

**LOCAL DEVELOPMENT POLICIES AS MEGA-PROJECTS:
MEASURING THE EFFICIENCY OF THE 2000-06 CSF
INTEGRATED TERRITORIAL PROJECTS
IN THE CAMPANIA REGION**

Corrado lo Storto

Introduction

The Integrated Territorial Projects (ITPs) were a specific and contextualized policy instrument for the promotion of local economic and social development introduced in Italy since late 2000. This instrument deliberately tried to stimulate the active participation of local authorities and organizations representing local interests in the design and implementation of local development projects, identifying strategies tailored to the needs of specific territories (Mantino, 2002; Moccia and Sepe, 2003). As scholars point out “[...] the ITPs generally diverged from the prevailing international approach to local development, with the explicit decision to restrict the role of private-sector partners, choosing instead to strengthen the role of municipal governments (Bianchi and Casavola, 2009, p. 80). The constitutional reform occurred in Italy in 2001 that transferred several relevant administrative competences to the Regions, or jointly to the State and the Regions, had established a new favorable framework, shifting many policy making issues and decisions to the local level.

The ITPs were introduced within the general framework document for programming Community funding for Southern Italy – the Objective 1 Region Community Support Framework (CSF) that defined them as “a set of consistent and closely interconnected inter-sector actions aimed at achieving a common territorial development objective that justifies a unified approach to implementation” (AA.VV, 2003). ITPs were henceforth a collection of operations (e.g., investments) in different sectors (cultural heritage, tourism, transport and urban small infrastructure, environment, human resources) unified by sharing a driving idea (or mission) that guides the selection and integration of operations themselves (Pittaluga, 2003). One of the most important issue of the ITPs policy approach was the great weight given to the coordination of negotiated goals among several stakeholders and timing of operations that focused on a restricted geographical area and were funded by financial resources within the same operational program (Bianchi and Casavola, 2009).

Policies that implemented ITPs in the 2000-06 programming cycle in various regions in the South of Italy might be actually considered as mega-projects for a number of reasons: 1) the large amount of financial resources formally allocated by each Regional Operative Program (ROP) to ITPs. The total amount of funds in the 7 Italian Ob. 1 regions was higher than 5 billion €, with the greatest amounts allocated in Sicily and Campania, respectively 1.3 billion and 2.0 billions €; 2) the role of the regional governments that, with a less or greater centralization, managed the implementation process of the policies providing the structure of planning, rules and operational instruments, and that never devolved design and project implementation entirely to local actors; 3) the multitude of stakeholders involved in policy and decision-making which - together with the large number of operations to realize and the diversity of structural funds measures involved - determined an intrinsic high complexity of the policy implementation framework. As it happens for mega-projects, it not easy to develop a comprehensive understanding of the functioning of this policy instrument and its performance, issues that are particularly important when policy makers want to improve and reform it. Here it is assumed that a multi-dimension performance measure is necessary to

grasp the complexity of the ITPs policy nature and its implementation, capable in the same time to have both average performance indicators and to preserve specificities.

This paper proposes a methodological framework useful to conduct benchmarking and ex-post evaluation of the outcome of the ITPs policy implementation. In particular, this framework is based on the adoption of Data Envelopment Analysis (DEA) for evaluating the ITPs implementation efficiency. The 2000-06 CSF ITPs local development policy implemented in the Campania Region is investigated.

The methodological framework

The proposed framework develops a 3-dimension efficiency score useful to assess the financial, strategic and management dimensions of the ITPs policy implementation: 1) efficiency relative to financial payments and expenditure (eff_exp); 2) efficiency relative to operations portfolio coherence (eff_procon); 3) efficiency relative to the overall integrated project management implementation (eff_proj). The first efficiency index (eff_exp) assesses the expenditure capacity of regional and local government authorities as to the efficient management of operational program funds allocated on ITPs projects; the second index (eff_procon) measures to what extent the implemented ITPs remained consistent with the original idea - and henceforth - the operations included in the initial ITP plan that was originally negotiated between the regional and local authorities were financed by EU funds after the positive evaluation of the regional technical evaluation unit; the last index (eff_proj) assesses the overall rate of completion of ITPs operations, considering the ITPs as unique entities.

