

# **The Economic Impact of Delta State University On the Mississippi Delta**



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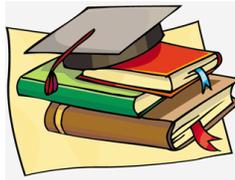
**February 1, 2019**



**\$175  
MILLION  
IN TOTAL  
IMPACT IN  
2018**



**\$65  
MILLION  
SPENDING  
IMPACT**



**\$110  
MILLION  
KNOW-  
LEDGE  
IMPACT**



**543 JOBS  
SUPPORTED**

- **\$175 million in total impact in the Mississippi Delta**
- **\$65 million in spending impact as a result of Delta State**
- **543 jobs supported by Delta State**
- **\$110 million in the Knowledge Impact of DSU: Increased earnings and social benefits of alumni**
- **\$2 million in cultural benefits**
- **207,000 hours of community development activities**

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**EXHIBIT 1****DELTA STATE UNIVERSITY IMPACT NUMBERS**

<b>DIRECT SPENDING BY DELTA STATE IN THE MISSISSIPPI DELTA</b>		
University Spending	\$10,319,037	
Faculty & Staff Spending	\$21,784,686	
Student Spending	\$4,812,750	
Visitor Spending	\$6,625,676	
	<b>\$43,542,149</b>	
<b>SECONDARY SPENDING IN THE MISSISSIPPI DELTA</b>		
Secondary Spending by Delta State	\$5,056,328	
Secondary Spending by Faculty, Students and Visitors	\$16,279,325	
	<b>\$21,335,653</b>	<b>\$64,877,802</b>
<b>DELTA STATE KNOWLEDGE IMPACT</b>		
<b>INCREASED EARNINGS OF ALUMNI</b>	<b>\$81,268,901</b>	<b>\$81,268,901</b>
<b>SOCIAL BENEFIT IMPACT</b>		
Reduced Absenteeism	\$3,258,827	
Reduced Alcoholism	\$944,616	
Reduced Crime Victim Cost	\$1,297,561	
Reduced Incarceration	\$3,895,827	
Reduced Smoking	\$1,453,139	
Reduced Unemployment	\$9,384,632	
Reduced Welfare Expenditures	\$6,931,002	
<b>Total Delta State Social Benefit Impact</b>	<b>\$27,165,604</b>	<b>\$27,165,604</b>
<b>CULTURAL BENEFITS</b>		
<b>Total Delta State Cultural Impact</b>	<b>\$2,111,733</b>	<b>\$2,111,733</b>
<b>TOTAL MISSISSIPPI DELTA ECONOMIC IMPACT</b>		<b>\$175,424,040</b>

## DELTA STATE UNIVERSITY OVERVIEW

Delta State University is a regional public university located in Cleveland, Mississippi, in the heart of the Mississippi Delta. DSU provides a comprehensive undergraduate and graduate curriculum. Dozens of degree programs on the undergraduate level provide educational opportunities in the Colleges of Arts and Sciences, Business, and Education and in the Robert E. Smith School of Nursing. Graduate programs on the master's, educational specialist, and doctoral levels provide advanced training in a broad range of disciplines.

Delta State University serves as the cultural and educational center of the Mississippi Delta, an 18-county, northwestern region, rich in various ethnic and cultural groups. The University identifies the Delta as its primary public service region, while acknowledging the importance of research and service that also benefits the state and nation.

The impacts in this report are for the fiscal year of 2018. Future impacts could be higher or lower depending upon enrollment, construction, contributions, and levels of government funding. The spending impact numbers are based on the “outside dollar” impact of Delta State.<sup>1</sup> The existence of Delta State results in a total \$175 million impact in the Mississippi Delta as well as supporting 543 jobs and providing over 207,000 hours of community development activities. The total impact includes an \$65 million Spending Impact, a \$108 million Knowledge Impact and a \$2 million Cultural Impact.

The total impact that Delta State University provides to the Mississippi Delta includes the following:

- \$44 million in Direct Spending
- \$21 million in Secondary Business Spending
- \$81 million in Increased Alumni Earnings
- \$27 million in Social Benefits
- \$ 2 million in Cultural Benefits

**STUDY PERIOD:** Fiscal Year 2018

**FOCUS OF THE STUDY:** Delta State University

**GEOGRAPHIC REGION:** The Mississippi Delta (Bolivar, Carroll, Coahoma, DeSoto, Holmes, Humphreys, Issaquena, Leflore, Panola, Quitman, Sharkey, Sunflower, Tallahatchie, Tate, Tunica, Warren, Washington, Yazoo)

<sup>1</sup> “Outside dollars” are funds that come into the Mississippi Delta from outside the region. The Mississippi Delta is defined as the 18 counties of the Mississippi Delta.

