



## THE ROLE OF UNIVERSITIES IN LOCAL ECONOMIC DEVELOPMENT: A CASE OF TRAZ REGION IN TURKEY<sup>1</sup>

Haktan SEVINC<sup>1</sup>

<sup>1</sup>Agri Ibrahim CeCen University. [hsevinc@agri.edu.tr](mailto:hsevinc@agri.edu.tr)

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Development, Regional Development, University, TRAZ Region

### ABSTRACT

The higher education institutions, as important social institutions for their regions, are of important role for especially national economy and local development. In this study, our objective is to reveal which effects the universities, which have shown significant qualitative improvement especially after 2005 in Turkey, have shown in local development of their cities and regions. We will demonstrate the effects of universities in Ağrı, Kars, Iğdır, and Ardahan cities in TRAZ region of Statistical Region Unit Classification on socioeconomic variables. Moreover, by making comparisons among the cities, we will reveal which universities are more effective on local development.

### JEL Classification

O10, O18, R11.

## 1. INTRODUCTION

Together with globalizing world, many countries have rapidly improved their economic growth and development through some of their geopolitical, capital, technologic or political superiorities, and then they have become superior to some of other countries. The significant development of certain countries has almost forced many growth and development theoreticians to develop new theories. But these economic growth and performances of the countries were not in same speed, same rate, and same time with others.

For this reason, new objectives of these rapidly growing countries are to develop new policies which can ensure the local and regional level development of relatively underdeveloped regions, and to ensure the economic growth and development of these regions. The most important one of these policies is to establish the local development based on internal dynamics of these regions.

The local economic development based on internal dynamics can be ensured by bringing some of industry-specific socioeconomic values of the country or region in the economy with the thought that they may have the potential more than national or regional averages.

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Particularly through local development policies, relatively underdeveloped regions or cities can get out from the effects of vicious circle of poorness and underdevelopment level, which especially the economists such as Nurkse have emphasized, through their internal potentials.

Within this context, through SWOT analyses on various industries, many countries, where the regional developmental imbalances constitute important problems, have investigated which dynamics the regional development can be based on, and they have developed policies in harmony with these dynamics. But these policies implemented in many countries have either failed or had very low efficiencies. Similarly, the developmental differences between the regions or local developmental differences are important structural problems for Turkish economy. Even if various policies have been developed in the course of time, the desired objectives couldn't be achieved, and local and regional developmental differences have continued without decreasing. Moreover, the unwillingness about repeating those failed policies and the deficiency in time and tangible capital allocated to these policies have led the policymakers to different searches.

These researches have revealed that many local economic and social institutions must have significant roles in ensuring the local and regional development. Especially thanks to the increasing importance of information-based industry, the politicians have better-understood the importance of universities in local and regional development in private and public sectors (Chakrabarti and Lester, 2002).

Within this context, as important socioeconomic institutions which can be considered as bases of technology-based industrialization and can provide the qualified human capital for local development, the universities are of great importance in local economic development as they can be accepted as drivers of local development in their regions (Chakrabarti and Rise, 2003;1). Because of this importance, many developed and developing countries have applied many implementations in order to reveal which tangible results can emerge from cooperation of universities and industries. The most interesting one among these implementations is the establishment of technoparks with leading role of the universities. Through the technoparks, it is aimed to develop industries involving advanced level of technology more easily. That is because the utilization of external scale economies by companies within a certain sector in both of product development and product creation activities and also the transfer of their experience to other companies will allow these industries to grow much more easily with much less costs.

## **2. LITERATURE REVIEW**

Although politicians pay attention to role of universities in local and regional technology-based economic development, there is scarce number of studies on this topic in literature (Varga, 2003; 13). The main reason of that is the scarcity of regional data making the comparison possible. Despite that, there are studies theoretically investigating the role of American universities in local and regional economic development.

In study of Smith et al. (1987) on USA, they have revealed that the universities must also be involved in economic development plans in order for these plans to succeed.

Walshok (1997) has revealed that the research universities that are very prevalent especially in USA play very important role in regional economic development together with technology transfer programs, technoparks, and other policy implementations.