Data Envelopment Analysis (DEA) was performed to calculate efficiency scores. DEA is a non-parametric approach which measures the relative efficiency of a certain decision making unit (i.e., the specific ITP in this paper) by estimating an empirical production function frontier from a set of input and output data relative to a sample of homogeneous units, without requiring any specification of a functional form, or any assumption relative to variable distribution (Charnes et al., 1978; Fare et al., 1985). Moreover, DEA identifies the sources and the degree of inefficiency for each decision making unit under examination. The production frontier is generated solving a sequence of linear programming (LP) problems, one for each ITP included in the sample, while the relative efficiency measure of an ITP is evaluated by the distance between the actual observation and the frontier obtained from all the ITPs in sample, adopting the Farrell measure of technical efficiency (TE) as a measure for the ITP efficiency score (Coelli et al., 1998; Cooper et al., 2006). Given the sample of ITPs, the model determines for each ITP the optimal set of input and output weights that maximize its efficiency score. Three DEA CRS output oriented models that utilize three different sets of inputs and outputs were used to calculate these measurements of efficiency. Inputs and outputs include measures relative to payments relative to operations completed, payments relative to operations not actually working, payments relative to operations not financially completed, cost of operations, cost of operations not completed, cost of operations not financially completed, amount of operations completed, overall ITP economical value, amount of driving operations, economical value of confirmed operations, time elapsed since ITP formal agreement. Tables 1-3 report the input and output sets for each DEA model. Cluster analysis was performed to uncover homogeneous groups in the sample implementing the K-means procedure and using the 3 sets of efficiency scores as clustering variables (Arabie and Hubert, 1994), while ANOVA was run to identify variables that explain difference between ITPs groups.

Table 1 - Efficiency relative to financial payments and expenditure (DEA Model 1)

<i>Input</i>	
I1	costs of operations completed
I2	(public) costs of aids to firms
I3	costs of operations not physically or financially completed
<i>Output</i>	
O1	payments relative to operations not completed
O2	payments relative to aids to firms
O3	payments relative to operations not physically or not financially completed

Table 2 - Efficiency relative to operations portfolio coherence (DEA Model 2)

<i>Input</i>	
I1	ITP economical value (as to initial planning)
<i>Output</i>	
O1	economical value of confirmed operations as to initial planning
O2	% of driving operations confirmed as to initial planning

Table 3 - Efficiency relative to the overall ITP implementation management (DEA Model 3)

<i>Input</i>	
I1	ITP economical value (as to initial planning)
I2	total costs of aids to firms
I3	time elapsed from initial planning to policy financial closure
<i>Output</i>	
O1	payments relative to completed operations
O2	payments relative to operations not completed
O3	(private) cost of aids to firms
O4	% of completed operations

The sample

The measurement framework was implemented using data relative to the 2000-06 CSF ITPs local development policy of the Campania Region, one of the Objective 1 regions in the South of Italy. Data processed to calculate efficiency measures were recorded as financial information and output indicators in the national MONIT database. These data were made available by the Evaluation Unit of the Campania Regional Authority (NVVIP, 2011).

The adoption of the local development policy based on the ITP instrument in the Campania Region had as an output 51 ITPs. In total, 2,312 operations were planned and 3.9 billion euro of public funds were initially allocated to this policy. However, slightly less than 38% of these resources have generated recorded expenditure and certified according to the EC rules, and 477 operations have been completed both physically and financially (i.e., they are actually working). These operations include mostly small-scale investments in traditional urban refurbishing, transport infrastructure financing, micro-interventions regarding minor local infrastructure construction, and cultural heritage initiatives.

Findings

Figure 1 reports the result of DEA implementation. Data reported in the radar diagram show that the three efficiency measures relative to every ITP greatly differ. In particular: a) the efficiency relative to operations portfolio coherence has the lowest score; b) only a small number of ITPs achieves high efficiency scores; c) generally, ITPs are unable to achieve high efficiency score along all 3 efficiency dimensions. The mean efficiency scores are respectively: 82% as to the payment and expenditure efficiency, 72.6% as to implementation

management efficiency, and only 45.6% as to operations portfolio coherence efficiency. As to the number of 100% efficient ITPs, DEA results indicate that 5 ITPs are efficient as to payment and expenditure, 8 ITPs as to implementation management, and only 2 ITPs as to operations portfolio coherence. Furthermore, the lowest score is less than 5% for this efficiency dimension.

