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The Role of Networking and Collaboration in the Process of Innovation: The Reality and the Myth in the TR61 NUTS 2 Level Region*

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Abstract

Knowledge and technological innovations in the production processes are regarded as a fundamental dual pre-requisite for successful regional and national economies where globalization has firstly forced employment of knowledge based economy and then increased the pressure of competition. In such an environment price (cost) based competition has to coexist with innovation based competition, and firms have to behave by taking both into consideration. Ironically, the growing interest on innovation, has a janus headed character: On one hand, form theoretical point of view, the innovation based production systems critically departs from previous production systems, and on the other hand it creates a multi-disciplinary academic and policy environment. One of the predominant approaches in analyzing innovative production technologies is the evolutionary innovation system which underlines the continuous interaction, collaboration, knowledge exchange, interdependence among various private-public-volunteer actors. As system theory suggests, the firm -the leading actor of innovative systems- transforms knowledge into economic value added through cooperation, exchange and networking with other actors, which also shapes the quality and the quantity of national and regional development. In this context the determination of the level of knowledge exchange and collaboration among actors, and strengthening these connections by making them sustainable is the key to successful regions and nations, particularly for developing ones.

However, the literature, and the reflection of mainstream studies on developing regions and nations remain relatively silence. Moreover, in Turkey, we witness a series of policy changes in industrial and science & technology areas due to the accession process to EU and economic and political transformation. Thus, the territorial characters of innovation systems are becoming more crucial in Turkey likewise European counterparts.

In this study we analyze a region (TR61) at the NUTS 2 level through the lenses of local and regional knowledge networking and cooperation for innovative actions. The study employs both a questionnaire and a deep interview method to firms and other actors.

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Introduction

Current approaches to (regional) economic development draw upon diverse theoretical fields and concepts but there is some agreement as to the importance of innovation. Various researchers from a wide range of disciplines stress the role of innovation in the process of economic development (Storper, 1995, 1997; Scott, 2001; Saxenian, 1994; Schmitz, 1999; Porter, 1990; Krugman, 1995). Generally, innovation refers to introduction of radical challenges in Schumpeterian setting; yet incremental changes still remain important, particularly for less developed economies with low and medium technological bases like Turkey.

However, we observe a lack of attention among scholars on less developed regions in terms understanding innovative activities and their impact on regional development. The rationale behind this might be the rise of concern about best practice and transferability of policies of the prosperous economies. Of course, it would be unfair to judge all literature from point of view that they all concentrated in advanced countries. We already know about NID (New Industrial Districts) and milieu concepts derived particularly from less developed economies; but on the policy and politics level, many developing economies are trying to imitate rather than searching for their unique characters in the innovation process. This is mainly due to large TNC's (Transnational Corporations) and technology transfer policies. In this sense, science and technology policies along with SME's (Small and Medium Enterprises) support measures become residual. That is to say '*policy transplantation*' takes place due to global level institutions and research elite orientation (Lovering, 1999). In this regard it is interesting to say that although there is a shift towards non-linear and inter-disciplinary models of innovation, less developed economies, generally, still insist on homogenous and transplanted policy frameworks in the fields of innovation and technology_ at least as we observe in Turkey.

In order to design an effective innovation policy we need to identify the nature of at least *four* frameworks. The very *first* one is the nature of firms. Firms are shaped by economic and social circumstances, even though global competition enforced them to convergence to a certain norms and standards. In recent development theories, the SME's are regarded as innovators apart from TNC's and public institutions.

Second, the operating regime of accumulation directly challenges the environment that firms are acting. Many theorists presume post-Fordism as a major regime of

accumulation, while in less prosperous economies it is rather difficult to identify a dominant regime of accumulation. Thus the typology of firm will differ in these economies.

Third, sectors in an economic framework shape the type and the speed of innovation. Although there is a consensus on the role of technology and innovation even in traditional products, some sectors, due to their nature, employ much more innovations and spillover effects are more visible and strong.

Lastly, the particular localities and regions serve as a network and collaboration base; hence they do have the concepts such as institutional thickness, social capital, associational network etc in which an innovative region is born. As we all know, trust and strong civic relations in a locality that serves as a source of competitiveness through cooperation. This kind of so-called '*copetition*' (cooperation+competition) is becoming more vital in the global market where firms and localities have to face with an increasing competition fostered by high mobility. Thus, the rapid change both in technologies and markets (innovations) as well as government policies has induced firms and localities to take collective actions to enhance their capacity to adapt and respond to uncertainty (Lundvall, 1998), and innovation is the one of the main routes to collective action.

