

The Strategic Role of Universities in Local and Regional Development: Case of Cankiri Karatekin University-Turkey

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Abstract: It is expected that socio-economic development should be started at local level and extended to regional level and then contributed positively to sustainable national development. New established universities are among strategic actors of local development as well contribute to university education and scientific in Turkey. Therefore, there is a compulsory for universities to work in corporation with local actors in the subject of development in addition to its leader role in national development. After establishment of regional development agencies, development process extending from local to national has gained more importance. Having a take-off and strategic role of universities in local development accelerate this process. In this study Cankiri Karatekin University chosen as case study will show us that how universities have communicated and cooperated with local dynamics in the field of local and regional development. In this study, activities, projects, formal communications and meeting documents between university and local actors will be investigated via using secondary data.

Introduction

Most people, traditionally, regard universities as higher education and fundamental research centers. However, in the contemporary period, universities have managed to get beyond this perception. Universities, in a wide spectrum, provide the society, economy, the welfare level and life quality with additional economic, social, cultural contributions. Their activities enter into all aspects of daily life (Rosan, 2006). The different dimensions of the role of universities in regional development have been studied by a variety of scholars. Harvey (2004) for instance, Harvey (2004) have focused on the relationship between regional social participation and universities, Jeffrey (2001) focused on university and the phenomena of new regionalism, Newlands (2003) focused on learning regional universities, Clayman and Holbrook (2003) have studied the relationship between universities and industrial clusters, Seongoh (2000) analyzed the connection between universities and regional reform systems, Chakrabarti and Lester (2004); Bansevicius and Tolocka (1999); Vitaskova (2005); Shadbolt and Kay (2005) have focused on the University-Industry relationship, Cooke and Leydesdorff (2004); Peters (2004); Karlsen (2005) have focused on University and information based regional development relations. All the above mentioned studies regard universities as one of the most important dynamics of regional development (Çetin, 2007). Universities are especially the transporters of working capitals for novel research. In this respect, they are crucial factors in terms of accelerating novelties, and developing new products and services. Universities, since they are the major consumers of local products and services, are catalysts that provide the emergence and development of a chain of added-value to most local small business (Rosan, 2006). Universities, which did only perform education and training functions previously, have become more important institutions and are located in a central position within the socio-economic life of the society in the contemporary information century. Consultancy, widespread education, applied studies, publication activities, health services, the production of technology (...etc.) are the primary functions of the contemporary higher education institutions. In Turkey, in face of the level of development that has been acquired by

the cities that have universities, other newly developing cities also demanded for Universities. For these reasons, the functions of higher education institutions that have been established in developing regions, in regional development have gained strategic importance.

Changing and developing role of Universities in local development in Turkey

When we analyze the important studies that were conducted on the university-local cooperation, “The First Council Workshops on University-Industry Cooperation in Turkey” that was organized by Istanbul Technical University in 4-5 November 1994 is one of the important studies. The final report of the council on “the Development, Strategic Design and Application Model of University-Industry Cooperation”, was published and sent to over 1000 people and institutions at different official ranks by TUBITAK (The Scientific and Technological Research Council of Turkey) (ITU, 1994). TUBITAK initiated a support program to encourage the establishment of “University- Industry Common Research Centers” in 1996. In line with this program, the financial burdens of these centers are shared by TUBITAK and the industrialists. TUBITAK can support these centers for 5 years. With the condition that TUBITAK’s financial contribution will not be more than that of the industrialists the financial support is a disposal.

