

Policy and Efficiency Analysis of EU Pre-Accession Funds in Turkey as Instruments of Multi-Level Governance

ARZU TEKTAS & ASLI DENIZ HELVACIOGLU KUYUCU

ABSTRACT This article focuses on multi-level governance in Turkey and develops an interdisciplinary multidimensional approach to examine the governance of the pre-accession funds allocated for regional development. The approach integrates the vertical and horizontal relations at different levels of governance with the four main principles of EU structural funds identified as concentration, programming, partnership and additionality. The article aims to demonstrate the differences in the efficiency levels by using an empirical approach. It analyzes the influence of the dual governance structure on the efficient utilization of EU funds allocated to 191 municipality and local authority projects executed under two different calls covering seven NUTS II regions and twenty cities in Turkey. Results show that EU pre-accession funds in Turkey promote the formation of a European model multi-level governance structure by generating new forms of relations among authorities at different levels.

KEYWORDS: • multi-level governance • efficiency analysis • DEA • European Union pre-accession funds • Turkey

CORRESPONDENCE ADDRESS: Arzu Tektas, Ph.D., Bogazici University, Hisar Campus 34342, Istanbul, Turkey, email: tektas@boun.edu.tr. Asli Deniz Helvacioğlu Kuyucu, Ph.D., Bogazici University, Hisar Campus 34342, Istanbul, Turkey, email: asli.helvacioğlu@boun.edu.tr.

DOI 10.4335/8.2.161-183(2010)
ISSN 1581-5374 Print/1855-363X Online © 2010 Lex localis (Maribor, Graz, Trieste, Split)
Available at <http://pub.lex-localis.info>.

1 Introduction

Multi-level governance (MLG) is a concept of European polity which has become increasingly significant after the Maastricht Treaty. MLG paves the way for the plurality of public and private actors interacting in the EU policy network. MLG conceives regional integration in the EU as part of a more general phenomenon, the articulation of authority across jurisdictions at diverse scales (Hooghe and Marks, 2008). It is exposed as a complementary element of the European integration's polity creating process in which authority and policy making influence are shared across sub-national, national and supra-national levels of government. Multi-level polity has provided a new heterarchical governance environment (Neyer, 2003) where state administrations no longer monopolize decision-making. On the contrary, these administrations provide new opportunities for regional mobilization by establishing innovative patterns of interaction among actors at multiple levels of government (Marks et al., 1996; Hooghe and Marks, 2001).

Sub-national mobilization is conceived as the main feature of MLG for both member and candidate countries. It leads to growing engagement of sub-national governmental actors in European Union institutions and policy making processes.

MLG studies in candidate countries lack research on Turkey; even though, Turkey has been the longest-standing country. This article contributes to the MLG literature in Turkey and other candidate countries by examining the governance of the pre-accession funds allocated for regional development in Turkey. It contributes to the related research by developing a framework that integrates the governance system in Turkey and the four operational pillars of the EU structural funds. As a second contribution, the article analyzes the influence of the dual governance structure on the efficient utilization of EU funds and demonstrates the differences in the efficiency levels by using an empirical approach.

The article develops an interdisciplinary multidimensional approach for investigating the MLG mechanism in Turkey. It integrates the vertical and horizontal relations among the supra-national, national and sub-national actors with the four main principles (concentration, programming, partnership and additionality) underpinning the operation of the EU structural funds. The analysis proceeds with investigating the effect of the dual governance structure in Turkey on the efficiency of the EU-funded projects. A total of 191 municipality and local authority projects are executed under two different calls covering seven NUTS II regions and twenty cities. Efficiency analysis is conducted by applying the multidimensional, non-parametric mathematical tool, Data Envelopment Analysis. The study demonstrates that the EU pre-accession funds in Turkey promote the formation of EU model multi-level governance structure by generating new forms of relations among authorities at different levels. The results indicate that there are

significant differences among distinct governance structures in their use of MLG elements such as Regional Development Agencies (RDA) that further result in differences in their efficiency scores.

The article starts with an introduction section which overviews the MLG concepts and summarizes the outline. Second section discusses sub-national mobilization in MLG complemented with a literature review. The following section discusses the dynamics of the governance mechanisms in Turkey with respect to EU harmonization process including a multidimensional analysis of MLG in Turkey. The article proceeds with the analysis and evaluation of the EU pre-accession funds in Turkey in reference to the MLG context. This section discusses the methodology and the empirical findings. The article ends with a conclusion section.

2 Sub-National Mobilization in MLG

The discourse on sub-national mobilization in MLG has developed with the aim of assessing the effect of EU policies on the capability of the member and candidate state administrations that enable their participation in EU decision and policy making as well as challenging their ability and influential power to apply and manipulate those policies at the local level. Related research focuses on how regional actors have become integrated into the complex European system of transnational decision-making in this enlarged EU framework in order to benefit more from the EU funding mechanisms (Hooghe, 1996; Ansell et al., 1997; Benz and Eberlein, 1999; Jeffrey, 2000; De Rooij 2002; Gualini, 2003; Hodgett, 2006; Smith, 2007). Structural funds that demand co-operative arrangement between local administrations, national government and the European Commission have emerged as one of the most important motivational elements of MLG for local authorities in the sub-national mobilization process. Marks (1993) claimed that structural funds represented the leading edge of MLG where power was shared between supranational, national and sub-national actors. Hooghe (1996) defined structural funds as the striking illustration of the multi-level governance standpoint. Kinnunen (2004) further defined the end of the EU funding as a major threat for the breakdown of Finnish MLG system.

Structural funds have provided a new instrument to investigate the relationship between EU funding schemes and MLG. Benz and Eberlein (1999) argued that adjustments of both intergovernmental and regional structures arising in the context of structural funds policy led to the development of processes to establish MLG in France and Germany. In a similar vein, Jeffrey (2000) focused on the sub-national mobilization in Spain, United Kingdom and Germany. He pointed out that there was a new, diverse and dynamic pattern of MLG, mostly influenced by the structural funding process that demanded higher level of sub-national involvement in European structural policy. De Rooij (2002) studied the EU impact

on local government in the Netherlands and defined MLG as a new opportunity for local government to influence policy and promote interests under the scope of structural funds. De Rooij concluded that Dutch sub-national mobilization grew as a result of the increased EU funding opportunities for local government. Gualini (2003) presented Italy as a country in which institutional capacity building under the framework of 2000-2006 structural funds fostered policy innovations, including MLG. Hodgett (2006) explored the role of the structural funds in Northern Ireland in changing the government into a facilitator and a voluntary sector as an important partner in democratizing society with a new multilevel and multiform structure. All these studies imply that sub-national authorities make use of structural funds as practical instruments to modify the traditional state-centric system and to align with the EU model of MLG.

