

An Economic Impact Study  
of the  
University of Michigan-Flint  
on  
Flint and Genesee County

by

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First Reader



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# Introduction

Any institution affects and is affected by the community in which it is located. The existence of the University of Michigan-Flint, as an urban university, goes beyond the university's primary roles of teaching, research, and public service.

In addition to its primary aims, the university also influences the local social and political environment and, at the same time, provides the community with jobs and considerable income.

In particular, the University of Michigan-Flint is an important economic contributor to the surrounding area. This study will show the economic impact of purchases made from local businesses made by the university, faculty, staff, and students; purchases by local businesses from other local sources in their support of university-related business; and local business stimulated by the expenditure of university-related income by local individuals other than faculty, staff and students. During the academic year 1994-1995, the University of Michigan-Flint accounted for over \$13 million of university-related local business.

This study is concerned with defining the economic impacts of the university on its local environment. It models and measures the economic impact of the University of Michigan-Flint on the city of Flint and the surrounding area. The surrounding area encompasses Genesee County which



includes the townships of Montrose, Vienna, Thetford, Forest, Flushing, Mt. Morris, Genesee, Richfield, Clayton, Flint, Davison, Gaines, Mundy, Grand Blanc, Atlas, Argentine, and Fenton. The cities and villages are Montrose, Clio, Flushing, Mt. Morris, Swartz Creek, Burton, Davison, Goodrich, Grand Blanc, Linden, and Fenton.

The model used in this study follows guidelines suggested by John Caffrey and Herbert H. Isaacs in "Estimating the Impact of a College or University on the Local Economy." Economists Caffrey and Isaacs developed a series of models for estimating the magnitude of the economic impact of a university upon its local environment in a given period of time. These same models have been used, with some modifications, in most economic impact studies of universities and colleges.

The emphasis of this study is on the measurable impacts of spending by the university, its faculty, staff and students. The model used in this study includes institutional expenditures, not revenues, in a given period of time. Amounts and sources of revenue are readily known, but it is not as easy to identify expenditures or to trace patterns of spending in the community, which is what this study sets out to do. The model imposes a structure on cash outflow to identify who is spending, how much they are spending, what goods and services they are buying, and where the spending is being done. As such, the educational, cultural and aesthetic benefits to the community are not evaluated by this study. Perhaps one of the most important features of this



model is its built-in understatement; i.e., the actual economic impacts are probably greater than the models suggest. The model assumes that all money spent in university businesses is lost to the community (such as food services, bookstores, etc.). Therefore, in this respect, the model underestimates local economic impact.

This study looks at current and short range effects. As such, the model also underestimates the positive economic impact because it does not include an analysis of some long term benefits, including the upgrading of skilled and professional people, the contribution of scientific research to manufacturing and industry, or the drawing power of the university community as a desirable place for residence or the location of research and industrial enterprises.

(Caffrey and Isaacs, 1971)



# Historical Summary

The establishment of a Flint campus of the University of Michigan results from three factors: the decision made by the University of Michigan in Ann Arbor to establish a campus in Flint; the enormous and ongoing contributions by the Charles Stewart Mott Foundation; and the community's need and desire for the university.

In 1944, the University of Michigan opened a University Extension Office in Flint. At the same time, the city of Flint was selected as a University of Michigan Center for Graduate Study under the administration of the Extension Service.

In 1956, a combination of community support and University of Michigan cooperation brought about the establishment of a two-year senior college offering baccalaureate degrees in Flint. In 1957, the Mott Memorial Building, a gift to the community from C. S. Mott, was occupied.

The admission in 1965 of the first freshman class made the college the first four-year University of Michigan program offered outside Ann Arbor. A Citizens Advisory Committee was established to advise the executive officers of the college on the long-term educational needs of the community and the role that the institution might play in meeting them. The Mott Memorial Building was expanded in 1967, again with a generous gift from C. S. Mott. This gift enabled the campus to add laboratories, offices, classrooms, an



auditorium, and a student cafeteria to existing facilities. Growth of the student population and faculty began to increase rapidly with the addition of the freshman and sophomore classes.

Through the combined efforts of many influential citizens and the Flint city government, in 1971 the university acquired 42 acres along the Flint River in the heart of the city. In February, 1973, the Regents approved the Campus Development Plan which provided for relocation of the University of Michigan-Flint campus to the riverfront site. In January, 1977, the campus occupied its first building on the riverfront campus, a general classroom-office building housing, an educational theatre facility, and a single floor functioning as an interim library. For the present, the University of Michigan-Flint continues to utilize the Mott Memorial Building on the C. S. Mott Community College Campus for its Public Broadcasting Service - WFUM-Channel 28 and WFUM-FM. The Lapeer Street Annex Building on the Court Street site offers classroom and instructional activities as well as faculty offices in the health sciences.

Other facilities on the riverfront campus include the Central Energy Plant, which was designed to heat and cool all buildings at that site, and the University Center and Recreation Building. The latter facilities were opened in 1979 and 1982 respectively, with construction funds derived from substantial private gifts from the community and a limited amount of loans to be repaid from future student fee revenues. With the construction of the



riverfront campus the university has established a facility capable of fostering a collegiate atmosphere in addition to providing a public service resource to the entire community.

As a result of continued growth and strong support from community and state officials, the university has undertaken several major construction projects on its riverfront campus. In October, 1988, the William R. Murchie Science Building was dedicated, and a new student parking deck was opened in May of that same year. In October, 1991, the University of Michigan-Flint took possession of the University Pavilion (formally Water Street Pavilion) from the city of Flint. Many administrative and student services offices moved from locations in the Classroom Office Building and the University Center, to the upper level of the Pavilion. The construction of campus facilities, as well as the acquisition of University Pavilion, have centralized nearly all academic, administrative, and public service activities of the university onto the riverfront campus. In 1994, the Frances Willson Thompson Library was opened. These actions will allow the University of Michigan-Flint to continue serving the public well into the twenty-first century.<sup>1</sup>

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<sup>1</sup>University Relations Office of the University of Michigan-Flint: 1995.



# Assessing Economic Impact

A model was needed that could measure the economic impact of a university on its surrounding area. Several impact studies of colleges and universities across the country have been carried out in the last fifteen years. The methodology used in most of the economic impact studies of higher education completed during the past two decades is based upon the work of John Caffrey and Herbert H. Isaacs, "Estimating the Impact of a College or University on the Local Economy." The economic impact studies of higher education that follow were examined and used for comparison in this study.

James L. Altmann completed a study in 1984 entitled, "Indiana University Southeast's Impact on the Local Economy." Altmann and his research team, using the Caffrey and Isaacs model, determined the economic impact on the seven-county service area of the university. The study focused on the impacts of spending by the university, faculty and staff, and students. Also measured was the impact on business property values, the credit base, and the creation of full-time jobs. The study concluded that the total university-related local business volume for 1984 was \$19,926,008, with almost \$9 million contributed by the multiplier. Altmann concluded that the university is a major contributor to the local economy in that it stimulates local business, adds to local business property values, expands the area's credit base, and creates a significant number of full-time jobs.



Another study examining the economic impact of a university was the "Impact of the University of Virginia on Charlottesville and Albemarle County," by Eleanor G. May and Margo E. Hauck. In this study, the economic impact and the cultural and community service impact of the university were assessed during the academic year 1979-1980. The economic activity was measured in terms of business volume, personal income and employment, while the cultural and community impact was measured by residents' use of facilities and events. The University of Virginia, directly and indirectly, accounted for over \$307 million of the Charlottesville-Albemarle business volume with over \$131 million accounted for indirectly. This study also followed Caffrey and Isaacs very closely.

Both of these studies were used for comparison with the present study. Final data analysis was compared with the data of both studies as another method of checking the reliability of the study. Several other impact studies were examined that used parts of the Caffrey and Isaacs model, but were used for their ideas rather than for comparison.



# Methodology/Model

In this section of the report, the procedure used to determine the university's economic impact is documented by explaining the methodology used to supplement or to verify figures used in the Caffrey-Isaacs model. The model consists of a number of equations to estimate spending generated by the university's presence in the community.

In using the Caffrey-Isaacs model, in order to estimate the economic impact of the university, the following information was needed:

- ▶ information from the Registrar's Office regarding student profiles;
- ▶ information from the Purchasing Office regarding university expenditures;
- ▶ information from the Accounting Office regarding faculty/staff compensation;
- ▶ a faculty and staff survey; and
- ▶ a student survey.

In the Caffrey-Isaacs model, an attempt is made to estimate how spending circulates through an economy by using an adaption of the multiplier concept.



## **The Concept of the Multiplier**

The multiplier is used to estimate the amount by which an expenditure will affect the economy beyond its direct impact of the original expenditure, because of the circular flow of income. In other words, once money enters a geographic area it may be spent and re-spent, leading to a greater measure of economic activity and a larger income for the area. In this study, it is important to estimate how individuals allocated their after-tax income between savings and spending for consumption. It is also important to know how much of the consumption spending was done in Flint and Genesee County and how much was done outside of the area.