According to The Scientific and Technological Research Council of Turkey (TUBITAK) Commission Report in first university-industry congress in 1994, technological developments in market economy countries surely produce new conditions on competitiveness. It is clear that countries and their firms, which use generic technologies effectively and develop it day by day, will get the competitive superiority in the world markets. Technology is the main field to realize this superiority. Competence in technology is *sine qua non* condition of the industries to keep up with ongoing developments and maintain their competitive power. The other competencies that the market economies require will be built up on this competency base (TUBITAK, 1994). The most important step taken in the 1990s was the Research and Development (R&D) Support Announcement on November 4th, 1998 (Tebliğ No: 98/10). With this announcement, the R&D activities of the private sector became widely supported. With the aim of encouraging the industry for R&D, this Announcement is of crucial importance for University- industry relationship. The industry that improves its R&D and innovation activities will, by nature, engage in cooperation with universities. In this announcement, in order to encourage university-industry cooperation, article d of the 11th clause tells that “If the industrial enterprise, procured an R&D service from one of the universities and/or TUBITAK affiliated institutions in terms of a specific project or the enterprise at point performs its R&D activities in one of the aforementioned institutions, then the support percentage will be increased by %30 for these type of service procurement or costs of R&D activities performed in techno-parks.” Article c of the 12th clause of the same announcement, by telling that “All the project-related expenditures of the universities or research institutions that enter into a project together with an industrial enterprise, with the condition that these expenditures do not exceed \$100 000 for each project in the time period of the project, will be provided with the R&D support.”

One of the most important improvements in University-Industry cooperation over local development in Turkey is the enactment “Technology-Developing Regions Law”, which is also known as Technokent (Techno-city) law, in 2001 (Law code: 4691). The law facilitates the employment of academic personal in those regions where technology development is initiated and the contribution of the personnel to production of technology. As it is stated in the first clause, the law aims to provide the grounds through which cooperation can be sustained among the universities, research organizations and institutions. Taking into account the fact that the added value of the industrial sector is relatively higher than other sectors, the establishment of university industry cooperation is of utmost strategic importance for the development of regional industry. The primary task of the industrial sector is to prioritize research-development activities which will be carried out through cooperation with the universities. Especially with the expression that “the personnel of public institutions/organizations and universities, whose services are required in the activities in the region, can work, either full-time or part-time, with the permission of their institutions. Part-time working Faculty members’, lecturers’, research assistants’ and experts’ income from their services are exempt from the revolving funds of the universities” in the 7th clause, academic personnel are encouraged to participate in this cooperation. Particularly, within the scope of Technology-Developing Regions Law numbered 4691 that was implemented in 2001, since December 2009, in total 37 technology development regions are established: 6 in Ankara, 5 in Istanbul, 3 in Kocaeli, and 1 in İzmir, Konya, Antalya, Kayseri, Trabzon, Adana, Erzurum, Mersin, Isparta, Gaziantep, Eskişehir, Bursa, Denizli, Edirne, Elazığ, Sivas, Diyarbakır, Tokat, Sakarya, Bolu, Kütahya, Samsun, and Malatya (basbakanlik.gov.tr).

In technology developing regions; including reformist firms established first on areas like software-informatics, electronics, and advanced material technologies and then on designing, Nano-technology, biotechnology, automotive, medicine Technologies and renewable energy the number of R&D projects that are

conducted in the region have increased up to 3.475 by December 2009. According the results taken at December 2009, in 22 regions:

- Firm numbers reached up to 1235
- Employed personnel number reached up to 10.806 (8.622 in R&D and 2.184 as supportive personnel)
- The number of concluded Projects reached up to 5,775
- The number of ongoing projects have reached to 3.475
- Exports have reached up to 540 million US Dollars
- Number of Foreign companies have reached up to 53 and the total investment by these companies have reached up to 450million US Dollars
- The licence applications conducted/approved have reached up to 296. (basbakanlik.gov.tr).

Benefits of Collaboration between University-Industry

A collaboration between university and industry has many major and minor benefits to universities, industry and so to society. It is argued that main reason and benefit behind university-industry collaboration is to improve research and development capability and innovative potential of companies that will help the countries to increase their competitive power. Also By placing a higher priority and being more responsible to the needs of their local and regional communities universities could be perceived as useful to society and so ensure to receive a public support that will make public resources more available for higher education. So, entrepreneurial activities are undertaken by universities will not just improve local economic performance but will also provide a financial advantage for universities (Shattock 1997).