The European model of MLG provided a flexible governance system enabling the emergence of transnational actors and regional processes which led to MLG of various inter-related policy areas (Cesar de Prado, 2007). EU cohesion policy constituted another sophisticated issue for MLG studies. Due to its complex nature, this issue required effectiveness, efficiency and legitimacy as well as participation, collaboration and Europeanization at the sub-national level. Bache (2008) concluded that cohesion policy strengthened the vertical and horizontal dimensions of MLG in Britain. Bagarani and Zampino (2008) investigated whether the reorganization of the Italian system is coherent with the main features of the EU MLG system in the governance of cohesion policy. They concluded that the decentralization process depended significantly on the level of administrative and political efficiency and on the efficiency of governance solutions. Efficient MLG was regarded as a value for the optimal delivery of cohesion policy since it encouraged the participation of regional and local levels of governance in fostering economic development (Hübner, 2009).

2.1 Multi-Level Governance in Candidate Countries

The limited number of studies on MLG experience of the candidate states showed that EU funds had positive impact on the establishment of efficient local administrations, capable of adopting the MLG system (Bailey and de Propriis, 2006). Goetz (2001) referred to the key development objective of building public administration that would allow the future member states to act as effective players in the EU MLG system. Lippert et al. (2001) examined the impact of European integration in Czech Republic, Estonia, Hungary, Poland and Slovenia. They concluded that EU membership was a driving force for administrative reform, but the candidate countries still needed medium-term strategies for becoming efficient multi-level players in the European policy-making process. Illner (2002) came up with similar findings for the MLG system in Czech Republic, Poland and Hungary. Bailey and de Propriis (2002) analyzed some applicant countries from Central and Eastern Europe which moved towards MLG

in relation to EU structural policy. They further commented that an evolutionary process of institutional change and learning could enable the regions to participate efficiently in the EU system. After the enlargement in 2006, Bailey and de Propris concluded that the Commission attempted to use PHARE and other pre-accession funds to shift candidate countries' governance and regional development understandings closer to EU structural policy.

Some of the most comprehensive studies on the MLG practices of the candidate countries are provided by the projects funded under the EU framework programs. EU supported the ADAPT¹ project provided that the EU pre-accession assistance funds contributed to the MLG system formation and the improvement of administrative capacities at central and sub-national levels (Fleischer et al., 2002). Related to the Connex project², Adam (2006) stated that MLG had been a great challenge for Bosnia and Herzegovina, Croatia and Serbia and the absence of effective governance appeared to be an important obstacle blocking their road to Europe. Even though Turkey was one of the countries covered by the Connex project, there hardly existed any MLG research on Turkey focusing on the role and influence of the EU funding for adopting the MLG system (Goymen, 2001; Okcu, 2005; Dulupcu, 2006; Goymen, 2006; Goymen and Ozkaynak, 2007). The state-centric governance structure in Turkey and the novelty of the multi-layered relations among sub-national authorities that benefit from pre-accession funds might be the reasons for the lack of a research exploring the causalities between the EU funds and MLG in Turkey.

3 Dynamics of the Governance Mechanisms in Turkey with Respect to EU Harmonization Process

The governance structure is basically state-centric in Turkey. Decentralization is provided at the local level through the existence of municipalities, special provincial administrations (SPA) and villages. Governance of regional development is undertaken by the State Planning Organization (SPO) which is a central authority operating at the national level. SPO acts as a programming unit and provides the schemes for regional governance and development, keeping up the cooperation and coordination with the government and ministries. Limited participation of local administrations or civil society is regarded as the most important deficiency related with these planning and programming processes. This could in inconsistency and incapability that might impair the effective application or timely completion of the regional development action plans (Gunaydin, 2004). Central and local governance mechanisms managing and supporting regional development programs under the scope of MLG, could enable sub-national mobilization by encouraging coordination and partnership among the actors in the governance chain (Gunaydin, 2004).

In that respect, European Union provided the main motivation towards the full recognition of sub-national mobilization as an integral part of the MLG system (Goymen 2006; Dulupcu, 2006). In the 1998 Regular Report, the European Commission recommended that regional development should be high on the government's list of priorities promising to deploy the resources of the European strategy (European Commission, 1998). In 2000, Turkish Parliament approved the 8th Development Plan, setting medium-term targets for regional development in line with the traditional centralized governance architecture. Consequently, SPO claimed that the regional development policies and the organizational structures of the local administrations in the EU might provide an example for the regional development schemes in Turkey (SPO, 2000).

The first development for the establishment of a new system that would enable sub-national mobilization was the adoption of the EU NUTS-IBBS (The Nomenclature of Territorial Units for Statistics) in 2002. This system provided a new regional mapping of 3-level territorial units, based on the main framework of methodology grouping the cities with similar economic and social conditions and taking those groups as the reference units for fund allocation. The introduction of new regions under the NUTS system created a new sub-national policy space and paved the way for the foundation of new bodies that would not only enrich the governance system but also open the way for the MLG of regional development schemes. In 2003, Central Finance and Contracts Unit (CFCU) was established under the Memorandum of Understanding signed between the Commission and Turkish Government. CFCU is an agency responsible for the overall budgeting, tendering, contracting, payments, accounting and financial reporting aspects of all procurement in the context of the EU programs in Turkey, including the regional development schemes (Helvacioğlu Kuyucu and Tektas, 2008). European Commission Delegation in Turkey, working in coordination with the CFCU, became an important actor with the pre-approval competence in all the tenders and grants. (Akkahve, 2006). Therefore, it became an integral part of the allocation process of the pre-accession funds even though it was a not a national agency.

In 2006, RDAs were established in line with the EU harmonization process. This institutionalization was a milestone for Turkey since RDAs were the first semi-autonomous regional authorities with decision making capabilities independent from central, regional and local administrations. These new actors, placed above the provinces in the governance chain, seemed to be capable of achieving sub-national mobilization through direct links with the national and supra-national actors in the EU system. RDAs introduced a new institutional framework in Turkey. RDAs facilitated the resemblance of regional development in Turkey to the prevailing European approach both in

terms of the nature of policy initiatives and governance structures surrounding sub-national economic development activities (Halkier, 2006; Tutar and Demiral, 2007). After the establishment of RDAs, National Program, the Pre-Accession Economic Program and the Strategic Coherence Framework (SCF) published regional development programs under the pre-accession schemes to harmonize the regional development policy and practices with EU. 2007 Pre-Accession Economic Program aimed at developing institutional capacity at both central and local levels. The 2008 National Program of Turkey mobilized the local potential with financial support systems strengthening local development initiatives. In compliance with these, the Council³ has foreseen the reinforcement for institutional structures and strengthening administrative capacity to implement EU pre-accession programs as a preparation for the implementation of the Cohesion Policy. Consequently, 540 million Euros were earmarked in financial assistance for Turkey from the Instrument for Pre-accession Assistance (IPA) in 2008. On the other hand, 2008 Progress Report (European Commission, 2008) stated that Turkey vigorously needed to address weaknesses and improve the quality and efficiency of the projects and funding cycles in order to maintain the IPA allocations.