Chakrabarti and Lester (2002) and Chakrabarti and Rise (2003), in their studies, have comparatively examined the USA and Finland in order to determine the role of universities in local and regional development. As a result, they have revealed that, despite that many public and private American corporations are enthusiastic about relationships with universities, Finland utilized the universities better in regional economic development, and that universities have play active role in regional planning in Finland.

Goldstein and Drucker (2006), in their study, have determined that information-oriented university activities in USA had positive effects on economic development in their regions by creating concentration economies especially in regions that are not excessively large.

Investigating the role of universities in economic development and innovation, Power and Malmberg (2008) have determined that universities that are in good positions in worldwide level play active role in regional economic development.

Moreover, Sohn and Kenney (2007) and Kim (2008), in their studies Korean economy, have revealed that the universities don't have such positive contributions on innovative systems and aggregation as much as they are assumed to have. As the reason of that, they asserted the conservative cultural structure of Korea, the lack of relationship between universities and regions, and central character of economic structure.

But there is more limited number of studies investigating the role of universities in local development in Turkish economy.

The study of Atik (1999) theoretically represents the advantages provided by universities for local and regional economic development. But, when it comes to specific point, it has been concluded that some of contributions of Erciyes University to Kayseri city had positive effects on local development of the city.

Çetin (2007) has identified the entrepreneur universities rather than classic research universities, and emphasized the role of entrepreneur universities in regional development. Accordingly, he demonstrated through the university examples from USA and Europe that the entrepreneur universities were more successful in socioeconomic development than classic research universities.

Şen (2011) has examined the effects of universities on local income and employment through the case of İzmir Ekonomi University. He structured his study as two dimensional as direct and indirect effects. The findings have proved that universities are an important economic power in local income and employment improvement through the multiplier effect.

Çatalbaş (2007), in his study, has revealed that universities have more contributions to local economic development in locations where the infrastructural and superstructural requirements for universities' effects on local economic development to be more efficient are completed and in locations where the internal and external scale economies are suitable for aggregation. Moreover, he has emphasized that the universities must be generalized in order to ensure the local and regional economic development.

Within this context, the objective of this study is to reveal to what extent the Ağrı İbrahim Çeçen University, Kafkas University, Iğdır University and Ardahan University in TRA2 region of Statistical Region Units Classification do contribute to local development in the cities where they are located. For this purpose, we will comparatively analyze some of the social and economic variables' values before and after the establishment of universities. The study consists of 3 sections. First section is the section where the introduction and literature summary of the study are presented. In second section, the contribution of universities in local development will be explained, and the effects of universities in TRA2 region on region's economic development will be discussed. In third and final section, the discussion of the study will be presented. Since this study is a comparative one, we believe that it will have significant contribution to the literature.

### **3. RELATIONSHIP OF LOCAL ECONOMIC DEVELOPMENT TO UNIVERSITY**

From past to present, the main objective of the all of the states has been to increase the economic and social welfare level of their citizens. But, more severely, especially in underdeveloped and developing countries, the socioeconomic welfare levels of all the citizens couldn't be same due to both of historical and socioeconomic reasons. For this reason, the states have made effort in order to improve the life standards of their citizens having lower welfare levels. Within this context, from local-level potentials of the countries, the policies applied in order to relatively underdeveloped regions or territories are named local development policies.

Named LED Approach in international literature, the Local Economic Development Approach is, according to International Labor Organization (ILO), the development process using local sources and competitive advantages, supporting collaborations and partnerships between public and private sector components, allowing the commonly creation and implementation of a general development strategy, and having important objectives such as creating the appropriate employment opportunities and supporting the economic activities (Van Boekel and Van Logtestijn, 2004; 6).

With local economic development approach, the regions and territories have transformed into active and participant units having their own identities, historical and cultural values, and making effort in order to survive in globalizing world by getting free of more passive role of traditional development economics based on modern, intelligent, and technologic information (Çakmak and Erden, 2005; 126).

