

Livingston County

Summary of Tourism Impacts

1999-2000

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Economic Significance of Tourism to Livingston County: Summary for Year 2000

Visitors

- ✘ 1.1 million visitors (person trips to the area)
359,000 day trips, 744,000 overnight trips

- ✘ 970,000 travel party days/nights
57% overnight stays with friends and relatives (VFR), 15% day trips, 14% motel
10% seasonal homes, and 5% campground
135,000 room nights in hotels

Spending

- ✘ \$85 million total visitor spending in Livingston County
\$73 per travel party per day for day visitors, \$184 per party per night for visitors in motels
Spending by category: restaurants (20%), groceries (17%), gas and local transportation (17%), lodging (12%), recreation/entertainment (7%), other retail (26%).
Tourist spending accounts for 95% of all hotel sales in the area, 14% of restaurant sales, 8% of amusements, and 4% of retail trade

- ✘ Overnight visitors staying in motels account for 29% of visitor spending

Economic Impacts

- ✘ Direct Effects in tourism-related businesses
1,528 jobs
\$23.5 million for wages, salaries and payroll benefits
\$186,000 in local room tax
Tourism jobs by primary tourism sectors
 - restaurants - 513 hotels - 269
 - amusements - 234 retail trade - 412

- ✘ Total impacts including secondary effects
1,868 jobs
\$30 million wages and salaries
Tourism accounts for about 1.1% of all sales in the county and about 3% of all jobs

Includes all spending in Livingston County by visitors on trips of 60 miles or more away from home.

Room Assessments and Revenue 1997-2000

Total room revenues in Livingston county have grown from \$4.4 million in 1997 to \$9.3 million in 2000. The largest increase was in 1999 (Table 1).

Table 1. Room Assessments and Revenue, Livingston County, 1997-2000

Measure	1997	1998	1999	2000	2001
Room assessment collections (2%)	\$88,642	\$109,025	\$175,460	\$186,102	
Room revenue excl taxes (\$ millions)	\$4.43	\$5.45	\$8.77	\$9.31	
Room revenue incl taxes (\$ millions) ^a	\$4.79	\$5.89	\$9.47	\$10.05	

a. Includes local 2% assessment and state 6% room tax

Visits by Lodging Segment, 2000

Tourists are divided into five segments based on the type of lodging used: day trips and overnight stays in motels, campgrounds, seasonal homes or with friends and relatives (Table 2). On a party night basis, visitors staying with friends and relatives are the largest visitor segment for Livingston County (57%), followed by visitors on day trips (15%), overnight stays in motels (14%), and stays in seasonal homes (10%). The county hosted 970,000 tourist party nights in 2000, which equates to 1.1 million person trips. The \$10 million in room revenue in 2000 comes from 135,000 motel room nights at an average room rate of \$75.

The primary unit of analysis for spending is the travel party day/night. This consists of one travel group staying in the county for one night (one day for day trips). A typical travel group consists of 2.5 people traveling in the same vehicle or staying together in the same room. Party nights may be converted to a per trip or per person basis by applying average length of stay and party size factors.

Table 2. Breakdown of Visitors by Segment, Livingston County, 2000

	Day Trip	Hotel, motel, cabin or B&B	Camp	Seas. Home	Stays with friends or relatives	Total
Travel party nights (000's)	144	135	46	93	553	970
Percent of Party nights	15%	14%	5%	10%	57%	100%
Party size	2.5	2.5	2.5	2.5	2.5	2.5
Length of stay in days/nights	1	2	2	4	3	
Party trips (000's)	144	67	23	23	184	441
Person trips (000's)	359	169	57	58	460	1,104
Person days/nights (000's)	359	337	114	233	1,381	2,425

Spending by Lodging Segment, 2000

The five visitor segments help to explain variations in spending by different types of visitors. Table 3 provides a detailed analysis of spending for various goods and services by lodging segments. Spending averages are reported on a party day basis for day trips and party night basis for overnight visitors. Visitors in motels spend \$184 per party per night, while visitors on day trips, staying with friends and relatives or in seasonal homes spend just over \$70 per party per day.

Total visitor spending in Livingston County in 2000 was \$85 million. Tourist spending was divided 26% to shopping, 20% restaurant, and 17% groceries. Visitors staying with friends or relatives accounted for about half of this spending. Visitors staying in motels spent \$25 million in the county.

