 72.2%	<u>n=335</u> 94.6%	<u>n=308</u> 5.7%	<u>n=63</u> 2.78	1,530,896	<u>n=60</u> \$143.08
Total	35,440,253					27,124,767	----- <u>n=757</u>
Mean							\$160.61

^a Population estimates are from *Sales & Marketing Management* magazine's "1996 Survey of Buying Power".

Table 2. Estimated pleasure trip volume and expenditures in Michigan by state of origin, as estimated by the 1996 mail survey.

State of Origin	No. Person-Trips to Michigan	Pct. That Were Pleasure Trips ¹	Estimated Number of Pleasure Person-Trips	Estimated Expenditures/Pleasure Person-Trip
	H	I	J=H*I	K
IL	1,865,182	<u>n=1,857</u> 73.1%	1,362,901	<u>n=1,221</u> \$108.72
IN	1,267,694	<u>n=1,254</u> 69.9%	886,331	<u>n=732</u> \$148.46
MI	16,529,198	<u>n=16,373</u> 78.3%	12,940,099	<u>n=11,244</u> \$82.61
MN	473,195	<u>n=442</u> 52.0%	245,958	<u>n=221</u> \$181.75
OH	2,535,604	<u>n=2,442</u> 68.7%	1,741,003	<u>n=1,448</u> \$85.24
WI	1,000,410	<u>n=1,000</u> 85.9%	859,653	<u>n=836</u> \$98.84
Total	28,933,124	<u>n=28,478</u> 75.0%	18,053,945	----- <u>n=15,702</u>
Mean				\$90.21

¹ "Pleasure trip" includes the following purposes: visiting friends or relatives, outdoor recreation, entertainment, or business/pleasure.

SOURCE: Authors' analysis of weighted 1996 TravelScope data.

Results

The number of pleasure trips to Michigan that originated in the above six states was estimated from the phone survey data to be 27.1 million--50% higher than the TravelScope result (Table 3). Average per person expenditures on these trips were estimated to be \$161--78% higher than the TravelScope result (Table 3).

Phone survey estimates of the number of pleasure trips to Michigan originating from a given state were higher than

those generated by the mail survey in the case of each of the six states examined (Table 3). Estimates derived from the two surveys were similar in the case of Ohio, but quite different in the case of other states. Phone survey estimates of the number of trips originating from a given state were 12% higher in the case of Ohio, 42% higher in the case of Michigan, 65% higher in the case of Minnesota, 78% higher in the case of Wisconsin, 106% higher in the case of Indiana, and 126% higher in the case of Illinois.

Table 3. Comparison of estimates derived from telephone versus mail surveys.

State of Origin	No. Pleasure Person-Trips			Expenditures/Pleasure Person-Trip		
	Phone Survey	Mail Survey	Percentage Difference, Phone vs. Mail	Phone Survey	Mail Survey	Percentage Difference, Phone vs. Mail
IL	3,084,994	1,362,901	126.4%	\$162.86	\$108.72	49.8%
IN	1,829,298	886,331	106.4%	\$113.43	\$148.46	-23.6%
MI	18,317,994	12,940,099	41.6%	\$131.59	\$82.61	59.3%
MN	405,427	245,958	64.9%	\$301.17	\$181.75	65.7%
OH	1,956,158	1,741,003	12.4%	\$182.93	\$85.24	114.6%
WI	1,530,896	859,653	78.1%	\$143.08	\$98.84	44.8%
All 6 States	27,124,767	18,053,945	50.4%	-----	-----	-----
Mean				\$160.61	\$90.21	78.0%

Table 4. Comparison of regional and national estimates of pleasure trip volume and expenditures derived from telephone versus mail surveys.

Variable	Phone Survey	Mail Survey	% Difference, Phone vs. Mail
Estimated no. pleasure person-trips to MI from 6 states	27,124,767	18,053,945	50.4%
Estimated no. pleasure person-trips to MI from all U.S. states	32,629,818	21,696,393	50.4%
Average estimated expenditures/pleasure person-trip to MI from 6 states	\$160.61	\$90.21	78.0%
Estimated total pleasure trip expenditures in MI from 6 states	\$4,356,508,828	\$1,628,646,378	167.5%
Estimated total pleasure trip expenditures in MI from all U.S. states	\$5,240,675,069	\$1,957,231,613	167.8%

Since the study population for the phone survey was confined to the upper Midwest, it was necessary to expand the phone survey results from a regional to a national population to estimate the number of trips to Michigan from all possible origins in the U.S. An analysis of TravelScope data indicated that the six states generated 83.13% of all domestic pleasure trips to Michigan. Applying this percentage to the 27.1 million pleasure person-trips to Michigan taken by residents of the above six states, an estimate of 32.6 million pleasure person-trips from all possible U.S. origins was obtained. This estimate was 50% higher than the TravelScope estimate (Table 4).

The above estimates of pleasure trip volume were used to estimate total pleasure trip expenditures generated by residents of the six states and the nation as a whole. Total expenditures in Michigan by residents of the six states were estimated from the phone survey data by multiplying total pleasure trip volume by average person-trip expenditures of \$161 to obtain a value of \$4.36 billion; total expenditures in Michigan by pleasure travelers nationwide were estimated by multiplying nationwide pleasure trip volume by this same value of \$161 to obtain an estimate of \$5.24 billion (Table 4). Both estimates were about 167% higher than those derived from TravelScope data.

The estimate of \$5.24 billion in domestic pleasure trip expenditures in Michigan derived from the phone survey data seems to compare fairly reasonably with the estimated \$7.94 billion in total domestic trip expenditures in Michigan in 1994 generated by the U.S. Travel Data Center's Travel Economic Impact Model (U.S. Travel Data Center, 1996b). However, the comparability of these estimates is limited by the differing time periods to which they pertain and by differing definitions of a "trip." The USTDC estimate pertains to all overnight trips in paid accommodations regardless of distance away from home, but excludes day trips to places less than 100 miles away from home. Nevertheless, it would appear that the inclusion of business, convention, educational, and other types of non-pleasure trips in the USTDC estimate should probably result in a higher estimate than a figure pertaining only to pleasure trips, even though the USTDC estimate excludes overnight trips involving stays in second homes and friends' or relatives' homes and most trips to places less than 100 miles from home.

Conclusions

The reasons for the differences in estimates derived from the phone and mail surveys are unclear. Certainly the results of both surveys to some extent could be distorted by sampling error, nonresponse and recall biases, and other errors. Different definitions of "pleasure trip" could also be a factor.

Overall, the results of this analysis suggest that survey-based estimates of pleasure trip volume and expenditures, at least in the case of the two surveys examined, appear to be affected by methods of data collection. This in turn suggests that caution should be exercised in using these estimates to make important decisions in the tourism industry. It also suggests that further research on this subject would be warranted. This study could be expanded by comparing the above results to those derived from additional household travel surveys, including the U.S. Census Bureau's 1995 American Travel Survey and panel surveys conducted by Longwoods International, Inc. and D.K. Shifflet & Associates. It could also be expanded by comparing household travel survey results to those derived from statewide travel surveys involving various types of on-site data collection (e.g., Hunt and Gartner, 1988; Maiorano, 1995; Perdue, 1985).

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