Within this context, we can demonstrate the policy, tool, and implementers developed by van Boekel and van Logtestijn (2004) for local economic development approach:

**Table 1: Local Economic Development Approach**

	<b>LED Policies</b>	<b>LED Tools</b>	<b>LED Implementers</b>
<b>LED Approach</b>	Finance	Credit Programs, Guarantee Funds, Circulating Capital, Joint Ventures, Special Credits for Women and Children	Private and Development Banks, Micro-Finance Institutions
	Business Development Services	Market Research, Consultancy, Data Bank, Exportation Incentives, Aggregation	Local Governments, Private Sector, Chambers and Organized Markets, Research Institutes, <b>Universities</b>
	Education/Training	Management Courses, Business Travels, Special Courses for Women and Rejected People	Research Institutes, Private-Public Schools, Chambers and Organized Markets, <b>Universities</b>
	Infrastructure Investments and Planning	Local Development Plans, Environmental Plans	Local Governments, Multinational Companies, Research Institutes, and <b>Universities</b>
	Appealing Investments	Regional Marketing	Local Governments, Private Companies, Chambers and Organized Markets
	Networking	Establishing Relationships with Development Agencies, Multinational Companies, International Investors, Organizations, and Central Government	Local Governments, Chambers and Organized Markets, Local and Regional Development Agencies
	Geographical and Functional Coordination of Local Sources	Managing the Regional Investments, Aggregation Strategies, and Development Activities	Local Governments, Chambers and Organized Markets, Local and Regional Development Agencies

Being the most important implementers of policy implementations of local development policies such as education, business development services, and infrastructure and employment, the universities are very important socioeconomic institutions of the society having increasing popularity in local economic development activities. Moreover, as social institutions of local economy, the universities affect the economy of their city through their academic and administrative staff, students, and public entity, and they are also constantly in interaction with social, cultural, political, scientific, and physical environment (Çatalbaş, 2007; 93).

Within this context, in a report of OECD, it has been demonstrated that the countries continuously investing mainly to higher education constantly gained economic and social advantages. For example; it is accepted that every 1 dollar spent in OECD countries in order to achieve higher qualifications brings important return through the way of economic growth. This investment provides benefit not only for ones benefiting from higher education opportunities but also for the entire society. It has been demonstrated that the countries that can give its citizens 1 additional year for education can increase the productivity in time, and also increase their economic outputs by 3-6% (Asia Development Bank, 2008; 43).

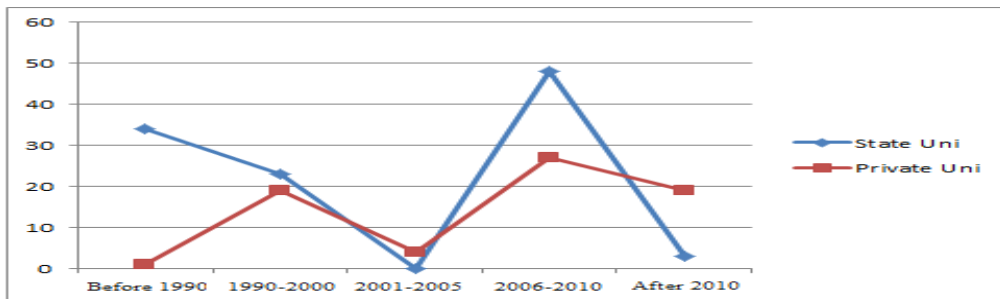
Moreover, the contributions of the universities to their regions have been demonstrated to be as follows;

- Economical aspect; effects on employment through university-industry cooperation, patents developed by universities, and regional income and labor force mobility.
- Social and physical infrastructure aspects; information and technology transfer for R&D activities and scientific studies, and improvement in construction, health, communication, and transportation services.
- Improvement in quality of life; increasing number of sociocultural activities.
- Improvement in demographic structure; more qualified labor force supply by training the local human capital, change in rate of participation into education, change in death and birth rates, and decrease in immigration (Yıldız and Talih, 2011; 273).