First of all these collaborations has critical benefits to society. It is commonly accepted that the development of knowledge economy in cities is based on close cooperation between the world of education, science, research and business. Because of this, in the knowledge economy universities become key actors for the development of the city. Ever more interests of cities and universities are converging in new ways that brings changes to both and creates new alliances between them. Under these circumstances, one of the main focus of urban policy for local development appears to be the adaptation to challenges of network society (Castells, 1996). Cleary (2002) The HEFCE/Universities UK report (2001), The Regional Mission, highlighted a range of contributions universities make to their region:

- Regional competitiveness
- Urban and rural regeneration
- Lifelong learning and employability
- Cultural activities
- Social well-being and health
- A sustainable environment

As stated before activities between university and industry not just help regional development but has many benefits to the parts of this collaboration. Yücel argues that interaction between universities and industry has some benefits for each side that motivate them to collaborate. It help universities as

- Self development of academic personel,
- Developing the studies of fundamental and applied sciences,
- To publish the results in order to contribute to science and disciplinary knowledge

And for the industries some of the benefits are:

- Developing new technologies for the market,
- Finding solutions for production,
- Developing the product quality,
- Increasing the market share (Yücel, 1997).

There are also some other reasons that benefits both university and industry. According to Carayannis these benefits are:

- Sharing of risk and cost for long term research,
- Access to complementary capabilities,
- Access to specialized skills,
- Access to new suppliers and markets,
- Access to state-of-the-art facilities (Carayannis, et al., 2000)

On the other hand, there are many benefits that is harder to anticipate because of they are not included neither private benefits of individuals nor direct research outcomes. Some of these benefits are:

- Increased learning of graduates provides increased learning for non-graduates in the form of knowledge disseminated
- Cultural and social standards set by universities improve the social infrastructure which underpin the harmonious working of society and the economy
- Valuable means of interaction with individuals and groups from other countries with attendant trade, social and cultural opportunities;
- The Promotion of inquiry and dispassionate debate on public policy issues leads to improved public decision making; and
- A training ground for staff members who may leave university to take up positions in industry, the public service, governance or the community (Borland, et al., 2000).

It is important to note that besides the benefits of university-industry collaboration there are also some strong criticisms to this relationship. Especially it is supported that engagement in these types of entrepreneurial activities could destroy academic independence and so they do not conform with the nature of academic activity. But still it is clear that universities has an important role in the context of knowledge economy so it is necessary to form a balance that will ensure universities undertake these type of activities while protecting independence and nature of academic activity (Çelik, 2007)

Methodology and Data Sources

The case study method was used in our research. One of the several ways of doing social science research is case study research, besides other ways, which include experiments, surveys, histories, and analysis of archival information (Yin, 2003). According to Flyvbjerg, case study methods involve an in-depth, longitudinal examination of a single instance or event. They examine a limited number of variables rather than using large samples and following a disciplined procedure. Case study methods involve systematic way of looking at events, collecting data, analyzing information, and reporting the results. (Flyvbjerg, 2006).

Çankırı Karatekin University was established by Law No. 5662 published on Official Gazette with No. 26 536 came into force on May 29, 2007. According to the units of the university, academic staff are given in Table 1.

Units	Professor	Associate Professor	Assistant Professor	University Lecturer	Instructor	Expert	Research Assistant	Total
Faculty of Science and Literature	4	3	43	1	0	0	21	72
Faculty of Economics and Administrative Sciences	1	1	19	0	0	0	18	39
Faculty of Forestry	4	2	7	1	1	0	16	31
Faculty of Arts	0	0	5	8	0	0	3	16
Health Vocational School	0	0	0	7	0	0	1	8
Vocational high school	0	1	4	47	2	6	0	60
Kızılırmak vocational high school	0	0	0	0	0	0	0	0
The Graduate School of Natural and Applied Sciences	0	0	0	0	0	0	0	0
Institute of Social Sciences	0	0	0	0	0	0	0	0
Institute of Arts	0	0	0	0	0	0	0	0
Rectorate	0	0	0	0	15	3	0	18
Total	9	7	78	64	18	9	59	244

Table 1: Number of academic staff in the units

Çankırı Karatekin University's total number of students is 4878 people in academic year 2009-2010. Distribution of educational level is given Figure 1.