The rationale behind the methodology of the multiplier can be summarized as follows: the university spent its funds for wages, salaries, services and supplies. The wage and salary component of university expenditures that is paid to area residents represents a direct impact of the university on local income. The university also buys a portion of its supplies locally. This spending represents a direct impact on area business sales. In addition, local suppliers of the university hire employees to handle the business directly generated by the university and they buy some of their supplies locally. These two expenditures represent part of the indirect impact of the university on the local area. However, probably the most significant portion of the indirect effect is represented by the spending of university employees. A large fraction of the income of university faculty and staff is spent locally.



As a result, business sales are higher, and hence the businesses buy additional supplies and hire employees (creation of new jobs) to service the needs of university faculty and staff.

The magnitude of any multiplier varies among localities at any point in time, as well as over a period of time for any one locality. It must be emphasized that the multiplier effects can only be estimated statistically, not traced directly. Local variation of statistical estimates, notwithstanding data errors and estimating errors, can spring from such factors as the relative dependence of a community on imports, the spending and saving preferences of the local residents, the number and demographic characteristics of the residents, the patterns of consumer spending, and the industrial and commercial structure of economic activity. Within this framework, it is necessary to estimate the values for several of the variables involved. (Caffrey and Isaacs, 1971)

To capture the effects of the multiplier, one must look not only at spending by the university, its staff, faculty and students, but also at spending by local businesses which occurs as a result of the university's presence in the area. This model estimates the multiplier in two ways: *Additional Purchases from Local Business* which is explained below in Added Production Requirements, and *Additional University-Related Expenditures* which is explained under Income-Induced Requirements. Specific estimates, described below, include the multiplier effects. They are a combination of the original



direct impact and the indirect impact.

### **Added Production Requirements**

The coefficient  $m_p$  represents the degree to which local businesses purchase goods and services from local sources. In other words, this coefficient is the additional value of local production generated by one dollar spent by local households in local business establishments. The starting point in deriving the estimate is the average household dollar expenditure for local final products, to which is added the average local business expenditure for locally produced materials and services. Any intermediate effects on income are excluded since the estimate is restricted to final sales plus transactions between local business establishments for locally produced products. Caffrey and Isaacs (1971) have shown that the range of the coefficient  $m_p$  is \$.15 - \$.30 per dollar of expenditures by local residents in local business establishments. For this study, \$.15 is chosen as a low estimate of the impact to avoid exaggerating the effects.

### **Income-Induced Requirements**

The coefficient  $m_i$  represents the degree to which individual income received from local business activity is spent and re-spent locally. Total production requirements excludes the effects of household income receipts and spending. The coefficient  $m_i$  as the income-induced requirements per dollar of



final demand, represent the additional value of local industrial and commercial output when household income and expenditures are recycled. This coefficient may be added to total production requirements when the university wants to include household effects on the level of business output. The range for this variable, used by colleges and universities, is \$.60 - \$.80 per dollar of expenditures by local residents in local business establishments. (Caffrey and Isaacs, 1971) For this study, \$.60 is used as a low estimate of the impact to avoid exaggerating the effects.



# Survey Methods/Descriptive Statistics

In order to obtain needed data for this project, surveys were necessary. Some estimates from the Caffrey-Isaacs model, based on national samples, were used as guidelines. However, local data was also gathered to get an idea of local spending patterns of faculty, staff and students to complete the University of Michigan-Flint impact study. During the fall of 1995, surveys were developed and distributed to two groups: faculty and staff; and students. These surveys were developed to collect data needed to estimate the Caffrey-Isaacs model.

The student and faculty/staff surveys were coded and tabulated using the Statistical Package for the Social Sciences (SPSS) program. PURA, a university research organization, handled data input in the SPSS.

## Student Survey

Standard statistical theory offers a formula to determine the sample size with adequate precision. The formula to determine the sample size for standard errors no greater than two percent for any sampling ratio came from the book, Survey Sampling by Leslie Kish.<sup>2</sup>

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$$^2 n = n' / (1 + n'/N)$$

where, n = the sample size

N = the number of elements in the population

n' = the statistical error

From this formula, if:  $n = 625 / (1 + 625/6,312)$  then  $n = 568$



Given a population of 6,312, it was determined that a sample size of 568 students would represent the total student population. Twenty classes were randomly selected, which included 575 students. With the cooperation of the instructors 20 classes were surveyed, of which 547 student responses were completed. The student survey instrument is in Appendix C.

Figure 1 is a breakdown of the survey results compared to the actual student population of the university. Actual population statistics were gathered from the Registrar's office and the Office of Budget and Institutional Analysis, to compare with the sample statistics. Two results of the survey may suggest bias — overrepresentation of freshman and sophomore students, and overrepresentation of full-time students. But given the closeness in age between the sample and the population, 26.7 years and 27.2 years respectively, and given the residence of the survey respondents, 71.6 percent surveyed and 70 percent actually live in Genesee County, there is a good reason to believe the sample is fairly representative. Another interesting finding is that 65.9 percent of student respondents live at home with their parents.

Data from the student survey is broken down on three tables. Table 1 breaks down student residence. Only 28 percent of the respondents live outside Genesee County. The breakdown of monthly expenditures of all students surveyed is shown on Table 2. Students spend 15 percent of their monthly disposable income at the university, 52 percent in Genesee County



and 33 percent outside the county. The breakdown of expenditures by category is shown on Table 3.

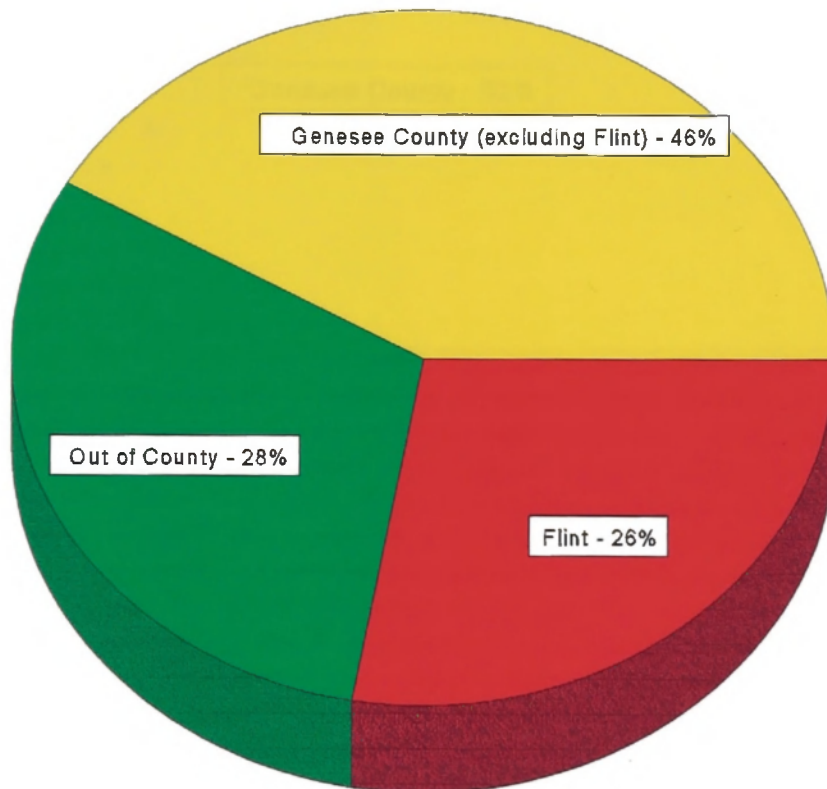


**Figure 1**  
**STUDENT SURVEY RESULTS WITH COMPARISON OF ACTUAL**  
**POPULATION**

	<b>SURVEY</b>	<b>ACTUAL POPULATION</b>
<b>STATUS</b>	547 students surveyed	6,313 full- and part-time
Freshman	32.6%	15.4%
Sophomore	24.3%	19.9%
Junior	18.4%	22.9%
Senior	21.6%	31.1%
Graduate	2.7%	6.6%
Extension	.4%	4.1%
Totals	100%	100%
<b>FULL/PART TIME</b>		
Full-time	88.1%	48.2%
Part-time	11.9%	51.8%
Totals	100%	100%
<b>AVERAGE AGE</b>	26.7 years	27.2 years
<b>RESIDENCY</b>		
Flint/Genesee County	71.6%	70%
Other	28.4%	30%
Totals	100%	100%
<b>HOUSING</b>		
With Parents	65.9%	not known
Rent house/apartment	21.3%	not known
Other	12.8%	not known
Totals	100%	



