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Estimating the Economic Impact of Higher Education: A Case Study of the Five Colleges in Berks County, Pennsylvania

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Abstract

Most economic impact studies are prepared by external consultants at significant cost to an individual college, a higher education state system, or a set of institutions with similar Carnegie Classifications. This case study provides a detailed framework that academic institutions may use to derive economic impact estimates without hiring external consultants. This research is unique in its case study analysis of the collective impact of five colleges that differ with respect to Carnegie Classification, control type, enrollment size, and selectivity. Utilizing internal expertise and resources, the schools estimate they contributed \$923 million to \$1.2 billion to the Berks County, Pennsylvania economy in 2004–05. Detailed discussion of the underlying methodology, data sources, multipliers, professional expertise needs, and case study limitations are provided.

Introduction

Higher education accountability has become increasingly prominent in recent years. Not surprisingly, several institutions and state systems have undergone economic impact analyses to assert their institution's or system's worth to the community (Siegfried, Sanderson, & McHenry, 2007). Economic impact studies are often commissioned by higher education institutions to discern the additional revenue and income generated in a specific region (Bellinger & McCann, 2002). Alternately, higher education institutions may be asked to justify, in economic terms, the state funding they receive (Brown & Heaney, 1997). In addition, many economic impact studies convey the value of higher education's public service beyond that of the obvious economic benefits (Pennsylvania State System of Higher Education, 2006).

The purpose of this economic impact case study is twofold. First, a detailed description of a recent economic impact study

conducted by the authors is given. Second, this case study provides the basic framework to implement an economic impact study that is reasonable in cost, resources, and human capital. Hence, this case study affirms that conducting an economic impact study is within the reach of most, if not all, higher education institutions.

Economic Impact Indicators

Higher educational benefits are as varied as colleges themselves (Drucker & Goldstein, 2007). Not surprisingly, a wide array of benefits has been proposed to communicate the economic and cultural value of postsecondary institutions. Table 1 lists some of these benefits and their corresponding source.

Table 1
Economic Impact Indicators and Corresponding Sources

Indicator	Source
Alumni Participation in Giving	Council for Aid on Education (CAE)
Degrees Conferred	National Center for Educational Statistics (NCES-IPEDS)
Educational Obtainment	U.S. Census Bureau, American Community Survey (ACS)
Employees (wages, salaries benefits)	NCES-IPEDS
Employment/Unemployment	U.S. Bureau of Labor Statistics (BLS)
Endowment	NCES-IPEDS
Enrollment	NCES-IPEDS
Faculty Salaries	NCES-IPEDS
Financial Aid	NCES-IPEDS
Housing	ACS, NCES-IPEDS
Injury/Illness	BLS
Institutional Expenses (ex. operation, instructional)	NCES-IPEDS
Median Income	NCES-IPEDS
Monthly Rent	ACS
Percent of Population in Workforce	ACS
Personal Income	U. S. Department of Commerce, Bureau of Economic Analysis (DEC-BEC)
Personal Savings	DEC-BEC)
Private Giving	CAE
Sales & Services of Entrepreneurial Enterprises	NCES-IPEDS
Student & Institutional Grants	NCES-IPEDS
Student and Staff Spending	DEC-BEC, NCES-IPEDS, BLS
Turnover, Employment	BLS
Volunteerism	Corporation for National and Community Service (CNCS)
Wages	BLS

A common misperception is that nonprofit organizations such as colleges do not generate state tax revenue (Tripp Umbach & Associates, 2004). However, it has been demonstrated that city, local, and state tax revenues increase as a result of the presence of higher education. Colleges impact at least four types of tax revenue: (a) income tax revenue as a result of the increased earning power of college graduates, (b) college employee income tax, (c) sales tax on student spending, and (d) tax paid by vendors who provide the college goods and services.