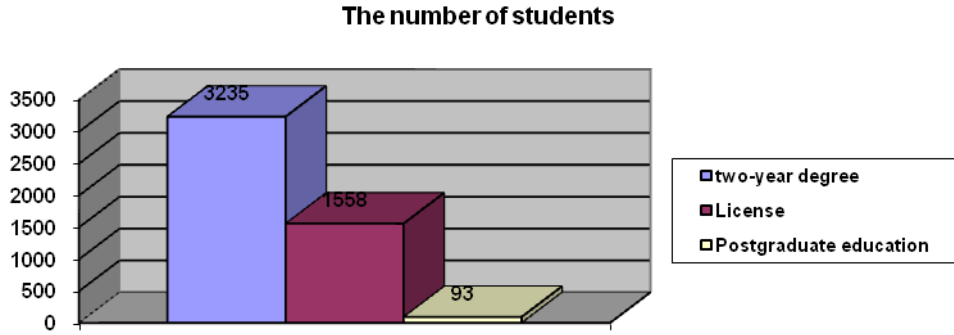


Figure 1: The number of students in Çankırı Karatekin University

The official correspondences between the University and Local Actors were analysed in terms of content in order to determine cooperation areas since January 1, 2009. In addition, secondary data (questionnaires directed to stakeholders during the strategic planning studies of the University) were used. Assessment of NGOs in Çankırı about the University is given in Table 2.

Thoughts about Çankırı Karatekin University	Agree (%)	Disagree (%)	Undecided %
Çankırı Karatekin University provides qualified education to youngs living in Çankırı without going to another city.	61,5	24,5	13,9
The University enhances quality of life in Çankırı (economy, health, education, etc.)	89,5	6,6	4,0
I would like my children or relatives to study at Çankırı Karatekin University	58,9	19,2	19,9
The University will enhance art and culture quality of life in Çankırı (Cinema, theater, cafe, etc.).	89,4	5,3	4,6
Çankırı Karatekin University raises level of the city's culture.	81,5	7,3	10,6
I believe that the University forms libertarian and tolerant atmosphere in Çankırı.	68,2	15,9	14,6
I believe that the University was integrated with the people living in Çankırı at sufficient level.	40,4	29,2	29,8
I believe that attitudes and behaviors of students enrolled to Çankırı Karatekin University are good example for youngs in Çankırı.	29,8	43,1	25,8
I would like to rent my home to university students and be neighbor with them.	60,3	16,5	23,2
I believe that Çankırı Karatekin University contributes to vitality of city's economic life.	90,8	7,3	1,3
I'm pleasure due to establishment of the University in Çankırı	96,1	3,3	2,6

Table 2: Assessment of the University by Non-governmental Organisations

Whereas %24,5 of the participants to the survey, who are involved in civil society organizations, disagreed with the idea that Çankırı Karatekin University “provides young people with a good education that they would not need to go to the other cities”, %61,5 agreed with the idea. Whereas %89.5 of those people expressed their belief that

Çankırı University will improve the life quality, %6,6 expressed the opposite. Additionally, whereas %19,2 mentioned that they would not like to see their child or relative attending Çankırı University, %58,9 mentioned that they would. Whereas %5,3 of the participants disagree with the idea that the university improves the quality of arts and cultural life in Çankırı, %89,4 think that the university improves the quality of arts and cultural life. Whereas %7,3 of these people, who are involved in civil society organizations, disagree with the idea that the university improves the cultural level of Çankırı, %81,5 think that the university improves the cultural level. %15,9 of the participants mentioned that they do not agree with the idea that the university provides a more liberal and indulgent atmosphere to Çankırı. %68,2 of the participants mentioned that they agree with the idea that the university provides a more liberal and indulgent atmosphere to Çankırı. Whereas %29,2 of these people expressed their disagreement with the idea that the university has sufficiently integrated with the people in Çankırı, %40,4 expressed the opposite. %43,1 of these people disagree with the idea that university students' behaviors and attitudes represents a good example for the young people in Çankırı but %29,8 expressed that they agree. %16,5 of these people, who are members of civil society organizations, do not want to rent their apartments to or become neighbors with University students but %60,3 expressed that they do not agree with such an idea. Again, whereas %7,3 of these people expressed their disagreement with the idea that the university provides a lively economic life %90,8 expressed their that the university provides a lively economic life. Finally, %3,3 of these people emphasized that they do not appreciate the establishment of a university in Çankırı but %96,1 emphasized that they appreciate it.