## **DELTA STATE UNIVERSITY SPENDING IMPACT**

The Spending Impact of an organization on a region is derived from its ability to attract “outside dollars” to the region or to prevent funds from leaving it. The Spending Impact of a university comes from its ability to attract students from other parts of the country and to retain local students who would otherwise have attended a college or university elsewhere.

“Outside dollars” received by a region from out-of-area sources determine the impact of a university on the local economy. For instance, tuition revenue that Delta State University receives from Biloxi is different from revenue received from Indianola. The Biloxi family earned its income from outside the Mississippi Delta. When their tuition is paid to the University it is an outside injection into the economy of the Mississippi Delta. Tuition revenue from the Indianola family comes from within the Mississippi Delta and remains within it. Therefore, local tuition revenue is not used to determine Delta State’s Spending Impact, as it is “inside dollars,” and typically would remain in the region whether Delta State University was present or not.

The share of Delta State revenues from tuition, contributions, grants, and auxiliary activities that came from outside of the Mississippi Delta in 2018 was 74%. This percentage was multiplied by University vendor spending and payroll in the region to determine the Delta State Direct Spending Impact.

It should also be understood that not all spending by Delta State stays within the Mississippi Delta. Dollars that “leak” out of the Mississippi Delta through purchases from outside suppliers are not included in Delta State’s economic impact on the Mississippi Delta. Exhibit 2 summarizes what funds are included and excluded from the spending impact in this report.

### **EXHIBIT 2**

#### **WHAT IS INCLUDED AND EXCLUDED IN THE SPENDING IMPACT**

<b>Types of Spending</b>	<b>Included in the Spending Impact</b>	<b>Excluded from the Spending Impact</b>
University vendor spending	In the Mississippi Delta	Outside the Mississippi Delta
Employee salary and benefits	In the Mississippi Delta	Outside the Mississippi Delta
Student living expenses	Non-Mississippi Delta students	Mississippi Delta students
Visitor spending	Non-Mississippi Delta visitors	Mississippi Delta visitors

This spending impact analysis measures the impact of direct, indirect and induced spending impacts from Delta State University on the Mississippi Delta. Exhibit 3 explains these impacts. The multipliers used in this study were derived by the Social Science Research Lab of the University of Mississippi.

## **DELTA STATE UNIVERSITY DIRECT SPENDING IMPACT**

Delta State University had a direct spending impact of \$43.5 million in the Mississippi Delta in 2018. Exhibit 3 summarizes the sources of the direct spending impact.

### **EXHIBIT 3**

#### **DIRECT SPENDING BY DELTA STATE UNIVERSITY IN THE MISSISSIPPI DELTA**

University Spending	\$10,319,037
Employee Spending	\$21,784,686
Student Spending	\$4,812,750
Visitor Spending	\$6,625,676
<b>Total Direct Spending</b>	<b>\$43,542,149</b>

#### **UNIVERSITY DIRECT SPENDING**

Delta State University spent almost \$13.9 million in the Mississippi Delta during 2017-2018. Not included in this direct spending are payments to vendors outside the Mississippi Delta. Of this amount \$10.3 million was derived from outside the Mississippi Delta. Not included in this total are salaries to employees, loans and grants to students, and purchases of goods and services from organizations outside the region.

#### **EMPLOYEE DIRECT SPENDING**

In 2017-2018 the payroll for Delta State employees living in the Mississippi Delta was \$29.4 million. \$21.8 million of the payroll derived from outside the Mississippi Delta. Employee compensation includes fringe benefits and FICA taxes paid by the employer on behalf of the employee. This does not include wages paid to student workers.

#### **STUDENT DIRECT SPENDING**

In 2017-2018 students from outside the Mississippi Delta spent about \$4.8 million in the region. Revenue from these students was injected into the local economy every time they bought a pizza or filled a tank with gas. These Delta State students stimulate the Mississippi Delta economy.

The student direct spending impact is generated by the expenditures of students at Delta State from outside of the Mississippi Delta. For students living in university housing it includes spending on clothing, entertainment, food, and the like. For non-local students living off-campus the spending impact also includes apartment rent.

