Growth of Educational Institutions and its Impact on the Development of a Region

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Abstract

The paper explores the circumlocutory and direct role that educational institutions have on their local regions specifically within five (5) km radius. According to Allision (2003) universities of higher learning goes beyond their core function of teaching and research to impact considerably on their local regions. Thus to identify the possibility of a replicable relationship between educational institutions on the development of the local region in Allahabad, a self-administered questionnaire of thirteen (13) items consisting of a five point likert scale was used to obtain data from two hundred and twenty three (223) respondents in and around two educational institutions. The respondents were made up of students, faculty and business owners around those colleges. Factor analysis was carried out after being satisfied with the internal consistency of the instrument. Regression analysis was used to ascertain the relationship between local region development and the presence of educational institutions. The researcher identified typical employment opportunities evolving around the local regions of educational institutions.

Keywords

Educational Institutions, Local region, Commercial activities, Development

Introduction

Educational Institutions have their core functions to be teaching and research. The economic impact assessment of a university provides useful information on the nature and magnitude of its contribution to the local communities that have it. Such study helps university administrators to communicate the economic value of the university to stakeholders like state officials, policy makers and government agencies (Allison, 2003). For

example according to Goldstein (2006), in the United States, universities have generally embraced the goal of economic development as a complement to their traditional missions of education, research and public service. This new goal of higher educational Institutions has been termed as the third mission where universities are expected by the Stakeholders like policy makers and government agencies to contribute to social and economic development.

Thus in spite of educational institutions well known role in awarding degrees to students, coupled with the function of teaching and research, such institutions whether private or public ought to be active directly or indirectly in providing solutions to economic issues in the form of creating Jobs which further creates employment opportunities eventually improving the standard and welfare of individuals living around such institutions. This study examines educational institutions role in the development of the local regions (within 5km radius) in which such institutions are situated.

Problem Statement

University Institutions have been acknowledged by the economic world to have a direct economic impact on their immediate surroundings (Franciscan University of Steubenville, 2005). This study explores whether the presence of educational institutions leads to development within the local regions in which such institutions are located, particular within a five (5) Kilometre radius.

Objectives

1. To identify the noticeable job opportunities within the local region (5 km radius) of educational Institutions.
2. To identify the relationship between the presence of educational institutions and development within their local area (within 5 Km radius).
3. To propose a model for local region development.

Research Questions

1. What work opportunities are found within the local area of educational Institutions?
2. What is the link between the presence of educational institutions and local region development?

Hypothesis

H0: There is no significant relationship between the presence of educational institutions presence and development in their local area.

H1: There is a significant relationship between the presence of educational institutions and development in their local area.

Review of Literature

The basic objective of an economic impact study is to measure the increase in a regions economic activity attributable to the presence of a college or a university (Elliot, Levin and Meisel (1988). According to Troy (1994), employing economic analysis technique gives a university the abilities to clarify the economic benefits of higher education institutions. He further noted that such studies may be helpful in securing public support for the expansion of higher education institutions. Further, in a report summarizing economic impact study results of member institutions, the National Association of State Universities recognizes the importance of economic impact as useful means for an institution when communicating its value to public officials and policy makers. Moreover in the work of Hughes, Alston and Bayne (1988) it is stated that ''systematic quantification and analysis of an academic institution's impact on the local and regional economies can help college and university administrators to make decisions internally and improve community relations''. This implies that universities can go beyond its traditional role of teaching and research to assess its economic impact on surrounding communities so as to maximize such impacts as creating jobs and increasing business volumes.

Approaches to The Economic Impact of Universities

According to the study conducted by Tripp Umbach and Associates (2004), a well-established methodology which has been employed in hundreds of impact studies throughout the United States is the American Council on Education (ACE) method.

This ACE model which was developed in 1971 by Herbert Isaacs and John Caffrey helps educational institutions to estimate their economic impact on the local communities hosting them. it merges financial and multiplier analysis by using numerous variables like Faculty, staff, students, and college expenditures as well as the socio-economic information about the community and regional input multipliers to estimate indirect economic impact.

Usinger (2005) further notes that the multiplier effect used by the Isaac and Caffrey is based upon the idea that a portion of any local expenditure results in additional jobs and services.

It presumes that money spent by one source will be spent again in the purchase of goods and services by another source within a declared geographical region.

Allison (2003) stated that the produce involved in using the Caffrey Isaacs model requires the Institution undertaking the impact study to determine the local spending of its students, employees, and visitors making sure not to include students' payment to the institution for tuition, room and board. A regional economic multiplier is then applied to the total expenditures to determine the overall economic impact. This is an indirect or induced impact and is made up of business subsequent purchases by members of the Institutions community. The ACE method also uses a separate multiplier to estimate the impact of the total expenditures on job creation in the surrounding area. One limitation noted again by Allison about the ACE method is its inability to separate the spending of resident and non-resident students, employees and visitors. Another approach used by Nagowski (2006) in his study is in two folds, namely; Economic based approach and Skill based approach.

