

Review Article

Theoretical Analysis on Economic Impacts of Universities on Regional Economies

Habtamu Kefelegn

Department of Economics, Faculty of Business & Economics, Mekdela Amba University, Mekane Selam, Ethiopia

Email address:

habfuture2006@gmail.com

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Abstract: Policy makers widely recognized that universities have dynamic contribution to individuals, to the regional and national economy and to society as whole. Now a days understanding the economic impacts of universities that convey to the hosted local economy and communities in which they are located is attracting extensive attention in scientific community. This paper tries to analyze the economic impact of universities on regional economies from empirical literatures. Methodologically, the paper used systematic reviewing approach that follows the distinct phases of planning, searching, screening, coding and synthesis. The results of the study found that universities hosted in different region of given country positively and significantly affect private consumption, public spending, investment, employment, urbanization and industrialization, human capital variables and sustained regional economy. Moreover, individuals, firms and local government and economy can be better-off with universities. These institutions also lead the agriculture, industry and service sectors growth of regional economy. Despite this, the result also suggests critical assumptions like quality of public infrastructure, quality of teaching and research, university-industry-community partnership, academic freedom and peace and stability of region determine the level of impact it works. Finally, the study suggests national government should lead efforts towards improving both the regional universities and local economy to promote efficiency and equitable development in the entire economic system of the nation.

Keywords: Regional Economies, Universities, Systematic Review, Economic Impacts, Research, Human Capital

1. Introduction

Policy makers of widely recognized that higher institutions especially universities have multidimensional contribution to individuals, to the economy and to society. Universities have growing economic importance both at national and regional level. Now a day understanding the economic impacts of universities that convey to the local economy and communities in which they are located is attracting extensive attention. Universities are a major economic forces in its community and largest sector of economic activity in the hosted region. Furthermore, universities growing at an unprecedented rate lead regional economic activities to achieve fastest growing as well [1].

Universities specifically in developing countries are particularly valued for the contribution that can make national development [2, 3]. In Ethiopia, over the last decades there

has been enormous expansion in university education across different areas and regions of the country.

The important question that we have to raise and answer here is: What are the economic benefits to the regions community from hosting of university? In order to understand that, this paper try to review systematically the theories on the economic impacts of universities on local or regional economy from existing literatures.

2. Theoretical Framework

2.1. Definitions of Economic Impact

In the field of regional economics, Economic impact defined as the analysis of changes to various economic activities (i.e. spending, income, employment etc.) of local economy after the introduction of the change or new element to the economy.

In the case of university, it is dealing with economic changes and the theoretical issues on the channels through which the university influences the economy, and by various means of association [4, 5].

2.2. Reasons for Local Economic Impact Measurement

Clearly, a university expected to have an enormous economic stimulus at the local and region level in terms of purchases, incomes, employment, and the associated multiplier effects as these factors circulate through the economy. A standard regional economic impact analysis would stop at that point. The main purpose of this paper is going beyond the standard analysis, and understands the economic impact resulting from the real purpose of the university: teaching and research. In the process of trying to measure the impact we gain a much better understanding of the output of the university and the value of those outputs to society and the economy, and in so doing, provide policy makers with at least some sense of the priority that ought to be accorded to the existence of strong teaching and research university. Even for the university and local community, understand the impact will have motivation for further success and solutions for drawbacks [4].

2.3. Approach to Measure Local Economic Impact

Even though quantifying economic impact of universities is not simple task, economists have developed two approaches that widely discussed in literatures.

2.3.1. Economic Base Approach

It measures the direct and indirect economic effects that the

expenditures associated with universities influence into region's economy essentially treating a university like any other firm or business entity. It views an increase or decrease in expenditure as an indicator to expansion or withdrawal of the industry from the industry from the region that affecting job creation and overall economic activity in a region [6-8].

2.3.2. Skill Based Approach

It supplements the economic base approach by attempting to quantify the impact that universities' output has on the long run course of the region's economy through teaching, research and community engagement that produce skilled workers and increases in technology and innovation [6-8].