#### **VISITOR DIRECT SPENDING**

The Delta State campus hosted almost 184,000 visitors last year. They came to cheer the Statesmen at McCool Stadium. They came to hear "The Sound of Music" and see Cinderella at the Bologna

Performing Arts Center. They came to watch graduates march down the aisle and many other events. Most of these people were from the Mississippi Delta.

Over 32,000 of these visitors came from outside of the Mississippi Delta. They brought almost \$6.4 million in new money to the Mississippi Delta in 2018. Exhibit 4 describes these visitors.

**EXHIBIT 4**  
**OUT-OF-AREA VISITOR SPENDING**

Category	Number of Visitors	Total Expenditures
Admissions Visits	1385	\$286,002
Alumni Events	400	\$55,755
Athletic Events	24,325	\$5,023,113
Bologna Performing Arts Center	2,780	\$386,155
Culture and Learning Center	1,550	\$320,075
Graduation	1,510	\$311,815
Win the Race	150	\$30,975
<b>TOTAL</b>	<b>32,100</b>	<b>\$6,413,890</b>

\* Exact numbers for attendance by out-of-area visitors are not available in most cases. Estimates have been used.

**THE MULTIPLIER EFFECT**

The total direct spending impact of the Delta State University community in the Mississippi Delta was \$43.5 million in 2017- 2018. This amount went to area businesses, including utilities, plumbers, restaurants, property owners, hotels, and other services.

To understand the dynamics of the Delta State impact we can visualize a rock being thrown into a lake. There is an initial splash, and then waves continue to move out from the center. The Direct Impact is like the splash. The Secondary Impact is like the waves.

Secondary Spending happens when these local businesses use the funds from Delta State to buy other goods and services in the Mississippi Delta. The company that delivers food to the dining hall gets its trucks serviced locally. The hotel that hosts a parent from Biloxi gets its cleaning supplies from local markets. Of course, both the food supplier and the hotel pay their employees from money spent by the Delta State community.

The impact of this re-spending is known as the multiplier effect. Spending outside the Mississippi Delta is called a leakage and reduces the multiplier and the overall impact. It was excluded when estimating the DSU impact on the Mississippi Delta.

The multipliers used in this report were derived from the Social Science Research Lab of the University of Mississippi. Exhibit 5 shows that for every \$1.00 of DSU Community spending there was an additional \$0.49 spent in the Mississippi Delta. Therefore, the multiplier for Delta State University spending was 1.49.

**EXHIBIT 5****DELTA STATE MULTIPLIER EFFECT**

	<b>Direct Impact</b>	<b>Secondary Impact</b>	<b>Total Impact</b>
<b>Mississippi Delta Multiplier</b>	<b>1</b>	<b>0.49</b>	<b>1.49</b>
College Spending	\$10,319,037	\$5,056,328	\$15,375,365
Employee Spending	\$21,784,686	\$10,674,496	\$32,459,182
Student Spending	\$4,812,750	\$2,358,248	\$7,170,998
Visitor Spending	\$6,625,676	\$3,246,581	\$9,872,258
<b>Total Spending Impact</b>	<b>\$43,542,150</b>	<b>\$21,335,653</b>	<b>\$64,877,803</b>

**JOB IMPACT**

Delta State University supported 543 jobs in the Mississippi Delta in 2018. There were 441 full-time Delta State employees in 2018 living in the Mississippi Delta. Additionally, there were 102 other people who owed their jobs to the presence of Delta State.

**THE DELTA STATE UNIVERSITY KNOWLEDGE IMPACT**

Delta State University makes a significant Knowledge Impact by increasing the human capital of its graduates. “Human capital refers to the stock of competencies, knowledge and personality attributes embodied in the ability to perform labor so as to produce economic value. It is the attributes gained by a worker through education and experience.” (Sullivan & Sheffrin, 2003) In the context of this report, Knowledge Impact refers to the contribution of Delta State University toward higher incomes and the social benefits of positive lifestyle choices.

According to Stokes and Coomes (1998), “Knowledge Impacts result from the transmission of ideas to the community.” Machlup (1980) makes a distinction between “subjective new knowledge” and “objective” or “socially new knowledge.” Subjective knowledge is produced by the passing of knowledge from faculty to students. It is new to the students but not new to society. University students receive knowledge and greater technical ability. This increase in their human capital translates into higher earnings for themselves, with multiplied benefits for the community. It also results in greater productivity for the labor force.