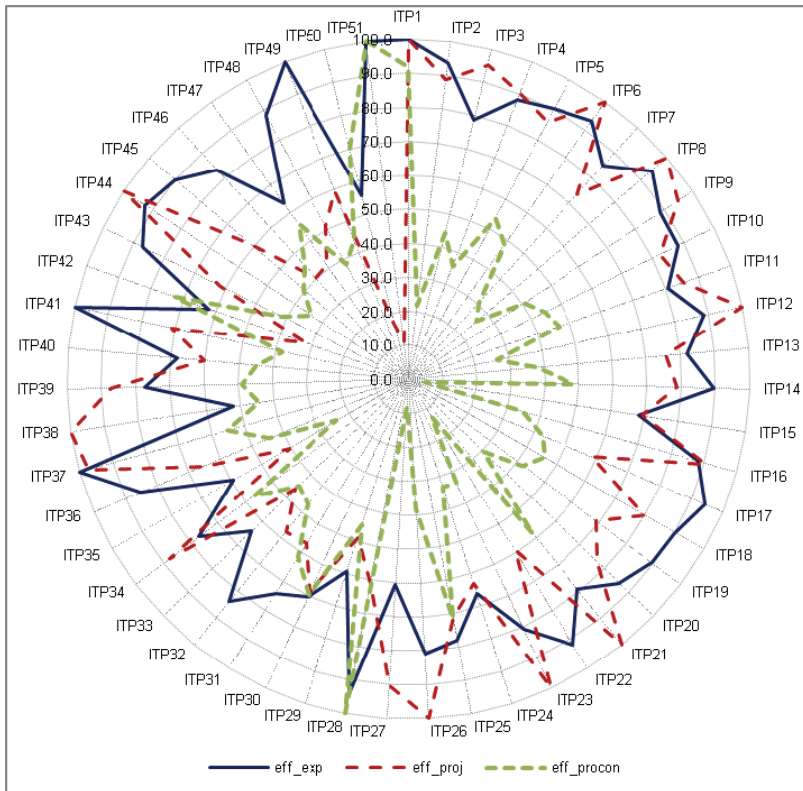


Figure 1 – Efficiency measures

Findings from cluster analysis and ANOVA also offer useful insights. Particularly, two groups of ITPs were clearly identified as means of efficiency variables differ with prob. < 1%. Table 4 reports ANOVA statistics relative to both groups. The first cluster includes 36 ITPs that on average score lower as to *eff_proj* and *eff_exp* measures, but are higher as to *eff_procon*. The contrary is for the second cluster that contains only 15 ITPs. The first cluster also includes ITPs that on average had a lower amount of financed operations and completed operations (% completed operations is 24%). Finally, ITPs in cluster 1 were also less relevant in terms of initial planned economical value (€10,280,887, i.e. the total estimated cost of the collection of operations), and costs of operations completed on average (€ 3,620,912).

Table 4 – ANOVA between clusters

	mean		prob.
	cluster 1	cluster 2	
efficiency relative to financial payments and expenditure	74	85	0.002
efficiency relative to the overall ITP implementation management	47	83	0.000
efficiency relative to operations portfolio coherence	59	40	0.001
number of financed operations	2.8	12.1	0.002
average planned operation size	2,168,414	1,488,166	0.101
decentralised management (municipal level)	23	9	
centralised management (regional level)	13	6	
payments relative to operations not completed	2,244,375	12,859,611	0.008
payments relative to aids to firms	3,182,678	4,255,669	0.487
payments relative to operations not physically/financially completed	6,576,226	9,755,329	0.440
costs of operations completed	3,620,912	16,039,393	0.014
(public) costs of aids to firms	10,035,096	11,041,888	0.727
costs of operations not physically or financially completed	13,663,958	16,628,654	0.687
payments relative to completed operations	4,367,715	19,716,207	0.002
payments relative to operations not completed	9,942,649	11,988,845	0.525
% of completed operations	24%	54%	0.000
ITP economical value (as to initial planning)	10,280,887	23,955,199	0.047
total costs of aids to firms	19,997,965	24,118,892	0.509
time elapsed from initial planning to policy financial closure	65	71	0.013
economical value of confirmed operations as to initial planning	8,889,156	18,473,427	0.055
% of driving operations confirmed as to initial planning	0.72	0.73	0.919

Apparently, these data point out a paradox in the implementation of the ITPs policy measure as it emerges that ITPs in which the operations included in the preliminary plan have been removed and substituted by other operations (ready to be implemented) are more efficient in terms of expenditure advancement and goal achievement as to operations realized (and working). The expenditure capacity was supported by a widespread use of pre-funded projects and a predilection for smaller sized projects that were relatively easier to plan and implement, or to substitute with more viable projects when necessary. Frequently, the need to meet the N+2 rule of the operational program determined a reduction of commitment to pursue the driving idea of the ITP and, vice versa, a greater effort aimed at speeding up the expenditure amount. The consequence has been a considerable lack of internal coherence of the operations collection that made the ITP. Further, the inclusion of pre-funded projects that replaced some of the planned operations generally provided a distorted measure of efficiency.

Conclusion

This study has showed that there have been important inefficiencies in the implementation of the ITP local development policy in the Campania Region. The DEA measurement framework reveals that there has been a general lack of strategic coherence that in many cases has seriously compromised the effectiveness of the policy instrument itself. Furthermore, the number of ITPs that achieved high efficiency scores remains small.

This paper has a major limitation in the output and input used to evaluate efficiency. As literature on efficiency and productivity analysis points out, the results of efficiency measurements crucially depend on the availability of adequate, accurate and timely data. The lack of consistent monitoring data available in public databanks, the low quality and scarcity of financial and management data should arise the problem of data relevance to assess public policy performance and the need to collect and make them available for ex-ante and ex-post performance analysis. The analysis of final results has to take into account this methodology shortcoming.

