ECONOMIC IMPACT:
Toombs County Recreation Center

Prepared for:
Toombs County Recreation Department

Prepared by:
Bureau of Business Research & Economic Development
Georgia Southern University

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INTRODUCTION

The Toombs County Recreation Department located in Lyon, Georgia asked that the Bureau of Business Research & Economic Development (BBRED) at Georgia Southern University perform an economic impact analysis of the county's recreation center. This center hosts a wide variety of events including, family reunions, wedding receptions, business meetings and other large gatherings and as a result many non-county residence travel to Lyon for these events. Visitor usage numbers provided by the Recreation Department and along with average visitor spending estimates for the state of Georgia for day trips and overnight trips from 2006 were used to prepare an economic impact are estimated.[1] The following report first explains the method of analysis, than followed by a discussion of the visitor economic impacts on Toombs County.

Methodology of IMPLAM

Impact **A**nalysis for **PLAN**ning is nationally recognized as one of the best economic input-output modeling systems and includes a database for the state of Georgia and each of its counties. The estimates were prepared using the 2000 database. Since the expenditure data is in years 2000 dollars, the program automatically inflates the dollars to 2007. Therefore, all of the estimates impacts are reported in current year 2007 dollars.

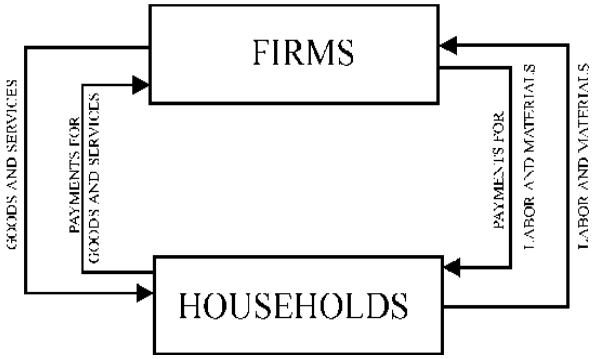
Input-Output analysis, a branch of economic modeling and statistics, has the ability to illustrate and quantify the economic interdependence of producing industries in any regional or local economy. Just as each industry produces goods and services; it is also a consumer, purchasing other goods and services for use in the production process. Using the input-output analysis technique, the impact of a specific industry or economic activity can be traced throughout all sectors of the economy.

Economists often view the economy as if it were a series of transactions that flow in a circle. They often summarize the economy by describing it as a series of transactions.

[1] TRAVEL PROFILE – GERORIA STATE Visitors' Statistics & Travel Economic Impact Regional Analysis prepared by the Travel Industry Association

Each transaction by one sector has a counterbalancing transaction in at least one other sector.

Figure 1



In Figure 1, the outside loop refers to such things as goods, services, labor, and capital. The households provide firms with such things and labor materials.[i2] In return, the firms provide households with such things as goods and services for sale. The inner loop, on the other hand, identifies the payments for the transaction of the goods and services, which are part of the outer loop. The firm pays the household wages and other payments for labor and materials. The household, however, provides payments back to the firms for the goods and services it produces.

Equilibrium in this simple economy will be maintained as long as there are no leakages from the system. Leakages include savings, imports, and taxes. A leakage means that the amount of payments going to the firm for its goods and services is less than the income obtained by the household. When leakages occur, the total amount of income and goods will shrink unless new spending injections occur to offset the losses. Some examples of these injections are: 1) the investment of savings by the firms; 2) consumers from outside of the region buying the firm's goods, exports; and/or; 3) government purchase of goods with generated tax revenue. The economy will balance if injections continue to equal leakages. If injections are greater than leakages, the economy will grow. When leakages exceed injections, the economy will shrink. Input-output models begin by simply assigning dollars to the flow of transactions between businesses, households, and other major consumer groups in the economy such as governments. The transactions are recorded in the hypothetical transactions table shown in Figure 2. The rows