First, college graduates increase income tax revenues beyond that of high school graduates. The income of an associate degree graduate over his/her lifetime will exceed the total income of the average high school graduate by about \$400,000. The average bachelor's degree recipient can expect to make about \$500,000 more over his/her lifetime than someone with an associate's degree and, therefore, \$900,000 above that of a high school graduate (Grubb, 2002; Human Capital Research Corporation, 1997; Montclair State University, 2006; Moretti, 2004; U.S. Census Bureau, 2007).

Second, local tax revenues increase by virtue of the college's role as an employer, often one of the largest employers of a region (Hodges, Mulkey, & Stevens, 2007; Marist College, 2007; Montclair State University, 2006; Office of Institutional Research, 2007; Tripp Umbach & Associates, 2004). Third, student and visitor spending not only improve the economy but increase local and state sales tax coffers (Childs, Greenstreet, & Witt, 1998; Paff & D'Allegro, 2007). Fourth, tax revenues are produced by the regional vendors who provide goods and services to colleges (Huron Consulting Group, 2006). Deciphering the proportion of regional purchases of goods and services and multiplying that by the local and state tax rate can provide an estimation of these proceeds (Karaman, 2008).

Better health, increased volunteerism, improved likelihood to participate in government politics, enhanced moral character, and propensity to donate to charitable organizations are some of the social, cultural, and economic benefits attributed to higher education (Clark, Feng, & Stromsdorfer, 1998;

Fairweather & Hodges, 2006). Charitable donations include monetary funding, donation of facilities, and cultural activities that are offered at no charge (Bellinger & McCann, 2002). In addition, many college libraries allow local residents use of and access to their collections and library resources. This includes the access to computers and computer-aided training, library holdings, databases, and reference assistance (Paff & D'Allegro, 2007).

Economic impact indicators associated with faculty productivity include research, external grant acquisition, and entrepreneurial enterprises. With limited budgets, faculty research must often be supported by external grant funding (Paff & D'Allegro, 2007). Often, the grant monies purchase regional goods and services, pay for temporary workers, or support local agencies and businesses. Subsequently, these research monies can be transferred to local businesses that are willing to work with college and university research centers (Clark et al., 1998).

Additional economic benefits ensue when postsecondary institutions collaborate with business and industry. Most colleges have a department or division dedicated to workforce education including the development and administration of noncredit courses, customized training, and continuing education courses. Often, these educational offerings are overlooked in economic impact studies. Notwithstanding, Georgia Institute of Technology was cited as a model of economic growth because of its support for innovation centers, entrepreneurship programs, and business incubators (Nagel, 2005).

Economic Impact Indicator Sources

Current information for many economic impact indicators is available on government and public agency web sites. A partial compilation of these sources is listed in Table 1. Demographics, economic parameters, and social information can be obtained from the U.S. Census Bureau, American Community Survey (ACS). In 2006, the ACS began to be administered annually (U.S. Census Bureau, 2010). Information collected by the ACS project includes educational attainment, median household income,

and percent of population in the workforce. These indicators provide meaningful context to the higher education presence in a particular regional area. Further, this information is readily available on the U.S. Census Bureau FactFinder web application (U.S. Census Bureau, 2010).

Employment, unemployment, and wage information can be found on the U.S. Bureau of Labor Statistics (BLS) web site (<http://www.bls.gov/>). In addition, BLS reports turnover, injuries, and illness statistics. The affirmation that higher education institutions add economic value can be strengthened by providing historical comparisons of this information, comparisons across industries, and comparisons with geographic areas that do not have a higher education presence.

The Community Economic Toolbox enables graphical comparisons of employment and demographic data between states and counties (Glasmeier, 2010; Shields, 2003). Intended to help local communities understand key local economic indicators and economic trends such as job growth, the interactive web tool enables graphical comparison across several industries between two selected geographic locations.

The National Center for Educational Statistics (NCES) provides information on college and university enrollment, completions, and financial data. The financial data that are available depends on the college's source of control, public or private; however, information that is available for both types of institutions comprise investment income, capital and financial aid grants and gifts, and change in endowment value (NCES, 2010). This information is accessible using the NCES Integrated Post-Secondary Education Data System (IPEDS) Data Center web site. IPEDS is a federal government sponsored postsecondary data reporting system (NCES, 2010).