The transfer of subjective knowledge accounts for most of the Knowledge Impacts of universities. These effects are long-term. University students receive knowledge and greater technical ability. This increase in their human capital translates into higher earnings for themselves, with multiplied benefits for the community. It also results in greater productivity for the labor force.

**DELTA STATE UNIVERSITY ALUMNI IMPACT**

In 2018 there were about 12,000 known Delta State University alumni alive today in the Mississippi Delta. Over 9,000 of them were employed in the labor force. The total value of their increased earnings impact in 2017-2018 was approximately \$81.3 million.

The total value of their increased earnings impact in 2018 was about \$162.6 million. Fifty percent of this Alumni Impact, or \$81.3 million is included in this report. This assigned some of the responsibility for social benefits to Delta State and left some credit to other factors such as family background and personal characteristics.

The alumni earnings impact is based on several factors. For example, the impact of a 32-year-old DSU alumna with a bachelor’s degree is the difference between what she earns due to her DSU degree and what she would earn with a high school diploma. The number of Mississippi Delta women in their 30s who have Delta State bachelor’s degrees is multiplied by the difference between the average earnings of a college graduate and the average earnings of a high school graduate. The formula below summarizes this.

$$\begin{array}{l} \text{Number of working} \\ \text{30-39-year-old MS} \\ \text{Delta women with} \\ \text{DSU bachelor’s} \\ \text{degrees} \end{array} \times \begin{array}{l} \{ \text{Average earnings of 30-39-} \\ \text{year-old women MS Delta with} \\ \text{bachelor’s degrees} - \{ \text{Average} \\ \text{earnings of 30-39-year-old} \\ \text{female high school graduates} \} \end{array} = \begin{array}{l} \text{Alumni Earnings Impact} \\ \text{for 30-39-year-old MS} \\ \text{Delta women with DSU} \\ \text{bachelor’s degrees} \end{array}$$

The same calculation was done for every other age group of males and females. Exhibit 6 shows the average amount of increased earnings for each level of academic degree. For example, DSU alumni with doctorates earned almost \$21,000 more per year on average than Delta State alumni with master’s degrees.

**EXHIBIT 6**

**INCREASE EARNINGS OF DELTA STATE DEGREE HOLDERS**

<b>Highest Degree Held</b>	<b>Alumni Total*</b>	<b>Increased Earnings Value to Individuals</b>
Doctorate	349	\$20,785
Masters	2,059	\$8,933
Bachelors	6,891	\$17,026
<b>Total</b>	<b>9,299</b>	

\* Alumni numbers include all known living alumni with addresses and degree information who are working.

**SOCIAL BENEFIT IMPACT**

Education pays - not just in better incomes but also in better lifestyles. Better living pays benefits to society. University graduates tend to possess greater self-esteem; live longer, healthier lives; assume greater civic responsibility; enjoy more aesthetic interests; attend more athletic events; exercise better moral judgment; and nurture children more effectively than do those without university educations. (Baum & Payea, 2005; Behrman & Stacey, 1997; Ma, Pender and Welch, 2016)

Absenteeism, alcoholism, crime, incarceration, unemployment, and welfare place heavy costs on governments and businesses. Rates for these behaviors decline as education levels increase. Because of the lower rates of these behaviors university graduates incur lower costs to society.

The total value of these reduced social costs is almost \$54.4 million. Fifty percent of this Social Benefit Impact of Delta State University alumni, more than \$27.2 million, in the Mississippi Delta is included in this report. This assigned some of the responsibility for social benefits to the University and left some credit to other factors such as family background and personal characteristics.

Delta State University, therefore, has a Social Benefit Impact on the Mississippi Delta because of the choices made by its alumni who live there. Exhibit 7 shows the value of these reduced social costs.

### **EXHIBIT 7**

#### **DELTA STATE SOCIAL BENEFIT IMPACT**

Reduced Absenteeism	\$3,258,827
Reduced Alcoholism	\$944,616
Reduced Crime Victim Cost	\$1,297,561
Reduced Incarceration	\$3,895,827
Reduced Smoking	\$1,453,139
Reduced Unemployment	\$9,384,632
Reduced Welfare Expenditures	\$6,931,002
<b>Total Delta State University Social Benefit Impact</b>	<b>\$27,165,604</b>

### **COMMUNITY DEVELOPMENT IMPACT**

Delta State University works to build relationships that strengthen communities in the Mississippi Delta. During 2017-2018 DSU provided over 207,000 hours of service to the Mississippi Delta.

