

THE KNOWLEDGE INTENSIVE INFRASTRUCTURE AS LEVERAGE REGIONAL DEVELOPMENT SPECIALIZATION - THE CASE OF THE UNIVERSITY OF CENTRAL GREECE ON LIVADIA

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Abstract

The research was conducted to confirm the contribution of the regional university in economic, cultural, social and environmental development of the city and the region, to assist the state in developing a network of regional universities in the country with immediate purpose of upgrade the level of society and reduce inequalities between citizens of different regions.

Education is keystone to economic growth because human capital, as an important element of production, contributing to increase of productivity and diffusion of new technology. University promotes production and transmission of new scientific knowledge by providing students with skills and as a research center contributes to the creation of new products and production methods. The investigation showed that the university not only helps to increase the active demand, the emergence of cultural and local identity, economic upgrading of the city and the region by increasing the GDP. It also improves the political, social and environmental situation in the research, events, conferences, scientific meetings and presentations made in collaboration with local authorities.

Keywords: *Education, Regional Universities, Economic Growth, Economic Development, Sustainable Development, Local Development, Integrated Development, Research, Expertise, Experience, Knowledge Diffusion, Productivity*

1. Introduction

The term «Economic Development» is general term than economic growth. We can not have economic growth without an increase in the product. In contrast, growth does not mean simultaneously and development (Kollintzas T., 2003). The "Regional Development" aims to achieve one or more positive changes to the essential elements of socioeconomic activity of people living and working in the region. The "Local Development" is the process for structural change aimed at improving the living standards of a region. It is not only economic growth, but also other parameters, such as social, cultural and environmental development (Mitoula P., 2007). Knowledge is considered as the perception of interrelated events, truths or information gained in the form of experience and learning. Argued that education provides market and non-market benefits, externalities and diffuse effect and promotes employment and social cohesion (Tsamadias K., Staikouras X., Pengas P., 2010). The slow processes of restructuring and introduction of new technologies in conjunction with basic infrastructure deficiencies which have not been addressed sufficiently in developing regions often make visible the risks weakening the economy and the social fabric (E. Theodoropoulos, 2010). In 1963, Schultz has

analyzed the economic value of education, which is directly linked to research and development in new technologies (Schultz T., 1963).

2. Regional universities and their contribution to economic development sites

Universities contribute to the smooth functioning of a free society and strengthen institutions of liberal economy by establishing strong incentives for productive activities. Regional universities were established as a policy for local development by assessing the direct economic impacts produce (Labrianidis L., 1995). The available empirical research showed that the contribution of universities in research and development of the private sector is largely around the university, showing the importance of space and geographical distance (Hippel E., 1994). The outputs of traditional knowledge and human capital are the primary means by which institutions of higher education help to come positive effect on economic growth (Feldman MP, 1994). Knowledge of modern research universities drive economic development leading to: (a) the creation of knowledge, (b) human capital, (c) the transfer of existing knowledge, (d) technological innovation investment (e) capital, (g) regional leadership (h) the impact on the regional environment and the productive infrastructure and (i) knowledge.

The increase in Canadian GDP between 1971 and 1993 due to research and development was \$ 50 billion of the total \$ 712.9 billion. The university research and development increases the GDP of the country by increasing the productivity of human capital of graduates of the university (Martin F., 1998). The businesses that are creative and innovative, they gain absolute advantage, which can not only keep it but to expand. This theoretical conclusion is fully confirmed by the dynamism that characterizes not only innovative businesses but also innovative systems, innovative countries and innovative areas. The leadership brings new leadership (Romer MP, 1986). In countries of the Organization for Economic Cooperation and Development (OECD) promotes university-industry cooperation as a means to stimulate economic growth (OECD., 2002). The direct economic benefits are estimated from 0.05 to 0.31% of GDP and 1.7% -12.8% of private consumption and together with indirect effects arriving at 0.13 to 0.71% of GDP (Labrianidis L., 1993). Finally, the university helps balanced distribution of education in the country. The regional university has the potential to offer a lot in a local community (increase effective demand, curb population growth of social prestige, etc.). Local communities realize this, for it mobilized in order to assert and often succeed.

The State has a wide range of controls on universities that undermine their autonomy and prohibit any significant initiative. Budgets and staff wages are controlled centrally by the state, and there is flexibility in the reallocation of budgets. The remuneration of teachers cover 40% of total costs in a regional university (Labrianidis L., 1995). According to an OECD study, the role and contribution of universities enhanced in modern world by offering an economic, regional and cultural development of knowledge which is based on research and development. In line with these objectives, the European Commission proposed the modernization of universities as a condition for the transition to a society and knowledge-based economy (OECD., 2004). Realizing success with this role, the university could actually contribute to the development, nowadays, is very important to improve competitiveness of Greek economy. Required by the university to create the right environment for research, which can not be easily, achieved everywhere, due to low public funding. The size of universities, the large quantity and good quality of the research carried out there attracted large financial donations and financial resources (Fritsch M., Slavtchev V., 2007).