In the era of globalization, the SMEs are regarded as the ultimate impetus employment, innovation, entrepreneurship and prosperity. So it is inevitable to connect a (strong) tie between SMEs and innovation, yet the coin is two sided: the SMEs are both creators and exploiters of the innovation in a locality. This makes SMEs a central issue at the heart of innovation. Although 99% of business enterprises comprise of SMEs in Turkey, their share in value added, credit and export are very low compared to the European counterparts (OECD, 2004). In other words the SMEs in Turkey seem to have problems in the fields of innovation and finance which are assumed to be solved through innovation as stated by various adherents of innovation literature.

This study has a few intertwined goals. First of all, the aim of this paper is to analyze and identify of networking character of Isparta and Burdur provinces which are located in the NUTS 2 Level TR61 Region through the lenses of innovative co-operation. In addition, internal and external knowledge networking level of innovative firms will be studied. The findings of such investigations will help policy makers to design effective strategies in order to improve the role of innovation in economic development process.

1. Changing Nature of Innovation and Knowledge in the Economy: Networking and Collaboration as Vital Intangible Assets

Although there is no consensus about the leitmotivs of innovation, knowledge still remains as leading input to innovation. Knowledge is very important for both firms and nations in 'knowledge-based economy'. This has a deep impact both on policy making like Lisbon Strategy of the European Council (EC, 2000) and on theoretical developments such as endogenous growth, new regionalism, new economy, social capital theory etc.

Knowledge can be defined as 'a fluid mix of framed experience, values, contextual information, expert insight and grounded intuition that provides an environment and framework for evaluating and incorporating new experiences and information'. Michael Polanyi makes a distinction that the knowledge can be categorized as explicit knowledge and tacit knowledge. Explicit knowledge is the most common type of knowledge which is readily available, can be documented and transferred easily via book, papers, journals, e-mails, CDs, databases etc. In contrast, tacit knowledge is person specific and embedded in individual experience. It is hard to articulate this form of knowledge with formal language. It can't be documented and transferred easily. (Andersson, 2004: 2)

1.1. Knowledge as a Source of Innovativeness

Traditional view of the innovation had assumed that innovation process is a linear process where knowledge to be public good. In such a framework, innovation starts with basic research, then adds applied research and development, and ends with innovation and diffusion

Figure 1: Linear Innovation Process

In such a linear model, as stressed by Antonelli (2005), codified knowledge, reflecting Arrovian character, should be produced through public institutions and might faced with underproduction problem due to limited resources allocated to public R & D.

However, recent studies emphasize the role tacit knowledge which can not be transplanted onto existing structures easily. In rapid, radical change, this form of knowledge becomes a critical resource for innovation. As mentioned in the 'Innovation Policy in a Knowledge-Based Economy' which has been published by EU Enterprise Directorate General:

> "*Most of the innovation that has economic impact is recombination of existing knowledge into new products or processes. For recombination to work well as a process itself, agents must have rapid, easy, cheap access to a large amount and wide variety of knowledge. This indicates the importance of knowledge diffusion or distribution. …Tacit knowledge is central to the process of absorption. Tacit knowledge is stored in the brains of people or the routines of organizations… Emphasis on the importance of tacit, as well as specialized knowledge, or any form of human capital that takes time and expense to generate, implies that human mobility may be an important facet of the distribution power, and one that differentiates between successful and unsuccessful systems of innovation*." (Cowan and Paal, 2000: 2)

1.2. Knowledge and Innovation Catalyses: The Network Concept

Network concept has been widely used in recent years. Scientist and academicians have recognized that the importance of social and economic network in determining the cumulative economic outcomes and innovativeness of firms-regions-nations. (Gay and Dousset, 2005: 1457)

Network can be defined as 'set of vertices (nodes) connected by edges (links), representing individuals and the interactions among them' (Gay and Dousset, 2005: 1460). These interactions are vital in terms of (tacit) knowledge exchange. By means of these interactions, firms' knowledge capabilities and accumulation of knowledge is raised.