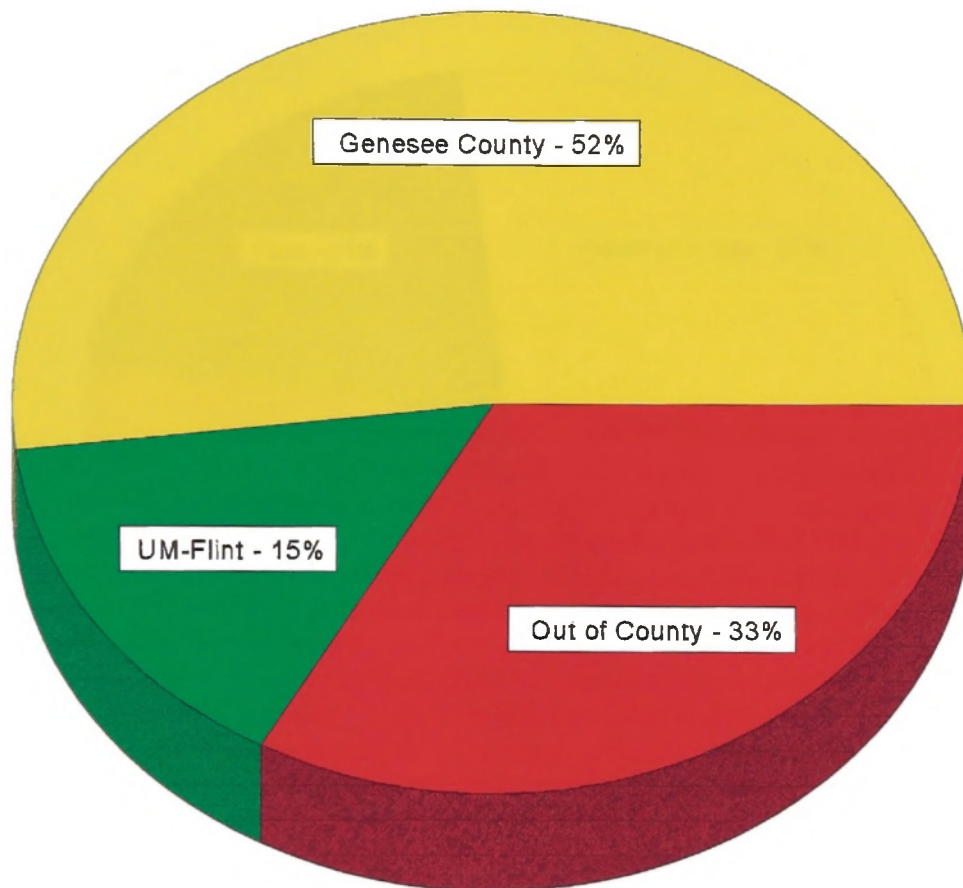
Table 1  
 UM-Flint Student Survey  
 Place of Residence  
 n=525



<i>Usual Residence</i>	<i>Number of Respondents</i>
Genesee County (excluding Flint)	242
Out of County	149
Flint	134
Total	525



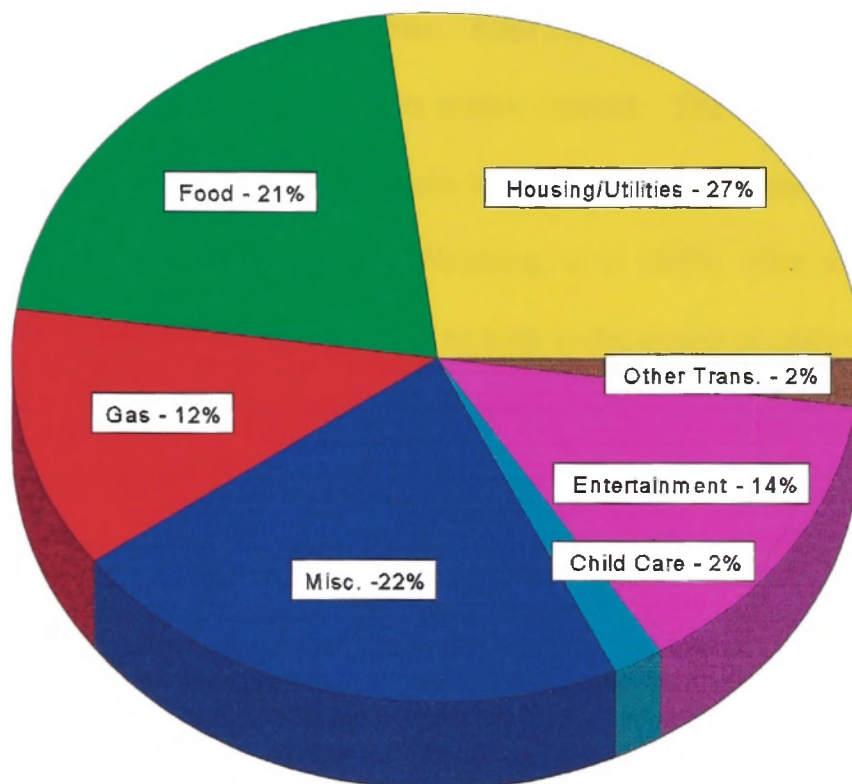
Table 2  
UM-Flint Student Survey  
Breakdown of Monthly Expenditures  
n=527



<i>Where Dollars are Spent</i>	<i>Dollars Spent</i>
Genesee County	\$146,733.50
Out of County	\$93,242.50
UM-Flint	\$43,816.99
Total	\$283,792.99



Table 3  
 UM-Flint Student Survey  
 Expenditures in Flint/Genesee County  
 Breakdown by Category  
 n=527



<i>Category</i>	<i>Dollars Spent</i>
Housing Utilities	\$51,290.00
Food	\$41,658.50
Entertainment	\$27,354.00
Gas	\$23,757.00
Other Transportation	\$4,255.00
Child Care	\$4,170.00
Miscellaneous	\$42,275.75
Total	\$194,760.25



### Faculty and Staff Survey

The survey questionnaire for the faculty and staff was distributed by mail to all 619 full-and part-time employees. The survey instrument is in Appendix D. Of the 619 questionnaires, a total 128 responses were returned amounting to a 20.7 percent response rate. There is no agreed-upon standard for a minimum acceptable response rate. Mail surveys often have a response rate below 30 percent due to education and/or interest. The lower the return rate, the more important it is to ascertain whether the non-respondents are concentrated among a certain group. (Weisberg, et al 1989) One way of checking the reliability of this survey is to look at the group or position of the respondents. The actual position breakdown of faculty and staff is 52.6 percent faculty and 47.4 percent staff. The survey results show 58.4 faculty and 41.6 staff, suggesting that faculty are slightly overrepresented and staff slightly underrepresented. Commuters may also be under represented because of time constraints, and lack of interest in the local community.

The total number of full- and part-time faculty and staff at the university during this period of time was 619 (information from Budget and Institutional Analysis). Of the 128 faculty and staff who responded to the survey, 70 percent live in the city of Flint and Genesee County, as outlined on Table 4, with 26 percent in Flint and 44 percent outside the city.

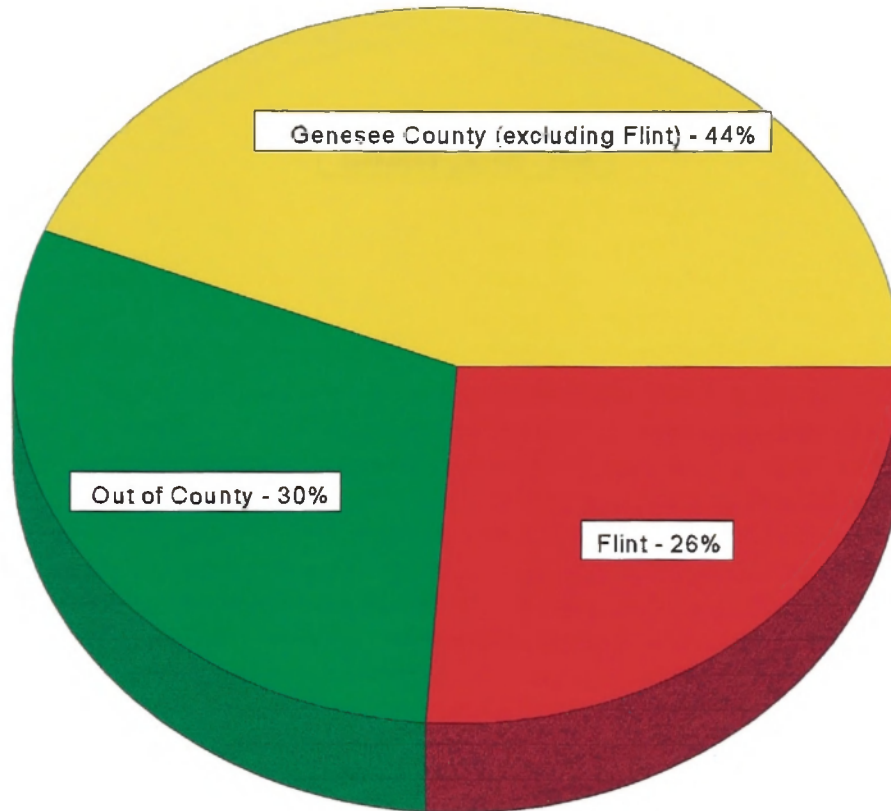
A breakdown of monthly expenditures by faculty and staff is shown on Table 5. Data from the 128 faculty and staff respondents, indicated that 50



percent of their monthly disposable income is spent in Genesee County, 3.5 percent on the campus, and 46.5 percent outside of the county. Table 6 depicts the expenditures made by faculty and staff in Flint and Genesee County.