In 2008, Operating Structures were defined for the IPA Regional Development; however, the decentralized management of IPA funds under the regional development was delayed. Turkey had not yet initiated preparations for the implementation of the future structural and cohesion funds. Since the training and technical assistance provided for preparation and implementation of the IPA operational programs was essentially confined to the central level, the administrative capacity remained rather weak at regional level (European Commission, 2008).

3.1 Funding Principles in Relation to Multi-Level Governance in Turkey

The discussion of structural funds in the literature is based on four main principles identified as concentration, programming, partnership and additionality. These principles form the basis for the evaluation of the administrative capacity and capability in adopting the MLG system (Fleischer et al., 2002; Bachtler and Mendez, 2007; Marshall, 2004; Bache, 2008; Hübner, 2009; Kern and Berkeley, 2009). Bachtler and Mendez (2007) assessed the MLG debate and emphasized concentration and programming as the important principles of decision-making in the interplay of design and implementation process of the cohesion policy.

Bachtler, Mendez (2007) and Reeves (2006) defined programming as multi-annual strategic planning developed by the European Commission and the candidate countries in compliance with regional and national priorities. Concentration focuses on selected regions and objectives as pre-defined in programming.

Additionality is a budgetary concept developed to ensure that EU funding does not substitute for national expenditure. Reeves (2006) emphasized the additionality principle as the cornerstone of EU funding for both member states and candidate countries. Additionality principle requires proper management, monitoring and evaluation of fund spending. Partnership foresees the participation of national, sub-national and supranational actors in the design and implementation of programs. In that respect, it is vital to improve vertical co-ordination between European and regional planning and to build up intraregional horizontal partnerships in the regions eligible for EU structural policy funding as stated by Benz and Eberlein (1999).

ADAPT project on EU enlargement and MLG concludes that the extent to which new member states' regional policy framework complies with these four principles characterizes their state of preparedness for MLG. This compatibility analysis might also help to identify the major obstacles to MLG convergence and anticipate the length of the accession period (Fleischer et al., 2002). Magone (2003) correlated this compliance with the structural fund mechanisms which led to the achievement of MLG in line with the EU methodology of governance export. He claimed that EU offered an encouraging role to stabilize and democratize the structures in the Central and Eastern European candidate countries, including Turkey. The Council highlights the coordination of structural instruments to reinforce the establishment of institutional structures in Turkey and strengthen the administrative capacity in programming, project preparation, monitoring, evaluation, financial management and control of EU pre-accession programs. This is noted as a requirement for the implementation of the Community Cohesion Policy in Turkey.

3.2 Multidimensional Analysis of Multi-Level Governance in Turkey

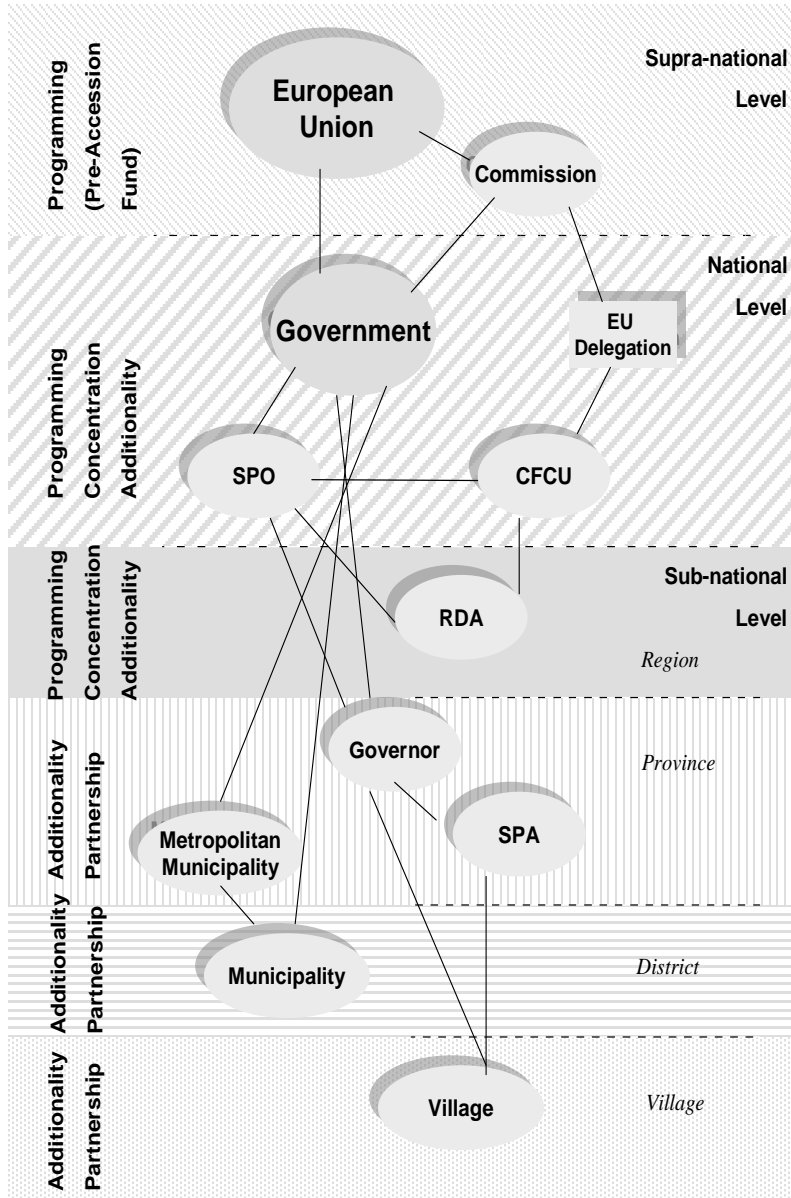
This study discusses the MLG structure in Turkey developing a multidimensional framework (Figure 1) which integrates the actors at six governance levels and the four principles of the EU structural approach.