The Regional Development efforts in Turkey decreasing the regional imbalances have been carried out through various policy implementations since the establishment of Republic. Atatürk has targeted the implementation of 1<sup>st</sup> and 2<sup>nd</sup> 5-year Industrial Development Plans in order to elevate the East to the level of West. In parallel with 1<sup>st</sup> 5-year Industrial Development Plan, public investments have been distributed throughout the country, but the implementation of 2<sup>nd</sup> 5-year Industrial Development Plan cannot be executed due to the start of World War II. But Atatürk has emphasized that the development of the country can be ensured via the education, and has also instructed by considering the country as a trivet in 1937 that universities will be established in Aegean-Marmara region, Central Anatolian region, and Eastern Anatolia region (he particularly wanted the university in Eastern Anatolia to be established in city of Van) (Gündüz, 2013; 65).

Since they are important providers of qualified human capital and they also provide important externalities in eliminating the regional imbalances in their regions, the universities are important actors in local development. Within this context, the rapid increase in number of universities especially after 2005, through establishing universities in every city, indicates that universities will contribute more to local development in Turkey. Hence, the higher education institutions have been generalized in the way covering all the cities throughout the country. This rapid increase is obviously seen in Graphic 1.

**Graphic 1: Newly Established Universities in Turkey over Years**

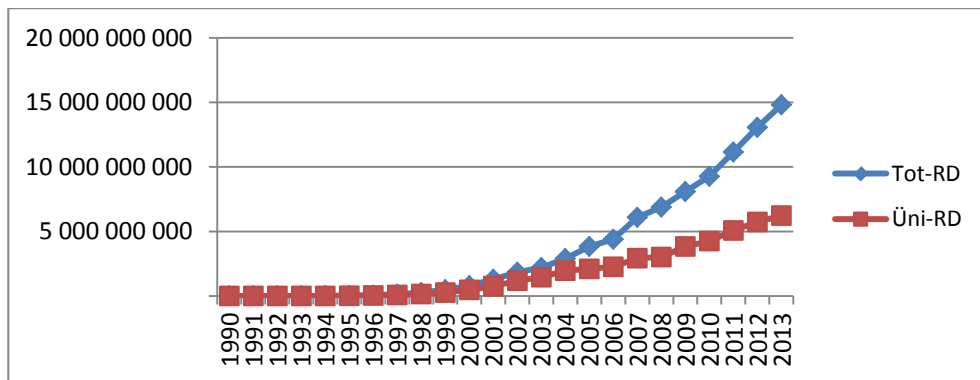


Source: Higher Education Institution ([www.yok.gov.tr](http://www.yok.gov.tr))

After better recognition of the role of universities in local economic development, the generalization of the universities has become the most important local economic development tool of the policymakers. Then, they have been qualitatively improved, and allowed to play more active roles in regional development strategies.

Moreover, the adoption and implementation of policies based on internal dynamics in regional development policies have influenced the R&D activities of the universities, and significant changes have occurred in universities' contribution to R&D expenditures especially after the year 2000. As it can be seen in Graphic 2, the portion of universities in total R&D expenditures has shown rapid increase after 2000. That is to say, the university R&D expenditures that have been 500 million TL in year 2000 has increased to 6 billion TL in year 2013.

**Graphic 2: R&D Expenditures in Turkey and Portion of Universities**



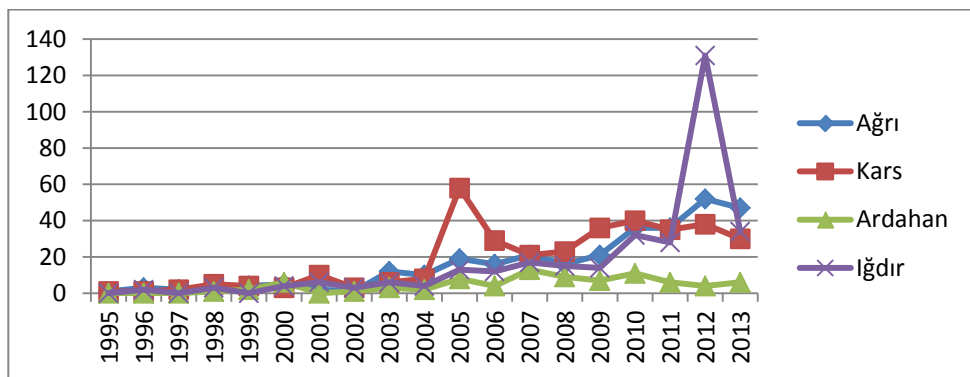
Source: Turkish Statistics Institution ([www.tuik.gov.tr](http://www.tuik.gov.tr))

As a result of these advances, as important technology development centers in their regions, universities have become important innovation centers in regions where they are located. Moreover, through their affiliated advanced technology centers such as technoparks, the universities also support the creation of external scale economies in their industrial branches by allowing the companies in their branch to utilize these technological developments.