Table 3. Visitor Spending by Lodging Segment, Livingston County 2000

CATEGORY	Day	Motel	Camp	Seas	VFR	Total Spending		
						\$ millions	Pct	
	<i>spending per party per night</i>							
Motel, hotel cabin or B&B	\$0.00	\$75.00	\$0.00	\$0.00	\$0.00	\$10.11	12%	
Camping fees	0.00	0.00	16.00	0.00	0.00	0.73	1%	
Restaurants & bars	18.85	40.80	13.96	17.73	11.81	17.03	20%	
Groceries, take-out food/drinks	5.31	10.71	10.71	13.38	19.00	14.45	17%	
Gas & oil	12.43	15.39	14.57	11.33	11.85	12.13	14%	
Other vehicle expenses	0.41	1.47	1.79	4.37	0.21	0.86	1%	
Local transportation	1.31	6.26	2.77	3.90	0.62	1.87	2%	
Recreation & Entertainment	9.78	10.12	5.23	3.74	3.92	5.52	7%	
<u>Shopping</u>	<u>24.53</u>	<u>24.70</u>	<u>14.73</u>	<u>16.91</u>	<u>23.49</u>	<u>22.08</u>	<u>26%</u>	
Total Spending per night	\$72.63	\$184.45	\$79.75	\$71.37	\$70.91	\$84.79	100%	
Party nights (000's)	144	135	46	93	553	970		
Total Spending (\$ millions)	\$10.44	\$24.87	\$3.65	\$6.65	\$39.18	\$84.79		

Direct and Secondary Economic Impacts of Visitor Spending

Direct economic effects are the changes in economic activity within economic sectors selling directly to tourists (e.g., hotels, restaurants, retail stores). Sales, jobs, wages and salaries, and value added are four measures of economic impact (Table 4). Wages and salaries include all payments to workers including contributions to retirement and health care programs. Jobs are not full time equivalents, but count part time and full time jobs the same. Value added is a commonly used measure of the contribution of an activity or sector to the region's economy. Value added includes wages and salaries paid to workers, profits and rents of firms, and sales and other indirect business taxes attributable to visitor spending.

Total direct sales are presented in Table 4 by spending category. Direct sales are less than visitor spending, as only the retail margin and a part of wholesale margins on goods bought by visitors is captured by the local economy. That is, the cost of goods sold to the retailer do not generally accrue to the local economy, as most goods bought by visitors are manufactured elsewhere.

The \$85 million spent by visitors in 2000 resulted in \$57 million in direct sales by local firms, \$24 million in direct personal income (wages and salaries) in tourism-related sectors and a total direct value added to the region's economy of \$38 million. Tourism supported 1,528 jobs in tourism-related sectors.

Table 4. Economic Impacts of Visitor Spending, Livingston County, 2000.

Sector/Spending category	Sales \$Millions	Jobs	Personal Income \$Millions	Value Added \$Millions
Direct Effects				
Motel, hotel cabin or B&B	10.11	269	4.02	6.59
Camping fees	0.73	19	0.29	0.48
Restaurants & bars	17.03	513	6.18	8.95
Recreation & Entertainment	5.52	234	2.36	3.87
Other vehicle expenses	0.86	9	0.30	0.49
Local transportation	1.87	47	0.87	1.05
Retail Trade (margins only)	16.85	412	8.27	13.93
Wholesale Trade (margins)	2.73	21	1.13	1.94
<u>Local Production of Goods</u>	<u>1.37</u>	<u>4</u>	<u>0.13</u>	<u>0.24</u>
Total Direct Effects	57.09	1,528	23.54	37.55
<u>Secondary Effects</u>	<u>18.50</u>	<u>234</u>	<u>6.72</u>	<u>11.95</u>
Total Effects	\$ 75.59	1,868	30.26	49.50
Multiplier	1.32	1.30	1.29	1.32

Secondary Effects

The tourism sales multiplier for Livingston county is 1.32, which means that an additional \$.32 in secondary sales is generated for every \$1.00 of direct tourism sales. Through secondary effects, tourism generates an additional \$18 million in sales, \$6.7 million in personal income, \$12 million value added and 234 jobs. While the direct effects can be traced to individual tourism sectors, secondary effects generally accrue to a variety of firms within the county that benefit either by selling goods and services to tourism firms or to their employees.

The total economic impact of tourist spending on the county is the sum of direct and secondary effects. In 2000 this was \$76 million in sales, \$30 million in personal income, \$49 million value added and 1,868 jobs.