Donations to colleges and universities can also infuse resources into the economy. The Council for Aid on Education (CAE) reports private giving to institutions—in fact, it purports to be the only source for private giving to education (Council for Aid on Education, 2010). The source of these donations is also tracked.

Tourism information including spending, length of stay, reason for visit, and visitor origin can be obtained from state-sponsored tourism offices (Pennsylvania Tourism Office, Department of Community & Economic Development, 2003). The Bureau of Economic Analysis (BEA) tabulates information about income and consumer spending (BEA, 2010; Montclair State University, 2006). Maintained by the U.S. Department of Commerce, BEA reports personal income, disposable income, and personal savings data. Income information is aggregated by state and metropolitan statistical area (MSA).

Volunteer activities provide assistance to nonprofit agencies, social agencies, and community planning (Institute for Higher Education Policy, 1998; Singell, 2002). The Corporation of National and Community Service reports the estimated percent of student volunteers (Dote, Crammer, Dietz, & Grimm, 2006). Coupled with student enrollment or full time equivalent (FTE), this estimate can be helpful in the derivation of student volunteer hours.

Publications are another source to determine economic impact. *American Demographics*, *University Business*, *Chronicle of Higher Education*, and *Post Secondary Education Opportunity* all provide information about student behavior, spending habits, financial aid received, and campus revenues and expenditures. Peer-reviewed journals that pertain to the economics of higher education include (a) *American Economic Review*, (b) *Economics of Education Review*, (c) *Journal of Econometrics*, (d) *Journal of Higher Education Policy and Management*, (e) *Industry & Higher Education*, and (f) *Research in Higher Education*.

Scope of Economic Impact

Most of the economic impact studies reviewed for this research computed economic impact for one fiscal year; however, the cumulative or average economic benefit across several years may provide a better economic impact estimate. As a case in point, the construction activities of the five colleges in this economic impact study varied from

year to year. Likewise, equipment, lease expenses, and land acquisition were remarkably diverse for some of these institutions from year to year.

Some factors to consider in the identification of an economic impact’s geographic boundaries include the college’s location, the location of other institutions, and economic impact study utilization (Karaman, 2008). As such, some studies have examined the impact for an entire state while other studies focused on a confined geographic area such as a county or set of municipalities. The geographic area of an economic impact study should align with the purpose of the study (Siegfried et al., 2007).

Case Study

Introduction

An economic impact study was conducted for five higher education institutions in Berks County, Pennsylvania. Charged by the Higher

Education Council of Berks County (HECBC), the five institutions are disparate in many aspects. Notwithstanding, the Carnegie Classification, control type, enrollment size, selectivity, and level of degrees conferred differed considerably. The five colleges included in the economic impact study and their respective control type, enrollment size, and selectivity, are listed in Table 2.

Methodology

The economic impact indicators under consideration were similar to those posited by Caffrey and Isaacs (1971), a widely used methodology initially developed for the American Council of Education. The initial step is to identify the expenditures directly associated with the academic institutions including amounts spent by the school(s), local spending by faculty, staff and students. Next, an economic multiplier is applied to the total amounts of direct spending. Caffrey

Table 2
The Five Colleges Included in the Economic Impact Case Study

College	Carnegie Classification	Enrollment	Selectivity
Albright College	Private 4-Year Baccalaureate Arts & Sciences	2,243	Moderately
Alvernia College	Private 4-Year Masters/Medium	2,718	Minimally
Kutztown University	Public 4-Year Masters/Larger	9,585	Moderately
Penn State Berks	Public 4-Year Baccalaureate Arts & Sciences	2,416	Moderately
Reading Area Community College	Public 2-Year Associate Rural/Medium	4,290	--

and Isaacs incorporate the competitive effects of university enterprises such as housing and food services, and other activities which are financially supported by the school(s) are added. Their model also estimates the benefits and costs of the school(s) on area governments, including items such as property taxes and government services. Last, their model considers labor market impacts, specifically the total number of jobs created (Stokes, 1996).