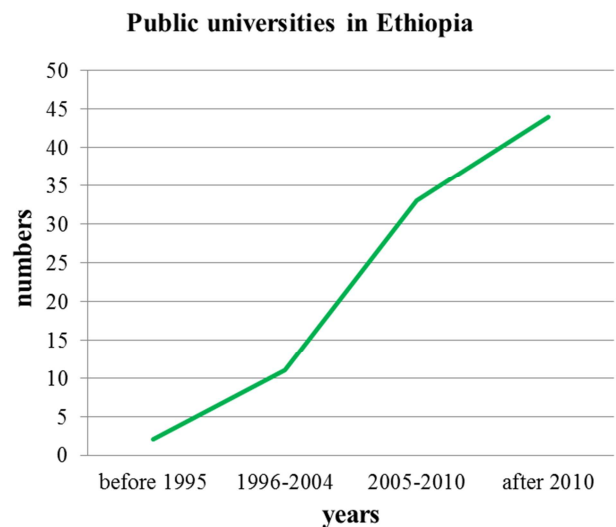


Figure 1. Number of public universities in Ethiopia.

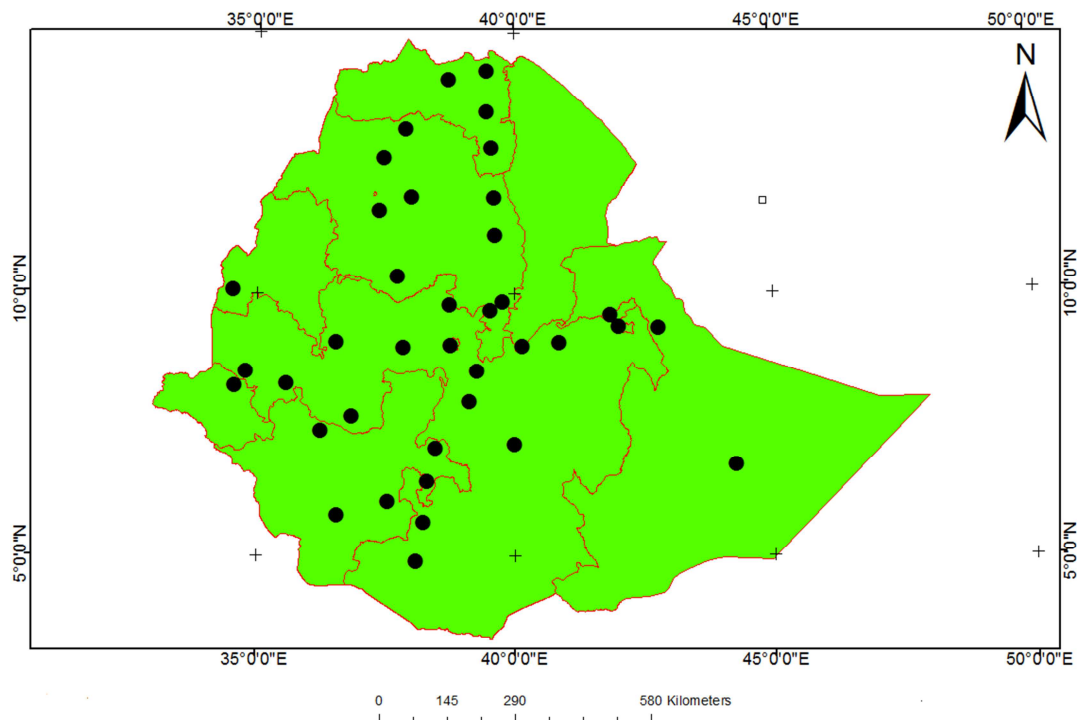


Figure 2. Distributions of public universities across regions in Ethiopia.

3. Methodology

This theoretical review of analysis on regional or local economic impact of universities was followed the principles of systematic reviewing with the following distinct phases [8].

- A. Planning: Elaboration of the conceptual issues and articulation of search strategy.
- B. Searching: identification of relevant literature
- C. Screening and Coding: Investigation of the scope and relevance of identified literature
- D. Quality appraisal: Analysis of the quality of all included studies, resulting in a further-reduced list of studies for analysis.
- E. Synthesis: Analysis of the evidence from the included literatures.