The main benefits of networks are (Forfas, 2004: 11-12):

- **Increased Scale and Scope of Activities:** The outcomes of collaboration may be applicable to all partners' market, and thus may expand individual firm's customer base. If a firm is part of a network, its performance capacity can be considerably extended through synergies between firm's different technological competencies.
- **Shared Costs and Risks:** Costs for major innovations have risen rapidly and are now beyond the means of any single firm. Collaboration can share the high costs and therefore risks of innovation.
- **Improved Ability to Deal with Complexity:** Many key technological developments are complex and draw on a wide range of scientific and commercial knowledge. This reinforces the need for co-operation for dealing with the complexity of multiple sources and forms of technology.
- **Enhanced Learning Effects:** With continuous and rapid market and technology change there are pressures on firms to improve their learning capacities. Collaboration and networks can provide possibilities not only of learning about new technologies, but learning about methods of creating future technologies.
- **Positive Welfare Effect:** Internalizing positive externalities through R&D collaboration results in increased R&D efficiency and an increase of overall R&D expenditure.
- **Flexibility:** Networks offer flexibility not in contrast to markets but to hierarchies;
- **Efficiency:** The efficiency enhancing effect of networks is related to the specific nature of technological knowledge. Much of the knowledge is tacit and firm specific. It is, therefore, difficult to transfer easily and quickly through market mechanisms. Collaboration provides a mechanism to transfer whereby this kind of transfer is based on trust between the partners.

Networking and collaboration has a local dimension, hence they are socially embedded in a regional and socio-cultural context (Cappelin, 2003). Interaction necessities proximity, hence regions become appropriate scale for innovation. Bottazzi and Peri (1999) find that knowledge spillovers between European regions are especially strong between technologically similar and geographically *close regions*. In addition, not only geographical proximity but also *relational* proximity has a role to play in improving the ease by which knowledge is transmitted. Wiig & Wood (1995) stress that the presence of

mutual trust and collective tacit knowledge in a region tend to stimulate innovative activities. Mutual trust facilitates exchange of knowledge and diminishes uncertainties while collective tacit knowledge eases exchange of technological know-how.

1.3. Social Capital and Mutual Trust: Multi-faces of Networking and Collaboration

Despite the discussions and agreement on the increasing role of social capital in innovation, it is becoming more difficult to sort out the exact meaning and definition of it. Nearly all the recent studies begin with an explanation of various types of social capital, yet with a stress on its uniqueness (Ruuskanen, 2004, Paxton, 2002, Puntam, 2000). This kind of growing academic and political appetite on social capital might be related to the social dimension of economic development which is well-known among evolutionary and institutional economists since Polanyi's (1944) study about the embeddedness of economic actions within the social environment.

Social capital exists and performs at different scales (family, community, network, and organization-local-regional-national levels). Sharing common values and norms along with trust is a cumulative process like learning: the more you trust, the more social capital is created, and correspondingly any society attracts more participants who have the capability to support social capital creation. But firstly we need social capital infrastructure for any locality. At this point knowledge and innovation enter into picture. First of all, for a region having collective goals rather than individual actions, is a pre-condition to build up a strong social capital. The availability of social capital in a certain region means that the locality has openness and a will to collaborate, and able to mobilize resources through developing both horizontal and vertical high caliber networks (Flora *et al.*, 1997). In this regard the institutional environment plays a crucial role through interaction for a common goal. Especially for the SMEs, the competitiveness is highly related to social capital as a valuable input; because it is heterogeneous and immobile likewise labor and to some extent innovation (Maskell, 1999).

2. Some Thoughts on Turkey's Innovation System and Regionalization Process

2.1. Regional Policies in Turkey

Recently, parallel with the developments in the world, local development initiatives have gained pace in Turkey as well. The regional dimension has always been in a central position in the development efforts of Turkey which can be obviously seen from the Five Year Development Plans (FYDP) (DPT, 1985; 1990; 1996a; 2000)

Turkey's regional development history can be summarized in three different periods:

- The first period covers the period from the beginning of the Republic (1923) until the start of the planned development era. In this period, regional planning approach was 'construction' rather than 'development'. Regional development had been neglected until the planned era.
- The second period starts with the introduction of the 1st FYDP in 1963. Turkey has been put into practice 8 FYDPs since 1963. These plans are prepared by the State Planning Organization (SPO), which is the central administration responsible for national and regional planning and regional policy. Most of these plans could not be implemented effectively. The main reason of this situation is the absence of any regional administrative structure at the intermediate level between central government and the local authorities. Similarly, the success of rural development projects -such as Antalya, Çukurova and Zonguldak regions- has been limited due to the financial and organizational problems. (Loewendahl-Ertugal, 2005: 26).
- The third period starts basically with the acceleration of the EU integration process when Turkey's formal candidacy status is accepted in Helsinki Summit in 1999. Following this, the EU financial assistance along with *acquis* has forced the central thinking towards a local understanding. This is partly confessed in Preliminary National Development Plan-PNDP (DPT, 2003a), 9th Development Plan (DPT, 2007: 57) and Accession Partnership Document (DPT, 2003b)