The methodology outlined for this case study is similar to that proposed by Elliot, Levin, and Meisel (1988), which modifies the Caffrey and Isaacs (1971) approach by distinguishing between the expenditure impacts of local and nonlocal students. Accordingly, the economic impact is estimated through a multistep process. First, estimated direct expenditure figures are obtained. Second, estimates of the indirect or induced expenditures are computed by applying a multiplier to the direct expenditures. Third, direct and indirect amounts are added. The sum of the direct and indirect expenditures denotes the higher education economic impact estimate.

The economic impact indicators were selected by collectively examining the missions of the five colleges. All told, this was the most important criteria in the selection process. The five colleges pride themselves as teaching institutions with a strong commitment to service. Additionally, because the economic impact study was not prepared by external consultants, the availability and ease of data collection also factored into the impact variable selection process.

Five economic impact indicators were selected for the study: (a) core expenses, (b) student

spending, (c) student spending on housing, (d) visitors to campus, and (e) volunteer activity. The economic impact indicator, student housing expenditures, was included in this case study because the enrollment at the four-year colleges is primarily residential. Specifically, most students at these four institutions do not reside in Berks County and, consequently, live in college housing or local rental apartments near campus. One college, Reading Area Community College (RACC) does not have any on-campus housing. These five economic impact factors were shared a priori to data collection with the five colleges. In addition, consensus was reached on the five economic impact indicators among the five higher education institutions before this study ensued.

Each higher education institution was asked to report the following information based on IPEDS submissions for the 2004–05 fiscal year: (a) enrollment, (b) full-time and part-time employees, (c) full-time faculty head count, and (d) full-time faculty salary expenditures. Enrollment was used to estimate numbers for student spending and student volunteer activity.

Core expenditures for each institution were determined by collecting the total operating expenses for each institution from the IPEDS Data Center. Based on the IPEDS definition, total operating expenses are the sum of all operating expenses that result from providing goods and services (NCES, 2010). Examples of operating expenses include employee and student worker salaries and benefits, supplies and services, and utilities (Haywood, 2006). Total core expenses are listed in Table 3.

Table 3
Direct Economic Impact Estimates

Estimate	Core Expenses	Student Spending	Student Housing	Visitor Spending	Volunteer Time Value
Low	\$198,774,778	\$27,128,320	\$10,132,188	\$102,516,000	\$ 497,934
High	\$198,774,778	\$64,599,312	\$16,230,192	\$114,612,888	\$1,477,701

Because core expenditures subsume staffing expenses, mainly salaries and benefits, employee expenditures were not reported separately as an economic impact indicator in this case study. However, parsed from other core expenditures, the number of employees and monetary value could be informative. Moreover, those employees not living in the region spend money from their wages on local goods and services while they are at work in the region (Department of Institutional Research and Management Studies, 2000; Singell, 2002). Number of employees and total staff salaries, wages, and benefits can be obtained from the IPEDS Data Center (NCES, 2010).

Spending by students falls into two main categories, discretionary spending, and nondiscretionary spending. Discretionary spending typically includes snacks and beverages, personal care items, entertainment, and technology items. The primary nondiscretionary item, excluding tuition and books, is rent. Book expenses were excluded for both full-time and part-time students because this expense could not reliably be uncoupled from the books and supplies nor the price of attendance as reported by the financial aid officers (NCES, 2010). Also, many students bypass the bookstore to borrow necessary books, buy or rent them online, or purchase them from vendors that are not local.

Students living on campus spend \$160 per month, whereas those either living with their parents or living elsewhere spend \$254 and \$381, per month respectively (Gardyn, 2002). Because there is a significant variation of monthly student spending depending on student type, both low (\$160) and high (\$381) determinations of student discretionary spending were computed multiplying these values by 12 to approximate an annual estimate. These annual estimates were multiplied by the enrollment of these five colleges (Paff & D'Allegro, 2007). The low and high estimates of discretionary student spending are shown in Table 3.