Turkey is a unitary state with regional administrations of substantial weight but with a strong presence of central government. The municipalities and the local authority system in Turkey operate in a dual governance structure. There is a hierarchical relation between government, governor, SPA and villages where decision making is a complete reflection of the state-centric approach. SPA is established as a regional administration unit that possesses an elected decision-making body. However, its organization and tasks are integrated with the central administration, specifically the governor (Kara and Gorun, 2008). On the contrary, the municipal structure is decentralized where the mayor and the municipal council are elected. This results in greater independence along with sub-national

mobilization. The major difference between the local administrations in the state-centric governance chain and the municipalities arises from the interdependence of the governor and SPA in decision making and budgeting at the national level. The only formal relation between the government and municipalities is based on budget allocation.

RDAs and CFCU, the monitoring authority, have introduced a breakthrough in the traditional governance structure in Turkey. EU pre-accession policies and funds enable sub-national actors to integrate with the EU MLG system and make it possible for an actor to access others at various policy making levels without prior consent of the higher-level actor in the hierarchy. RDAs constitute a new multilevel playground where the actors have gained expanded operational scopes. Along with the NUTS II system, regional definitions have evolved to include new criteria related to economic and social development rather than single geographical mapping. This enhanced inter-coordination and cooperation among the actors since the EU funds are allocated through NUTS II mapping.

Figure 1: The Multidimensional Framework of the MLG Structure in Turkey



Source: Authors' own model

European Union MLG system delegates administrative power and resources related to pre-accession funds to the upper policy making level. Figure 1 demonstrates how the four principles are related with the governance levels.

At the supra-national level, European Commission undertakes the initial programming of pre-accession funds for candidate states. Programming relates to the operational programs of the EU pre-accession funds allocated for regional competitiveness in Turkey. It is undertaken by the Commission and the relevant Turkish ministry; however, realisation starts only after the Commission approval. In this process, planning at the supra-national level is based on the strategic plan of Turkey developed by the SPO. In 2008, SPO prepared the Strategic Coherence Framework (SCF) that set out the strategy of Turkey for implementing the IPA regional development funds for 2007-2013 in response to the European Commission Multiannual Indicative Program.

At the national level, SPO and CFCU act cooperatively for programming and concentration of the pre-accession funds. CFCU is deemed responsible for tendering, contracting, payment, accounting and financial reporting aspects of all the procurement processes in the context of regional development schemes. In the governance of the regional development programs, SPO plays a coordinating role in the context of the IPA, the precursor of EU structural and cohesion funds. Government may provide budget support to the system under the framework of additionality principle. EU delegation may provide additional funding for some specific EU calls about intercultural dialog, civil society and culture for which funds are not evaluated under the regional development schemes. Throughout the process, EU delegation and CFCU keep up the cross-level communication.

At the sub-national level, there are regions, provinces, districts and villages. At the regional level, RDAs are involved in programming and concentration processes by submitting regional development strategies and priorities to SPO and CFCU. RDAs do not actually contribute to the budget but they function as control and audit units. The actors at the province, district and village levels function at the project implementation stage of the pre-accession funds. These actors commit a pre-specified amount of budget allocation under the additionality principle. The most important feature at sub-national level is the **partnership** principle linking public, private and civil society organizations in a cooperative multilevel decision and policy making. The sub-national level is the most flexible and mobile governance space. The actors have the freedom to interact and negotiate with the superior actors like RDAs, CFCU and even with the EU institutions at the supranational level. In this non-hierarchical, horizontal, polycentric self-governance space, the actors are free to join or leave. The EU pre-accession funding process emerges as a unique case for such a freedom of multilevel governance space in Turkey.

4 Analysis and Evaluation of EU Pre-accession Funds in the Multi-Level Governance Context

The effect of governance structure on planning, allocation and evaluation of pre-accession funds have attracted the attention of EU and candidate countries. Florio (2007) stated that “the EU experience in structural funds and cohesion fund shows the need for a good project appraisal, evaluation, and planning strategy. There should be cumulative ex-ante and ex-post project returns to establish benchmarks and yardsticks for designing the pre-accession funds that will assist candidate countries.” Existence of such ex-ante and ex-post project analyses will be critical because “the EU context poses new interesting questions of infrastructure, planning and evaluations in a multi-governance setting for the candidate countries” (Florio, 2007).

Regarding the sustainability of the projects benefiting from the EU contribution, Bickerton (2007) mentioned that “in the EU enlargement process in Eastern Europe, PHARE programs were found to have the EU external agencies substituting for local capacity in a way that they created a certain dependency on the EU contribution.” In 2004 report on PHARE program, many projects were labelled as unstable meaning that they would not be able to continue without the external support.

On the other hand, Turkey seems to be an eligible candidate for benefiting from increasing amount of structural and cohesion funds. Turkey will be receiving considerable support from the cohesion and structural funds at the expense of other member states which may no longer be eligible for these funds (Joseph, 2007). In order to make use of this opportunity, Turkey must develop a well functioning and stable fund allocation and project management system. In this respect, analyzing the efficiency of the current projects under the structural and cohesion funds would significantly contribute to optimal fund allocation, planning and management of future prospect funds as well as execution of the related forthcoming projects.

To this purpose, empirical analysis section of the paper conducts an ex-ante efficiency analysis of the projects supported by the EU pre-accession funds. The analysis focuses on the dual governance structure in Turkey and investigates how the governance mechanism in Turkey affects the efficiency of the EU-funded projects. Throughout the analysis, the effects of the distinct structures of municipalities and local authority on the efficiency of the EU pre-accession funds are investigated. Efficiency analysis determines the efficient and inefficient projects and proposes corrective actions for the inefficient ones.

In this respect, the analysis covers all the projects owned and managed either by municipalities or local administrations or else non-public authorities such as the

SMEs. Projects are grouped as total projects, municipality-owned projects (MOP) and local administration-owned projects (LAP). As the names imply, MOP and LAP cover only municipality-owned and local administration-owned projects respectively. As a whole, the projects include the three priority areas offered in the programs, namely the development projects, utility projects and SME-related projects.