Many community development activities are administered by the Center for Community and Economic Development (CCED). Other activities are part of pre-professional programs of the Education and Nursing schools. Exhibit 8 below summarizes the programs.

### **EXHIBIT 8**

#### **COMMUNITY DEVELOPMENT IMPACT**

<b>Program Name</b>	<b>Number of Hours</b>
Breast Education Early-Detection Project	2,000
College of Education and Human Services	141,000
Delta Educational Opportunity Center	6,500
Delta Reads Plus	1,500
Local Government Leadership Institute	5,000
Mississippi Delta Service Corps	42,000
Robert E. Smith School of Nursing	14,300
<b>Total</b>	<b>207,300</b>

## **BREAST EDUCATION EARLY-DETECTION PROJECT**

The Breast Education and Early-detection Project (BEEP) offered 2,000 hours of health education benefits to women in the Delta in 2017-2018. BEEP provided educational workshops on breast health awareness. It provided funding to offer free clinical exams and mammograms for qualified women. It participated in health fairs and other community events to promote breast health awareness throughout the year.

## **COLLEGE OF EDUCATION AND HUMAN SERVICES**

DSU Education students worked as student teachers and in field placements in 2017-2018. These students spent 141,000 hours serving in public and private schools in the Mississippi Delta

## **DELTA EDUCATIONAL OPPORTUNITY CENTER**

Delta Educational Opportunity Center (DEOC) provides counseling and information on college admissions to qualified adults who want to enter or continue a program of postsecondary education. The program also provides services to improve the financial and economic literacy of participants. An important objective of the program is to counsel participants on financial aid options, including basic financial planning skills, and to assist in the application process.

## **DELTA READS PLUS**

The mission of Delta Reads Plus (DRP) is to improve the academic engagement of students in grades K-6. DRP works to involve AmeriCorps members, parents, teachers, school administrators, and community volunteers in effective tutorial programs and community improvement projects. The DRP motto is “Providing Students and Communities with a Road Map to Success”.

During the 2017-2018 service year DRP staff and volunteers spent 1,500 hours involved in tutoring elementary school children.

## **LOCAL GOVERNMENT LEADERSHIP INSTITUTE**

The Local Government Leadership Institute (LGLI) works to assist and support local officials of the Mississippi Delta in addressing governance challenges by providing activities, basic training, and helpful tools to run their municipalities effectively and efficiently. During 2017-2018 the Local Government Leadership Institute offered seminars for Mississippi Delta city officials on such topics as Budgeting and Taxes, City Planning and Infrastructure, Community Data and Mapping, Economic Development, and Local Revenue Sources. LGLI staff spent 5,000 hours last year providing services to cities in the region.

## **MISSISSIPPI DELTA SERVICE CORPS**

The mission of the Mississippi Delta Service Corps (MDSC) is to empower individuals and organizations with skills and knowledge needed to implement and sustain programs in their communities. MDSC staff are assigned to non-profit agencies throughout the Mississippi Delta. They generally do not provide direct services but focus their efforts on building the organizational,

administrative, and financial capacity of organizations that fight illiteracy, improve health services, foster economic develop, and otherwise assist low-income communities.

In 2017-2018 MDSC coordinated volunteers who spent 42,000 hours working with such organizations as Delta Hope Care, Lower Income Child Care Initiative, Rosedale Community Youth Center, Tri-County Agricultural Cooperative, and the Tunica Parks and Recreation.

### **ROBERT E. SMITH SCHOOL OF NURSING**

DSU nursing students contributed over 600 hours of community service projects. Activities included participation in health fairs and screenings, collecting donations for hurricanes in Houston and Puerto Rico, collection of can tabs/box tops for St. Jude Ronald McDonald House and education in area elementary schools.

Nursing faculty, staff and students completed approximately 13,700 hours of clinical experiences at local hospitals, clinics, and the simulation/skills lab.

### **CULTURAL IMPACT**

This report shows that Delta State University provided a Cultural Impact of over \$2.1 million to residents of the Mississippi Delta in 2017-2018. This is due to the benefit of concerts, lectures, and athletic events being close to them.