Students also contribute to the Berks County economy through nondiscretionary spending (Paff & D'Allegro, 2007). Housing is the primary nondiscretionary expense of students while

attending college. With the exception of RACC, each college reported that less than half of their enrollment hailed from Berks County. In order to avoid overstating the financial impacts of commuter students who do not live with their families, 50% of enrollment was established as a low estimate of student tenants. Two of the colleges reported enrollment that resided in Berks County as 20% or less. Further, one of these two colleges accounted for about three-fifths the total enrollment of the four residential colleges. Therefore, this case study assumed a high estimate of 20% already live in Berks County, leaving 80% to reside in campus or off-campus housing. The estimate of 20% is also substantiated by the 2006 ACS (U.S. Census Bureau, 2010).

Students living in resident halls or off-campus rarely live by themselves. Accordingly, the low (20%) and high (80%) estimates of the proportion of students living off-campus were divided by four. These low and high estimates of the number of housing units was multiplied by the average rent in Berks County in 2004 (U.S. Census Bureau, 2010). These monthly rent aggregates were multiplied by 12 to arrive at an annual housing spending estimate. The low and high estimates of annual monthly rent estimates are shown in Table 3. Room and board charges can be found by using the IPEDS Data Center (NCES, 2010). However, resident hall charges are typically higher than off-campus housing rent. In addition, the residence hall capacity is severely below the demand for on-campus housing for the four Berks County colleges. Therefore, the average rent as reported by the U.S. Census Bureau (2010) was used in this case study as a more realistic estimate.

Visitors to campus are not enrolled in course or programs. Many visitors attend concert, studio, and other campus-sponsored events. Visitors may also be prospective students or partake in summer camps. The Pennsylvania Tourism Office (2003) states the day-trip per person average expenditure statewide was \$100. The average per-person expenditure per day during overnight visits was \$111.80 in Berks and Lancaster counties (Pennsylvania Tourism Office, 2003). Lancaster

County is adjacent to Berks County. These two daily expenditures, representing low and high estimates respectively, were multiplied by family, not per person. The low and high estimates of visitor spending are listed in Table 3.

Community service is another avenue of economic contribution (Paff & D'Allegro, 2007). The Institute for Higher Education Policy (1998) reports increased charitable giving and community service as one of the public social benefits that accrue to communities supported by one or more institutions of higher education. As such, aspects of the Bellevue Community College's *Community Impact Report* (2001) methodology were incorporated. This methodology recognizes that the higher education institutions' value to their surrounding communities extends beyond the traditional spending model to include volunteerism and other community support activities.

Student volunteerism estimates were based on a three elements: (a) percent of students performing community service, (b) value of student time, and (c) number of hours volunteered. Because there is significant divergence in estimates of time and the monetary value of volunteerism, a low and high estimate of both value of student time and volunteer hours were compiled. The proportion of students performing community service was estimated from the Corporation for National and Community Service (CNCS) estimates. Approximately, one-third (35.1%) of Pennsylvania college students engage in volunteer activities each year (Dote et al., 2006). For value of time, the minimum wage was used as a low estimate (Paff & D'Allegro, 2007). The minimum wage at the time of this case study was \$5.15 per hour. Independent Sector (2005) estimates that one hour of volunteer work in Pennsylvania was worth \$17.06 in 2004. This includes all forms of volunteer service from unskilled to technical labor. The Independent Sector estimation of \$17.06 was used for the high estimate.

Also according to Independent Sector (2005), the annual hours volunteered, excluding informal volunteering was 15.5 hours in 2000. The Independent Sector annual volunteer hour

estimate, 15.5, was used for the low estimate volunteer-hours computation. The average number of hours volunteered by Pennsylvania residents between the ages of 16 and 24 was 40.0 (Dote, et. al, 2006). The CNCS estimate, 40.0 hours, was used for the high estimate volunteer-hours estimate computation. Hence, the low and high estimates of volunteer value will depend dually on volunteer hours and estimated reimbursement per hour. In both estimate calculations, 35.1% of the institution's enrollment was used to determine the number of student volunteers. Low and high estimates of volunteer time are shown in Table 3.