4.1 Methodology

The efficiency measurements related to the EU-funded regional development projects involve multiple input and output criteria for which the nature of the interactions is not perfectly defined. The methodology for measuring efficiency, defined as the output-input ratio, should therefore handle multiple inputs and outputs. The literature cites a number of parametric and non-parametric methods⁴ for measuring efficiency. Applicability of non-parametric methods is wider due to their reliance on fewer assumptions and relative simplicity. Nonparametric methods do not require prior assumptions of mathematical distributions or functions; therefore, they are more practical and may be more reliable. Non-parametric methods define an efficient frontier, calculate the relative efficiencies of units, rank the units, and determine the excess input or deficient output for each inefficient unit. Among these methods, data envelopment analysis (DEA) emerges as the most commonly used technique both in terms of the number of research papers published and the number of applications realized (Golany, 1988). The DEA methodology, developed by Charnes, Cooper and Rhodes (1978), empirically measures the efficiency of units in a set in the presence of multiple inputs and outputs. Efficiency is defined as a weighted sum of outputs to a weighted sum of inputs where the weight structure is calculated by means of the linear programming optimization model.

The literature cites quite a number of DEA studies from diverse areas such as business, banking, education and others. Different than the previous studies, this paper applies the DEA methodology to the area of EU harmonization and regional development and analyzes the efficiencies of EU-funded projects. DEA is preferred due to its advantages compared to a number of parametric and nonparametric methods. DEA can handle multiple input and output criteria without requiring a priori assumption of the functional relationship among them. The criteria are also allowed to have very different units. The methodology compares each unit of analysis against a peer or a group of peers and calculates a relative efficiency score for each unit. This benchmarking methodology further assigns some reference peers to each inefficient unit and proposes numerical changes in its input and output values so that it can take place on the efficient frontier.

In DEA methodology, a unit of analysis is to be rated as fully (100%) efficient on the basis of available evidence if and only if the performances of other units do

not show that some of their inputs or outputs can be improved without worsening some of their other inputs or outputs. The basic DEA model named as the CCR model (Charnes, Cooper, Rhodes, 1978) is presented in Figure 2.

Figure 2: DEA - The CCR Model

$$\begin{array}{ll}
 \text{Max } E_o = \frac{\sum_{i=1}^k u_i y_{io}}{\sum_{j=1}^m v_j x_{jo}} & \text{(1)} \\
 \text{subject to} & \\
 \frac{\sum_{i=1}^k u_i y_{ir}}{\sum_{j=1}^m v_j x_{jr}} \leq 1 & r = 1, \dots, N \\
 u_i, v_j \geq \varepsilon, & i = 1, \dots, k \quad j = 1, \dots, m \\
 & 0 < \varepsilon \ll 1
 \end{array}
 \qquad
 \begin{array}{ll}
 \text{Max } E_o = \sum_{i=1}^k u_i y_{io} & \text{(2)} \\
 \text{subject to} & \\
 \sum_{j=1}^m v_j x_{jo} = 1 & \\
 \sum_{i=1}^k u_i y_{ir} \leq \sum_{j=1}^m v_j x_{jr} & r = 1, \dots, N \\
 u_i, v_j \geq \varepsilon, & i = 1, \dots, k \quad j = 1, \dots, m \\
 & 0 < \varepsilon \ll 1
 \end{array}$$

Model (1) is a non-linear model where the objective is defined as maximizing the output to input ratio and Model (2) is the linear equivalent of (1). In the model, N represents the number of projects analyzed. y_{ir} and x_{jr} are the given output and input levels of Project r respectively. u_i and v_j , which are the output and input weights for the analyzed Project o , are determined by solving the model. E_o is the ratio of weighted outputs to weighted inputs, defined as relative efficiency.

Model (2) is solved once for each project. In each run, the model finds the set of (u_i, v_j) values that maximize the efficiency ratio E_o of the project being rated. The maximum of E_o is the DEA efficiency score assigned to Project o by solving the model. The constraints mean that the output/input ratio, namely efficiency, should not exceed 1 for each project. Accordingly, the relatively efficient units are identified by a DEA efficiency score of 100% ($E = 1$). Inefficient units are identified by an efficiency rating of $E < 1$. A relatively inefficient unit implies the existence of more efficient units within the analyzed data set. In the case of a relatively inefficient unit, its performance can be improved. For each inefficient unit, DEA identifies an efficiency reference set. This is the set of relatively efficient units to which the inefficient one is compared most directly in calculating its efficiency rating. This comparison makes it possible to determine the amount of excess resources used by each inefficient unit as well as the amount of excess capacity to increase service outputs in these units without utilising additional resources.

4.2 Input Output Measures

Selection of the input output variables is a critical issue in the DEA implementation process. Literature review and data availability are usually the major determinants of the selected variables. For this study, availability of more detailed and standardized data emerges as a major issue since the regional development calls analyzed are among the first in Turkey. To our knowledge, there exists almost no empirical ex-post efficiency study related to development funds. Based on the previous study (Helvacioğlu and Tektas, 2008), output variables are taken as the annual percentage change in the tax level for city *i*, and the annual percentage change in municipality or governor budget for city *i*. Percentage change is defined as the percentage difference between the pre and post project periods. Selection of the first variable can be justified with the reasoning that the development projects result in an increase in infrastructure, increase in new business opportunities, decrease in costs, and increase in income as well as the level of tax. These changes are also expected to raise the amount of budget allocated to municipalities or local authorities by the government. Input variables are determined as the allocated total budget, number of projects, average project duration and a weighted indicator of project types. A project type related variable is included to adjust the significant structural differences between infrastructure and development projects. The indicator reflects the strength of the project type in creating an impact on factors such as the number of potential beneficiaries, impact duration and geographical coverage. In this aspect, the weight of infrastructure projects is ten times the weight of development projects. The related knowledge is gathered by interviewing project coordinators and by reviewing project reports.

4.3 Data

Data are compiled using TUIK statistics (Turkish Statistical Institute) and reports on regional development fund calls for pre and post call years. Data on municipality and local administration budgets are gathered through electronic post or telephone interviews. The analysis covers two development fund calls, seven NUTS-II regions and twenty cities in Turkey. Figure 3 provides information on these calls with the geographical coverage of NUTS-II regions.

Figure 3: Regional Development Funds Allocated to NUTS-II Regions in Turkey



	CALL 1										CALL 3									
	TRA2		TR72		TR52		TRB2				TR82		TR83		TRA1					
	Ağrı	Ardahan	Sivas	Kayseri	Yozgat	Karaman	Konya	Bitlis	Hakkari	Mus	Van	Çankırı	Kastamonu	Sinop	Çorum	Samsun	Tokat	Bayburt	Erzincan	Erzurum
Population (x1000)	531	112	638	1165	492	226	1959	328	246	405	980	174	360	198	550	1229	621	77	214	785
Area (x1000 km ²)	12	5	29	17	14	9	41	7	7	8	23	7	13	29	13	9	10	4	12	25
Total project budget (mio €)	4.2	3.2	6.3	12.6	4.4	7.7	16.7	4.1	2.7	4.6	13.4	4.7	6.8	19.5	5.9	7.8	7.2	4.3	3.6	4.0
No. of total projects	16	14	49	86	20	39	166	55	30	38	142	19	47	19	44	82	42	26	30	32

Source: State Planning Organization, TUIK and call reports.