The main criterion for selecting the city study of prospective students is the proximity of the place of permanent residence. The political establishment and in particular completely unplanned-mainly petty criteria development, the dispersion of each of the regional universities in many cities and the fact that the local economy has failed to satisfy the needs of the university

and the university community and to exploit the sudden rise in demand. Teachers see their position in the regional university as a transition state, as a "springboard", which will help them to "switch" in the center (Labrianidis L., 1995). The modernization of higher education requires a social contract state-university a good university culture (branch D., Contiades X., Panousis G., 2007). There is need therefore to systematically review the strategy of establishing regional universities to create college or units in other areas. It is also imperative that the folding of some regional universities by transfer of some cities. Of course, it is obvious that the removal of a unit of a university area is extremely thin.

3. Universities in Greece

The reasons why universities proliferated and swollen over thirty years is a quite lot such as national, economic, social, political and cultural. In this context, in each Region should operate an interdisciplinary (multidisciplinary/multifield) University Institute and a comparable, Technological Educational Institute (TEI) (Ministry of Education, 2001).

In June 2002 the Ministry of National Education and Religious Affairs issued a decision on the national spatial plan and development of Greek Higher Education adopting and approving the recommendations of the Explanatory team which led the Government in the decision establishing three new institutions of higher education, the University of Western Macedonia , based in Kozani, University of Eastern Central Greece, based in Lamia, and the TEI of Ionian Islands, located in Kefalonia. Especially for the Boeotia Prefecture, the Ministry of Education announced its decision to set up and initiation in the two years (2003-2004/2004-2005) a Department of the Prefecture (Ministry of Education, 2002).

The cost is high for Greek university because regional universities often forced to operate under difficult conditions, undermining the fundamental tasks (but primarily educational research). The Drettakis M. (2002) expressed the concerns of the university community to break up into small regional university centers without appropriate connectors for the development and diffusion of knowledge and technology (Drettakis M., 2002).

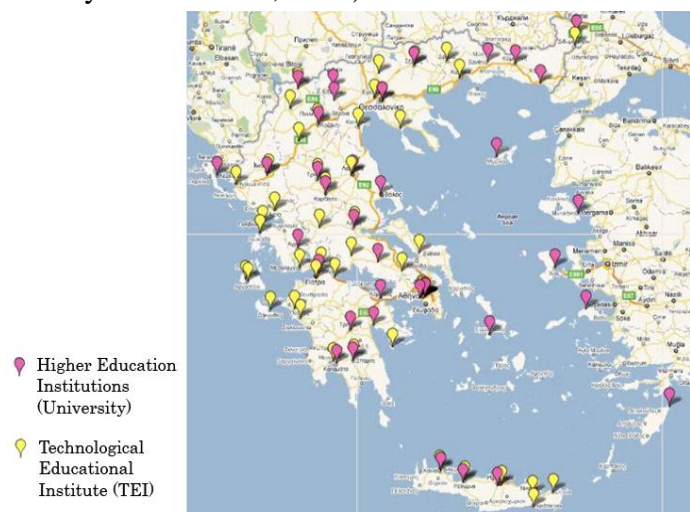


Figure 1: Location of Higher Education-year 2010.

4. The Pillars of Development at Livadia and the Greater Region

Environment: The valley of Livadia surrounded by the mountains of Parnassus and Helicon. It features the main river system (river and tributaries) Boeticos Kifisou. The industries of the area and the industrial area Oinofita-Schimatariou create pollution in tributaries Kifisou and adversely affect the ecosystem Boeoticos Kifisou. There is also the problem of lake material with waste disposal in the region. The state tries to limit the pollution problem by taking measures to clean the river and the lake with the intent of limiting industrial wastewater with heavy fines and suspension by operation of production units contaminate the area, application for Environmental Projects by industrial units with filters impoundments polluting exhaust and putting waste clearance mechanisms.

Society: The church and the state helps homeless people and foreign nationals with the supply of food daily. Livadia has KAPH nursing homes and for the elderly residents.

In Civilization: The town of Livadia has a long history. The path of this control is the oracle of Trofoniou as wonderful buildings from ancient times (Castle) as buildings modern times. The beautifully preserved buildings from the late 19th and early 20th century. The position of the city as a key node in the route Athens-Delphi helps it to attract tourists.