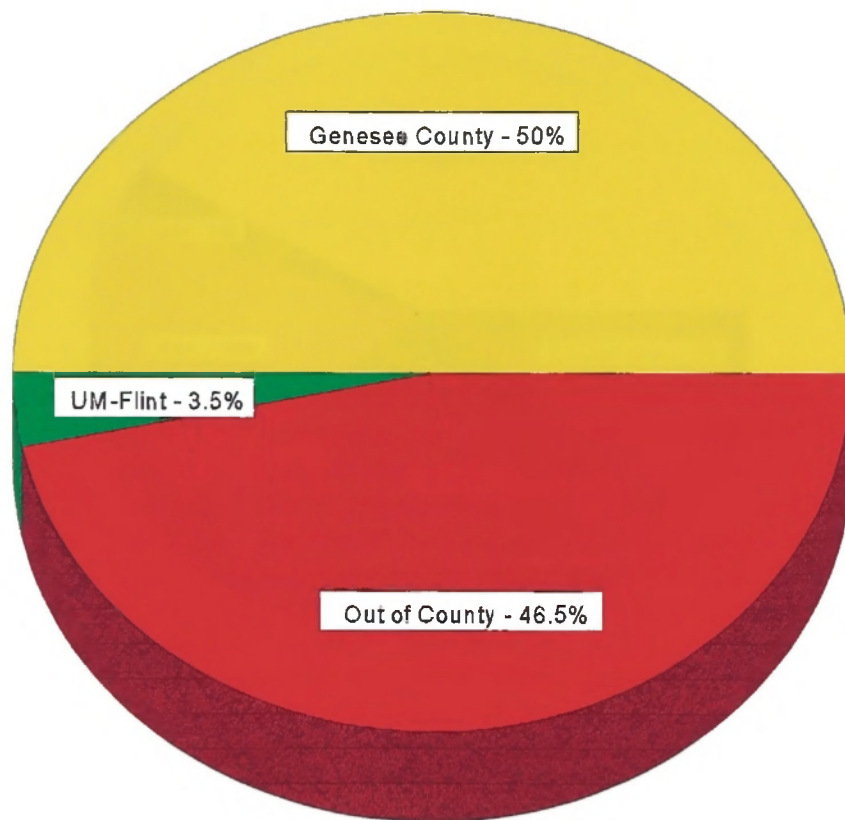
Table 4  
 UM-Flint Faculty/Staff Survey  
 Place of Residence  
 n=128



<i>Place of Residence</i>	<i>Number of Respondents</i>
Genesee County (excluding Flint)	57
Out of County	38
Flint	33
Total	128



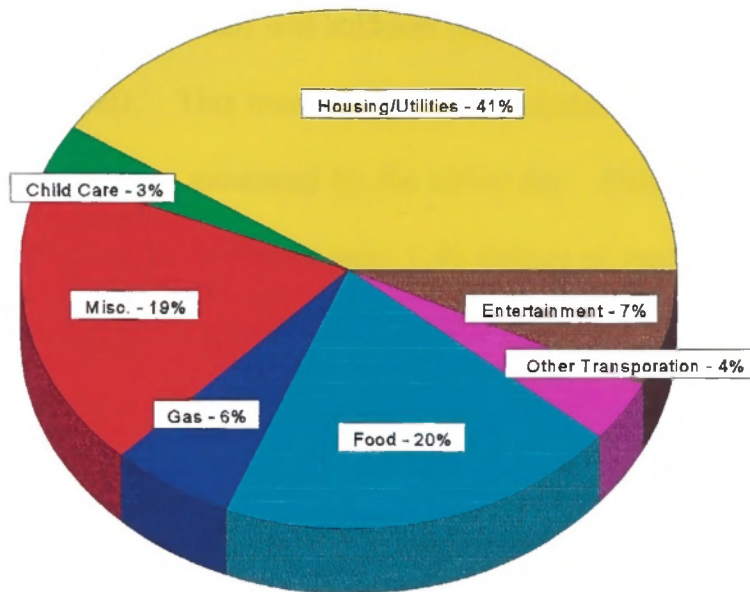
Table 5  
 UM-Flint Faculty/Staff Survey  
 Breakdown of Monthly Expenditures  
 n = 128



<i>Where Dollars Spent</i>	<i>Dollars Spent</i>
Genesee County	\$135,865.70
Out of County	\$125,834.30
UM-Flint	\$9,611.00
Total	\$271,311.00



Table 6  
 UM-Flint Faculty/Staff Survey  
 Expenditures in Flint/Genesee County  
 Breakdown by Category  
 n=128



<i>Category</i>	<i>Dollars Spent</i>
Housing/Utilities	\$58,499.00
Food	\$28,756.00
Entertainment	\$10,712.00
Gas	\$9,386.00
Other Transportation	\$5,930.00
Child Care	\$4,147.00
Miscellaneous	\$28,113.00
Total	\$145,543.00



# Economic Impact of the University

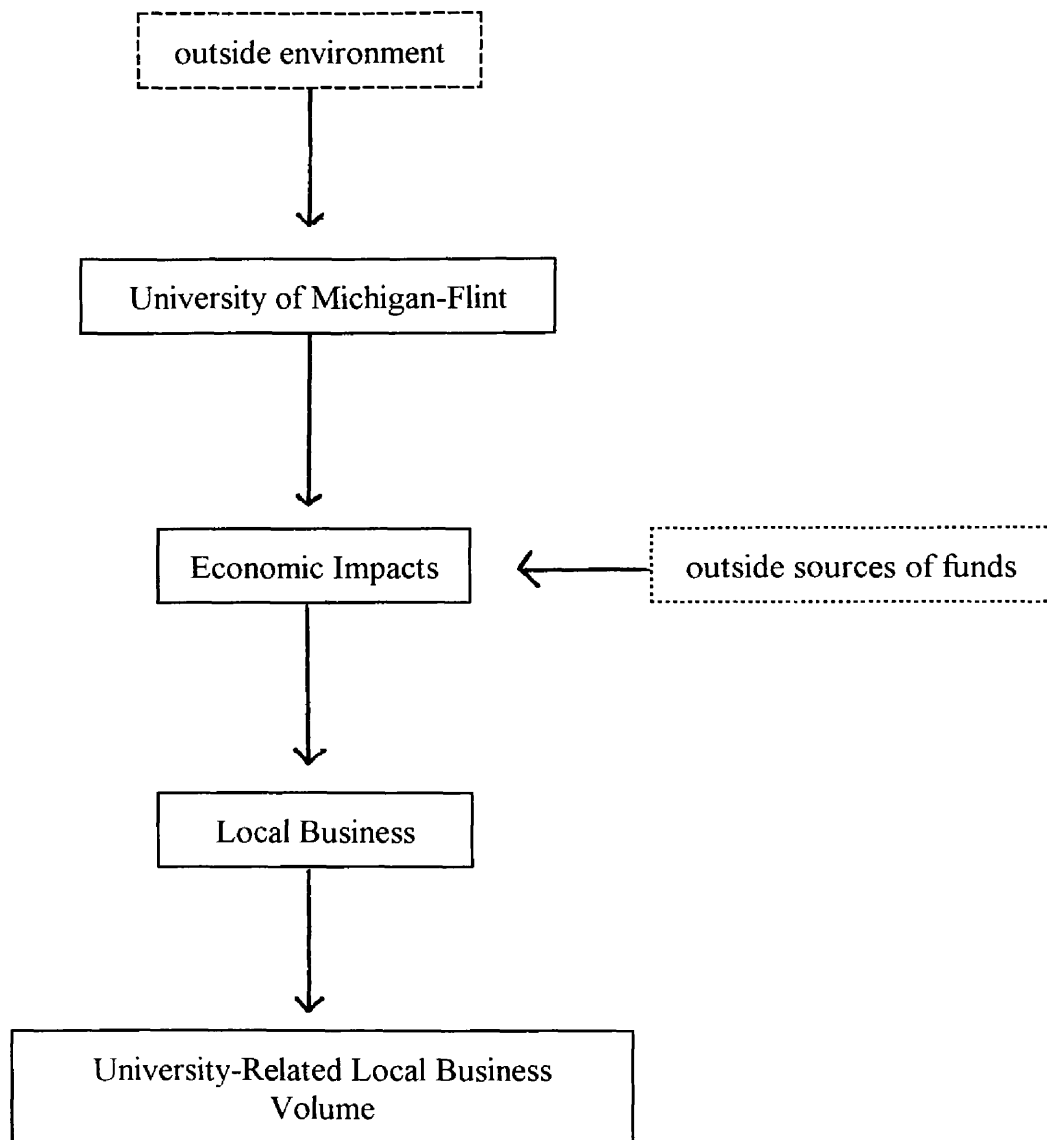
During the academic year 1994-95, the University of Michigan-Flint directly contributed through wages and local purchases, \$28,832,237.38 to Genesee County's economy. In addition, based on this model, the university accounted for \$13,311,993.22 of Genesee County's business volume generated by the university, its faculty, staff and students (see Appendix A for a detailed breakdown of the model). This breaks down to an additional 46 percent of income for Genesee County, generated by the university. This means that for every dollar spent by the university, at least 1.46 dollars of income is generated. Direct expenditures accounted for \$7,606,853.27 by the university, faculty, staff and students. Additionally, indirect expenditures account for \$5,705,139.95.