In the period of 8th FYDP, the EU accession process of Turkey also makes radical changes in regional development policies and implementation possible. These changes are: (i) the necessary infrastructure is being created at the central and local levels in order to

prepare for the structural funds that could be used after membership, and (ii) the environment required for an active and participatory regional development policy is being prepared. (DPT, 2007: 55) In this context a critical step was taken in the 8th FYDP period and The Nomenclature of Territorial Units for Statistics (NUTS), which enables the determination of the framework for regional development policies, the collection of regional statistics and the creation of a comparable statistical database harmonized with the EU regional statistics system was realized at three levels in 2002 (Ertugal, 2005:6; DPT, 2007:56, Başbakanlık, 2002). And in this approval the cabinet also agreed on that the NUTS will be the basis for regional policy. Another important attempt in area of regional policy was the establishment of the (R)DA's at the beginning of 2006, referring to both the Accession Partnership Document 2003 and the PNDP. Two of the 26 RDAs have already been established as pilot agencies.

2.2. Turkey's Attempts towards Building National Innovation System

Turkey has undertaken significant steps especially since 1990s in terms of science, technology and innovation policies and the development of a National Innovation System (NIS) to facilitate innovation. Despite these improvements Turkey is one of the lowest-ranking countries in most of the indicators. For example, the R&D intensity is only 0.67% in 2002. This is almost one-third of the EU-15's average of 1.99% in 2002. (Uzun, 2006: 555)

There are many reasons of this situation. First of all, science and technology (S&T) policy implementation has always been difficult in Turkey because of the several reasons: (i) lack of ownership of the R&D agenda by stakeholders, (ii) a lack of political support, (iii) a low level of dissemination, (iv) isolation of S&T from other policy domains and (v) fragmentation of research and of research resources. Moreover, for years, unfavorable macroeconomic conditions (high long-term inflation, high interest rates, repetitive crises etc.) have been significant disincentives for innovation in Turkey. (EC EDG, 2006: i)

Turkey's first attempt to formulate S&T policy begins with the establishment of TÜBİTAK (The Scientific and Technological Council of Turkey) in the period of 1st FYDP. TÜBİTAK is the main actor designing, promoting and coordinating science and research activities at national level (Erbil, 2007: 146) In the 2nd FYDP (1968-1972),

technologic development and technology transfer were mentioned briefly. But the 3rd FYDP (1973-1977) was very different from previous two plans. This plan focused on applied sciences and technology besides basic sciences. Main targets of the plan were increasing the total quantity of technical personnel and promoting high technology use in sectors which open to international competition (Uzun, 2006: 552, Erbil, 2007: 146-148.)