4. Result and Discussion

4.1. Local Economic Impact of Universities

Given the above theoretical frame work of measuring regional economic impact, channels through which universities affect local economies that widely discussed in empirical literatures can be analyzed in six groups as follows [6-13].

4.1.1. Spending Impact

Consider the fraction of the spending is local only, largest part of the university's spending takes the following form: (1) Spending by institutions themselves for salaries and benefits, operating supplies and expenses, and other budgeted expenditures; and for capital projects (construction) and (2) Spending by institutions employees and students who attend the institutions. These spending would increase when a new students and staffs join the university and region.

Generally, the university expenditure was financed through national governments from tax revenues raised mainly outside the region where the university is located. Income students gained from family or funders which are mainly non-local. These income sources would raise consumption of goods and services in turn activate production and service sector and saving in turn raises demand of financial institutions which expected to increase local investment. So, universities through spending may affect the regional growth and income distribution.

4.1.2. Employment Impact

In addition to spending, Employment as a measure of impact also gave bitter insight on the university's economic impact. Universities are powerful education sector in hiring and creating permanent and temporary employment opportunities. This increase in employment will certainly result in some in-migration. Though some of the new employees will be local residents newly entering the labor force, most will be migrants into the locality and mainly they are qualified personnel. These new families will demand not only a full range of goods and services from local firms but

housing, schools, and municipal facilities as well. This in turn expected to increase population and activate production and service sector of the local economy.

4.1.3. Urbanization and Industrialization

With growing spending and employment, universities will have great contribution to the growth of urbanization in local urban centers. In search for skilled manpower, industries opened in these areas where universities located. These in turn fosters trade and connects the local economy to the nation and to the global market which is one of ways to globalization.

4.1.4. Local Green Growth Economy

Currently the hottest global problem is climate change. But the place of resolving such environmental problem is regional. In such a case universities have huge contribution in producing and disseminating environmental friendly technologies and training and supporting environmental conservation programs in local areas of the nation. This in turn supports sustainable local economic growth.

4.1.5. Human Capital Impact

Universities can contribute to the economic success of a region by deepening the skills and knowledge or human capital of its residents. This can be expressed in two ways. Universities producing graduates who join the region's educated workforce is one way these institutions increase human capital levels. Mean that newly graduates directly raise human capital in the region if it remains in the area and enter to local labor market. In the other way, universities employing a larger number of high skilled workers have the potential to raise local human capital levels. Therefore, this educated and skilled workforce expands productivity across sectors of the economy.

4.1.6. Research and Community Service Impact

Strong regional based university suitable for community based research where community and university knowledge come together to solve problems and generate new ideas. Research and public service expenditure of universities, which is highly expected to be problem solving, have enormous economic contribution to support the development of agriculture, industry, tourism and service sectors of the local economy. The innovative ideas and technologies created through research activities in universities helps existing businesses to expand. This spillover effects can in turn raise the regions demand for high skilled workers [14]. In addition, workshops, seminars, trainings etc. prepared by the institution also attract individuals, businesses and the local government. For example, the participants' needs in terms of hotels, goods and other services energizes the local businesses, increase local tax revenue and income of individuals. Furthermore, public services of universities can be viewed as a public good since professionals (qualified doctors, teachers, engineers...) have a broad benefit to society in different dimensions.

To sum up, local economic impacts of universities can be generalized with two statement: (i) Individuals, firms and

local government and economy can be better-off with multi-sectorial growth of local or regional economy. universities and (ii) Strong universities can lead the

Table 1. Universities contribution to local customers, businesses and governments.

