

# Monitoring and Evaluation of anti-disturbance Policy in Public Procurement: works, services and supply contracts in Piedmont Region

Rachele Grosso\*, Francesco Prizzon\*\*,  
Manuela Rebaudengo\*\*\*

*key words:* policy impact assessment,  
code of contracts reform, abnormally low bids,  
anti-disturbance policy

## Abstract

According to a recent study (CRESME, 2016), Public Procurement market registered a significant standoff following the New Code of Contracts enactment (D.Lgs. 50/2016), that can be observed in terms of number of calls for tender's reduction and average bid drop increase. At the same time, slight changes in trend, achieved in 2017 and pointed out by the same study, can lead to another interpretation of the market's standoff: a transitional phase, due to the understandable necessity of time, for Public Administrations and businesses, to implement the new procedures, instead of a proof of the regulation's incapacity to positively respond to the Country's needs. The impact evaluation of the New Code of Contracts is a complex, but crucial, issue, essential to ensure effectiveness to the intervention and launch new participatory processes.

Among the different evaluation tools available to the legislator, supposed to quality-orientate policy cycles,

the one belonging to the ex-post phase is the Monitoring&Evaluation process, that applies, in Italy, according to a 2-years plan for laws' evaluation and review.

On that basis, the purpose of the present study is to analyse the Code's short-term impacts, almost two years after its enactment. The indicator that will be used as a 'flag' for this investigation is the study of Anomalous Bids, those that are 'abnormally' low in relation to the extent of the services required by the call for tenders, up to give rise to the suspicion that the bid is not serious and that the contractual service may not be performed correctly by the business, due to the fact that they do not ensure an adequate profit for the economic operator (ANAC).

In procedural terms, in fact, the anti-disturbance policy introduced by the New Code strongly differs from the corresponding regulatory framework at the European level, stipulating that the rule for anomaly threshold

determination is no longer identified a priori in the call for tender, but set in a totally random way (by drawing between the methods specified for by art. 97, c. 2 and 8), right after the opening of the bids.

We provide (i) a review on the application, by the

responsible institutions, of the evaluation tools at their disposal, (ii) an assessment framework of the new anti-disturbance policy, with empirical evidence at regional scale, (iii) a replicable working tool for policy monitoring&evaluation.

## 1. INTRODUCTION

To ensure the effectiveness of a regulatory activity, it is vital to know how the proposed regulation will be correctly enforced and to understand the capacity of affected parties to comply with it (Organisation for Economic Co-operation and Development, 2007). The evaluation is within the policy process, integrated at every step of it: from formulation (design, planning) to implementation and finally at the operational stage (collected data monitoring). At the final stage of the policy process, after the regulation is operable, a Regulatory Impact Assessment (RIA) *process should include an evaluation of whether regulations are operating in the manner that was expected* (Organisation for Economic Co-operation and Development, 2007). In order to achieve the best results, then, policymaking should systematically imply evaluation, within an integrated process, by using the most suitable tools – relating to the context – for positive or negative impacts' examination, as long as they are consistent, flexible, analytical and integrate both qualitative and quantitative analyses (Jacobs, 2004).

At an operational level the procedure that allows to ensure effectiveness to a policy should include an ex-ante evaluation, the Regulatory Impact Assessment (RIA), and an ex-post one, the Monitoring&Evaluation process (M&E) (European Commission), carried out in a continuous cycle of mutual influence: therefore, RIA development is preparatory to the application of M&E, and vice versa.

Our central contribution is to propose an integrated approach for the ex-post evaluation of medium term impacts of a state level policy, already implemented and actually operating in Public Procurement, with regard to one of the subjects under constant debate (Ministry of Infrastructure and Transport, 2018). An extensive literature survey was made in order to choose the most suitable approach for monitoring the progress achieved by implementing the new anti-disturbance policy in Public Procurement, and will be subsequently presented in a summarized form. This preliminary review lead to the construction of a Logic Model (Weiss, 1995; Fullan, 2001; Chen, 2005) for the entire Code of Contracts and the development of a Realist Evaluation (Pawson e Tilley, 1997) for the ex-post assessment of the anti-disturbance policy.