Multipliers

Many economic impact studies employ a multiplier to reflect the repeated reuse of expenditures and spending in the region's economy (Bellinger & McCann, 2002). Simply, college employee or student spending is extra income for the regional economy. In turn, residents and merchants in that region's economy use that additional spending to purchase additional goods and services locally. This spending continues infinitely but to a lesser extent for each subsequent iteration. A multiplier is a reasonable approximation of the sum of the infinite iterations of regional spending (Haywood, 2006). By virtue of expenditures, services, and cultural offerings, colleges impact this sum of infinite iterations of regional spending indirectly. Hence, the multiplier provides an estimate of the amplified indirect economic impact benefit (Drucker & Goldstein, 2007).

One method to determine multipliers is the examination of the U.S. Department of Commerce, Bureau of Economic Analysis (BEA) multipliers. Developed and updated for upwards of 500 industries including postsecondary education, these Regional Industrial Multiplier System (RIMS II) benchmarks have been used in several college economic impact studies (Haywood, 2006). RIMS II multipliers are the ratio of inputs purchased and outputs sold taking into account the relationship between industries in a specific region (Bureau of Economic Analysis, 1997).

Another method identifies appropriate multipliers by examining previously used multipliers at similar institutions and institutions of close regional proximity to ensure consistency with previously executed economic impact studies (MacFarland, 2004; Montclair State University, 2006; Office of Institutional Research, 2000; Singell, 2002). This was the method employed for this case study. Consistent with the former approaches used in estimating the direct impact, this case study attempts to avoid upwardly biasing the indirect economic impacts by providing two impact estimates employing two multipliers, 1.78 and 2.30. These indirect economic impact multipliers are based on two studies conducted by Pennsylvania institutions within the last six years: the multiplier used for the Harrisburg region in the Widener University study (Econsult Corporation, 2010), 1.78, and the multiplier used in Pennsylvania State University economic study, 2.30 (Tripp Umbach & Associates, 2004).

Results

Three economic impact indicators were used to estimate the direct economic impact (DEI): institutional core expenses (CE), student discretionary spending (SDS), and visitors to campus (VC) as illustrated in the first equation below. The indirect economic impact (I) is determined by multiplying an economic multiplier (EM) to the direct expenditure impact (DEI), shown in the second equation. As mentioned, two multipliers were used in this case study, one

for the low economic impact estimate, 1.78, and one for the high, economic impact estimate, 2.30. The total economic impact (EI) is the sum of the direct economic impact (DEI), the indirect impact (I), student spending on housing (SSH), and student volunteer activity (SV) expressed in the third equation. In sum, economic impact (EI) is computed using the following three equations:

$$\text{(Equation 1) } DEI = CE + SDS + VC$$

$$\text{(Equation 2) } I = EM \times DEI$$

$$\text{(Equation 3) } EI = DEI + I + SSH + SV.$$

Note that student spending on housing (SSH) and student volunteerism (SV) were intentionally omitted from the second equation, the multiplier computation. These omissions are justified for two reasons. First, the authors' aim to avoid upward bias of the indirect impact estimate suggested the prudent course would be to exclude the indirect impact of student housing expenditures. Second, to account for the variation in resident housing and availability across four of the schools in this economic impact study, the more conservative option was to exclude the student spending on housing (SSH) from the indirect impact computation. Similarly, since student volunteer activity (SV) has economic value but does not necessarily lead to a rippling effect throughout the regional economy, this economic indicator also intentionally was excluded from the indirect impact computation.

