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Liliana LUCACIU

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Universities' Contribution to more Effective Public Policies

Liliana LUCACIU¹

Abstract

Focusing on understanding the specific gap in the availability and accessibility of the learning opportunities for public managers, the paper is based on the author experience in policy and programme design, implementation and evaluation in EU member states and EU neighbourhood countries. The importance of the theme is explained by the recognised constraints experienced in the policies and programmes' analysis and evaluation. These phases appear to be deeply influenced by the availability of data, capacity to produce the necessary data, competences of the public managers and specialists to make the best use of data to formulate conclusions, identify alternative solutions and select the most appropriate ones. Based on a large literature review, the author outlines a clear map of the key actors in policy and programme design and evaluation, their role and the optimal competencies. Further on the author created an inventory of the typical gaps in ensuring the best use of data for effective policies and programmes, as well as solutions and measures implemented in different countries. The role of the universities and interactions with other actors for filling the gaps identified is assessed, leading to conclusions regarding the most effective future actions. The paper highlights the key role of the universities to develop specific competencies through education and training programmes, as well to contribute through research to new methodologies and tools for analysis and evaluation.

Keywords: *public policies; programmes; statistical analysis; evaluation; education.*

¹ PhD candidate, Bucharest University of Economic Studies, Romania,
lilianalucaciul@gmail.com

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Corresponding Author: Liliana LUCACIU

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1. Introduction

There is an increasing belief that strong evidence of the policies' impact can help to improve the effectiveness of the public policies and public funds use. We see this belief explicitly present in policies and programmes regulations and methodologies, in an increased number of impact evaluations and a higher interest in methodologies' development, reflected in papers and debates in the international arena.

The evidence-based policy making is mentioned in the definition of the "strategic policy framework" in the Common Provisions Regulations CPR) [4] for the European Structural and Investments Funds (ESIF) 2014-2020:

"a strategic policy framework' means a document or a set of documents established at the national or regional level, which sets out a limited number of coherent priorities established on the basis of evidence."

Moreover, evaluation is mandatory for the EU funded operational programmes (OP). Evaluation activities have to be performed for OP or group of OPs: ex-ante, ongoing and ex-post evaluations. The regulatory requirements are accompanied by methodologies, guidelines of the European Commission such as the Guidance on Monitoring and Evaluation, Concepts and Recommendations [4].

Public policies management involves more and more research, use of data and statistics. "Many decisions that public and non-profit managers make involve data and analysis, one way or another" [1].

The description and analysis of the problems and the evaluation appears to be key stages in the policies cycle requiring an effective combination of quantitative and qualitative methods and skills. The demand for clear and robust answers are expected from public managers and analysts in an evolving environment, posing the education and training actors the question how they can respond to these challenges.

The present research looks at the knowledge and skills demand for effective policies using quantitative methods and the supply from the part of the education and training providers. Due to the very extensive area covered by this theme, the author focused only on specific aspects of policy analysis and evaluation in regional development and the EU Cohesion Policy implementation in Romania and non-EU countries.

2. Problem Statement

The theme is extensively treated in the literature, including researches setting the conceptual framework and linking the processes to specific competences [1], documentation setting requirements for the professionals in public policies challenges [2] and [4], studies and evaluations on the situation in the field, e.g. Romania, and Republic of Moldova [3] and [6].

The literature reveals the continuously evolving needs of public managers and specialists, to develop their capacities in order to make the best use of quantitative and qualitative methods in policy analysis and evaluation. A key challenge for public managers is the mix of competencies required to fulfil their role, including the competencies related to public policies management and the use of data. Data mining and knowledge discovery in databases are essential to support the management processes and achieve the results.

Zellner [7] discusses the need and the way the good understanding of data mining should relate to the scientific methods in statistics and economics. Data mining could contribute to the creation of new models that “work well in explanation, prediction and policy-making”.

At the same time, a rich offer of learning programmes is available from the education and the training providers. One study, [6], presents an analysis of the available programmes in a specific area, regional statistics while another study [1], looks at the policies’ evaluation and the existing supply of expertise and learning opportunities.

The present research is focused on understanding a specific gap found in the literature regarding the availability and accessibility of the learning opportunities for public managers in the specific context of EU Cohesion Policy and regional development.

The research problem is to understand how the education and training providers could continuously support policy makers to develop and integrate their data mining competences into the policy-making processes.

3. Research Questions/Aims of the research

The aim of the research is to inform public managers and education and training actors how they could best cooperate to ensure the learning opportunities respond to the key competences required for the most effective use of quantitative methods in public policies management,

specifically in EU Cohesion Policy or regional development in not EU countries.