The Calls are designed under three broad priorities: infrastructure, SME competitiveness and local development initiatives. This study restricts the analysis to municipalities and governors and includes SME-related projects only for analyzing the efficiency of total projects. Consequently, 96 municipality projects and 95 governor projects in 7 NUTS-II regions and 20 provinces are implemented throughout the analysis. Remaining provinces are excluded due to the unavailability of municipality or local authority owned projects.

DEA efficiency results for total projects depict high variances due to the regional socio-economic diversity as well as the insufficient experience in design and implementation of the regional funds. These first calls have facilitated structural adjustment and turned into an experimental phase for most beneficiaries rather than generating a direct influence on regional development.

4.4 Discussion of the Findings

In the efficiency analyses, total projects, MOPs and LAPs are compared at Call, Nuts II region and city levels. Findings are presented in Tables 1, 2, and 3.

Table 1: Efficiency Scores of Total Projects at Call, Region and City Levels

Agri	Ardahan	Sivas	Kayseri	Yozgat	Karaman	Konya	Bitlis	Hakkari	Muş	Van	Çankırı	Kastamonu	Sinop	Corum	Samsun	Tokat	Bayburt	Erzincan	Erzurum
1	1	0.82	0.65	0.85	0.42	0.81	0.82	0.67	0.72	0.70	1	0.75	1	0.67	0.78	0.72	0.90	0.88	0.86
TRA2= 1		TR72= 0.77			TR52=0.61		TRB2=0.73			TR82=0.91			TR83=0.72			TRA1=0.88			
CALL 1= 0.77										CALL 3= 0.84									

Table 2: Efficiency Scores of Municipality Projects at Call, Region and City Levels

Agri	Ardahan	Sivas	Kayseri	Yozgat	Karaman	Konya	Bitlis	Hakkari	Muş	Van	Çankırı	Kastamonu	Sinop	Corum	Samsun	Tokat	Bayburt	Erzincan	Erzurum
0.98	1	0.92	1	0.90	0.43	0.87	0.75	0.69	0.79	1	0.91	0.88	0.70	1	1	0.86	0.99	0.83	1
TRA2= 0.99		TR72= 0.94			TR52=0.65		TRB2=0.81			TR82=0.83			TR83=0.95			TRA1=0.94			
ALL 1= 0.85										ALL 3= 0.91									

Table 3: Efficiency Scores of Local Administration Projects at Call, Region and City Levels

Agri	Ardahan	Sivas	Kayseri	Yozgat	Karaman	Konya	Bitlis	Hakkari	Muş	Van	Çankırı	Kastamo	Sinop	Corum	Samsun	Tokat	Bayburt	Erzincan	Erzuru
1	0.87	0.55	0.88	0.90	0.34	1	0.44	0.33	0.43	0.57	0.59	0.58	0.70	0.45	0.55	0.88	0.58	0.80	0.83
TRA2= 0.94		TR72= 0.78			TR52=0.67		TRB2=0.44			TR82=0.58			TR83=0.63			TRA1=0.74			
CALL 1= 0.67										CALL 3= 0.66									

Findings demonstrate discrepancies among the efficiency scores which might be explained by the differences in the governance system. The municipalities that are able to integrate into the MLG system more easily, have the highest average project efficiency scores; whereas, local authorities that lack the MLG flexibility and depend on central government have the lowest average project efficiency scores for both call and city levels (Table 2). For Call 1 and Call 3, average MOP scores are 0.85 and 0.91, whereas the related LAP scores are 0.67 and 0.66 respectively. The city-level results of LAP also rank the lowest with a high level of discrepancy between MOP and LAP efficiency scores. The average efficiency scores for MOPs and LAPs at city level are 0.88 and 0.67 respectively. The relatively poor performance of LAPs can be attributed to one of the output variables used in the DEA model, which is the percentage change in the administrative budget. The administrative budget allocation in Turkey does not comply with the annual budgeting system in the EU. The budgets that are allocated to local authorities and SPAs are not annual, meaning that they do not have to spend the whole budget in one fiscal year. Ironically, those administrations tend to save more due to the fact that their savings are associated with their performance.

Separate analyses of MOPs and LAPs show that the MOP efficiency scores depict a smaller variance except for one outlier with a score of 0.43. 85% of the cities have an efficiency score above 0.75. On the other hand, the LAP efficiency scores range between 0.33 and 1. 25% of the cities score under 0.5, 55% under 0.6 and only 30% above 0.85. The MOPs' percentage of scores above 0.85 is more than twice as much as that of LAPs'. Higher performance of MOPs can be explained by the facts that MOP topics better match the related call and city priorities; MOPs disseminate their results and create a larger impact; MOPs are better managed than the LAPs.

These factors are further strengthened by a small questionnaire completed by each urban municipality and local authority. The questionnaire consists of questions about the number of employees/experts working on EU-funded projects and the number of relevant training programs attended. Results indicate that municipalities are more prepared than local authorities for managing EU-funded projects, and they are much more open to cross-communication with other parties at different levels of governance. The questionnaire results show that 75% of the municipalities and 53% of the local authorities have received training and recruited employees for carrying out EU-projects. Karaman municipality, the one with the lowest efficiency score, has received no training and recruited no project related employees. On the other hand, all the efficient municipalities have allocated employees for this purpose and also received training from SPO or RDAs. These facts indicate that the presence of EU project specialists and the training programs do have a positive impact on project efficiency and can facilitate a potential transformation to MLG.

The presence of RDAs in a city might also facilitate participation in the MLG system. RDAs are present in the cities which are marked bold in Table 1,2,3. Almost all these cities have an efficiency score above the average in total projects and MOPs. The most significant scores are seen in MOPs where three of the cities with RDAs are purely efficient and the fourth one has a score of 0.87. This strengthens the opinion that in well functioning project groups such as MOPs, RDA presence propagates efficiency. In other words, given the fact that municipalities are more organized and accustomed to the EU funded project management philosophy, they manage to make better use of RDAs in accessing additional information and expertise as well as in enhancing their networking and partnership opportunities. This strengthens the fact that flexible MLG structure can become an advantage for sub-national authorities to benefit from the EU governance approach. The municipalities that are more open to communicating with RDAs (provided by the new MLG environment) improve their ability to deal with the EU harmonisation dynamics more easily.