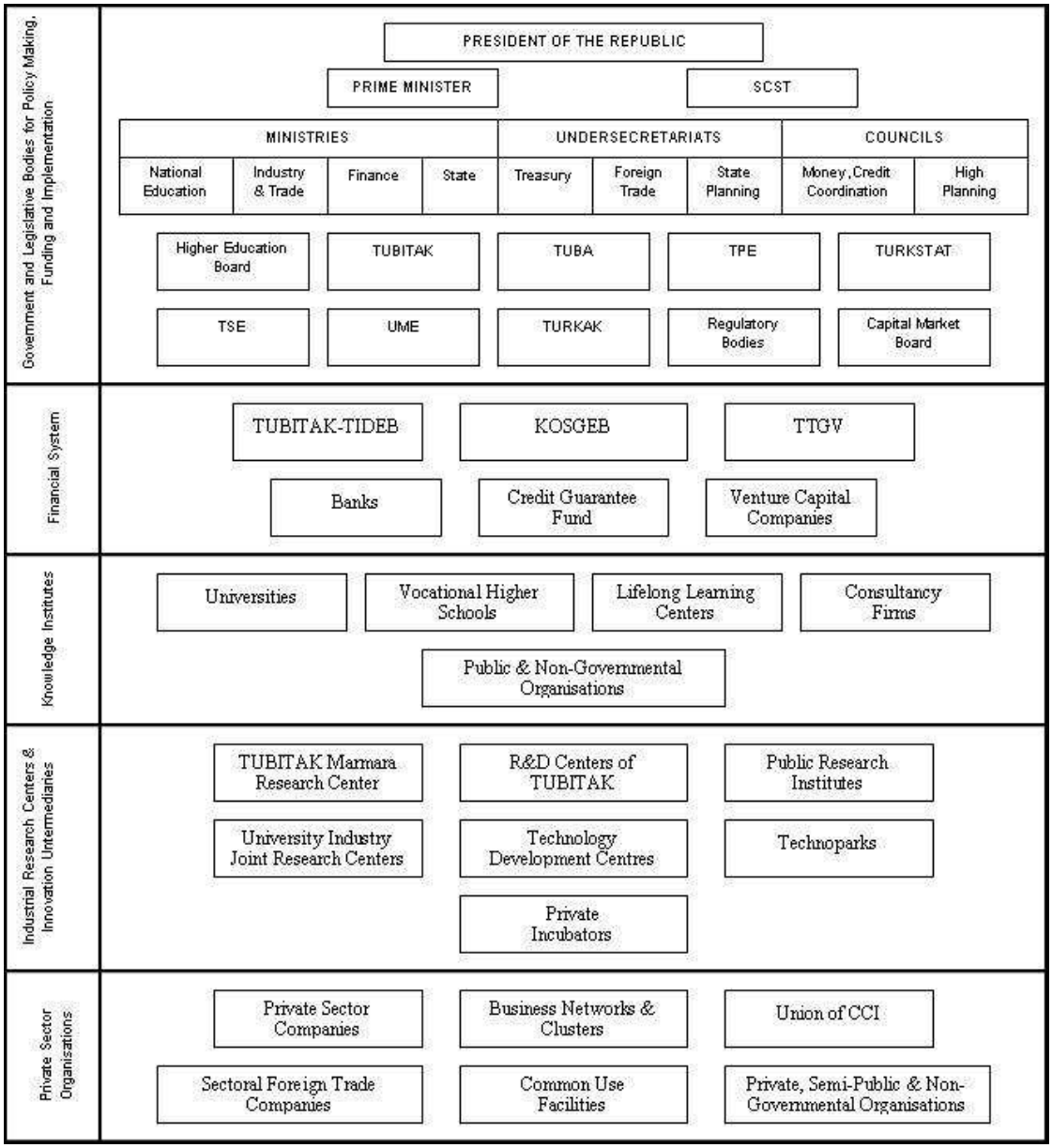
The 4th FYDP period (1979-1983) was the turning point of technology policy that has not only changed the current period but also Turkey's near future. Two important steps had been taken in this period. First of all, the first comprehensive S&T policy program 'Turkish Science Policy: 1983-2003' was published. Secondly, -more importantly-, Supreme Council for S&T (SCST) was established. With the establishment of SCST, Turkish S&T policy shifted from 'building a national R&D infrastructure' to 'innovation-oriented national policies'. SCST has been playing active role in S&T policy at national level especially since mid-1990s. (Uzun, 2006: 551)

Along with the paradigm shift which was started with the SCST, in 8th FYDP (2001-2005) Turkey set the important innovation-related objectives for the first time in its history, such as fully establishing and efficiently operating the National Innovation System (NIS), Completing legal and institutional arrangements for the smooth functioning of the NIS. (DPT, 2000: 125-127)

There are a number of actors which comprises the Turkish NIS, within these actors the TUBITAK and the SCST are the most critical ones, hence they have the responsibility of policy determining. In the policy formulation and implementation context, there are various ministries, undersecretaries and councils. The weak ring of the system is obviously financial and support mechanisms which have been recently reorganized in order to meet the needs of SMEs and other actors. And KOSGEB, SMEs support institution, in on the way of change.

Figure 2 shows the building blocks of the Turkish NIS.

Figure 2: Main Actors of National Innovation System of Turkey



Source: EC EDG 2006, s. 6.

3. TR61 NUTS2 Level Region: Some Figures and the Background

The region is comprised of three provinces, namely Isparta, Burdur and Antalya. In this paper we have only studied Isparta and Burdur provinces and the result of Antalya province will be ready in the very near future.