Çankırı Karatekin University, although it is a newly established university, attracts the attention with its projects that provide contributions to the local development. In table 3, it can be seen that the ongoing projects are valued at 2,401,708 Euro's. These projects will play a crucial role in the local development of Çankırı.

Project Name	Supporting Institutions	The Start and end Dates of the Project	Project Budget
The assessment of the economic potential of the chickpea agriculture in the North-Passage region and the collection of their weed forms and the identification of their resistance to Antracnoza.	TUBITAK	15/09/2007 15/09/2010	€ 64.000
The detection of new Micronas on opium puppies and thier Characterization	TUBITAK	01/01/2010	€ 106.800
The adaptation of the Continuous Education Approach for the return of Women living in the agricultural areas to the labour market (The Beypazarı Model)	EU	November 2009 December 2011	€ 205.659
En Vogue a tailor-made educational programme to provide an attractive stage for young female learners	EU	01/11/2009 31/10/2011	€ 25.249
University Child Arts Workshops (ÜÇSA)	Others	2008 -	-
The University and Change perception in Çankırı	Others	December 2009 August 2010	-
Cancer Research Project	State Planning Organization	2010-2012	€ 2 million

Table 3: Ongoing Projects at Çankırı Karatekin University

As for table 4, there are projects which are concluded and by the conduct of which Çankırı Karatekin University have provided positive contributions to the local development. As it can also be seen in the table, the university has provided positive contributions to the social and economic life with its projects that have a total budget of 147.500 Euro's.

Project Name and Number	Supporting Institution	The start and end dates of the project	Budget of the project
The application of Geo-statistics on the relationship between Different land usage types and some certain specialties of Agricultural land and the detailed study and mapping of those lands in Çankırı Yapraklı-Yukarıöz area. Number:104146	TUBITAK	05/01/05 05/01/08	€ 27.700
The Cultivation and “In Vitro” accelerated reproduction of endemic and endangered types of Muscari Azerum and Muscari Aucheri. Number: 106034	TUBITAK	06/01/06 06/01/09	€ 72.500
EU “Eylem 1-2: Today’s youth, Tomorrows Elder” Group Life Talisman	EU	01/02/09 01/07/09	€ 8.000
Uptronic	EU	01/12/200 30/11/2009	€ 39.314

Table 4: Concluded Projects at Çankırı Karatekin University

From the content analysis of the official correspondence regarding the activities that exist in the official communication channels of the university and conducted to improve cooperation with local dynamics, the results that are seen in Table 5 are obtained.

Cooperation issues	Municipality	Governorship	Provincial Directorate of the Ministries
Allocations of places temporarily	-	2	4
Training (conferences, seminars, panels, etc.)	1	4	15
Expert support of the University	3	-	2
Arrival	1	-	-
Allocation of bildings constantly	1	3	2
Allocation of vehicles temporarily	1	2	-
Reconstruction / Settlement	1	-	-
Requesting members to Commission / Concil	2	4	10
Social projects and aid	-	4	7
Construction of buildings	-	-	2
Security	-	1	1

Table 5: Analysis of Official Correspondence between Çankırı Karatekin University and Local Organisations (January 2009-April 2010)