A schematic representation of the modified Caffrey and Isaacs model is shown in Figure 2. This flow chart represents the environment and the local groups that provide a measure of the university's economic impacts on that environment. Outside sources of funds flow into the university — the economic impacts of the university are effected by the outside environment, which, in turn effects local business — university-related local business volume is the result.



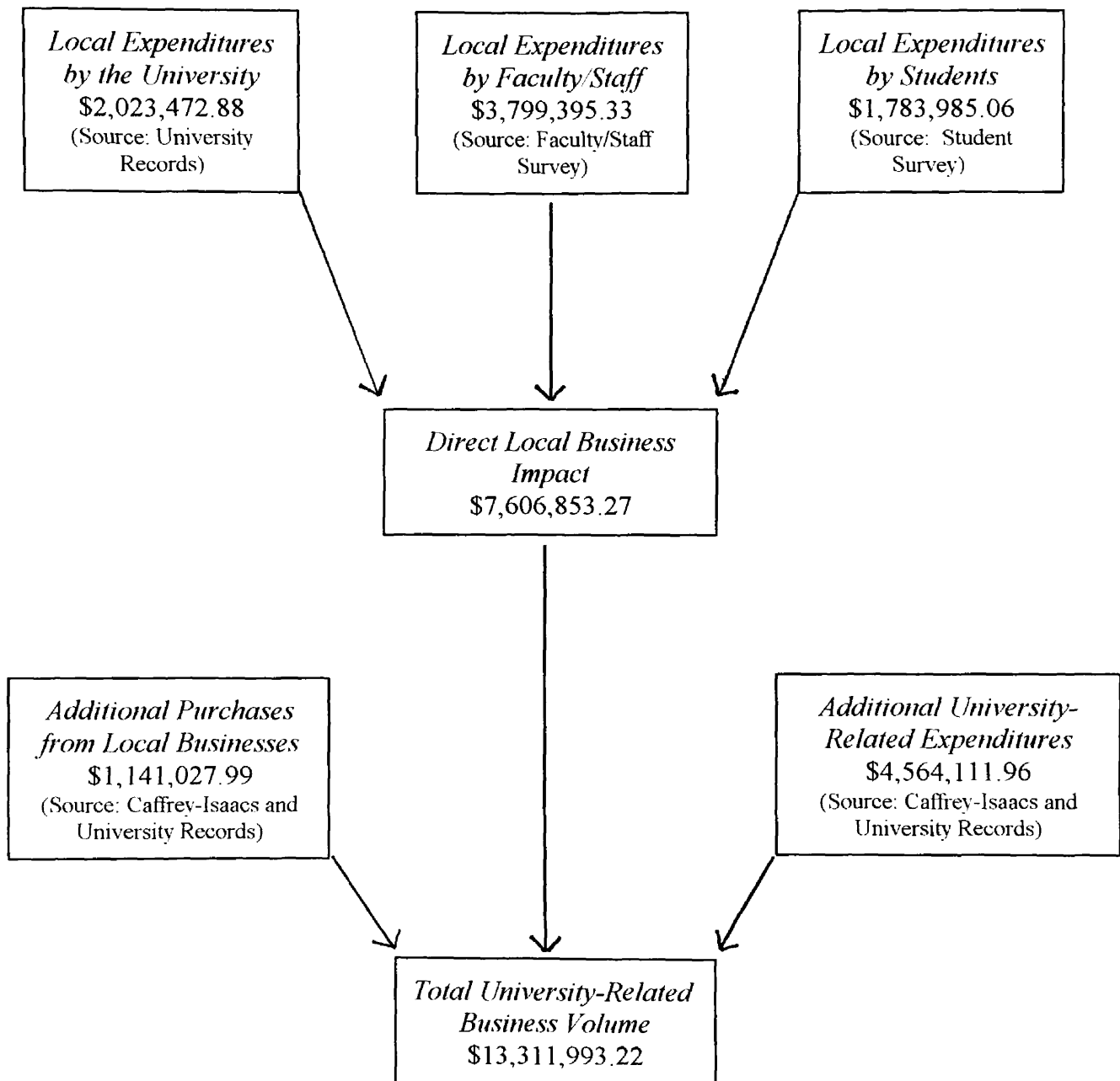
**Figure 2**

**Schematic Representation of the Impact Model**





**Figure 3**  
**Expenditure Model**  
**for the University of Michigan-Flint**





As depicted in Figure 2, *Total University-Related Local Business Volume* for 1994-95 is estimated to be \$13,311,993.22. This figure represents the sum of *Direct Local Business Impact*, *Additional Purchases from Local Businesses*, and *Additional University-Related Expenditures*. *Direct Local Business Impact* represents the sum of *Local Expenditures by the University*, *Local Expenditures by Faculty and Staff*, and *Local Expenditures by Students*.

### **Direct Local Business Impact**

The following three sections represents the data obtained from the surveys and university records.

#### **I. University-Related Local Expenditures**

The University of Michigan-Flint spent a total of \$28,832,237.38 during the fiscal year 1994-1995, of which: \$26,427,307.38 was for payroll to faculty, staff, and student employees; \$2,404,930 was spent for goods and services from businesses in Genesee County. The university makes extensive effort to purchase its goods and services from vendors within Genesee County. In addition, the Ann Arbor and Dearborn campuses of the University of Michigan also purchase many of their goods and services from Genesee County. The purchasing agent for the University of Michigan-Flint campus sends most of the vendors from Genesee County to the other campuses; in turn, the vendors from Genesee County compete and win many of the bids.



*Local Expenditures by the University* estimates the value of purchases of goods and services by the university from local businesses, as a portion of total expenditures. To estimate this value: the proportion of total university local expenditures is multiplied by the sum of: total university expenditures; gross compensation to faculty, staff and students; internal account transfers and payments; and taxes and other payments to government. This value is \$2,023,472. Data was gathered from the university's records, including the office's of Purchasing, Accounting, and Budget and Institutional Analysis. (See Appendix A and B)

## II. Local Spending by Faculty and Staff

Local spending by the faculty and staff was estimated by information generated from the survey administered in the fall semester of 1995. The survey methods are explained earlier in this paper and a complete description of each model and its application is presented in Appendix A.

*Local expenditures by faculty and staff*, are broken down into three sub-models: expenditures by faculty and staff for local rental housing; local non-housing expenditures by local faculty and staff; and local expenditures by non-local faculty and staff.

To arrive at the value for expenditures by faculty and staff for local rental housing, the proportion of faculty and staff residing locally was multiplied by the proportion of local faculty and staff who rent housing, which



was then multiplied by total disposable income of faculty and staff, which was then multiplied by the proportion of a tenant's total expenditures likely to be spent for rental housing. Based on these calculations, a value of \$602,939 is estimated. (See Appendix A)

Local non-housing expenditures by local faculty and staff was reached by multiplying the proportion of faculty and staff residing locally by the proportion of total non-housing expenditures that an individual is likely to make in his/her local environment, total disposable income of faculty and staff, and by the proportion of a consumer's total expenditures spent on non-housing items. This value is estimated at \$3,182,544. (See Appendix A)

To arrive at the value for local expenditures by non-local faculty and staff, the proportion of faculty and staff residing locally was multiplied by the total number of faculty and staff, and then by the estimated average local expenditures by each non-local faculty and staff person. A total of \$13,911 is estimated in this case. (See Appendix A)

The three estimates are added together to arrive at the value of *Local Expenditures by Faculty and Staff* of \$3,799,395. (See Appendix A)



### III. Local Expenditures by Students

Local spending by students was estimated using a student survey administered to 547 out of the 6,312 students. Total respondents represents 11.5 percent of the total student population during the fall semester of 1995. The survey methods are explained earlier in the paper. A complete description of each model and its application is presented in Appendix A.

*Local Expenditures by Students* are estimated in four parts: local miscellaneous expenditures by students obtaining local room and board, or living with parents; expenditures by students for local rental housing; local non-housing expenditures by students who rent local housing; and local expenditures by non-local students.