Antalya is the most important tourism center of Turkey. However, the economic structure of Isparta and Burdur provinces has predominantly based on agricultural sector. The productions of the SMEs in Isparta heavily concentrate in textile (yarn, carpet, fabric). Beside textile, food, lumber, marble, tanning, and rose oil industries are other main sectors. On the other hand, the SMEs in Burdur mostly produce the goods in the sectors of agriculture and animal farming. The productions of the SMEs in Burdur intensify in milk products, feedstuff, garment, chemistry, plastics and machinery processing industries. (DPT, 2003) According to the census of year 2000, Isparta and Burdur respectively; have a population of 514.000 and 257.000; and have a percentage of 0.5 and 0.3 in Turkey's GNP. The education level of the population of the region is also very satisfactory due to the existence of higher education institutions_ Süleyman Demirel University and Mehmet Akif Ersoy University. (DPT, 2006).

The socio-economic development of the provinces of Turkey has surveyed through the indicators of employment, education, industry, agriculture, finance, infrastructure and welfare by the State Planning Organization (DPT) in 1996 and 2003. In the latter survey, Isparta and Burdur were identified as the third degree socio-economic developed provinces where the agricultural structure is dominant and the SMEs do business both at provincial and regional scales. The socio-economic indicator values of the mentioned provinces are close to Turkey's averages. (DPT, 2003)

In the socio-economic development rankings, Isparta is 28th and Burdur is 31st. The sectoral distribution of employment in Isparta is 56.9% in agricultural sector, 8.34% in industry sector, 30.3% in services sector and 4.46% in other sectors. This distribution in Burdur is 60.13% in agricultural sector, 8.31% in industry sector, and 31.3% in services sector. (DPT, 2003c)

4. The Research Design and Findings

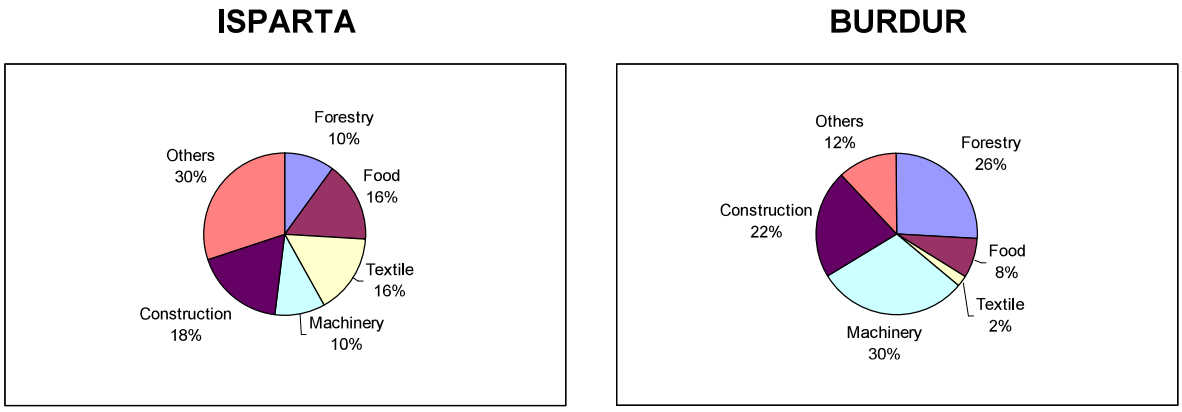
4.1. Sample

This study depends on a survey conducted in February-March 2007. Questionnaires were directly applied to the firm owners/managers via face-to-face interview method. In the scope of the study, questionnaires were applied to the 100 firms in both of the

provinces. These firms were drawn from KOSGEB's (Small and Medium Industry Development Organization) data inventory, which includes 460 SMEs for two provinces.

The sectoral distribution of firms by provinces is shown in Figure 3.

Figure 3: Sectoral Distribution of Firms in Isparta and Burdur



4.2. Methodology

In the questionnaire, standard Likert Scale was used. In this scale, the degree of various areas under discussion was used that is from (1) 'Not' to (5) 'High'. According to the conceptual model of the study, the dependent variables of the research divided into two main groups: Local-Regional-National Networking between SMEs and other actors, and Internal-External Knowledge Sources of innovative firms. Cronbach's alpha coefficient for the scale was 0.744 which is sufficiently reliable**.**

4.3. Findings

Innovative Performance of Firms

Isparta is more successful in terms of innovation activities. There are 26 innovative firms (52% of total) in Isparta, whereas 8 in Burdur (16%). Firms, in both provinces, usually utilize 'only product innovation'. 54% of firms in Isparta employs 'only product innovation',11.5% 'only process innovation' and 34.5% 'both product and process innovation'. However, 50% of firms in Burdur employs 'only product innovation', and 50% 'both product and process innovation'. Firms mostly do innovative activities by their own efforts and resources. 8 out of 34 firms do innovative activities with co-operation in

both provinces. The average innovation is 2.96 and 2.63, respectively in Isparta and Burdur.