Economy: Most of the manufacturing activities in the prefecture of Boeotia regards cotton processing units are an important factor in the export country. The rest, mainly industrial products, shall not exceed 6% of the produced product. It offers valuable primary and secondary sector while steadily growing and the tertiary sector of the economy. The problems of the region is the recent de-industrialization due to the economic crisis, with the consequent increase in unemployment, especially among young people. Unemployment rose dramatically in the last four years so the area coming in second place throughout the country, approaching 30% of the highest of the entire Region. The plain Kopais is the major feeder market of Athens with vegetables and vegetables.

5. Department of Regional Economic Development in Livadia

The University of Central Greece, was established by Presidential Decree 92 (83 Government Gazette Issue A / 04.11.2003) based in Lamia. The Department of Regional Economic Development, University of Central Greece was established by Law 3391 (Government Gazette A 240 t / 04.10.2005) and by decision of the competent authorities and began functioning in the academic year 2005-2006 , with the first seventy-two (72) students. The purpose of the establishment and operation of the department was the need that exists in the region for specialized knowledge on issues of regional economic development, regional development and planning in jobs related to the development, planning and policy of the European Union ([www.@ucg.gr](http://www.ucg.gr)).

The Internal Revenue Service of the University has the departments of Accounting and Fund. Total income and expenses of the Department of steadily rising over the years 2005-2010, but in 2011 developed severe decline due to the economic crisis which had as a consequence the limitation of government grants.

Table 1.1: Total revenues-expenses University of Central Greece 2005 to 2011

YEARS	TOTAL REVENUES	TOTAL REVENUES
2005	1.907.131,96	673.738,11
2006	3.144.513,20	750.076,72
2007	5.311.918,44	1.339.533,52
2008	5.911.266,82	1.611.058,75
2009	5.930.760,35	1.525.207,12
2010	6.077.732,05	1.576.849,08
2011	5.371.594,45	1.070.322,13

Source: Financial Service of the University of Central Greece and Editing Author

Table 1.2: Expenditube D.R.E.D. (In thousands of Euros)

YEARS	STAFF SALARIES AND PERMANENT TEACHERS	FEEDING	MISCELLANEOUS EXPENDITURE	EQUIPMENT	TOTAL
2006	144,0	14,0	98,0	124,0	380,0
2007	283,4	22,0	121,0	125,2	551,6
2008	421,0	25,0	52,0	128,0	626,0
2009	447,0	31,0	153,0	112,0	743,0
2010	449,0	0.0	127,0	42,0	618,0
2011	340,0	0,0	111,0	122,5	573,5
TOTAL	2084,4	92,0	662,0	653,7	3492,1

Source: Financial Service of the University of Central Greece and Editing Author

The majority of the operating expenses on the payroll of teachers Faculty teachers and professors (PD 407/80), which covers 59% of total costs. Also a large part of the costs to the costs of equipment, which accounted for 19% of total costs and essentially channeled to businesses in the Athens market realized through competitions. So the bulk of the costs of the School (about 78%) are not placed on the market of Livadia. This without serious error that will Calculate GDP growth in the region by the presence and operation of the University in the city mainly subsistence and welfare of students, namely the costs of rent and food and personal expenses (purchase his furniture, catering costs and entertainment).

6. Research

The research aims to seek views and perceptions in a sample of city residents in referanse with the existing state of the city (such as infrastructure, quality of life, etc.), as well as their views on the general contribution of the University to the cultural, social, environmental and economic development of the city and in a wider region. The methodology followed by the use of a questionnaire is as follows: The questionnaire consists of 39 multiple choice questions. 312 questionnaires were distributed to students and residents of the town of Livadia in the period between November and December 2012. Of these, 300 are valid, and which are used in the statistical analysis. Half questionnaires completed by students in the Department of Regional Economic Development and the other half completed by citizens of Livadia is proportional to the sample. The questionnaire was completed anonymously and the sample was selected by random sampling method and an attempt was made to cover all ranges of ages, genders and educational levels. Data processing and statistical analysis was performed using the SPSS.

Descriptive Statistics and Logistic Regression

According to the statistical analysis, the (53,33%) of respondents residing in the town of Livadia, 23% in the city of Athens and the 21.67% living in other places beyond the city of Livadia and Athens. Regarding occupation, 50% are students and 18% of freelancers. The involvement of men (53%) is higher among women (47%). The majority (61.33%) are high school graduates, while 27.67% are graduates submissions, while only 4.33% have a postgraduate degree. Greater participation of young people 18-25 years of age (51%), the 16.67% are 26-35 years old, 19.33% are 36-45 years old and only 13% 46 years and over. The economic crisis that prevails in our country negatively affects consumption and results in the majority of respondents to spend a month just 500 euros (55%), while only 4% spending more than 1,000 euros a month. A large portion of the residents know quite enough about the courses of university in the city (78%) and the presence of the university community assessed positively