№	Impact type	Contribution of university through each impact type			
		To local individuals	To local businesses	To local governments	To regional macro economy
1	Spending impact	Income sources	Create new business opportunities	Boost tax revenue	Increase regional GDP, investments, stimulate the local economy.
2	Employment impact	Create jobs	Demand for goods and services increase.	Increase tax base	Stability of economy, reduce unemployment.
3	Urbanization and Industrialization	Employment opportunities, better way of life	Businesses become hot and new firms enter to the market.	Supports socio-political changes and easy to give administrative services	Urban and local tourism sector development
4	Green growth economy	Healthy life and new income sources	Get new production technologies and services	Raise local capacity to promote positive changes.	Environmentally sustainable economy
5	Human capital impact	Access to skill and knowledge	Access to skilled man power and knowledge marketing	Improved institutions, helps to effective governance.	Skilled labour supply to market, workers Productivity and multi-sectorial growth.
6	Research and community service impact	Solutions to communities problem with incurring low costs	Increased Demand for goods and services promote production.	Improved governance and efficiency	Productivity and multi-sectorial growth.

Table 2. Sectorial growth contributions of regional universities.

№	Economic sectors	Universities contribution to local economy
1	Agriculture	-Support agricultural research and technologies in solving problems like food insecurity, nutrition and inefficiencies of agricultural commercialization.
2	Industry	-Supports technology transfer and local industrial transformation (i.e. formation, transplantation, diversification and upgrading industries)
3	Service	-providing appropriate education and training and one source of increasing volume of business. -improve tourism, health care, IT etc.... services and infrastructure. -provide important cultural, intellectual, architectural, artistic, athletic, recreational and medical resources and facilities.

4.2. Assumptions to the Impact

The above sections have summarized the key impacts of universities on local or regional development outcomes. But certain assumptions should be hold for the optimum and visible contribution of these higher institutions [8].

4.2.1. Quality Infrastructure and Facilities

Universities need to have access to better teaching facilities, public and research infrastructure to significantly contribute to local economy.

4.2.2. Quality Education and Research

For proper functioning of economic impacts universities must have sufficient quality. Teaching quality yield the required human capital to affect local development outcomes. For instance, many of the pathways require that graduates finish their education with sufficient high skills to allow them to interact with the existing knowledge and adapt innovations to industries. Huge budget of universities for research must be supported by qualified experts across disciplines to achieve their targets.

4.2.3. University-Industry and University-Community Partnership

Brain drain of graduates and staffs can be reduced the impact due to the departure of highly skilled human capital from local context. The level of interaction between university and local industry could have a profound effect on the ability of universities to influence development.

Furthermore, the active support from local government and surrounding society is useful for universities local economic impact become powerful.

4.2.4. Academic Freedom

The impact also assumes that universities and the surrounding environments will allow academic freedom. University education can't function without freedom to express contradictory or unpopular ideas. Quality of teaching and research can also be affected by a lack of academic freedom within an institution or a society.

4.2.5. Stable Local Economy

The impact also assumes that there is a supportive enabling environment for university education and research [15]. This concept encompasses all aspects of the local environment related to social, political, and economic issues. These affect the researcher's interest in participating regional level research and ability to graduate to capitalize on their education. The low crime rate, peace and stability, effective local government, existence of employment opportunity and support for entrepreneurship are examples of a positive enabling environment.

5. Conclusions and Recommendations

This study examined the economic impact of universities on regional economies to lesson for developing countries

specifically for Ethiopia. The paper adopts systematic reviewing approach to review empirical literatures. The result show that universities hosted in different region of given country have a great impact in terms of raising income, consumption and capital spending, employment opportunities and fostering urbanization and industrialization, human capital development across sectors and individual economic units. Furthermore, universities have huge role in building the green and sustained regional economy. Despite this, the result also suggests critical assumptions like quality public infrastructure, quality of teaching and research, university-industry-community partnership, academic freedom and peace and stability of region determines the level of impact it works. Finally, government should lead effort towards improving both the regional universities and local economy. This is because a well-developed academic institution and regional governance are necessary for efficiency of development in the entire economic system.

6. Directions for Future Researches

Beyond the lack of empirical studies on local economic impact of universities, there are a certain critical gaps that emerge from this theoretical analysis. (i) There is a need for empirical micro level analysis on the impact of universities on local environment outcomes across developing countries including Ethiopia. In order to conduct research, improved data system is needed. (ii) There is also need for regional input-output modeling that could give additional insight on the impact of universities on local economy. This models offer the opportunity to quantify local economic impacts of universities across sectors.

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