References

- AA.VV. (2003) *Progetti e immagini del territorio – L'esperienza dei PIT nelle Regioni del Mezzogiorno*, Dipartimento della Funzione Pubblica – Presidenza del Consiglio dei Ministri – Formez, Ed. Donzelli.
- Arbie P. and Hubert L. (1994) "Cluster analysis in marketing research", in *Advanced Methods of Marketing Research*, ed.: R.P. Bagozzi, Basil Blackwell.
- Banker R.D., Charnes A. and Cooper W.W. (1984) "Some models for estimating technical and scale inefficiencies in data envelopment analysis", *Management Science*, vol. 30, pp. 1078-92.
- Bianchi T. and Casavola P. (2009) Integrated Territorial Projects in the CSF 2000-2006 - Objective 1 Theories, evidence and views on local development policy, Issue17, *Analisi e Studi* series, *Collana Materiali Uval*, the Department for Development and Cohesion Policies or the Ministry for the Economy and Finance, also available in <http://www.dps.mef.gov.it/materialiuval>.
- Charnes A., Cooper W. and Rhodes E. (1978) Measuring the efficiency of decision-making units, *European Journal Operations Research*, vol. 3, pp. 429-444.
- Coelli T.J., Rao D.S.P. and Battese G.E. (1998) *An Introduction to Efficiency and Productivity Analysis*, Kluwer, Boston.
- Cooper W.W., Seiford L.M. and Tore K. (2006) *Introduction to Data Envelopment Analysis and its Uses*, Springer.
- Fare R., Grosskopf S. and C.A.K. Lovell (1985) *The Measurement of Efficiency of Production*, Kluwer-Nijhoff, Boston.
- Mantino F. (2002) *Fondi strutturali e politiche di sviluppo. La programmazione e la gestione degli interventi 2000-2006 nell'Unione Europea*, Milano, Il Sole 24 Ore
- Moccia F.D. and Sepe M. (2003) *I Progetti Integrati Territoriali. Esperienze avanzate in Italia*, Napoli, Edizioni Graffiti.
- NVVIP (2011) *Valutazione ex post dei progetti integrati del POR 2000-06*, Report, May, Regione Campania.
- Pitaluga P. (2003) *Nuove forme di governo del territorio*, Milano, Franco Angeli.

Appendix

Table A.1 – List of ITPs implemented in the Campania Region

ITP1	Protofilieri provinciali	ITP27	Sant'Agata dei Goti - Casapulla
ITP2	Benevento	ITP28	Isole del Golfo
ITP3	Avellino	ITP29	Antica Volceji
ITP4	Pietrelcina	ITP30	Grumo Nevano - Aversa
ITP5	Agro Monti Picentini	ITP31	San Marco dei Cavoti
ITP6	Caserta	ITP32	Area Giuglianese
ITP7	Salerno	ITP33	San Giuseppe Vesuviano
ITP8	Pompei - Ercolano	ITP34	Valle dell'Antico Clanis
ITP9	Filiera Turistica Enogastronomica	ITP35	Napoli
ITP10	Borgo Termino Cervialto	ITP36	Valle dell'Ofanto
ITP11	Piana del Sele	ITP37	Regio Tratturo della provincia di Benevento
ITP12	Portualità turistica	ITP38	Polo Orafo campano
ITP13	Valle dell'Irno	ITP39	Direttrice Monti Trebulani Matese
ITP14	Penisola Amalfitana e Sorrentina	ITP40	Solofra
ITP15	Area Nolana - Clanio	ITP41	Reggia di Caserta
ITP16	Napoli	ITP42	Appia- Pianura interna
ITP17	Antica Capua	ITP43	Parco Regionale del Matese
ITP18	Regio Tratturo della provincia di Avellino	ITP44	Parco Nazionale del Cilento e del Vallo di Diano
ITP19	Paestum - Velia	ITP45	Parco Nazionale del Vesuvio
ITP20	Certosa di Padula	ITP46	Parco Regionale del Partenio
ITP21	Calitri	ITP47	Parco Regionale Roccamonfina
ITP22	Città del Fare	ITP48	Parco Regionale del Taburno Camposauro
ITP23	Nocera Inferiore - Gragnano	ITP49	Parco Regionale dei Monti Picentini
ITP24	Litorale Domitio	ITP50	Parco Regionale del fiume Sarno
ITP25	Filiera Termale	ITP51	Ravello città della musica
ITP26	Campi Flegrei		

For contacts:

Prof. Corrado lo Storto
 School of Engineering, University of Naples Federico II
 Piazzale V. Tecchio n. 80, 80125 Naples – Italy
 email: corrado.lostorto@unina.it