#### 4. REVIEW OF SELECTED CASES

Since their establishments, 4 universities in TRA2 region have been contributing to the technological advancement of their regions. The most important indicators of this contributions are the innovation indicators such as patents and brands established by the universities. But it is very hard to obtain the data about the number of patent or commercial brand applications of universities in Turkey. For this reason, even if it is indirect, the contributions of universities to technological innovation level can be made meaningful by considering the number of patent, commercial brand and utility model registration applications of the universities. For this purpose, in Graphic 3, the numbers of patent and commercial brand applications of the universities in TRA2 region between 1995 and 2013 are demonstrated. As it can be seen in graphic, through the establishment of universities, there occurred a significant increase in number of commercial brand and patent applications that are considered as important indicators of technology levels of the cities, especially after the year 2007. But, no university from TRA2 region could enter into the list of “Entrepreneur and Innovative University Index” that has been annually published since 2011 in order to measure the technological innovation and entrepreneurship levels of the universities, and where the 50 most innovative and entrepreneur universities are listed.

**Graphic 3: Cities’ Patent, Commercial Brand and Utility Model Applications**



Source: Turkish Patent Institute ([www.tpe.gov.tr](http://www.tpe.gov.tr))

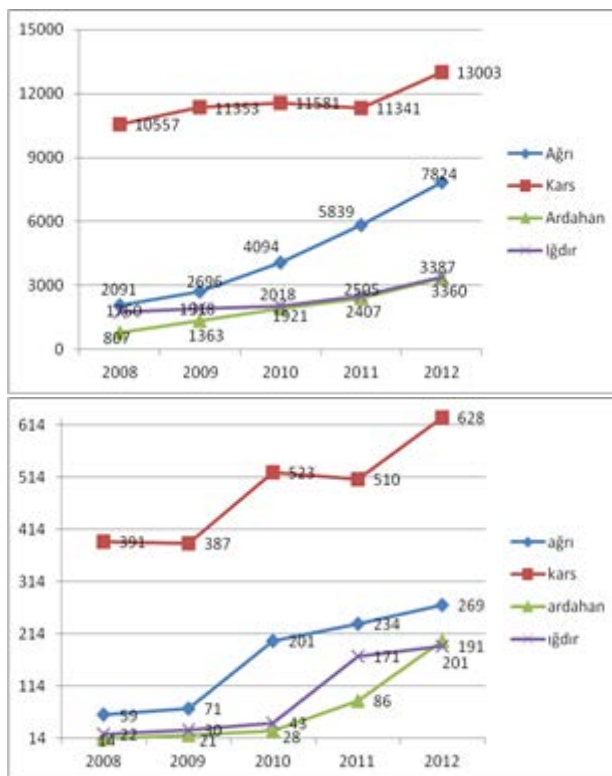
One of the most important contributions of the universities to local economic development, as emphasized above, is the creation of more qualified labor force by training the human capital. Within this context, the students having education in universities are very important for both of private sector (particularly for industries based on technology) and public sector. Better qualification of this labor class provide significant contribution to higher efficiency and productivity in public sector and to decreased costs of personnel training and higher incomes in private sector. Moreover, the purchasing power of these students also gives acceleration to local economic development of the cities where the universities are located. This acceleration also, as emphasized in Keynesian Multiplier-Acceleration Mechanism, creates an additional value-added, and



reveals to what extent this acceleration affects and is affected by the investments. This effect is then presented in Graphic 5.