Tourism Satellite Accounts

Tourism Satellite Accounts (TSA) are an alternative method for estimating the significance of tourism to an area's economy. The satellite accounts help to ground the tourism economic estimates in the official economic accounts for Livingston County. The most recent year for which complete accounts are available is 1999.

The TSA method estimates only the direct effects within key tourism-related industries. The TSA approach attributes a percentage of economic activity in each sector to tourist spending. We begin with the total output (sales) for the primary tourism sectors in Table 5. Tourism output in each sector is obtained by multiplying the total sales in 1999 by a set of tourism industry ratios (TI ratio) in the third column. These are the percentage of sales in each sector attributed to tourist spending. TI ratios are adjusted from those used in the national tourism satellite accounts¹, based on the ratio of tourists to local residents of Livingston county.

The tourism satellite accounts in Table 5 are quite consistent with the MITEIM model estimates of direct effects in Table 4.

Table 5. Tourism Satellite Accounts, Livingston County, 1999

Tourism industry	Total Economy		Tourism Economic Activity			
	Total Output (\$millions)	TI/Ratio ^a	Output (\$millions)	Jobs	Personal Income (\$millions)	Value Added (\$millions)
Hotels And Lodging Places	9.3	95%	8.8	243	3.5	5.8
Eating & Drinking Estab.	136.2	14%	19.5	608	7.1	10.3
Amusements And Recreation	72.1	8%	6.0	186	2.5	3.5
Retail Trade	359.1	4%	14.4	320	7.0	11.8
Wholesale Trade	392.6	1%	3.7	30	1.5	2.6
Local Transportation	76.4	3%	2.5	26	0.9	1.4
Total	1,045.8	5%	55.0	1,414	22.5	35.4

a. The TI Ratio is the proportion of sales to tourists in each sector

¹ BEA Reference

Methods

We employ two distinct methods to estimate tourism impacts. The first uses the Michigan Tourism Economic Impact Model (MITEIM) which multiplies visits in party nights times an average spending per party night to obtain total tourist spending in the region. Distinct spending profiles are used for each segment. The MITEIM “medium” spending profiles were used for Livingston County with an average room rate of \$75 in 2000. Visits were estimated based on room taxes (for motel), an inventory of lodging establishments, and assumed occupancy rates for seasonal homes and campgrounds. Local room assessment data was gathered from records at Travel Michigan for the years 1997-2000. Day trips and trips to visit friends or family are estimated by allocating a share of statewide totals to each county based on population and tourist attractions.

Direct and secondary economic impacts are estimated by applying total spending to an input-output model of the Livingston County economy. The model is estimated using 1999 data and the IMPLAN system. The model converts spending to the associated income and jobs and estimates multiplier effects.

The Tourism satellite approach uses IMPLAN base year data for the county for 1999. Sales, income and jobs in 16 tourism-related sectors are extracted from the IMPLAN accounts. Tourism industry ratios for each sector are adjusted from national ratios based on the resident population, numbers of tourists and spending patterns of each group.

MITEIM estimates for 1999 are compared with the TSA estimates to establish consistency and then projected to 2000 using local room tax data and price indices. Further details about models and methods are available in the references and on-line documents.

Table 6. Input Data for Livingston County Economic Analysis

Population (2000)	156,951
Hotel Rooms	770
Campsites	880
Seasonal Homes ^a	1,553
Avg. Room rate	\$75
Room Occupancy rate ^b	48%

a. U.S. Housing Census 2000.

b. Based on room assessment taxes and average room rate.

c. Room and campsite inventory from TTRRC County profiles, rooms adjusted from 700 to 770. County tourism profiles are available on line at:

<http://www.msu.edu/course/prr/840/econimpact/michigan/countyprof3.htm>

Guidance to References

Stynes (1997) and (1998a) provide background on economic impact concepts and methods for recreation and tourism. Further details about the spreadsheet models used to estimate tourist volumes (Stynes 1998b), spending and impacts (MITEIM – Stynes, 2000a) are available on line at our economic impact website (<http://www.msu.edu/course/prr/840/econimpact/>). The approach for combining tourism satellite accounts and visitor survey/I-O methods is discussed in Stynes (2001).

For further background on TSA's, see Frechtling (2000) or the "Methods section" of our economic impact website. Kass and Okubo (2000) and Okubo and Planting (1998) present national TSA's for the United States. Base TI-ratios are taken from the former. IMPLAN is an Input-Output modeling system developed by MIG, Inc. Multipliers used in MITEIM model and the economic accounts for TSA's are derived from 1999 IMPLAN county models and databases for Michigan.