Collaboration Level of Actors

In this part of this study, the actors which firms co-operate at different scales (local, regional and national) and degree of this co-operation were asked to the firms. In Isparta, local and regional networking level of firms is higher than Burdur. However, national and international networking level of firms is seen higher in Burdur. The co-operation is only limited within the boundaries of local scale, interaction at the regional-national scale is very low. The collaboration level of firms in two provinces at different scales, and the contribution level of local stakeholders to the collaborative environment are shown in Table 1.

Table 1: Collaboration Level, Mutual Trust and Co-operative Activities of Firms

	ISPARTA	BURDUR
Collaboration Level		
The collaboration level of actors in the province	2,598	2,441
The collaboration level of actors in the region.	1,924	1,858
The collaboration level of actors at national level	1,252	1,326
Contribution of Local Stakeholders on the development of the collaborative environment		
The contribution of the governorship	2,10	1,70
The contribution of the municipality	1,52	1,82
The contribution of the Chamber of Commerce and Industry	2,28	2,60
The contribution of the university	1,78	1,80
Mutual Trust and Co-operative Activities		
Firms' attitude towards doing a collective business with other firms and associations	2,76	3,70
Firms' attitude towards establishing a multi shareholder business	2,64	3,12
Firms' attitude to the co-operation culture within the province	2,04	2,12
Trust level among local economic actors	2,36	2,30

The mean values in Table 1 indicate that the managers/owners of the firms find quite low level of the contribution of local administrators on the development of the collaborative environment. Likewise it is seen that the contribution of the governorship, municipality, and the Chamber of Commerce and Industry on the development of the collaborative environment is perceived quite low in both provinces, as well. The results show that the trust level among the local actors and firms' attitude to the co-operation culture within the province are also low. Finally, results show that firms' attitude towards

establishing a multi shareholder business or doing a collective business with other firms and associations is a little higher.

Table 2: Local and Regional Co-operations with Actors

ACTORS	ISPARTA		BURDUR	
	Local	Regional	Local	Regional
Suppliers	2,98	4,02	3,06	3,26
Customers	3,94	3,90	4,34	4,06
Consultant firms	1,54	1,72	1,36	1,24
Firms in different sectors	3,96	2,70	2,76	2,12
Firms in same sector	3,08	2,46	2,50	1,90
Universities	2,28	1,12	1,56	1,80
Technology Development Centers	1,24	1,08	1,00	1,16
Chamber of Commerce and Industry	2,98	1,02	3,20	1,24
Commercial Exchange	1,52	1,00	1,84	1,04
Professional Organizations / Chambers	1,82	1,00	2,48	1,38
KOSGEB's Syngergy Unit (Sinerji Odağı)	3,24	1,14	2,76	1,24
AVERAGE LEVEL	**2,598**	**1,924**	**2,441**	**1,858**

Taking into account Table 2; the firms in Isparta show higher-performance than the firms in Burdur in terms of local and regional co-operation. The most important local actor which firms most tend to collaborate is 'firms in different sectors' in Isparta. The other important actors are 'customers' and 'KOSGEB'. In Burdur, the actors that firms likely tend to cooperate are 'customers', 'suppliers' and 'CCI'. The most important actors at regional scale are same in Isparta and Burdur, namely 'customers', 'suppliers', and 'firms in different sectors'. The relationship with science sector such as universities, research institutes is too weak.

KOSGEB takes the first place among the actors which supposed to be cooperated at national level. The level of cooperation with this institute is 3.48 and 2.18, respectively in Isparta and Burdur. It would be fair to state that there is almost no co-operation with other institutions at national level, except KOSGEB, in both of provinces.

Knowledge Sources of Innovative Firms

The knowledge sources that are used by firms for the innovative activities are separated into two categories: (i) firms' internal knowledge sources, and (ii) firms' external knowledge sources. There are 4 variables in internal knowledge sources and 14 variables in external knowledge sources at 3 different scales, namely local, regional and national. Isparta is better than Burdur in terms of using knowledge sources in both categories.