The point that attracts attention from table 5 is the density of cooperation with the provincial directorates that are affiliated to the ministries. The University, as an institution of education and training, has been in close ties with local units. But the rareness of cooperation with the municipality in educational issues attracts attention. Although the municipality reserves seats for University members in the city council and asks for experts from the university, which reflects a positive picture, the relationship with the municipality is still not in a sufficient level. Another point is the University’s appointment of the academicians to some commissions and councils by the request of the provincial directorates that are affiliated to the ministries. This situation will improve the grounds for cooperation. Whereas some activities are conducted with the provincial governorship and the directorates that are affiliated to the ministries on social projects and benefactions, it can be seen that there are no such cooperative activities with the municipality. We can see that there is a local solidarity in the solution of physical and location

inadequacies that are faced by Çankırı Karatekin University because of the reason that it is a newly established university. This situation is a clear indicator that the official institutions and organizations in Çankırı have supported the development of the university. Be it the provision of temporary auditoriums and locations for the conduct of cultural and social activities or be it the allocation of long term locations for the realization of education and training in more healthy conditions, it can be seen that there is an atmosphere of cooperation and solidarity. It can be seen that the relationship with the Chamber of Commerce is at minimal level. Especially, it is clear that there is a need for improvement in relations with civil society organizations.

Conclusion

Despite the fact that Çankırı Karatekin University is a newly established university the projects that it conducted in a short term indicates that it has a strategic role in local development. The fact that civil society organizations view the university positively shows that a platform of cooperation can be created within the city. The level of cooperation that is achieved with Public organizations can be become more effective with the participation of civil society organizations. Beside education and social projects there is also a need for the realization of projects that might improve the economic life. On this issue, especially the relations with the Chamber of Commerce and trade corporations should be improved. It is seen as a hard task, especially by small-business companies, to furnish an R&D center with machinery- equipment and research personnel. In this regard, with the establishment of a techno-park in the region, it may become possible to fill the technological information need of the industry by using the research infrastructure and space of the university. The legal regulations in Turkey encourage cooperation on this issue. The policies on the intensification of the Industry-University association, the development of information technology, the enhancement of licenses and discoveries, and the improvement of the frequency of solution-finding scientific projects on the regional and urban problems, should become policies with high-scale priority.

Çankırı Karatekin University should create a strategic cooperation platform with the active participation of local actors in order to acquire knowledge about, direct and establish scientific ground for local developments. This platform, which will take a strategic role in local development, should be led by the secretary general of the development agency that is going to be established in the region and starting primarily from the provincial governorship, the general secretary of the special provincial administration, the chair of the provincial assembly, the mayor, the chair of the city council, the provincial directorates of national education, agriculture and health, there should be participants from the provincial directorates that are affiliated with ministries, Chamber of commerce, representatives of different occupation chambers, public opinion leaders and the representatives of different social groups. The working groups that are formed by the members of the platform, in accordance with their profession, should conduct projects and activities regarding local development. The executive board, that coordinates the working groups, should be elected out of the members of the platform and should follow the developments through regular meetings. Since the strategic cooperation platform will play a leading role in regional development, it will create a synergic environment so that it will ensure the fertility and efficiency of the resources that are important for the development of the region.

References

Bansevičius, R. ve Tolocka, T. K. (1999). Development of Co-operation between Lithuanian Technical Universities and Industry in the Period of Economic Restructuring and Privatisation, *Global J. of Engng. Educ.*, 3(2):159-168.

basbakanlik.gov.tr/Handlers/FileHandler.ashx?FileId=3790 “Teknoloji Geliştirme Bölgeleri Kanununda Değişiklik Yapılmasına Dair Kanun Tasarısı”

Borland J., Dawkins P., Johnson D. and Williams R. (2000). Returns to Investment in Higher Education The Melbourne Economics of Higher Education Research Program Report No. 1 Report to the Vice Chancellor, The University of Melbourne, <http://www.melbourneinstitute.com/research/micro/rihe.pdf>

Carayannis, E. G., Alexander, J., Ioannidis, A. (2000). Leverage Knowledge, Learning and Innovation in Forming Strategic Government University-Industry R&D Partnerships in the US, Germany and France, *Technovation*, Vol. 20, pp. 477-488.

Castells, M (1996). *The Information Age: Economy, Society and Culture, The Rise of Network Society* Blackwell, Volume 1, Oxford.

Chakrabarti, A. K. ve Lester, R. K. (2004). Regional Development: Comparative Case Studies in the US and Finland, Massachusetts Institute of Technology Industrial Performance Center, Working Papers Series on Local Innovation Systems, No:2,1-14.