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<http://www.msu.edu/course/prr/840/econimpact/michigan/wc98b.htm>

Glossary of Economic Impact Terms

Terms are presented in a logical rather than alphabetical order

Commodities and industries. Commodities are the goods and services that firms produce and that consumers buy. Industries are collections of firms producing similar commodities. Tourist spending estimated from visitor surveys is on a commodity basis while industry sales statistics used in tourism satellite accounts are usually reported on an industry basis. For example, the spending reported in the MITEIM model on lodging is a pure room sales figure, while hotel sales reported in tourism satellite accounts will include other sources of hotel revenue (e.g., weddings, banquets, food service, gift shop, entertainment).

Sector is a grouping of industries that produce similar products or services. Most economic reporting and models in the U.S. are based on the Standard Industrial Classification system (SIC) or newer North American Industrial Classification System (NAICS). Tourism is more an activity or type of customer than an industrial sector. While hotels (SIC 70) are a relatively pure tourism sector, restaurants, retail establishments and amusements sell to both tourists and local customers. Key tourism sectors are lodging, eating & drinking establishments, recreation and miscellaneous amusements, retail trade, and transportation sectors.

Region – defines the geographic area for which impacts are estimated. The region is generally an aggregation of one or more counties. Impacts are estimated for tourist spending that occurs within the designated region and the impacts are for firms located within this region.

Impact analysis estimates the impact of dollars from outside the region (“new dollars”) on the region’s economy. Spending by local residents is usually not included when estimating tourism impacts. Locals can constitute a significant percentage of visitors at special events or particular “tourism” establishments. Local spending is sometimes included if it can be argued that this spending would otherwise go outside the region.

Significance analysis estimates the importance or significance of an industry or activity to a region usually including spending by both local residents and visitors from outside the region. For example, an airport serves both local residents leaving the area and tourists coming in. All passenger-related sales and jobs for the air transportation sector would be included as part of the tourism industry in a significance analysis, but only the portion of sales and jobs due to tourists coming into a region would be included in an impact analysis.

Tourism Satellite Account (TSA). A tourism satellite account estimates the significance of tourism activity to a region’s economy by extracting the portion of activity in tourism-related sectors that is attributed to tourism. For example, the national TSA for the U.S. for 1997 estimates that 80% of hotel sales is due to tourism and 17% of restaurant sales. The term “satellite account” refers to the fact that this is a rearrangement of information in the official national economic accounts to focus on particular activities that are not readily identified within the standard system of accounts. Satellite accounts have been developed for tourism, transportation, and other activities by the Bureau of Economic Analysis (BEA). The World Tourism Organization (WTO) and World Travel and Tourism Council (WTTC) have developed guidelines for TSA’s at the national level. TSA’s only include the direct effects of tourism within the primary tourism sectors.

Economic Impact Analysis estimates the changes in economic activity within a region due to some action. For tourism this usually entails estimating changes in sales, income and jobs in a region resulting from existing tourism activity or a change in tourism activity. The usual approach is to estimate the number of visitors

and their spending (typically via visitor surveys) and then apply this spending to a regional economic model (e.g. **input-output model**) to estimate the resulting sales, income and jobs, usually including both **direct and secondary effects**.

Input-output model. An input-output model (I-O) is a representation of the flows of economic activity between sectors within a region. An I-O model captures what each business or sector must purchase from every other sector in order to produce a dollar's worth of goods or services. Using such a model, flows of economic activity associated with any change in spending may be traced either forwards (spending generating income which induces further spending) or backwards (visitor purchases of meals leads restaurants to purchase additional inputs -- groceries, utilities, etc.). Multipliers are derived from input-output models.

MITEIM Model. The **Michigan Tourism Economic Impact Model** is a spreadsheet model developed by Daniel Stynes at Michigan State University for estimating economic impacts of tourism. The model estimates visitor spending for different types of visitors and then applies the spending to **sector-specific multipliers** derived from **IMPLAN** models to estimate tourism impacts on a given region.

IMPLAN is a micro-computer-based input output modeling system developed by M.I.G. Inc. With IMPLAN, one can estimate 528 sector I-O models for any region consisting of one or more counties. IMPLAN includes procedures for generating multipliers and estimating impacts by applying final demand changes to the model. Other commonly used I-O modeling systems are RIMS II and REMI.