Economic Base Approach

First, the Economic Base approach measures the direct and indirect economic effects that the expenditures associated with higher education Institutions has on a region's economy. He explained that the key tenet of this approach is that while expenditures have direct economic impact on the people and firms receiving the outlays, they also have an indirect effect when this money is spent again on the other sectors of the economy.

Skill Based Approach

The second approach, the skill Base approach also establishes the economic base that a University Contributes to the region's economy, but goes further to examine the impact of a Universities graduates (output) on a region. It is based on the fact that Universities through teaching and research produce skilled workers and increase technology, both of which can directly increase incomes in a region. Nagowski further highlights the importance of this fact by stating that higher incomes can benefit a region's economy through

increased tax revenue for state and local governments, increased consumption and higher rates of saving and investment.

One limitation of the skill base approach according to Nagowski is its tendency to inflate estimates of earnings and productivity of graduate since it is unable to account for a workers inherent ability, and so there is no way to know whether a worker earns higher income because of talent or higher education. He further identifies the possibility of graduates of a University migrating from the region of the University in question as one factor to affect the estimate of impact used by this approach. Comparing both the Economic Base approach and the ACE method one can note that they all require data on the expenditure by an Institution, its students and staff. Also the multiplier is employed by both approaches to estimate indirect economic impact. However, it is the skill base approach which attempts to consider the economic consequence of Universities traditional roles of teaching and research.

Theoretical Review

In every market economy, there is the existence of individuals and firms as the fundamental decision makers. Interactions between the two participants in the economy occur both in the product and factor markets R.G. Lipsey (1993). The product market comprises individuals who demand goods and services to satisfy their consumption desires. That is, individuals spend part or all of their incomes on purchasing goods and services produced or sold by business units. Therefore, business units become recipients of incomes (in the form of sales) that have been spent by individuals (in the form of expenditure). Expenditure, according to Encarta 2015, represents the amount of one's money income that is spent on purchasing desired goods and services.

Economic impact is defined as the positive or negative effects of an institution or a project on the level of economic activity in an area. Economic development and for that matter development is usually conceived as a process involving not only quantitative expansions but also changes in non-quantitative factors such as institutions, organizations, and culture under which economies operate.

Methodology

Exploratory analysis was used to ascertain the objectives of this study. To obtain data for the study, primary data collection was used to collect response from 223 respondents comprising of 158 students, 35 faculty members and 30 business owners from two educational institutions. This formed the sample unit for the study. Secondary data was however relied upon for a thorough literature review on the study. A convenient sampling technique was used in collecting the data. The survey was conducted with special reference to the local regions of Allahabad in Uttar Pradesh, India. A cronbach alpha value of 0.846 which is higher than the accepted value of 0.6 according to Nunnally, J.C (1798) was used to test the internal consistency of the instrument used. Factor analysis was used to identify factor loadings for development in the local region as well as deduce a descriptive inference on the perceived job opportunities within the local area of educational institution. A linear regression tool was used to develop regression analysis to explain the relationship between the variables under study. There after the researcher proceeded to develop a model based on the findings of its analysis.

Findings

Table 1 Cronbachs Alpha Coefficient for Scales
Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
0.846	0.843	13

A Cronbach alpha of 0.846 form 13 items determined the internal consistency and reliability of the scale used.

Table. 2.1 Factor Analysis
Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Factor	Total	Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.643	35.712	35.712	4.141	31.853	31.853	2.392	18.399	18.399
2	1.515	11.654	47.366	1.103	8.481	40.334	1.760	13.538	31.937
3	1.075	8.266	55.632	0.659	5.066	45.400	1.750	13.462	45.400
4	1.000	7.691	63.323						
5	0.899	6.912	70.235						
6	0.765	5.883	76.119						
7	0.636	4.890	81.008						
8	0.556	4.274	85.282						
9	0.525	4.037	89.319						
10	0.485	3.734	93.052						
11	0.348	2.678	95.730						
12	0.303	2.330	98.060						
13	0.252	1.940	100.000						

Extraction Method: Principle Axis Factoring.

Table 2.1 displays the total variance explained at three stages. At the initial stage it shows the factors and their associated eigenvalues, the percentage of variance explained and the cumulative percentages. Three factors were extracted as they have eigenvalues greater than 1. The three factors explain 55.6 of the variance when extracted. Factor one and two appears the more predominant factor with eigenvalue 35.712.