5 Conclusion

The adoption of the EU MLG system provides an important strand of the EU harmonization process in candidate countries. Our research shows that the ability of the sub-national authorities in coping with the EU funding schemes is clearly linked with their capability of sub-national mobilization as a substantial part of MLG. To this purpose, the MLG structure in Turkey is discussed in a multidimensional framework that integrates the actors at six governance levels and the four principles of the EU structural approach identified as concentration, programming, partnership and additionality.

Focusing on the dual governance structure in Turkey, an ex-ante efficiency analysis is conducted utilizing the non-parametric model of Data Envelopment Analysis. The analysis investigates the effect of the governance mechanisms on the efficiency of the EU-funded projects. The results suggest that the level of participation in MLG constitutes a significant element of attaining efficiency in the regional development funds allocated under the pre-accession funds. Sub-national authorities that can develop strategies to integrate with the MLG context achieve a critical competitive edge and benefit more from the EU harmonization process.

The EU policies and pre-accession fund mechanisms provide the essential motivation for the candidate countries to develop an EU model of MLG environment with the establishment of new institutions like RDAs and CFCU that help to develop and improve the partnership between public, private and civil society organizations with cooperative multilevel decision and policy making. In the EU harmonization process, the sub-national level becomes the most flexible

and mobile governance level, turning to non-hierarchical, horizontal and polycentric self-governance.

Notes

¹ Fifth Framework Program Project under EU Enlargement and MLG in European Regional and Environment Policies: Patterns of Institutional Learning, Adaptation and Europeanization among Cohesion Countries (Greece, Ireland and Portugal) and Lessons for New Members (Hungary and Poland).

² Sixth Framework Program Project under Network of Excellence on Efficient and Democratic Governance in a Multi-Level Europe.

³ Council Decision on the principles, priorities and conditions contained in the Accession Partnership with the Republic of Turkey.

⁴ The reader can refer to Seiford and Thrall (1990) for more information.

References

- Adam, F. (2006) Research on EU multilevel governance in Bosnia and Herzegovina, Croatia and Serbia: A state of research. Retrieved: 12.02.2009, <http://www.connex-network.org/govdata/reports/Report-BosniaHerzegovinaCroatiaSerbia.pdf>.
- Akkahve, D. (2006) AB destekli bölgesel kalkınma programlarının yönetimi ve yapısal fonlara hazırlık, Bölgesel Kalkınma ve Yönetişim Sempozyumu, ODTÜ Mimarlık Fakültesi, Tepav, 7-8 Eylül, 2006, Ankara, pp. 161-196.
- Ansell, C, Parsons, C. A. And Darden K. A. (1997) Dual networks in european regional development policy, *Journal of Common Market Studies*, 35(3), 347-375.
- Bache, I. (2008) *Europeanization and Multi-level Governance* (Lanham, MD: Rowman & Littlefield).
- Bachtler, J. & Mendez, C. (2007) Who governs EU cohesion policy? Deconstructing the reforms of the structural funds, *Journal of Common Market Studies*, 45(3), 535-564.
- Bagarani, M. and Zampino, S. (2008) Multi-level governance: The general model and the Italian experience, *Economics & Statistics Discussion Paper*, 45(08) (Campobasso: Università degli Studi del Molise, Facoltà di Economia, Dipartimento di Scienze Economiche, Gestionali e Sociali).
- Bailey, D. & De Propriis L. (2006) EU regional policy, enlargement and governance: Issues for the next reform of the structural funds, *Institute for Economic Development Policy Discussion Paper Series*, 2006-03.
- Bailey, D. & De Propriis L. (2002) EU structural funds, regional capabilities and enlargement: Towards multi-level governance?, *Journal of European Integration*, 24(4), pp. 303-324.
- Benz, A. & Eberlein B. (1999) The europeanization of regional policies: Patterns of multi-level governance, *Journal of European Public Policy*, 6(2), pp. 1350-1763.
- Bickerton, C. J. (2007) A union of disenchantment: The new politics of post-enlargement Europe, In: Stivachis Y. A. (ed.), *The State of European Integration* (Ashgate Publishing).
- Charnes, A., W.W. Cooper, & Rhode, E. (1978) Measuring the efficiency of decision making units, *European Journal of Operational Research*, 2, 429-444.
- Cooper, W.W., Seiford, L.M. & Zhu, J. (2004) *Data envelopment analysis: Models and interpretations*, In: Cooper, W.W., Seiford, L.M. & Zhu, J. (eds.) *Handbook on Data Envelopment Analysis* (Boston: Kluwer Academic Publisher).
- De Prado, C. (2007) *Global Multi-level Governance* (United Nations University Press).
- De Rooij, R. (2002) The impact of the European Union on local government in the Netherlands, *Journal of European Public Policy*, 9(3), 447-467.