Within this context, the Graphic 4 presents the total numbers of students and academic staff in universities of 4 cities in TRA2 region between 2008 and 2012. As it can be seen in graphic, the highest number of students is in Kafkas University. The lowest number of student belongs to Ardahan University. The most interesting characteristic of the graphic is the continuous increase in numbers of students in all the universities (except Kafkas University in educational year 2011). The most attention-grabbing one among these increases is the increase in number of students of Ağrı İbrahim Çeçen University and Ardahan University. This increase is at the level of approximately 400%. Another attention-grabbing characteristic is that the rate of increase in number of students of Kafkas University established in 1992 is relatively lower than that of other universities. The reason of this relatively decreasing increase is that both of Ardahan University and Iğdır University have been established by breaking apart from Kafkas University. Given the number of academic staff of these universities, it is seen that this continuous increase keeps existing.

**Graphic 4: Number of Higher Education Students and Instructors by Cities**

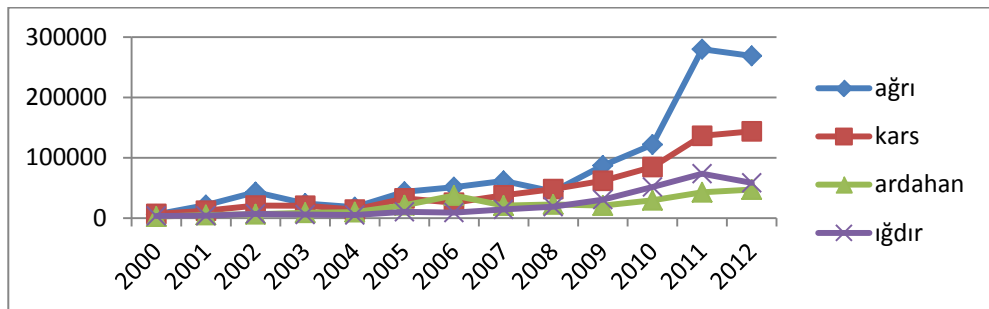


Source: Turkish Statistics Institution ([www.tuik.gov.tr](http://www.tuik.gov.tr))

The public investments that are the very important tools of local and regional economic development and allocation of these investments to underdeveloped regions have increased through the establishment of universities, and also become more rational. That's because the public politicians, who are responsible for realizing the investments, aim to allow the universities to contribute the process by considering their intellectual capitals and their advantage of being located in region. Especially for supporting the university-industry collaboration, the public investments have been allocated to supporting certain industries, and intense investments have been made in domains directly related with these industries.

As stated above, the mentioned universities provide significant contributions to economic development levels of their cities through the income and employment increases. Moreover, higher amounts of public expenditures have started to be made through the establishment of universities in these cities and, as stated in Keynesian Multiplier-Accelerator Mechanism, these expenditures have led to increase in investments, and increased investments have led to increase in expenditures by triggering the expenditures. As it can be seen in Graphic 5, the public investment amounts have shown continuous increase by years. An attention-grabbing point in graphic is that the continuous increases in public investments in Ağrı and Kars cities especially after 2007, when the university has been established, are much higher than increases in other cities.

**Graphic 5: Distribution of Public Investments among Cities**



Source: State Planning Organization ([www2.dpt.gov.tr](http://www2.dpt.gov.tr))

## 5. CONCLUSION

In this study, the role of universities in local economic development has been examined on the basis of TRA2 region universities. Being important sociocultural institutions in their regions, the universities create technologic innovation, employment, university-industry collaboration, and various sociocultural activities, and also encourage the local and regional economic development. Moreover, as local actors, they play active role in regional policies and planning by conveying the region-specific potentials, superiorities and weaknesses to policymakers.

Within this context, the mentioned TRA2 region universities' character of being newly established leads to limited contribution to local economy and limited determination about these contributions. For this reason, it is very hard to make analyses based on some econometric models mentioned in literature.

And in general, it is clear that these universities have significant contributions on local economic development of their cities, especially on local income and employment increases. Moreover, they create positive externalities for certain industries and companies by creating aggregation economies in region, and also provide important advantages in increasing the competitiveness of their cities or regions. In addition, these universities, by providing positive contributions to improvement of infrastructure and superstructure investments in their cities, play important roles in order for their cities to become important economic powers.

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Türkiye İstatistik Kurumu ([www.tuik.gov.tr](http://www.tuik.gov.tr))

Yükseköğretim Kurumu ([www.yok.gov.tr](http://www.yok.gov.tr))