Charles, D. (2001). Universities and Regional Development, Project funded by the European Community under the Targeted Socio-Economic Research (TSER), Final Report, July.

Clayman, B. P. ve Holbrook, J. A. (2003). The Survival of University Spinoffs and Their Relevance to Regional Development, Centre for Policy Research on Science and Technology (CPROST), Simon Fraser University, Canada.

Cleary, J. (2002). The Entrepreneurial University and The Learning Economy in A Regional Context, <http://www.aair.org.au/jir/2002Papers/Cleary.pdf>, (02.04.2010).

Cooke, P. ve Leydesdorff, L. (2004). Regional Development in the Knowledge-Based Economy: The Construction of Advantage, http://users.fmg.uva.nl/leydesdorff/constructed_advantage/jtt2004.pdf.

Çelik, G. (2007). In Partial Fulfillment Of The Requirements For The Degree Of Master Of Science In Urban Policy Planning And Local Governments, A Thesis Submitted To The Graduate School Of Social Sciences Of Middle East Technical University.

Çetin, M. (2007). Regional Development and Entrepreneurial Universities, Ege Academic Review 7(1): 217–238.

Flyvbjerg B. (2006). Five Misunderstandings about Case Study Research, Qualitative Inquiry, vol. 12, no. 2, pp. 219-245.

Harvey, J. (2004). Rural Universities and Rural Development: Making a Difference. A Case Study from Rural Australia, A paper presented to the Europe at the Margins: EU Regional Policy, Peripherality and Rurality Conference. Angers, France, (15-16 April), 1-6.

Jeffery, C. (2001). The Resurgence of Regional Governments, Universities and the ‘New Regionalism’, ACU Conference of Executive Heads, Cyprus, (22-26 April), 1-6.

Karlsen, J. (2005). The Knowledge Concept and Universities Third Role, Paper to be presented at Seminar in Kingston, 1-13.

Law code: 4691. Teknoloji Geliştirme Bölgeleri Kanunu, R.Gazete Tarih: 06.07.2001, Sayı: 24454.

Newlands, D. (2003). The Role of Universities in Learning Regions, Paper presented for ERSA 2003 Congress, University of Jyväskylä, Finland, (27-30 August), 1-20.

Peters, M. A. (2004). Universities, Regional Policy and the Knowledge Economy, Policy Futures in Education, 2(2):263-277.

Rosan, R.M. (2006). The Role of Universities Today: Critical Partners in Economic Development and Global Competitiveness, http://www.icfconsulting.com/Markets/Community_Development/docfiles/roleuniversities.pdf, (01.04.2010).

Seongoh, D. (2000). The Role Of Universities and Research Institutes for The Technopolis Development: The Case of of Taedok Science Town, <http://in3.dem.ist.utl.pt/downloads/cur2000/papers/S10P06.pdf>,

Shadbolt, P. ve Kay, J. (2005). Industry Engagement: Transforming Good Intentions into Good Practice, http://www.auqa.edu.au/auqi/2005/program/papers/session_f3_paper.pdf.

Shattock, M. (1997). The Managerial Implications of the New Priorities, Higher Education Management, v.9, n.2, p27-34.

Tebliğ No: 98/10, 4.11.1998 tarih ve 23513 sayılı Resmi Gazete Araştırma-Geliştirme (Ar-Ge) Yardımına İlişkin Tebliğ.

TUBITAK (1994), Türkiye Üniversite-Sanayi İşbirliği Birinci Şurası: Üniversite-Sanayi İşbirliğinin Geliştirilmesi, Strateji Tasarımı ve Uygulama Modelinin Ortaya Konulması Alt Komisyonu Raporu, BTP 94/02.

Vitaskova, A. (2005). Cooperation between Universities and Private Enterprises: The Real (Im)Possibility, Systems Integration, 454–459.

Yin, R., K., (2003). Case Study Research. Design and Methods. Third Edition. Applied social research method series Volume 5. Sage Publications. California.

Yücel, İ. H., (1997). Bilim-teknoloji Politikaları ve 21. Yüzyılın Toplumu. <http://ekutup.dpt.gov.tr/bilim> (02.04.2010).