- Dulupçu, M. (2006) Bölgesel politikalar kopyalanabilir mi? Bölgeselleş(tir)me (yönetim) karşısında (Yeni) bölgesel(cilik) (yönetişim), Bölgesel Kalkınma ve Yönetişim Sempozyumu, ODTÜ Mimarlık Fakültesi, Tepav, 7-8 Eylül, 2006, Ankara, 29-38.
- European Commission (1998) Regular report from the Commission on Turkey's progress towards accession, retrieved: 12.06.2008, http://ec.europa.eu/enlargement/archives/pdf/key_documents/1998/turkey_en.pdf.
- European Commission (2008) Turkey 2008 Progress Report, Commission Staff Working Document, SEC(2008) 2699 final, Brussels.
- Fleischer, T., Futó, P., Horváth, G. & Kovács I. P. (2002) *First Report: Multi-level Governance and the Impact of EU Integration in Hungarian Regional and Environmental Policies*. (Budapest and Pecs: ADAPT)
- Florio M. (2007) Introduction: Cost-benefit analysis, shadow prices and incentives, In: Florio M. (ed.) *Cost-Benefit Analysis and Incentives in Evaluation: The Structural Funds of the EU* (Edward Elgar Publishing).
- Goetz, K. H. (2001) Making sense of post-communist central administration: Modernization, Europeanization or Latinization? *Journal of European Public Policy*, 8(6), 1032–1051.
- Golany, B. (1988) An interactive MOLP approach for the extension of DEA to effectiveness analysis, *Journal of Operational Research Society*, 39(8), 725–34.
- Goymen, K. (2001) Multi-level governance in Turkey, RIGAS Network Project, 7th workshop on multi-level governance in South Eastern Europe, December 9th – 12th 2001, Retrieved: 10.02.2008, [ww.cecl.gr/RIGASNETWORK/databank/REPORTS/r19/r19.html](http://www.cecl.gr/RIGASNETWORK/databank/REPORTS/r19/r19.html).
- Goymen, K. (2006) Dynamics of local governance in Turkey: Demise of the bureaucratic ruling tradition, *Journal of Society and Economy*, 28(3), pp. 245-266.
- Goymen, K. and Ozkaynak, B. (2007) Recent developments in local governance in Turkey: the Pendik experience, Local Development, Brussels: IIAS, July 2007.
- Gualini, E.(2003) Challenges to multi-level governance: Contradictions and conflicts in the Europeanization of Italian regional policy, *Journal of European Public Policy*, 10(4), pp. 616-636.
- Gunaydin, O. (2005) Bazı AB ülkeleri ve Türkiye'de bölgesel yönetim, *Türk İdare Dergisi*, Haziran 2005, 77-100.
- Halkier, H. (2006) Regional development agencies and multilevel governance: European perspectives, Bölgesel Kalkınma ve Yönetişim Sempozyumu, ODTÜ Mimarlık Fakültesi, Tepav, 7-8 Eylül, 2006, Ankara, pp. 3-16.
- Helvacioğlu Kuyucu, A. D. and Tektas, A. (2008) The impact of local decision-making in regional development schemes on the achievement of efficiency in EU funds, *International Journal of Social Sciences*, 3(3), pp. 180-188.
- Hodgett, S. (2006) Multi level governance: Policy and interpretive approaches in one european region, *Politics and Policy*, 34(4), pp. 726-746.
- Hooghe, L. (1996) *Cobesion Policy and European Integration: Building Multi-Level Governance* (Oxford: Oxford University Press).
- Hooghe, L. and Marks, G. (2001) *Multi-Level Governance and European Integration* (London: Rowman and Littlefield).
- Hooghe, L. and Marks, G. (2008) A postfunctionalist theory of European integration: from permissive consensus to constraining dissensus, *British Journal of Political Science.*, 39, pp. 1–23, doi:10.1017/S0007123408000409.
- Hübner, D. (2009) Regions in a system of multi-level governance, *Scottish Jean Monnet Centre Occasional Paper Series*, 1(1).
- Illner, M. (2002) Multi-level government in three East Central European candidate countries and its reforms after 1989, *EUI Working Papers*, RSC No.2002/07 (Robert Schuman Centre for Advanced Studies).

- Lippert B., Umbach G., & Wessels W. (2001) Europeanization of CEE executives: EU membership negotiations as a shaping power, *Journal of European Public Policy*, 8(6), 980-1012.
- Jeffery, C. (2000) Sub-national mobilization and European integration: Does it make any difference?, *Journal of Common Market Studies*, 38(1), pp. 1-23.
- Joseph, S. J. (2007) Turkey's accession to the European Union: Dilemmas, opportunities and constraints in Stivachis Y. A. (ed) *The State of European Integration* (Ashgate Publishing).
- Kara, M. and Gorun M. (2008) Kırsal kalkınmada il özel idarelerinin, köylere hizmet götürme birliklerinin ve ilçe yönetimlerinin rolü ve bazı uygulamalar, *Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 13(1), pp. 411-433.
- Kern, K. and Berkeley, H. (2009) Cities, Europeanization and multi-level governance: Governing climate change through transnational municipal networks, *Journal of Common Market Studies*, 47(2), pp. 309-332.
- Kinnunen, J. (2004) *Multilevel Governance: The Dynamics of EU Cohesion Policy, The Structural Funds as a Vector of Change in Finland*, OEUE Phase II, occasional paper, 3.4-09.4, (Dublin: EU Framework V: Organizing for EU Enlargement Project).
- Magone, J. M. (2003) Exporting governance: The relations of the EU with other regions of the world, N.11/2003. (Siena:Centro Interdipartimentale di Ricerca sul Cambiamento Politico)
- Marks, G., Hooghe, L. and Blank, K. (1996) European integration from the 1980s: State-centric versus multi-level governance, *Journal of Common Market Studies*, 34(3), pp. 341-378.
- Marks, G. (1993) Structural policy and multi-level governance in the EC, in Cafruny, A.W. and Rosenthal, G.G. (eds), *The State of the European Community* (Boulder: Lynne Rienner).
- Marshall, A. J. (2004) Europeanization at the urban level: Local actors, institutions and the dynamics of multi-level interaction, ESRC/UACES study group on the Europeanization of British politics and policy-making, Sheffield, 23 April 2004.
- Neyer, J. (2003) Discourse and order in the EU: A deliberative approach to multi-level governance, *Journal of Common Market Studies*, 41(4), pp. 687-706.
- Okçu, M. (2005) *Avrupa Yönetişel Alanına Doğru Türk Kamu Yönetimi: Çok Düzlemli Yönetişim*, Nohutcu, A. and Balci, A. ed.s, *Bilgi Çağında Türk Kamu Yönetiminin Yeniden Yapılandırılması-I*, içinde, Beta Basım Yayım, İstanbul, 258-298.
- Reeves, T. (2006) Avrupa Birliği yolunda bölgesel kalkınma, Bölgesel Kalkınma ve Yönetişim Sempozyumu, ODTÜ Mimarlık Fak., Tepav, 7-8 Eylül, 2006, Ankara, pp. 29-38.
- Seiford, L. M. and R. M. Thrall (1990) Recent developments in DEA: The mathematical programming approach to frontier analysis, *Journal of Econometrics*, 46(1-2), pp. 7-38.
- Smith, A. (2007) Emerging in between: The multi-level governance of renewable energy in the English regions, *Energy Policy*, 35(12), pp. 6266-6280.
- SPO, (2008) *2008 National Program of Turkey* (Ankara: State Planning Organization)
- Thanassoulis, E. (2003) *Introduction to the Theory and Application of Data Envelopment Analysis* (Massachusetts: Kluwer Academic Publishers).
- Tutar, F. and Demiral, M. (2007) Yerel ekonomilerin yerel aktörleri: Bölgesel kalkınma ajansları, *Eskişehir Osmangazi Üniversitesi IIBF Dergisi*, 2(1), 65-83.

Acknowledgments

Authors thank Bogazici University Research Fund for supporting the Project (08HN201) titled “Ex-Post Efficiency Analysis of European and Internationally Funded Projects”.