[2] In a private, market economy, the households are the ultimate owners of all the productive resources.

display the transaction of things, goods, and services. The columns reveal the payments associated with each transaction. The system balances in that all injections and leakages are accounted for. In other words, **Total Output (Expenditures)** is equal to **Total Payments (Income/Revenue).**

Figure 2

HYPOTHETICAL TRANSACTIONS TABLE

Outputs* Inputs*	[1] A	[2] B	[3] C	[4] D	[5] E	[6] F	[7] Gross inventory accumul-Ation(+)	[8] Exports to foreign countries	[9] Govern-ment purchases	[10] Gross private capital formation	[11] House-holds	[12] Total Gross Output
[1] Industry A	10	15	1	2	5	6	2	5	1	3	14	64
[2] Industry B	5	4	7	1	3	8	1	6	3	4	17	59
[3] Industry C	7	2	8	1	5	3	2	3	1	3	5	40
[4] Industry D	11	1	2	8	6	4	0	0	1	2	4	39
[5] Industry E	4	0	1	14	3	2	1	2	1	3	9	40
[6] Industry F	2	6	7	6	2	6	2	4	2	1	8	46
[7] Gross inventory depletion (-)	1	2	1	0	2	1	0	1	0	0	0	8
[8] Imports	2	1	3	0	3	2	0	0	0	0	2	13
[9] Payments to government	2	3	2	2	1	2	3	2	1	2	12	32
[10] Depreciation allowances	1	2	1	0	1	0	0	0	0	0	0	5
[11] Households	19	23	7	5	9	12	1	0	8	0	1	85
[12] Total Gross Outlays	64	59	40	39	40	46	12	23	18	18	72	431

The transactions table is more than a numerical version of the circular flow of transactions illustrated in figure 1. The table is actually a set of equations that depict the linkage between the final demand for goods and services, and the payments, income or revenue, associated by the production of those goods and services. The solution of the system of equations results in a set of multipliers which show the relationship between the final demand for a good or service and the intermediate demand among the producers who supply goods and services at the various stages

of production. The mathematical manipulation required to solve the set of equations will not be discussed here.[3]

Input-output models are driven by final demand (consumption). Industries selling to customers respond to the demand for their products by supplying customers directly. However, in order to supply consumer demand, the directly impacted industries must buy goods and services from other businesses. Hence, indirectly impacted producers supply goods and services to the industries responding to direct demand, which means that in turn they must buy goods and services from yet other producers. Each industry that produces goods and services generated demand for other goods and services and so on, in a round by round fashion. These round-by-round incremental effects are described by multipliers. Within the general framework of input-output analysis, various methodologies can be employed to solve the mathematical equations and derive the multipliers.

IMPLAN relies on a complex database of linked expenditure patterns between 528 processing sectors in the economy. Using data specific down to the county level for the state of Georgia, the program is capable of generating five separate impact measures in the form of multipliers. These are: 1) output multipliers; 2) personal income multipliers; 3) total income multipliers; 4) value-added multipliers; and, 5) employment multipliers. Each of the multipliers is composed of several components or effects. These effects are denoted: 1) direct effects; 2) indirect effects; and, 3) induced effects. There are three types of multipliers which may be estimated in a system of input-output equations. These are termed Type I, Type II, and Type III Sam multipliers. Type I multipliers include only the direct and indirect effects. Type II multipliers are almost a complete estimate of a full impact including the direct, indirect, and induced effects.[4]

[3] A general discussion of the mathematical process for deriving multipliers is found in *The Elements of Input-Output Analysis*, by William H. Miernyk. IMPALN estimates Leontief Type I multipliers and a modified form of Miernyk's Type III multipliers.

[4] Induced effects may be estimated by either Type II or Type III Leontief Multipliers. The primary difference between the two types of multipliers arises from the type of constraint imposed on the system of equations. The Type III multipliers used in IMPACN assumes that the economy is at full employment. Therefore, any change in final demand either increased or decreases population by the number of jobs created or lost. It is therefore assumed that wages do not adjust, only the number of people employed. Each person added or lost adds to or deducts form the average expenditures per person.