To obtain the value for local miscellaneous expenditures by students obtaining local room and board, or living with parents, the number of students obtaining local room and board or living with parents was multiplied by the average reported expenditures per student of this type, by the proportion of total expenditures that an individual is likely to make in his/her local environment. This value is \$908,037. (See Appendix A)

Expenditures by students for local rental housing was obtained by multiplying the number of students renting local housing by the average rental housing expenditures per student. This value is \$376,697. (See Appendix A)

Local non-housing expenditures by students who rent local housing was obtained by multiplying the number of students renting local housing by



average non-housing expenditures per student, by the proportion of total non-housing expenditures that a student is likely to make in the local environment. This value is \$265,280. (See Appendix A)

To obtain the value for local expenditures by non-local students, the number of non-local students was multiplied by the estimated average local expenditures by each non-local student obtained from the sample data. This value is \$233,969. (See Appendix A)

These four estimates are added together to obtain the value for *Local Expenditures by Students*. The total value for this model is \$1,783,985.

#### Additional Expenditures: The Multiplier Effect

Local spending by the university, faculty and staff, and students generates additional economic activity in the Genesee County area. When local service industries and retail establishments purchase supplies from other retailers, service industries, and wholesalers, this results in what is referred to as second-round effects or the multiplier in action. The second-round effects are local purchases by local concerns in support of their university-related business. The total effect labeled, *Additional Purchases from Local Businesses* is estimated to be \$1,141,027 in 1994-95, using the Caffrey and Isaacs model.

In addition to the impact on purchases by local concerns in support of their university-related business, the university service area business payrolls and profits increase from spending by the university, faculty and staff, and



students — this yields additional income to the university service area. This increased income ultimately is channeled into increased business volume, estimated to be \$4,564,111 in *Additional University-Related Expenditures* again using the Caffrey and Isaacs model.



# Conclusions

The University of Michigan-Flint is responsible for contributing \$28,832,237 directly to Genesee County's economy through wages and local purchases. This model estimates that an additional \$13,311,993 is generated by spending patterns of the university, its staff, faculty and students and local businesses of Genesee County. This breaks down to an additional 46 percent of income for Genesee County, generated by the university. This means that for every dollar spent by the university, at least 1.46 dollars of income is generated. Direct expenditures account for \$7,606,853 by the university, faculty, staff and students. Additionally, indirect expenditures account for \$5,705,139.

This model offers a snapshot view of the University of Michigan-Flint's contribution to Genesee County. Although the overall effect of the university compared to larger, residential, established universities is smaller, this study could be a basis for looking at new infusions of money into the community, such as expanding the university. For example, how would increased enrollment or the hiring of more staff and faculty effect the economy. Expanding the university would bring in new money from outside the area, which would stimulate the economy and have a positive effect on the community.

One way to affect the local economy significantly would be by



expanding the university into a residential setting. Bringing in students to live in downtown Flint would not only benefit the university, but benefit the community as a whole. This model suggests that more students would not only bring money into the community, but would expand the downtown area. The demand for restaurants and shops by the students would rejuvenate downtown Flint. Expanding the university would also effect the multiplier, which in turn, would have a positive effect on the community.

This institution of higher education is a major asset that contributes to the well-being of society. A university such as the University of Michigan-Flint makes its major contribution in the areas of teaching, research and public service. The outstanding impact of a university is the potential for citizens to invest in their most important resource, themselves. While the training of human resources is the primary mission of the university, there is a collaborative effort in that the university represents a positive financial investment for the community. This impact enhances the value of the community with regard to its attractiveness to prospective citizens, businesses, and employers.

In conclusion, the impact study has considerable potential in informing the public that the University of Michigan-Flint does not operate in a financial vacuum. The results of the study show the university to be a major contributor to the economic health of the community. Presumably, this will augment the level of support for the university by the business community,



**voters and legislators.**



# Appendix A

## Local Business Models

VARIABLE	SOURCE	VALUE
<u>Model B-1.</u> = $BV_{CR}$ University-related local business volume $BV_{CR} = (E_L)_{CR} + (P_{LB})_{CR} + (BV_I)_{CR}$	Sum of B-1.1, 1.2, 1.3	\$13,311,993.22
<u>Model B-1.1.</u> = $(E_L)_{CR}$ University-related local expenditures $(E_L)_{CR} = (E_L)_C + (E_L)_F + (E_L)_S$	Sum of B-1.1.1, 1.1.2, 1.1.3	\$7,606,853.27
<u>Model B-1.1.1.</u> = $(E_L)_C$ Local expenditures by the university $(E_L)_C = (e_L)_C (E_C - W_{F.S} - XF_C - R_C)$  $(e_L)_C$ = proportion of total university expenditures, excluding compensation, internal items, and taxes, that are local.  $E_C$ = total university expenditures. $E_{NL}$ = university expenditures known to be non-local.  $W_{F.S}$ = gross compensation to faculty, staff, and students.  $XF_C$ = internal account transfers and payments.  $R_C$ = taxes and other payments to governments.	University Records                Records Records               Records               Records               Records	\$2,023,472.88                .401               \$31,553,553.44 \$2,991,137               \$26,427,307.38               \$80,179.06               \$0
<u>Model B-1.1.2.</u> = $(E_L)_F$ Local expenditures by faculty and staff $(E_L)_F = (E_H)_F + (E_{NH})_F (E_L)_{NLF}$	Sum of B-1.1.2.1, 1.1.2.2, 1.1.2.3.	\$3,799,395.33



<p><u>Model B-1.1.2.1.</u> = <math>(E_H)_F</math> Expenditures by faculty and staff for local rental housing. <math>(E_H)_F = (f_L) (f_H) (DI_F) (e_H)</math></p> <p><math>f_L</math> = proportion of faculty and staff residing locally. <math>f_H</math> = proportion of local faculty and staff who rent housing. <math>DI_F</math> = total disposable income of faculty and staff. <math>e_H</math> = proportion of a tenant's total expenditures likely to be spent for rental housing.</p>	<p>Faculty/Staff survey Faculty/Staff survey Faculty/Staff survey Faculty/Staff survey</p>	<p>\$602,939.02    .703 .167 \$19,820,480.53 .26</p>
<p><u>Model B-1.1.2.2.</u> = <math>(E_{NH})_F</math> Local non-housing expenditures by local faculty and staff. <math>(E_{NH})_F = (f_L) (e_L) (DI_F) (e_{NH})_F</math></p> <p><math>f_L</math> = proportion of faculty and staff residing locally. <math>e_L</math> = proportion of total non-housing expenditures that an individual is likely to make in his local environment. <math>DI_F</math> = total disposable income of faculty and staff. <math>(e_{NH})_F</math> = proportion of a consumer's total expenditures spent on non-housing items.</p>	<p>Faculty/Staff survey Faculty/Staff survey Faculty/Staff survey Faculty/Staff survey</p>	<p>\$3,182,544.91    .703 .57 \$19,820,480.53 (.703) (.57) = .40071</p>
<p><u>Model B-1.1.2.3.</u> = <math>(E_L)_{NLF}</math> Local expenditures by non-local faculty and staff. <math>(E_L)_{NLF} = (1 - f_L) (F) (E_I)_F</math></p> <p><math>f_L</math> = proportion of faculty and staff residing locally. <math>F</math> = total number of faculty and staff. <math>(E_I)_F</math> = estimated average local expenditures by each non-local faculty and staff person.</p>	<p>Faculty/Staff survey University records Faculty/Staff survey</p>	<p>\$13,911.40    .703 619 \$75.67</p>



<u>Model B-1.1.3.</u> = $(E_L)_s$ Local expenditures by students. $(E_L)_s = (E_M)_s + (E_H)_s + (E_{NH})_s + (E_L)_{NLS}$	Sum of B- 1.1.3.1, 1.1.3.2, 1.1.3.3, 1.1.3.4	\$1,783,985.06
<u>Model B-1.1.3.1.</u> = $(E_M)_s$ Local miscellaneous expenditures by students obtaining local room and board or with parents. $(E_M)_s = (S_L) (E_m)_s (e_L)$  $S_L$ = number of students obtaining local room and board, or parents. $(E_m)_s$ = average expenditures per student of this type. $e_L$ = proportion of total expenditures that an individual is likely to make in his local environment.	Student survey Student survey Student survey	\$908,037.25  (.717) (6,312) = 4,525.7 \$352.00 .57
<u>Model B-1.1.3.2.</u> = $(E_H)_s$ Expenditures by students for local rental housing. $(E_H)_s = (S_H) (E_h)_s$  $S_H$ = number of students renting local housing. $(E_h)_s$ = average rental housing expenditures per student.	Student survey Student survey	\$376,697.60  (.214)(6,312) = 1350.8 \$278.87
<u>Model B-1.1.3.3.</u> = $(E_{NH})_s$ Local non-housing expenditures by students who rent local housing. $(E_{NH})_s = (S_H) (E_{nh})_s (e_L)$  $S_H$ = number of students renting local housing. $(E_{nh})_s$ = average non-housing expenditures per student. $e_L$ = proportion of total non-housing expenditures that a student is likely to make in the local environment.	Student survey Student survey Student survey	\$265,280.64  (.214) (6,312) = 1350.8 \$344.54 .57