Final Demand is the term for sales to final consumers (households or government). Sales between industries are termed **intermediate sales**. Economic impact analysis generally estimates the regional economic impacts of final demand changes. Tourist spending is one type of final demand.

Direct effects are the changes in economic activity during the first round of spending. For tourism this involves the impacts on the tourism industries (businesses selling directly to tourists) themselves.

Secondary effects are the changes in economic activity from subsequent rounds of re-spending of tourism dollars. There are two types of secondary effects:

Indirect effects are the changes in sales, income or employment within the region in backward-linked industries supplying goods and services to tourism businesses. The increased sales in linen supply firms resulting from more hotel sales is an indirect effect of visitor spending.

Induced effects are the increased sales within the region from household spending of the income earned in tourism and supporting industries. Employees in tourism and supporting industries spend the income they earn from tourism on housing, utilities, groceries, and other consumer goods and services. This generates sales, income and employment throughout the region's economy.

Total effects are the sum of direct, indirect and induced effects.

Multipliers capture the size of the secondary effects in a given region, generally expressed as a ratio of the total change in economic activity in the region relative to the direct change. Multipliers may be expressed as ratios of sales, income or employment, or as ratios of total income or employment changes relative to direct sales. Multipliers express the degree of interdependency between sectors in a region's economy and therefore vary considerably across regions and sectors.

Type I multipliers do not include induced effects while **Type II** multipliers do. IMPLAN's **Type SAM** multipliers adjust the Type II multipliers for income that is not normally re-spent immediately within the region, e.g. commuting workers who live outside the region and contributions to retirement programs. Multipliers in the MITEIM model are based on IMPLAN Type SAM multipliers.

A **sector-specific multiplier** gives total changes throughout the economy associated with a unit change in sales in a given sector.

Tourism multipliers. As tourism is not a single economic sector, tourism multipliers are calculated as weighted averages of sector-specific multipliers with the percentage of spending in each sector as the weights.

Capture rate is the percentage of spending that accrues to the region's economy as direct sales or final demand. All tourist spending on services within the region is captured, however, tourist purchases of goods is generally not all treated as final demand to the region. For imported goods bought at retail establishments, only the retail and possibly wholesale margins will accrue to the local economy.

Purchaser prices are the prices paid by the final consumer of a good or service. **Producer prices** are the prices of goods at the factory or production point. For manufactured goods the purchaser price = producer price + retail margin + wholesale margin + transportation margin. For services, the producer and purchaser prices are equivalent. The retail, wholesale and transportation margins are the portions of the purchaser price accruing to the retailer, wholesaler, and shipper, respectively. Only the retail margins of many goods purchased by tourists accrue to the local region, as the wholesaler, shipper, and manufacturer often lie outside the local area.

Measures of economic activity:

Sales or output is the dollar volume of a good or service produced or sold

Final Demand = sales to final consumers

Intermediate sales = sales to other industrial sectors

Income is the money earned within the region from production and sales.

Personal Income includes wage and salary income, payroll benefits and sole proprietor's income.

Total Income also includes rents and profits of firms.

Jobs or employment is a measure of the number of jobs required to produce a given volume of sales/production. Jobs are usually not expressed as full time equivalents, but include part time positions. Seasonal jobs are adjusted to a year-round basis, i.e. four jobs for a three month period equates to one job.

Value Added is the sum of total income and indirect business taxes. Value added is the most commonly used measure of the contribution of a region or industry to the national economy, as it avoids double counting of intermediate sales and captures only the "value added" to final products by the sector or region. Think of value added as the total income accruing to the region including wages and salaries accruing to households, profits and rents accruing to firms, and sales and other taxes accruing to government. Value added by a sector or region for a particular good or service can also be conceptualized as the price of the good minus the cost of all non-labor inputs.

Note that these are different measures of economic activity. They should NOT be added together. Income is paid out of the revenue from sales. Personal income is one part of value added. Choose those measures that are most meaningful to your audience. Value added is probably the "best" measure of impact, but it is not widely understood outside of economics. The second-best measure is personal or total income. Jobs, while a popular impact measure, pose problems due to part time jobs and different wage and salary levels across industries. Sales can also be misleading as some sales generate significantly more jobs and income than others. For example, sales by factory outlet stores may only support a small number of retail jobs, with most of the purchaser price leaking immediately outside the region to where the goods are manufactured.

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