Table 2.2 Rotated Component Matrix

Variables	Component		
	1	2	3
Factor 1 - **Commercial Activities**			
Improved Security	0.628		
Augmented number of Banks	0.573		
Presence of small scale Industries	0.459		
Increased number of Retail Shops	0.443		
Poor sanitation conditions	0.308		
Presence of small scale farming	0.478		
Factor 2 – **Educational Institutions**			
Increased number of colleges		0.642	
Increased number of primary schools		0.456	
Enhanced road network		0.619	
Proliferation of student hostel (Private)		0.620	
Factor 3 – **Accessibility to Health Facility**			
Increased number of medical stores			0.638
Improved adult literacy			0.533
Available health facilities			0.780
Kaiser- Meyer-Olkin Measure of Sample Adequacy			0.813
Bartlett's Test of Sphericity			951.495
Df			0.78
Significance			0.000

Table 2.2 reveals that six (6) items, namely improved security, augmented number of Banks, presence of small scale industries, increased number of retail shops, sanitation concerns characterized by commercialization in a relatively small space and presence of small scale farming were loaded under one factor one (1) ranging from 0.308 to 0.628 indicating pure variables under factor one (1) as all the items have loadings greater than 0.3 Again four items (4) like increased number of colleges, increased number of primary school, enhanced road network and proliferation of student hostels (Private) were loaded under Factor two (2) ranging from 0.456 to 0.642 indicating pure variables under factor two (2) as all the items have loadings greater than 0.3. Factor three (3) had three items being loaded under it. The items are

increased number of medical stores, improved adult literacy and available health facilities. The loadings in Factor three (3) ranges from 0.533 to 0.780 indicating pure variables under factor three (3) as all the items have loadings greater than 0.3.

Table 2.3 Factor Alpha and Eigen Value

No	Factor	Eigen value	Cronbach alpha
1	Commercial Activities	4.643	0.70
2	Educational Institutions	1.515	0.71
3	Accessibility to Health Facility	1.075	0.76

Table 2.3 indicates that the alpha values for the three factors are 0.70, 0.71 and 0.76 respectively. This confirms a strong level of agreement among the 233 respondents for each of the three factors. Hence factor 1, 2 and 3 have been named respectively as commercial activities, educational Institutions and accessibility to health facility.

Table 3: Multiple Regression Summary Anova[b]

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.533	3	8.178	23.890	0.000a
	Residual	74.964	219	0.342		
	Total	99.498	222			
a. Predictors: (Constant), Accessibility to health facilities, commercial activities, educational institutions. b. Dependent Variable: Development within local region						

Table 3 indicates that the coefficient of determination (R2) was compared to determine percentage variation in the dependent variable. The F value computed the significance of R2 with F-distribution at 5% level of significance. The model is found fit on significance (.000) which is less than (0.05) level of significance. Therefore we reject the null hypothesis Ho which states that there is no significant relationship between the presence of educational Institutions and development in their local area and accept the alternate hypothesis H1 which states that there is a significant relationship between the presence of educational institutions and development in their local area.

TABLE 3.1 ANOVA[B]

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.497[a]	0.247	0.236	0.58507
a. Predictors: (Constant), accessibility to health facilities, commercial activities, educational institutions. b. Dependent Variable: Development within local region				

The predictor ability as explained by the R Square is 0.247 which is approximately 25%.

Regression Equation

Development within local regions = 0.867 + 0.645 (Presence of educational institutions) + 0.178 (Presence of commercial activities) + 0.118 (Accessibility to health facility)

Table 3.2 Coefficients of Model

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	0.867	0.101		8.557	0.000
Presence of commercial activities	0.178	0.133	0.183	1.342	0.181
Presence of educational institutions	0.645	0.136	0.774	4.740	0.000
Accessibility to health facility	0.118	0.085	0.149	1.390	0.166
a. Dependent Variable: Development within local region					

Development in local regions is influenced significantly by the presence of educational institutions ($\beta = 0.645$, t = 4.740) followed by the presence of commercial activities ($\beta = 0.178$, t = 0.181) and then accessibility to health facility ($\beta = 0.118$, t = 1.390).