The hypothesis of the research is that there is a permanent gap between the competencies required for the effective use of the quantitative methods and data mining methods in the public policies management and the offer of the education and training providers.

The author aims at answering the following questions:

What are the key dimensions of the gap between the needs of the public managers regarding the quantitative methods, data mining competences and the provision of learning by the universities and other education and training providers?

How could be the gap addressed in the most effective way?

4. Research Methods

The research is based on the literature review, selected from a wide database as most relevant for the area of the research. The gap analysis was designed and elaborated based on a “roles - competencies model” proposed by one author [1] and the own author work in one study [6] focused on regional development policies and regional statistics in a not EU country. The methodology in the respective study included the analysis of the availability and accessibility of relevant regional statistics data as well as a review of the universities and other training providers’ curricula relevant for the theme.

The author approach was based on three key interrelated concepts: (1) public managers’ (or specialists) roles in policy making, (2) competences, focused on the use of data and quantitative methods, (3) learning actions (such as education and training programmes related to the data analysis and mining.

The roles were assessed from the point of view data use in various phases of the policy cycle: e.g. policy analysis, policy formulation, policy implementation, policy evaluation.

5. Findings

The literature review led to the general finding of the author that public management competencies are not anymore sufficient to produce the expected change and they have to be complemented with data analysis competences. However, data analysis has to prove its contribution to the effectiveness of the public policies implemented.

Considering the aim of the public policies to produce a change in order to resolve a problem or problems, public management has to make a difference and “not to sit behind a desk and crunch numbers” [1]. Further, on the authors of this publication identify six competencies for the effective use of data in public policies management:

- Be familiar with data sources
- Ability to gather own data for the specific scope
- Data analysis
- Communicating results
- Integrate the analysis with the theory and practice of management
- Sound and a strong sense of ethics.

The six competencies indicate that in fact we need more than data analysis skills and therefore the author will use in this paper also the concept data mining, that better encompasses the multiple tasks related to the use of data.

According to Friedman cited by one author [5], data mining and statistics have similarities and differences. Statistics is only about quantifying data and provides the tools necessary for data mining. The additional feature of data mining is that it helps to understand relationship and patterns with great advantages in the specific case of large databases.

In practice, we do not always find both data mining and public policies competences, possessed by the public managers. Therefore data analysts are many times integrated into the programme management teams. More and more data are available and publicly accessible due to the ICT, the policy makers publish the studies and the evaluation reports and make available data for further research. For example, in Romania, the Ministry of European Funds responsible for the coordination and management of the European Structural and Investment Funds makes available microdata for all the programmes funded in the 2007-2013 and the current programming period (accessible at <http://www.fonduri-ue.ro/transparenta/date-deschise>). But also the European Commission makes available the data by themes (accessible at <https://cohesiondata.ec.europa.eu/themes>). This implies more responsibility to programme managers and specialists to produce relevant data, store and make them available and accessible. In table 1 the author has selected some key tasks in the policy cycle, where data mining is required.

Table 1. Specific tasks involving data mining in the policy cycle

Policy / Programme cycle phase	Specific tasks involving data mining competencies	Actors involved/ responsible
Identification and formulation	Analysis of problems, challenges Description of the intervention, objectives and actions formulation, targets setting	Policy makers, programme managers Data specialists, sectoral specialists
Implementation	Monitoring tasks including creation of databases, Communication of results	Programme managers and monitors Data specialists
Evaluation	Evaluation studies Impact assessments	Programme managers Evaluation specialists Data specialists

Source: author's concept

In all three phases, the author sees the data specialists as members of the teams manipulating data, but also responsible for a creative work producing new methods and tools to make data meaningful for the scope of the policy. External specialists may contribute as well, such as academics or practitioners in the field, able to bring a wide experience, creativity and potential of innovation.

Regional statistics raise a particular interest in the context of regional development and cohesion policies, while development at territorial level imposes clarity about the needs, clarity about the differences at territorial level and phenomena, as well as about how the previous interventions worked, contributed or not a to the expected change. Disaggregated data are essential for robust analysis. The capacity of the programme management to cooperate with official statistics producers to adapt their offer to the needs

as well as to design and manage the territorial databases with microdata during implementation appears crucial. All these aim to ensure the availability and accessibility to the required data for the specific works and supporting research.

One research [6] offers a competency framework for the public managers involved regional development policies and programmes structuring the competencies as presented below:

Area of competence I, Data Fluency: Statistical organization, Data Awareness/ Knowledge of data sources, Statistical concepts and measures, ability to analyse interpret and evaluate statistical information, Geography and statistics, Communicating statistical information and understandings, IT tools for regional statistics.