The direct effects on any given producer or industry are the output and employment associated with the immediate effects of change in final demand. Final demands consist of purchases of goods and services for final consumption, as opposed to an intermediate purchase where the goods will be further re-manufactured by a supplier of final demand. For example, expenditures for new bridge construction are direct final demand.

The indirect effects are the output or employment associated with backward linkages in industry demand. These are the inter-industry effects i.e. producers buying from other local businesses. To produce the output necessary to serve final demand, directly impacted industries must demand inputs form supporting producers. In order for supporting businesses to produce the intermediate demand for output going to the directly impacted industries, they require the input of goods and services from other businesses and employment. Therefore, some portion of the demand for each intermediate producer is attributable to the primary supplier of final demand. The induced effects are changes in demand associated with the household income generated by the direct and indirect effects of output or employment. Household consumption is related to household income in a stable way and is typically estimated by the propensity to consume. Hence, employment and output generate income, which the household uses in turn to demand goods and services. Some part of each region's consumption, therefore, is dependent on household income generated by the owners and employees of both directly and indirectly impacted producers. Input-output analysis traces how the final demand for goods and services has direct, indirect, and induced effects on industry final demand, total industry output, and employment.

FINDINGS

The Toombs County Recreation Department provided user figures of there county's recreation center. This data describes how many visitors used the center last your and the length of their stay. The recreation center had 12,935 non-county visitors use the center for one day, 365 non-

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Type II multipliers, on the other hand, assume that employment income increases or decreases as final demand changes. Therefore, it is assumed that wages adjust, but not employment. As each employee's income increases, the model assumes that expenditures on all personal consumption items increases.

county visitors used the center for two days and 125 non-county visitors used the center for five days.

Having the basic data on the number of visitors, to complete impact analysis several assumptions were required. The first assumption was with regard to the impact of the, length of a visitors stay. Visitors staying one day were considered day-trip and would not need any lodging. Those who stated 2 or more days were considered overnight travelers and would require overnight accommodations.

Next using average spending figures provided by the Travel Industry Association 2006 Travel Profile of the state of Georgia, a spending number was attached to each traveler. Those in the day-trip spent on average state wide $43.69 per day. While those who stayed overnight spent on average state wide $104.78 per day. Table 1 illustrates the usage figures and per person per trip spending.

Table 1

Total Spending Per Trip

Number of Day	Visitors To Recreation Center	State Average Spending	Total Pre-trip
1	12,935	$ 43.69	$ 565,130.15
2	365	$ 104.78	$ 76,489.40
5	125	$ 104.78	$ 65,487.50

The information reported by the Travel Industry Association of American does not provide details on the distribution of expenditure by type, e.g. food, accommodations, retail, etc. However, the IMPLAN multipliers are different and sufficiently detailed to provide more sensitive results where direct expenditures are applied to disaggregated sectors. In order to disaggregate the estimated per person per day estimated expenditures this analysis used a survey conducted by Georgia Southern for travelers in the I-95 corridor this year long survey of travel expenditures for visitors traveling the I-95 corridor in 1999-2000.[5] This information comes from the Economic Impact Report: Proposed Crime & Punishment Museum prepared by BBRED Staff in 2002. The sample contains over 1000 surveys. The distribution of expenditures by type included:

TABLE 2

Distribution of Spending by Travelers

Day Trip		**Overngiht**	
1. Gasoline	17%	1. Gasoline	10%
2. Meals	28%	2. Meals	16%
3. Apparel	9%	3. Apparel	5%
4. Recreation & Attractions	19%	4. Recreation & Attractions	11%
5. Misc. Retail	26%	5. Misc. Retail	14%
		6. Accommoda	44%

Using the Travel Industry Association data discussed previously the total day trip and total overnight spending are depicted in table 3.