Regression Equation

Development within local regions = 0.867+0.645 (Presence of educational institutions)+0.178 (Presence of commercial activities)+0.118 (Accessibility to health facility)

From the regression equation, we observe that the presence of educational institutions has the highest induced value of 0.645 followed by commercial activities and accessibility to health facility respectively. Thus educational institutions amongst the two other factors possess considerable influence on the development of local regions.
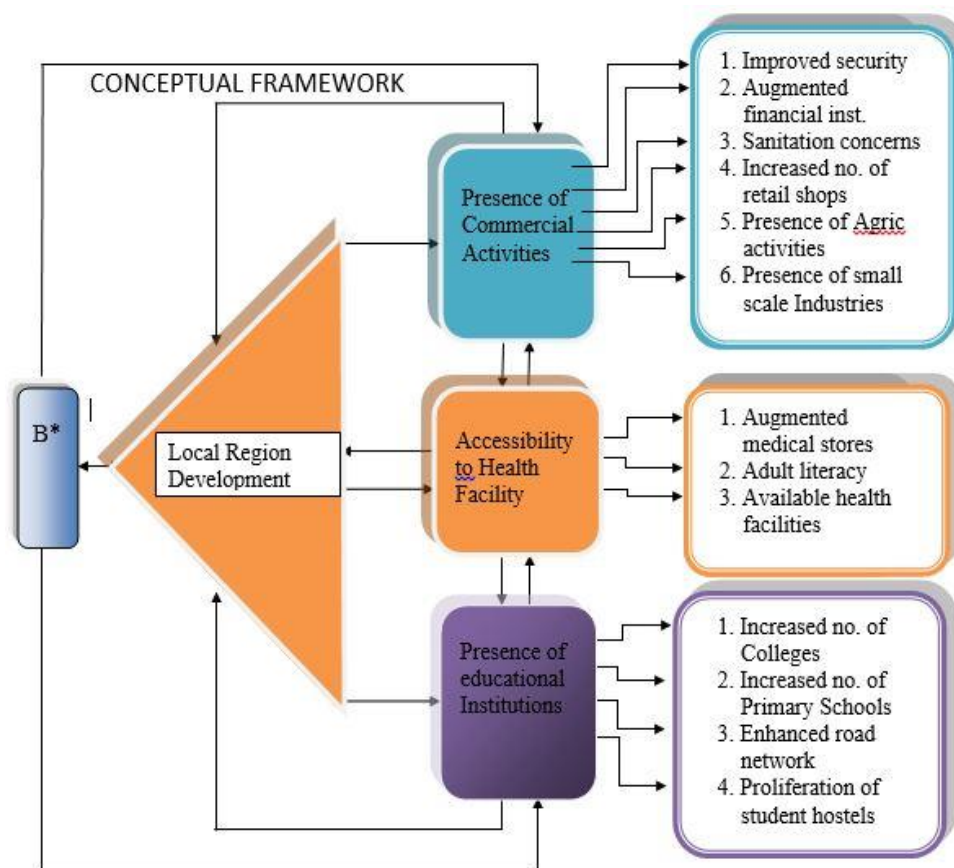
*Source: Researcher's survey 2016 [Proposed Local Region Development Model (**Boohene & Maxwell, 2017**)]*

The proposed local region development model highlights the relationship between development in a local region and their predictor factors, namely presence of commercial activities, accessibility to health facility and the presence of education institutions. The predictor factors explains 25% of the variations in local region development where as the constant B* explains the remaining percentage. Among the three factors presence of educational institutions which is interlinked with the other two predictor factors is the most influential on local region development. Thus the three triangles that lie outside the rectangle represent the other possible factors that could lead to local region development.

Conclusion

Educational Institutions function directly in the development of human capital through knowledge transmission to its students. However, aside the core objective for research and teaching, educational institutions play a considerable circumlocutory role in stimulating development in their local regions. This study provides a replicable empirical evidence that suggests that the presence of more educational institutions stimulate an unswerving employment opportunities ranging from business owners, shop assistants, service providers (stationery shops, retail shops, food and vegetable stores, café joints etc) in their local regions. The study identified the presence of commercial activities, educational institutions and accessibility to health facility as predictor factors for development in local regions. Amongst the three factors, the presence of educational institutions proved to be most influential in developing local regions. This was depicted by a highest coefficient of 0.645 in the regression analysis as seen in regression equation. The predictor ability as explained by the R Square is 0.247 which is approximately 25%. The test statistics also indicated that, there is a significant relationship between the presence of educational institutions and development in their local regions (5 km radius). A conceptual model was proposed to explain the relationship between predicted factors and their variable loadings. The model underpins the relationship between development in a local region and their predictor factors. Thus the presence of educational institutions to some significant extent spurs on development in the local regions (5 km radius) in which such institutions are situated. This confirms why educational institutions like universities have been acknowledged by the economic world o have a direct economic impact on their immediate surroundings according to Franciscan University of

Steubenville (2005). The findings of this work also agrees with the work of Allision (2003) that universities of higher learning goes beyond their core function of teaching and research to impact considerably on their local regions.

Recommendation

At the micro level university institutions and for that matter educational institutions should ensure the implementation of mechanisms that foster growth of their institutions as this eventual growth prospects rolls out avenues for further developmental activities in the local regions where such educational institutions are located. On the macro level, policy makers should create the enabling environment through tax reliefs, grants etc for the private sector to invest in education.

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