Mississippi Delta residents attended cultural programs at Delta State University over 150,000 times last year. These programs included Statesmen games, concerts and plays at the Bologna Performing Arts Center and many other events. About 90,000 of them drove an hour or less to Cleveland. Coming to Delta State saves these visitors from longer round trips to Memphis, Oxford or Jackson. When leisure time is valued at \$15 an hour the total value of time saved was over \$2.1 million. (Exhibit 9)

### **EXHIBIT 9**

#### **TIME VALUE OF DELTA STATE CULTURAL PROGRAMS**

Attendance from the Mississippi Delta	X	Hours of Travel Time Saved	X	Hourly Value of Leisure Time	=	Total Value of Time Saved
90,245		1.56		\$15.00		\$2,111,733

## **CONCLUSION**

The significant Economic Impact of Delta State University on the Mississippi Delta can be felt in several ways. The University produces alumni who earn more than individuals who did not complete a degree in higher education. These alumni adopt better lifestyles and thus save the community on expenses such as healthcare. The University provides employment opportunities, not only through jobs on campus but also through jobs generated by business the University and its members conduct locally.

The University and those associated with it pumped \$175 million into the Mississippi Delta economy in 2017-2018. It is clear that in addition to the University's profound contributions to the cultural life of the community it is making sizable economic contributions as well.

## APPENDIX 1

### METHODS USED TO CALCULATE THE SPENDING IMPACT

The analysis of the Spending Impact of Delta State University on the Mississippi Delta was conducted in the tradition of the method developed for the American Council on Education (ACE) by Caffrey and Isaacs (1971) to determine the impact of higher education. The ACE method is still the primary method employed in economic impact studies. (Siegfried, Sanderson, & McHenry, 2007) To determine Delta State University's economic impact, its Spending and Knowledge Impacts were examined in depth. Methods used in the analysis of the Spending Impact are described below:

**Spending Impact** - The Delta State University Spending Impact is the result of Direct, Indirect, and Induced Spending. Direct spending comes from the University, its employees, students, and visitors. Indirect Spending is by businesses which supply Delta State and spend more money in the Mississippi Delta. Induced Spending is by employees of Delta State and employees of its suppliers in the Mississippi Delta

**Total Spending Impact** - The Total Spending Impact = Direct Spending Impact + Secondary Spending.

**Multiplier** - The ratio of Total Spending Impact to Direct Spending Impact (Multiplier = Total Spending Impact/Direct Spending Impact). An institution's Total Spending Impact is derived from some multiple of its direct expenditures. To determine Delta State University's Total Spending Impact multipliers produced by the Social Science Research Lab of the University of Mississippi were used.

**Out of Region Students** - The Economic Impact of an organization on a region is derived from its ability to attract outside money to a region or to prevent funds from leaving it. The Economic Impact of a university comes from its ability to attract students from other parts of the country and to retain local students who would otherwise have attended college elsewhere.

The "outside money" received by a region from these out-of-region students determines the impact of a university on the economy. For instance, tuition revenue that Delta State University receives from Nashville is different from revenue received from Indianola. The Nashville family earned its income from outside the Mississippi Delta. When their tuition is paid to the University it is an outside injection into the economy of the Mississippi Delta. Tuition revenue from the Indianola family comes from within the Mississippi Delta and remains within it. Therefore, local tuition revenue is not used to determine Delta State's Spending Impact, as it is "inside money" and typically would remain in the region whether Delta State University was present or not.

The share of tuition revenue that came from outside of the Mississippi Delta in 2018 was 74%. This percentage was multiplied by University vendor spending and payroll in the Mississippi Delta to determine the Delta State Direct Spending Impact for the region.

**Student Personal Spending** - Student living expenses for food, entertainment, transportation, clothing and other items, which are above payments to Delta State University for tuition, residence halls, and meal plans are counted as student personal spending. Only personal spending by Delta State students

originating from outside the Mississippi Delta was counted when determining the Delta State Economic Impact.