[5] Economic Impact Report: Proposed Crime & Punishment Museum prepared by BBRED Staff in 2002

TABLE 3

Total Spending by Type of Visitors to Toombs County

Day Trip Total Spending			**Overngiht Trip Total Spending**		
1. Gasoline	$	96,072	1. Gasoline	$	14,198
2. Meals	$	158,236	2. Meals	$	22,716
3. Apparel	$	50,862	3. Apparel	$	7,099
4. Recreation & Attractions	$	107,375	4. Recreation & Attractions	$	15,617
5. Misc. Retail	$	146,934	5. Misc. Retail	$	19,877
			6. Accommodations	$	62,470

After the distribution was calculated the information was entered into the IMPLAN program. The following table will show the output in turns of dollars added to the economy of Toombs County estimates a total $956,578. Additionally, IMPLAN determined three different categories to describe the visitors to the recreation center. These are direct, indirect and induced. The direct category refers to impact that occur as a result of the spent to the tourist in Toombs county. An example of direct impact is the tourist buying a T-shirt from a local merchant. This money was spent to directly by the tourist. In this case the direct impact was $694,286 spread between several different industries. The second type of spending is indirect. These in direct impact are those events that happened as a result of what the tourist is consuming while in the area being examined. For example, some events require a catering company. These local companies will hold some merchandise in stock that was used during this event. Any purchases made by this company to replace merchandise used during the event are indirect related to the tourist at the event. The total indirect impact for Toombs County was $133,011 spread over several industries. Final induced impacts are those impacts that happen because of the indirect impact. For example, the catering company from the previous example has employees that working the event. The employees paid and the spending of there pay is an induced impact. The total induced impact for Toombs County was $129,281 spread over several industries. The table below depicts the industries that receive the most impact from these visitors. The table 4 below shows the output in 2007 dollars and uses the Standard Industrial Classification system.

TABLE 4

OUTPUT IMPACT (2007$)

Industry*	Direct	Indirect	Induced	Total
Agriculture	0	2,064	1,509	3,573
Mining	0	967	15	981
Construction	0	15,645	2,041	17,685
Manufacturing	0	8,512	5,662	14,174
Transportation, Public Utility	97,096	41,831	12,779	151,706
Trade	314,884	17,338	37,018	369,240
FIRE	0	18,634	31,367	50,002
Services	148,303	25,255	36,882	210,441
Government	1,853	2,765	1,879	6,496
Other	0	0	129	129
Institutions	132,150	0	0	132,150
Total**	**694,286**	**133,011**	**129,281**	**956,578**

*Industry classification based on the Standard Industrial Classification

**Number may not add up due to rounding

Additionally, IMPLAN also produced an employment outcome. Over all 17.4 jobs were created due to the spending of the visitors. The majority of these jobs were created from direct spending. Table 3 shows a detailed breakdown of the industries where these jobs were created and table also uses the Standard Industrial Classification system to organize the industry category.

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EMPLOYMENT OUTPUT

Industry*	Direct	Indirect	Induced	Total
Agriculture	0	0	0	0.1
Mining	0	0	0	0
Construction	0	0.3	0	0.3
Manufacturing	0	0.1	0	0.1
Transportation, Public Utility	0.1	0.1	0.1	0.3
Trade	8.7	0.3	0.8	9.8
FIRE	0	0.1	0.1	0.2
Services	5.5	0.5	0.6	6.7
Government	0	0	0	0
Other	0	0	0	0
Institutions	0	0	0	0
Total**	**14.3**	**1.4**	**1.7**	**17.4**

*Industry classification based on the Standard Industrial Classification

**Number may not add up due to rounding

Conclusion

The impact of these visitors to the recreation center is positive. This facility provides a local alternative for residents to has some of there big events close to home. By capturing some of these events the county of Toombs is having approximately $950,000 and 17 jobs to the overall economy.