by society of the city. Relations between student community and residents are quite good because 87% of residents have "embraced" their students. The townsfolk in great majority (77%) believe that is offered a high quality of knowledge for this and wish the children going to university. The economic crisis in our country imposes a non-removal of students from their permanent residence because of tight family budget. Finally, 70% of respondents felt that there is cooperation between the University and the E.V.E. Livadia after participating in events at the University and continually strives to approach industrial and commercial enterprises in the university community. Any variables showed statistically significant correlation between them (X2 control) were analyzed using logistic regression in order to determine the type of dependency between the independent variables and the dependent. The method we use is called Backward Wald with which the independent variables do not affect the responses of the sample of respondents are removed one by one until you find the best model for our analysis. The purpose of regression is to determine the effects that certain factors, such as gender, education, age, income, ancestry etc on respondents' answers to the questionnaire, and found that the results are scientifically documented.

7. Conclusions

The economic contribution of the University in the development of the wider region is approaching 0.1% of Gross Domestic Product (GDP) of Boeotia. But if we focus only on the city of Livadia and the wider area of the municipality that covers almost one quarter of the county, the result is GDP growth close to 0.4% of GDP in the region. The main factor of this contribution is the students and the expenditure of the University for stipend for meals and purchases of materials and maintenance costs. At the start of each academic year, the demand for housing is very high. The prices of student apartments is relatively high and the big problem in student housing would solve the creation of student housing.

In all cities of mainland in Greece want presence and vividness of students. In recreation centers and entertainment there is an increase patrons. Social life was enriched with cultural events, film screenings and activities not previously exist. The sponsorship of any form and especially the offer buildings and land by the municipality helped in smooth functioning of the University. Dealing students with local development problems can be done with the preparation work of students and research programs. Is needed not to be remained "within the university walls", but presented and communicated to local stakeholders and the local community. The University students in both departments showed diligence during the period of study leading to become knowledgeable of their subject. The most common degree diploma for graduates of the University and the two parts were "very good." Over 40% of graduates of the University of Central Greece have turned to postgraduate studies. The majority of graduates P.O.A. has attended MSc in Greece. The time elapsed since graduation to find a job is lower for graduates of the department P.O.A. (Vassilopoulos M., B. Kostoglou, Sotiraki K., Chance L., 2012).

From the analysis of economic data shows that the financial transactions of the University of Central Greece, concerning funding of the Ordinary Budget and Development Company, conducted primarily with companies of Lamia and Athens. The funds of the Public Investment Budget was covered by companies in Athens. The areas which enhance economic activity of the University is mainly the tertiary sector of services and retail trade. Although not investigated, it is certain that there will be other indirect economic, positive and negative effects of the presence and operation of the University in the area, such as transport, communications and the likely increase in the cost of living in consumer goods and house. There are also other indirect positive effects as the fun, the entertainment, the occupation of students and graduates and implementation of effective research programs in businesses. The University of Central Greece on Livadia encountered difficulties similar to those found in central universities, but

also other regional universities. There were difficulties related to the management, organization, operation, networking, communication, collaboration, visibility, infrastructure and living conditions of members of the university community. There were deficiencies such as failure to cover vacancies administrative staff, and creating more workshops. The drawing larger number of research programs requires more resources from the state. In such an economic reality, the University of Central Greece only helped boost the tertiary sector of the economy and could contribute to the development of primary production sector (rural area Kopaídos) but also in the secondary sector of production (industrial area of Thebes-Inofita). The participation of the development effort requires the activation of the population and stimulate local entrepreneurship, which are prerequisites for self-development (Barquero VA, 1991).

The establishment of a regional university has a positive impact because the university is a major consumer regarding the local economy and contribute to the growth of effective demand in the region. The regional universities, because of fragmentation, have problems with the faculty members, the students and the integration of the same university in the social and cultural fabric of the city. The incomplete building infrastructure is a limiting factor, both in educational, research and administrative functions, and to attract and retain the human resources that the faculty members and students. The establishment of the University had an impact on the cultural and social aspect as a society strengthened in recent years is facing huge unemployment. The last time the Livadia characterized by a general weakening. Result of this is the increase in unemployment in the wider area of Livadia, approaching 30% and is considered the third largest in the country. The strengthening of local economy is not happening just by the contribution of the University in growing the GDP of Livadia but transforming overall the development of cultural, political, and social environment of the area. Finally, the contribution of the University of Central Greece for the development of Livadia and the region is beyond any doubt. The development of the area is not an easy task but requires efforts by all factors of society.

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Electronic Resources

- <http://www.ucg.gr> (University of Central Greece)

Illustration Resources

- Figure 1: Quality Assurance Agency (2011), “Report on the Quality of Higher Education from 2010 to 2011”, *Publication Quality Assurance Agency for Higher Education*, Athens.