## **METHODS USED TO CALCULATE THE KNOWLEDGE IMPACT**

Spending and Knowledge Impacts differ in their relative influence over time. The local Spending Impact of a University is noticeable immediately, whereas Knowledge Impacts continue to influence the community throughout the entire lives of alumni and, therefore, have long-term effects. A high level of educational attainment (“knowledge”) allows the university graduate to benefit directly (in the form of higher earnings) and yields significant social returns, such as the individual’s interactions with co-workers (to better a company or organization) and the increased tendency of these graduates to make positive lifestyle choices. (Stokes & Coomes, 1998)

The extent of the Spending and Knowledge Impact of a university is related to the source of its students, and the size of the region in which it is located. Institutions that receive most of their students from inside of their regions, such as Delta State, have small Spending Impacts. Typically, universities in large regions, such as Delta State, have large Knowledge Impacts because a large number of their graduates remain in the area.

**Alumni Earnings** - The principal economic value of a university degree lies in the difference between the average earnings of a university graduate versus that of a high school graduate. This was calculated in the following manner: the number of alumni by gender, graduation year, and degree was multiplied by the average annual earnings for each category. The average annual income for high school graduates for each category was then subtracted. This process showed the additional earnings gained from a university education.

**Social Benefits** - This is the benefit of reduced alcoholism, incarceration, unemployment, and welfare because of the choices made by Delta State alumni who live in the Mississippi Delta. Lower social costs reduce expenditures of businesses and governments.

## **APPENDIX 2**

### **KEVIN STOKES – BIOGRAPHICAL SKETCH**

Kevin Stokes specializes in providing Economic Impact studies for public and private universities. He has developed a unique method for determining the impact of higher education on municipal budgets. His clients have included Flagler College, St. Leo and Southeastern Universities in Florida and Lyon College in Arkansas. Other clients have included DePauw University (IN), Hope College (MI), Loma Linda University (CA), University of Bridgeport (CT), University of the Southern Caribbean (Trinidad), and Washington and Lee University (VA).

Clients in healthcare have gained from his expertise in the areas of analysis of variance, certificate of need application, management training, market definition, mergers and acquisitions, personnel development, statistical regression, trend analysis and value of life analysis. Clients have included Adventist Health System-Asia (Singapore), Adventist Living Centers (IL) , Brooke Grove Healthcare (MD), Battle Creek Adventist Hospital (MI), Fuller Memorial Hospital (MA), Geer Memorial Hospital (CT), Gritman Hospital (ID), HMO Nebraska, Kentucky Poison Control Center, Louisville Medical Center Development Corporation (KY), Pullman Memorial Hospital (WA), Sacred Heart Hospital (WA) and the World Health Organization.

Mr. Stokes received his B.A. from Andrews University in Michigan and his M.A. in Economics from Washington State University. He has served as adjunct Professor of Economics and Statistics at Webster University.

## REFERENCES

- Baum, S., & Payea, K. (2005). *Education Pays 2004: The Benefits of Higher Education for Individuals and Society*. New York, NY: The College Board.
- Behrman, J., & Stacey, N. (1997). *The Social Benefits of Education*. Ann Arbor, MI: The University of Michigan Press.
- Caffrey, J., & Isaacs, H. (1971). *Estimating the Impact of a College or University on the Local Economy*. Washington, DC: American Council on Education.
- Florax, R. (1992). *The University: A Regional Booster: Economic Impact Of Academic Knowledge Infrastructure*. Aldershot, U.K.: Avebury.
- Ma, J, Pender M & Welch, W. (2016). *Education Pays 2016: The Benefits of Higher Education for Individuals and Society*. New York, NY: The College Board.
- Machlup, F. (1980). *The Production and Distribution of Knowledge in the United States*. Princeton, NJ: Princeton University Press.
- Pennsylvania State University. (2008). *The Pennsylvania State University Impact Statement 2008*. Retrieved from [http://econimpact.psu.edu/downloads/giving\\_back\\_full.pdf](http://econimpact.psu.edu/downloads/giving_back_full.pdf)
- Siegfried, J., Sanderson, A., & McHenry, P. (2007). The economic impact of Colleges and Universities. *Economics of Education Review*, 26(5), 546-558.
- Stokes, K., & Coomes, C. (1998). The local economic impact of higher education: An overview of methods and practice. *Association of Institutional Research Professional File*, 67. Retrieved from <http://airweb3.org/airpubs/67.pdf>. Accessed 1/30/19.
- Sullivan, A., & Sheffrin S. (2003). *Economics: Principles in Action*. Upper Saddle River, NJ: Pearson Prentice Hall.
- U.S. Department of Transportation. Office of the Secretary of Transportation. (2016). *The Value of Travel Time: Departmental Guidance for Conducting Economic Evaluations*. Revision 2 (2016 Update)