Table 3: Internal Knowledge Sources of Firms

Internal Knowledge Sources	ISPARTA	BURDUR
R&D Activities	3,31	4,13
Employers	4,19	3,38
Marketing Department	4,04	3,25
Management Department	4,12	4,00
AVERAGE LEVEL	**3,915**	**3,69**

Table 3 shows the internal knowledge sources and usage of these sources by the firms according to the provinces. However, it should be underlined that the knowledge acquired from R&D activities in Isparta is less than Burdur due to the lack of firms which carry out R&D (There are 17 firms in Isparta which carry out R&D and 31 in Burdur).

From the perspective of external knowledge sources (Table 4), the first is internet; the second is sectoral magazines/publications, and then customers and finally national exhibits/fairs. 'Knowledge-flow-from-customers' is seen as an important source and it is frequently used by firms. In Isparta, apart from the 'knowledge-flow-from-customers', knowledge flow from suppliers and firms in different sectors are seen as important. Knowledge exchange with science sector (universities and research institutes) which is other important source in innovativeness is too weak.

Table 4: External Knowledge Sources of Firms

External Knowledge Sources	ISPARTA			BURDUR		
	L	R	N	L	R	N
Customers	2,92	3,04	3,15	2,50	3,38	3,38
Suppliers	2,31	2,62	3,00	1,50	2,00	2,50
Firms same sector	2,54	2,62	2,73	1,38	1,75	1,38
Firms in different sectors	2,81	2,27	2,42	1,63	1,88	1,88
Subcontractor firms	1,81	1,50	1,15	1,13	1,88	1,63
Research Institutes	1,50	1,35	1,46	1,13	1,13	1,63
Universities	2,27	1,00	1,15	1,38	1,63	1,75
CCI	2,62	1,00	1,00	1,00	1,50	1,50
National exhibits / fairs	1,38	2,15	3,08	2,00	2,50	3,38
AVERAGE LEVEL	**2,24**	**1,9**	**2,02**	**1,44**	**1,81**	**1,98**
International exhibits / fairs	1,54			2,50		
Sectoral Magazines / publications	3,96			3,00		
Internet	4,42			3,63		

Table 5 summarizes the correlation at different scales for the collaborative action. Obviously the theory is confirmed. There is a strong correlation between local cooperation and local cooperative culture. Similarly, mutual trust shapes the local cooperation level and even cooperation at the regional level. Eventually cooperative culture and mutual trust is mutually dependant. Local stakeholders are related to all levels in terms of cooperation. This means institutional factors are effective in the region, yet its low level avoids further cooperation.

Table 5: Results of Correlation Analysis

	Local Coperation	Regional Cooperation	National Cooperation	Local Stakeholders	Cooperation Culture	Trust Level
Local Coperation	1	,360** (,000)	,128 (,206)	,288** (,004)	,253** (,011)	,343** (,000)
Regional Cooperation	,360** (,000)	1	,241* (,016)	,291** (,003)	,098 (,333)	,278** (,005)
National Cooperation	,128 (,206)	,241* (,016)	1	,283** (,004)	-,146 (,147)	,126 (,210)
Local Stakeholders	,288** (,004)	,291** (,003)	,283** (,004)	1	,093 (,357)	,187 (,063)
Cooperation Culture	,253** (,011)	,098 (,333)	-,146 (,147)	,093 (,357)	1	,485** (,000)
Trust Level	,343** (,000)	,278** (,005)	,126 (,210)	,187 (,063)	,485** (,000)	1
** Correlation is significant at the 0.01 level * Correlation is significant at the 0.05 level						

Concluding Remarks

Although regional development studies focus on innovation, networking and collaboration, little has been done in order to understand the situation in Turkey. The TUİK's innovation survey seems to be relevant study, but a quick policy framework is needed at the regional level. This study mainly investigates three interrelated concepts, innovation, networking, collaboration. The findings of this study support the theoretical foundations of innovation and networking. Mutual trust is the first step of regional innovativeness. Unless mutual trust is created, the region can not produce collaborative structure and environment which leads to innovation. Thus local actors in the region should be more proactive and seek new ways and forms for enhancing trust level along with cooperative structure. However national policy makers should question the effectiveness of their policies and what is perceived from their policies at the local and regional level.

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