Area of competencies II, Advanced competences, Statistical analysis (descriptive and inferential) for policy analysis monitoring and evaluation: Foundation skills for descriptive and inferential statistical analysis in the regional development context, Regional Policy Strategic Planning – social and economic analysis for planning purpose, Creating a Region's profile, Monitoring and evaluation of regional development policies, by using the indicators' system, Improving the statistical basis.

The findings presented above reveal not only a high demand for competences in data mining applicable the EU cohesion policy and regional development but also significant changes of the demand, that appears more and more sophisticated, due to the evolution of the technology used for data management. One author [7] refers to this feature saying that KISS formula (keep it simple stupid) should be reformulated as (keep it sophisticatedly simple). The need for new competencies and capacity to create new models and innovate requires effective learning and adequate learning opportunities. Thus, we can transpose the discussion into a demand-supply problem for competencies and learning, leading to the question, to what extent the education and training providers respond to the competencies learning needs and demand in this area. When analysing the statistical competences, it was noticed that non-economics students have an anxiety towards statistics [8] that need to be taken into account when designing the curricula.

The competencies supply is also found as a dimension of the evaluation culture [3], formulated as “availability and quality of evaluation expertise” as shown in Table 1, the evaluation being one policy phase with significant demand for data mining. The universities are seen as the main providers of expertise directly or indirectly through the learning programmes.

One research undertaken in the Republic of Moldova in the context of the use of the regional statistics [6] provides not only the assessment of

the situation in the country and the gap but also provides a concise view of the education offered in other EU countries. Thus in Romania, the universities offer courses in Regional statistics and Spatial Econometrics, while in other EU member states the universities frequently offer Spatial statistics courses, but also spatial econometrics. In Germany and Spain, data mining courses are offered while in Holland, and Spain universities have research centers dedicated to the regional economy, involving intensively in applied spatial statistics.

According to the evaluation culture assessment in Romania [3], the availability and quality of the evaluation expertise have to be increased. The involvement of the universities in the evaluations is limited, the number of private consultants is low, and there are no specialised research centres, e.g. in regional development. The networking of the universities, research centers and practitioners was also assessed as weak and needs to be reinforced.

A large number of universities provide a rich offer of Massive Open Online courses in statistics, spatial statistics and econometrics and data mining. However these courses require the individual initiative and learning self-management, because they are not, or to a small extent integrated into the training processes of the public institutions. The research [6] concludes that in the Republic of Moldova there are larger gaps in supplying the needs of competences and learning opportunities in regional statistics, but there is a good awareness about the needs and there are good premises for reducing the gap.

The measures addressing the gap proposed in the research [6] may be extended to other countries as well and include: involvement of the national institutes of statistics in ensuring data availability and accessibility as well as learning opportunities, continuous adaptation of the curricula to the evolving needs on the market, creation of short duration courses on specific regional statistics topics, creation of research working groups.

6. Discussions

The findings and the conclusions of the research are valid for the Cohesion policy environment in Romania and regional development in the Republic of Moldova.

The analysis should be extended to other phases of the knowledge discovery process, e.g. “data availability, accessibility and integration”, “data storing”, “data task-related selection”, or deepened for specific more specific competencies required in data mining, pattern evaluation.

7. Conclusions

The complexity of the policies, evolution of the information and communication technology, the increasing volume of data available and accessible required more sophisticated methods and competencies to public managers, programme managers and other specialists to satisfy the evolving expectations.

The demand of expertise appears as a key dimension for the programme performance in general and in particular for specific tasks involving intensive data analysis, such as the policy analysis, identification and formulation of objectives and actions, monitoring and evaluation, particularly impact evaluation. Regional statistics is a particular area of expertise because the spatial data have unique properties and features not covered by the classical statistics tools, therefore requiring dedicated attention and effort.

The evolving needs, increase complexity and sophistication of policies and programmes creates gaps against the supply of expertise and learning opportunities in the data analysis and mining integrated into the policy-making processes.

The key dimension subject of a gap between the demand and the supply of data use related expertise include the following: data availability and accessibility at territorial level, limited involvement universities and other consultancies in the evaluation exercises, adaptation of the education and training programmes to the new competencies required, insufficient networking between universities, researchers and practitioners to increase the quality of the policy analysis and evaluation, and make the best use of data.

The universities are recognised as key actors, more exactly: direct providers of expertise, either through their specialists or their own research centers, indirect providers of expertise (through the provision of learning and knowledge), key networks' members (bringing together academia, researchers, practitioners from the public and private sector). The universities have to prove sufficient flexibility to adapt quickly to the demand for expertise.

The provision of learning opportunities has to be complemented through adapted HR policies in the public institutions responsible for policy making, enabling more efficient approaches based on self-management of individual learning, adopting the relatively new forms of learning such as MOOCs, offering an extremely rich learning environment.

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