The economic impact of each of these components and the total economic impact are shown in Table 4. Jointly, institutional core expenses, student discretionary spending, and

Table 4
Direct and Indirect Economic Impact Estimates

Estimate	(a) Direct Impact Sum Indicators	(b) Direct Impact Sum *Multiplier	(c) Student Housing	(d) Volunteer Time	(a + b + c + d) Total
Low	\$328,419,098	\$584,585,994	\$10,132,188	\$ 497,934	\$ 923,635,214
High	\$377,986,978	\$869,370,049	\$16,230,192	\$1,477,701	\$1,265,064,920

visitors to campus add between \$328 million (\$328,419,098) and \$378 million (\$377,986,978) to the Berks County economy. Indirect economic impacts are estimated between \$585 million (\$584,585,994) and \$869 million (\$869,370,049). Volunteer work and civil engagement add an estimate additional value of \$500,000 (\$497,934) to \$1.5 million (\$1,477,701) to the economy and the community. The volunteer and visitor economic impact estimates understate the actual economic impact of visitors to campus and student volunteers because not every institution in this case study provided this information. Overall, the direct and indirect economic impacts of the higher education institutions described in this case study contribute conservatively \$923 million (\$923,635,214) to the Berks County economy. However, the remuneration to the economy may be in excess \$1.2 billion (\$1,265,064,920).

Limitations

As an applied research project, articulating the limitations of this case study are in order (D'Allegro, 2002). The economic impact indicators selected for this case study, choices of economic indicators, formulas to estimate the economic impact indicators, and economic impact multipliers may not be relevant to other institutions. The five higher education institutions under review in this case study may not be comparable to other colleges or college systems. Certainly, the group of higher education institutions used in this case study differed significantly from previous economic impact studies that either focused on a single higher education institution or a homogeneous set of colleges.

Several economic impact indicators were not used in this case study but may be relevant to other economic impact studies and future economic impact studies executed by the five Berks County higher education institutions. Some of the economic impact indicators not captured in this case study were noncredit course activity, faculty research, grant acquisition, entrepreneurial enterprises, charitable donations, and use of library

facilities (Paff & D'Allegro, 2007). In addition, this case study did not discern any tax revenue that may have been generated due to the colleges' presence. These tax revenues include: (a) increased graduate earning income tax revenues, (b) college employee income tax revenues, (c) sales tax on student spending, and (d) taxes paid by vendors that provide goods and services to the college.

This case study estimated an annual economic impact. This interval may be irrelevant, specifically too short, in relation to the factors that affect the Berks County economy or other geographic regions under consideration. In addition, the fiscal year, 2004–05, may not necessarily reflect the economic impact of previous or subsequent years.

Akin to previous economic impact studies, the region under consideration is unique to the college or set of colleges conducting this case study. Moreover, the geographic size of the region for this study is fairly small, encompassing 1 of 67 Pennsylvania counties. Therefore, the additional economic benefits of college graduates was not included in this case study because the confluence of the small geographic size and the inability of the five colleges to determine the proportion of graduates that migrate to other regions (Brown & Heaney, 1997).

In addition, a portion of the expenditures including goods and services purchased by the college, employee wages and salaries, student spending, student housing, and volunteer activities could have taken place outside of Berks County; however, the five colleges are centrally located and within 15 miles of the largest city, Reading. It is unlikely that much of the student spending and student housing costs were accrued outside Berks County, at least during the school year. Similarly, volunteer work, by nature of the colleges' missions, was performed mostly in Berks County. One exception is the college goods and services purchased outside Berks County. Correspondingly, the percent of college goods and services purloined from other regions was not available for this economic impact study.

Discussion

This paper describes the details of an economic impact study conducted for five colleges and universities in one regional area, Berks County, and this case study illustrates that a relevant and robust economic impact study is within the reach of most higher education institutions. In addition, this particular economic impact study reinforces the positive impact that postsecondary institutions have on the regional economy. Visitors to the campus generated over \$100 million in regional revenues while student-housing costs produced an additional \$10 million to \$16 million for Berks County (Paff & D’Allegro, 2007). The total impact of the five colleges and universities in Berks County exceeded \$1.2 billion. Nonetheless, this economic impact estimate excludes many additional economic benefits that were not enumerated in this case study. For instance, faculty research, entrepreneurial endeavors, endowment, collaborations with business and industry, library services, tax revenues, and charitable donations were not used in this economic impact study.

