

Quality of Life and Efficiency in Italian Municipalities

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The focus of our research is to assess the relationship between local government performance and urban quality of life (QoL), following the recent literature (Morais & Camanho, *Omega*, 2011). QoL is a multifaceted concept that is difficult to measure as it includes various aspects of well-being related to economic, environmental, and social dimensions of life. The perception of public service quality depends partially on inputs employed. Likewise, the concept of local government efficiency is not so easy to define, because potential inefficiencies in public service provision may create political and social frictions and the definition of government output may be controversial. We take into account these problems by explicitly considering not only traditional “desirable” outputs, like education, welfare, environment, urban transportation, local police and other relevant public services, but also “undesirable” outputs such as number of pollutants and number of accidents.

The objective of our research is to analyze urban QoL using parametric and nonparametric procedures to evaluate the impact of both desirable and undesirable outputs and non-discretionary variables on the efficiency achieved by municipalities. We also include in the QoL measurement relevant variables such as budget constraints, social-economic conditions and political contexts. The empirical analysis uses a large dataset on municipality characteristics (main sources are the Association of Italian City Councils, ANCI, National Institute for Statistics, ISTAT and Legambiente, Italian environmental association) with detailed information on budgets, grants, taxation, structural variables related to QoL and social and environmental aspects. This procedure allows us to build a model of intervention to identify “best urban practices”.

We employ data from 1997 to 2008 covering a wide span of time before the economic crisis, using as output indicators the Legambiente Survey and other environmental variables. As an input indicator we use the total cost of public services which also includes payments for capital and third parties services (Balaguer-Coll et al., *European Economic Review*, 2007). We proxy other inputs affecting administrators’ behavior with

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geographical, structural, fiscal, economic and institutional variables. In order to take into account political effects on QoL, we consider also government stability, coalition fragmentation, gender, age, ideology of the mayor, and “political affinity” between local and national government.

Econometric estimation is based on a two-stage DEA approach. In the first stage we model overall cost efficiency measures by taking into account both desirable and undesirable outputs; for the latter we use “Data Transformation Function Approach” (Scheel, *European Journal of Operational Research*, 2001). Empirical results allow ranking Italian municipalities depending on QoL level and cost efficiency.

In the second stage we use efficiency scores as descriptive measures of cities’ relative performance. Given that the DEA cost efficiency score is a variable with left-truncated distribution at the value of 1, we tackle this problem using a bootstrap truncated regression model (Simar & Wilson, *Journal of Econometrics*, 2007).

Results show that the most efficient municipalities achieve the highest level of QoL. At the top of the ranking are municipalities located in the northeast of Italy. At the bottom are municipalities located in southern Italy and in the major islands, which are unfortunately well-known for inefficient public administration, corruption, organized crime. A comparison of the top and bottom eight municipalities in our ranking and in the Legambiente Index shows a substantial accordance.

We find that “human pressure variables” such as electricity and water consumption increase municipality inefficiency. Congestion yields a negative correlation between inputs and output variations. Moreover, we find that the “unauthorized building” variable affects negatively QoL and cost efficiency with an effect which induces a municipality ranking downward change on the order of about 19 %. Fiscal autonomy reduces inefficiency; we estimate a marginal effect of 0.6 implying that an increase in local tax revenues by 1 % reduces cost inefficiency by 0.6 %.

Moreover, we find that the total tax revenue parameter is highly significant but its magnitude is very low. Municipality efficiency is negatively affected by geographical location. Indeed altitude has a negative marginal effect inducing a municipality ranking downward change on the order of about 4.4 %.

By considering political variables, we note that second term elected mayor has a negative influence on efficiency, although coefficients are not significant. We find that awareness of voters about monitoring public expenditures might put local administrators under pressure, so as to spur more efficient management by introducing some decentralization in services provision.

In conclusion, our results suggest that political and socioeconomic context may influence city governance and consequently urban QoL. This result is surely crucial but it is also worthy of further analysis given the complex relationship between political aspects and QoL and their potential endogeneity (Bigerna & Polinori, *Economics and Policy of Energy and the Environment*, 2013). Future research could include other exogenous determinants such as social capital measures in QoL analysis.

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