<p><u>Model B-1.1.3.4.</u> = <math>(E_L)_{NLS}</math>  Local expenditures by non-local student.  <math>(E_L)_{NLS} = (S_{NL}) (E_L)_S</math></p> <p><math>S_{NL}</math> = number of non-local students.  <math>(E_L)_S</math> = estimated average local expenditures by each non-local student.</p>	University Records Student survey	<p>\$233,969.57</p> <p>(.283) (6,312)  = 1786.3  \$130.98</p>
<p><u>Model B-1.2.</u> = <math>(P_{LB})_{CR}</math>  Purchases from local sources by local businesses in support of their university-related business volume.  <math>(P_{LB})_{CR} = (m_p) (E_L)_{CR}</math></p> <p><math>m_p</math> = coefficient representing the degree to which local businesses purchase goods and services from local sources.  <math>(E_L)_{CR}</math> = university-related local expenditures.</p>	<p>Calculation explained in Appendix B</p> <p>Model B-1.1</p>	<p>\$1,141,027.99</p> <p>\$ .15</p> <p>\$7,606,853.27</p>
<p><u>Model B-1.3.</u> = <math>(BV_I)_{CR}</math>  Local business volume stimulated by the expenditure of university-related income by local individuals other than faculty, staff, or students.  <math>(BV_I)_{CR} = (m_i) (E_L)_{CR}</math></p> <p><math>m_i</math> = coefficient representing the degree to which individual income received from local business activity is spent and re-spent locally.  <math>(E_L)_{CR}</math> = university-related local expenditures.</p>	<p>Calculation explained in Appendix B</p> <p>Model B-1.1</p>	<p>\$4,564,111.96</p> <p>\$ .60</p> <p>\$7,606,853.27</p>



The nomenclature for the models and sub-models provides a consistent numbering and lettering framework. The business models are labeled B. The numbering indicates which sub-models should be combined to produce the value of a model, such as,  $B-1.1 = B-1.1.1 + B-1.1.2. + B-1.1.3 + B-1.1.4$ . The notation scheme uses capital letters for amounts and lowercase letters for coefficients. An asterisk on a letter indicates that the value is a subset, such as,  $f_L$  is the proportion of faculty and staff residing locally, while  $f_L^*$  is the proportion of faculty and staff residing locally in non-university housing.

The notation used in these models represents amount with capital letters, coefficients with lower-case letters, and indexes with mnemonics. For example:

$$(P_{LB})_{CR} = (m_p) (E_L)_{CR}$$

P = purchases

LB = local business

CR = college-related

E = expenditures

L = local

$m_p$  = fractional multiplier (proportion) of local purchases, by local business

It is understood that the two terms,  $(m_p) (E_L)_{CR}$  , are to be multiplied, as in algebraic notation.



The business models explain the university-related local business volume. **Model B-1** and its component sub-models estimate accumulated spending from the direct purchases from local businesses made by the university and faculty, staff, students, and visitors (B-1.1); purchases from local sources by local businesses in support of their university-related business volume, or second round purchases (B-1.2); and the amount of local business volume stimulated by the expenditure of university-related income by local individuals other than faculty, staff, or students (B-1.3).

**Model B-1.1** is the dollar value of university-related local direct expenditures. These include expenditures by the university as an institution (B-1.1.1), by faculty and staff (B-1.1.2), by students (B-1.1.3).

**Model B-1.1.1** estimates the value of purchases of goods and services by the university from local businesses, only as portion of total expenditures. The proportion  $(e_L)_C$ , is derived from total expenditures, excluding wages and salaries,  $W_{F,S}$ ; various account transfers and internal payments that appear on the books,  $XF_C$ ; and taxes and other payments to governments,  $R_C$ .

Wages and salaries are not included here but are considered separately below. Accounting entries that charge departments within the university for their share of joint services are not included since they do not represent external purchases. Taxes and other payments to all governments are excluded since, by definition, they are not in the business sector. This model provides a good example of how the models tend to understate the impact of the



university upon its environment. In exempting wages and salaries, deductions for pensions and insurance are excluded as well. These, as well as receipts from pension and insurance funds, are not included in any other model, yet they may have some impact on the community.

**Model B-1.1.2** estimates the dollar volume of local purchases of personal goods and services by university faculty and staff households. These purchases are made by two groups, those residing locally, within Genesee County, and those residing outside Genesee County. Both rental housing and non-housing expenditures by local residents are considered. For non-local faculty and staff, only non-housing expenditures are considered. The three items added together approximate the dollar value of local expenditures by the faculty and staff of the university.<sup>3</sup>

**Models B-1.1.2.1 and B-1.1.2.2** measure expenditures — rental housing and non-housing — of local faculty and staff. These models represent the arithmetic products of the respective terms. Only disposable income is given as a dollar figure; expenditures are listed as percentages. Model B-1.1.2.1 yields a dollar value for the  $(E_H)_F$  term in B-1.1.2.

Both models are subject to an inherent bias. Both multiply the take-home pay of faculty and staff by the proportion of faculty and staff residing in

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<sup>3</sup>Understatement is evident in this model. Owner-occupied dwelling units are not considered. Real property value is considered elsewhere, but model B-1.1.2 excludes such items as payments to real-estate brokers, payment of interest charges on outstanding mortgages to local banks, and payment of insurance premiums on owner-occupied dwelling units. Also avoided is any consideration of imputed rental on houses owned outright by faculty and staff, that is, what the rent might be if the houses were offered in the rental market.



Genesee County. The underlying assumption is that the income received by those who reside in Genesee County is representative of all faculty and staff. Generally, however, the faculty will receive higher wages than the staff, and, if the university is located in a high income community, it is likely that faculty members will live close to the university, while staff members, with lower incomes, will be forced to live elsewhere in housing commensurate with their means. This is not the case with the University of Michigan-Flint. Genesee County has both high and low income residential areas.

Also assumed in this model is that income is equal to expenditures. Clearly this is not the case with many households. The model assumes that all disposable income is expended. To the extent that some is not spent, the case is overstated. However, it is likely that a household has other income sufficient to make its total expenditures no less than the employee's salary after normal deductions. In effect, the net result of this assumption will probably yield a minimal understatement of the annual purchases of goods and services from local businesses by resident faculty and staff.

**Model B-1.1.2.3** expresses local expenditures made by non-local faculty and staff. The previously obtained  $f_L$  is the proportion of faculty and staff residing locally. Therefore,  $1 - f_L$  is the proportion of faculty and staff not residing locally. This proportion, multiplied by the total number of faculty and staff,  $F$ , yields the number of non-local faculty and staff.

**Model B-1.1.3** involves five terms that are added to obtain an estimate



of the total local expenditures by students.

**Model B-1.1.3.1** estimates the local expenditures, exclusive of room and board, by students obtaining room and board locally in group living arrangements or parental quarters. To obtain is dollar figure, I multiply the number of such students,  $S_L$ , by the estimated average expenditures (exclusive of room and board) per student of this type,  $(E_m)_s$ . The result is then multiplied by the proportion of total expenditures (exclusive of room and board) that a student is likely to make in his local environment,  $e_L$ .

**Model B-1.1.3.2** depicts expenditures by students for local rental housing. To obtain this figure, the number of students renting local housing,  $S_H$ , is multiplied by the average rental housing expenditure per student,  $(E_h)_s$ .

**Model B-1.1.3.3** defines local non-housing expenditures by students who rent local housing. The number of students renting local housing,  $S_H$ , is multiplied by the average non-housing expenditures per student,  $(E_{nh})_s$  and the resulting figure is multiplied by the proportion of expenditures an individual is likely to make in his local environment,  $e_L$ .

**Model B-1.1.3.4** estimates the local dollar expenditures by non-local students by multiplying the number of students not residing locally,  $S_{NL}$ , by the estimated average local expenditures by each such student,  $(E_l)_s$ .

**Models B-1.2 and B-1.3** are considered second-round local expenditures that indicate the additional volume of local business activity resulting from stimuli provided by the purchases of goods and services



considered in the other B-1 models. When the university buys from a local supplier or when a visitor eats in a local restaurant, a long train of economic transactions is set off. The initial dollar is re-spent many times; it may reappear as income to residents of the community, as business receipts by other local merchants, or as payment to suppliers outside the community.

**Model B-1.2** estimates the volume of purchases by local concerns in support of their university-related business. The coefficient  $m_p$ , represents the proportion of receipts from university-related purchases used in turn to purchase goods and services from local sources.

This multiplier will tend to be smaller for highly specialized communities and for small communities within large urban areas than for the diversified, large city.

**Model B-1.3**, the second estimation of indirect effects of university-related business activity, represents personal-income-induced business activity in Genesee County. As noted before, some of the receipts by local businessmen will be paid out to local residents in the form of wages, salaries, and entrepreneurial returns, and a portion of this money will be spent for the everyday purposes of its recipients. The coefficient  $m_i$ , represents the proportion of income received from local university-related business activity that is spent and re-spent locally.