Many higher education institutions face the challenge of placating the concerns of local residents who firmly believe that colleges and universities are detrimental to the community, especially neighborhoods surrounding the campuses. The recycling of tuition to the community and the economic impact benefits outlined in this case study may help to diminish these “town/gown” confrontations. Paulsen and Toutkoushian (2006) assert that economic impact studies that identify specific regional economic benefits provide compelling evidence that demonstrate the advantages of higher education institution in the local community.

Recommendations

Many institutions hire or consider an outside consultant or external firm to conduct an economic impact study. An outside consultant can mitigate the perception of an institution’s bias concerning its worth. However, most postsecondary institutions have institutional research offices. Similarly,

institutions that have business departments, schools or colleges are likely to have in their employ faculty who are economists. Both vocations are governed by professional associations that have strict ethical standards and stringent guidelines about ethics, accuracy, and integrity. Therefore, internal human capital should be regarded as trustworthy and unbiased as external consultants or outside agencies.

In addition to the cost savings of executing economic impact studies in-house, faculty and institutional research offices are most likely to build inventories of the academic activities and research that are more varied in scope than an outside agency can engender. Inherently, faculty and institutional research offices are aware of what is happening on campus and know the best internal sources of information. In addition, faculty and institutional research offices have committed to these projects and the institution long-term. These long-term commitments are not usually financially feasible to an external consultant or outside agency.

Conducting economic impact studies at established reasonable intervals, say every five years, will help underscore the credibility of the economic impact. Using similar economic indicators and methodologies outlined in previous studies and regularly replicated economic impact studies can strengthen the association between regional economic growth and higher education.

More than one department should be responsible for conducting an economic impact study. The choice of economic impact indicators, the multiplier, source data, duration of study, and other parameters should be collaboratively decided across areas of expertise and among institutions if applicable. Information should be verified by more than one source. Tasks such as data collection and reporting of the economic impact indicators should be disbursed among the colleges participating in the economic impact study. A system to check the data collection and final report should also be put in place and be the responsibility of all colleges involved in the economic impact study.

Selection of economic impact measures should take into consideration the college mission as

well as the resources needed to collect the data and information. If the collection of economic impact measures is not feasible, at the very least, a comparison of educational obtainment among comparable regions or time periods could be examined. The U.S. Census Bureau FactFinder web applet provides percent of persons 25 and older who have obtained a bachelor's degree for a specified region. This information is available for 2000 and, in most cases, 2006. If the percent of bachelor degree obtainment is favorable compared to some established baseline, region, or time, the results of government and public policy research could also be integrated in the economic impact study to further demonstrate the benefits of higher education.

Conclusion

Economic impact studies are not new to higher education. Accordingly, the results of this case study and other economic impact studies communicate valuable economic, cultural, and social benefits to public constituents. This particular economic impact study sought to estimate the economic impact of five higher education institutions in a specific geographic region, Berks County, Pennsylvania. These institutions varied by Carnegie Classification, type of control, enrollment size, and selectivity. Nonetheless, this case study demonstrates that a technically robust, comprehensive economic impact study can be conducted collectively with institutions that are dissimilar in many respects. Chiefly, this case study undermines the presumption that economic impact studied cannot be conducted with existing institutional resources. The results illustrate a positive regional economic impact. Further, this case study identifies intangible cultural benefits that are difficult to quantify economically.

As demonstrated in this case study, postsecondary education institutions do not need to rely on external consultants or outside firms to conduct economic impact studies. The applied research project corroborates results of previous studies demonstrating that higher education institutions do provide economic worth to the

region they propose to serve. Most importantly, this paper illustrates that the economic impact study is a genre unto itself. As such, the economic impact study genre requires continued refinement of (a) knowledge, (b) experimental methods, and (c) research base dedicated to studying economic impact to sustain it as a robust tool to determine the value of higher education.

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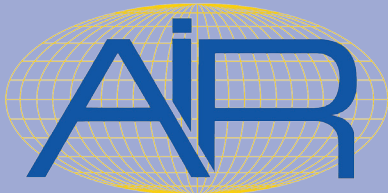
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