# Appendix B

## UNIVERSITY OF MICHIGAN- FLINT STUDENT SURVEY

**Student:** The purpose of this survey is to gather the necessary data in order to assess the economic impact of the University of Michigan-Flint on Genesee County. Please be assured that your responses on this questionnaire will be kept strictly confidential and all data obtained will be presented in aggregate form to further assure anonymity. This is completely voluntary and you are not obligated in any way to complete it. Thank you for your cooperation.

1. Please indicate your status at the university:  
Freshman                   \_\_\_ 1.  
Sophomore                 \_\_\_ 2.  
Junior                      \_\_\_ 3.  
Senior                     \_\_\_ 4.  
Graduate student         \_\_\_ 5.  
Extension student        \_\_\_ 6.
2. Full time               \_\_\_ 1.  
Part time                \_\_\_ 2.
3. Female                 \_\_\_ 1.  
Male                     \_\_\_ 2.
4. How many persons are in your household?  
Total                                   \_\_\_ 4a.  
Number of children 18 or younger   \_\_\_ 4b.  
Number of children attending  
public school (K - 12)               \_\_\_ 4c.
5. What is your age?       \_\_\_
6. Where is your usual residence while attending the University of Michigan-Flint?  
Flint                                   \_\_\_ 1.  
Genesee County                       \_\_\_ 2.  
Out of county                         \_\_\_ 3.



7. Where is your usual residence during the spring and summer?  
 Flint     1.  
 Genesee County     2.  
 Out of county     3.
8. In what type of housing do you reside while attending the university?  
 Fraternity/Sorority     1.  
 Rented apartment or house     2.  
 With parents     3.  
 Other     4.
9. Was your choice of housing related to your decision to attend the University?  
 Yes     1.  
 No     2.
10. Housing: do you own or rent?  
 Own     1.  
 Rent     2.  
 Other     3.
11. Are you employed in Flint/Genesee County?  
 Yes     1.  
 No     2.

*This next section involves question concerning income. It is very important in an economic impact study to obtain this type of data. Once again, it is voluntary.*

12. What is your average, after tax, individual monthly income? \$
13. On average, how much money do you receive each month from parents/spouse or other sources? \$
14. How much do you spend in an average month? \$
15. Of the above expenses, how much is spent:  
 15a. At the University? (excluding tuition) \$                       
 15b. In Flint/Genesee County? (excluding the university) \$                       
 15c. Outside of the county? \$



16. Of your **monthly** expenses, please estimate how much you spend in Flint/Genesee County on the following:
- |                       |          |      |
|-----------------------|----------|------|
| Housing and utilities | \$ _____ | 16a. |
| Food                  | \$ _____ | 16b. |
| Gas                   | \$ _____ | 16c. |
| Other transportation  | \$ _____ | 16d. |
| Child care            | \$ _____ | 16e. |
| Entertainment         | \$ _____ | 16f. |
| Misc.                 | \$ _____ | 16g. |
17. Of your **annual** expenses, please estimate how much you spend in Flint/Genesee County on the following:
- |                             |          |      |
|-----------------------------|----------|------|
| Clothing                    | \$ _____ | 17a. |
| Car repair and gas          | \$ _____ | 17b. |
| Insurance                   | \$ _____ | 17c. |
| Health Care (out of pocket) | \$ _____ | 17d. |
18. In the past year, how much have you spent on tuition, fees, books, and supplies:  
\$ \_\_\_\_\_
19. What is your annual income for calendar year 1995?
- |      |          |  |
|------|----------|--|
| 19a. | \$ _____ | Total individual, after tax, annual income.              |
| 19b. | \$ _____ | Total after tax income for all members of your household |
20. What is your average monthly balance in Flint and Genesee County financial institutions? (include checking and savings)  
\$ \_\_\_\_\_

*If you live in Genesee County, please answer only question 21. If you live outside the county, answer question 22.*

21. How many people from outside Genesee County visited you in the last year? Each visit should be counted separately for those people who visited more than once.
- 21a. \_\_\_\_\_ visitors
- Please estimate the average length of stay of each visitor:
- 21b. \_\_\_\_\_ days
- Please estimate how much your visitors spent on hotels, entertainment,



Please estimate how much your visitors spent on hotels, entertainment, shopping, and food in Flint and Genesee County:

21c. \$ \_\_\_\_\_ per person, per day

22. Did you have guests who spent time in Genesee County during the last year?

22a. 1. ☐ Yes

2. ☐ No

If yes, please estimate amount spent by guests in Flint/Genesee County during visits in the last year.

22b. \$ \_\_\_\_\_ total guests spent in last year

**Thank you again for your participation and cooperation**



# Appendix C

## UNIVERSITY OF MICHIGAN- FLINT FACULTY/STAFF SURVEY

**Faculty/Staff:** The purpose of this survey is to gather the necessary data in order to assess the economic impact of the University of Michigan-Flint on Genesee County. Please be assured that your responses on this questionnaire will be kept strictly confidential and all data obtained will be presented in aggregate form to further assure anonymity. This is completely voluntary and you are not obligated in any way to complete it. Thank you for your cooperation.

1. What is your position with the University?
  1. ☐ Faculty
  2. ☐ Faculty/Administration
  3. ☐ Staff
  4. ☐ Staff/Administration
2.
  1. ☐ Full-time
  2. ☐ Part-time
3.
  1. ☐ Female
  2. ☐ Male
4. What is your marital status?
  1. ☐ Single
  2. ☐ Married
5. How many persons are in your household?
  - 5a. ☐ Total
  - 5b. ☐ Number of children 18 or younger
  - 5c. ☐ Number of children attending public school (K - 12)
6. How many persons in your household are employed by the University?



7. Where do you reside?
  1. ☐ Flint
  2. ☐ Genesee County (outside of the city)
  3. ☐ Other
8. Housing, do you rent or own?
  1. ☐ Rent
  2. ☐ Own
9. Did you purchase a UM-Flint parking permit for 1995-96?
  1. ☐ Yes
  2. ☐ No
10. Do you pay to use the Recreation Center facilities?
  1. ☐ Yes
  2. ☐ No
11. Are you currently taking classes in Flint\Genesee County?
  1. ☐ Yes
  2. ☐ No

*This next section involves questions concerning income. It is very important in an economic impact study to obtain this type of data. Once again, it is voluntary.*

12. What is your average, after tax, individual monthly income? \$ \_\_\_\_\_
13. On average, how much money do you receive each month from spouse or other sources? \$ \_\_\_\_\_
14. How much do you spend in an average month? \$ \_\_\_\_\_
15. Of the above expenses, how much is spent:
 

At the University?	\$ _____	15a.
In Flint/Genesee County?		
(excluding the university)	\$ _____	15b.
Outside of the county?	\$ _____	15c.



16. Of your **monthly** expenses, please estimate how much you spend in Flint/Genesee County on the following:

Housing and utilities	\$ _____	16a.
Food	\$ _____	16b.
Gas	\$ _____	16c.
Other transportation	\$ _____	16d.
Child care	\$ _____	16e.
Entertainment	\$ _____	16f.
Misc.	\$ _____	16g.

17. Of your **annual** expenses, please estimate how much you spend in Flint/Genesee County on the following:

Clothing	\$ _____	17a.
Car repair and gas	\$ _____	17b.
Insurance	\$ _____	17c.
Health Care (out of pocket)	\$ _____	17d.

18. In the past year, how much have you spent on tuition, fees, books, and supplies:

1. \$ \_\_\_\_\_ At UM-Flint
2. \$ \_\_\_\_\_ At another institute of higher education in Flint/Genesee County

19. Annual income.

- 19a. \$ \_\_\_\_\_ Total individual, after tax, annual income.
- 19b. \$ \_\_\_\_\_ Total after tax income for all household members.
- 19c. \$ \_\_\_\_\_ Total after tax income for all household members from UM-Flint.

20. What is your average monthly balance in Flint and Genesee County financial institutions?

1. \$ \_\_\_\_\_ checking
2. \$ \_\_\_\_\_ savings

*If you live in Genesee County, please answer only question 21. If you live outside the county, answer question 22.*



21. How many people from outside Genesee County visited you in the last year? Each visit should be counted separately for those people who visited more than once.

21a. \_\_\_\_\_ visitors

Please estimate the average length of stay of each visitor:

21b. \_\_\_\_\_ days

Please estimate how much your visitors spent on hotels, entertainment, shopping, and food in Flint and Genesee County:

21c. \$\_\_\_\_\_ per person per day

22. Did you have guests who spent time in Genesee County during the last year?

22a. 1. ☐ Yes

2. ☐ No

If yes, please estimate amount spent by guests in Flint/Genesee County during visits in the last year.

22b. \$\_\_\_\_\_ total guests spent in last year

**Thank you again for your participation and cooperation**



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