*Use of Program Logic Models began in the 1970s for*

*program design and evaluation: they are a visual approach to the implicit maps we all carry in our minds* (The Logic Model Guidebook, 2013); a method for presenting an idea and share understanding about programs and organizations. The present evaluation integrates Logic Model with the twofold aim of (i) producing knowledge about the general goals pursued by the policy and the relative adopted strategies, (ii) experimenting the fragmentation of a complex problem in partial single-topic analysis.

The basis of realist approach to evaluation is its particular focus on the interaction between recorded outcomes and context, which is interpreted from stakeholders' point of view, and on the concept of mechanism, that, in a particular context, generates certain outcomes. Mechanism is the process by which subjects interpret the underlying strategy of an intervention (Stame, 2016), through a Context-Mechanism-Outcome pattern (CMO), that allows to (i) emphasize the crucial role of context within a policy impact evaluation, (ii) set specific focus to which separately apply the methodology, without, at the same time, losing the alignment between the 'big picture' and its component parts. A preliminary activity of data collection and extensive documents review led to a simulation of the ex-ante stage of the policy evaluation, whose main findings will be later presented. Ultimately, in the analysis and results section, the comparison between expected and achieved outcomes is presented, with respect to the anti-disturbance policy provided by the New Code of Contracts.

## 2. CONTEXT AND LITERATURE REVIEW

### 2.1 Better Regulation framework

The European Union aims to ensure a common market, with standardized laws, that apply in all Member States: this is an ongoing intention, pursued through regulatory actions (i.e. laws, programs, policies) enacted by the single Member States' governments, that come from the transposition of common European Directives, issued to respond to specific needs, relating to the internal single market topic. In order to support this process, a Better Regulation Agenda was set: a systemic vision of policy making process, promoted since 1992 by European Commission, developed during the 2000s, intended to foster the formulation of high quality level legislation among Member States (Rosati, 2010). *Better regulation is not about regulating or deregulating. It is a way of*

working to ensure that political decisions are prepared in an open, transparent manner, informed by the best available evidence and backed by the comprehensive involvement of stakeholders (European Commission).

In this respect, and inspired by international Best Practices (Canada and the USA were the first ones to introduce the concept of quality in policymaking in the 80s), European Commission suggested the use of rigorous evaluative frameworks (in the form of guidelines) to support policymakers to keep control over adopted strategies and expected impacts. Circularity is a

main feature of the regulatory process, in which every step runs on previous step's feedbacks; this way effectiveness can be ensured to new regulations.

RIA and M&E were transposed by Italian law: they can be defined as tools that complement each other in achieving quality in policy making, step by step, from needs and priorities identification, to policy planning, implementation and following review, in a circular approach (D.P.C.M. 169/2017, art. 2, c. 1).

Italian law on RIA and M&E defines scope and exclusions, main contents for each stage, relevant agencies and procedures, but, as well as the European guidelines that it transposes, it does not give specific indications on how data should be processed, leaving considerable room for the evaluator on the type of analysis to be carried out. Consistently, the attempts of definition found in the literature have been multiple; for simplicity we propose the definitions given by the D.P.C.M. 169/2017. The objective of RIA (art. 3 and 4) is to offer, during the course of the regulatory investigation, through a transparent path of analysis, based on empirical evidence, information support on the appropriateness and content of the regulatory intervention. RIA is reserved for regulatory initiatives with a significant impact on citizens, businesses and public administrations. In carrying out RIA, Administrations identify and compare alternative regulatory options, including non-intervention, assessing their feasibility and expected effects.

The objective of M&E (art. 5 and 6 of the above mentioned D.P.C.M.) is to provide, through a transparent evaluation process, an information support, based on empirical evidence, on the continuing usefulness, effectiveness and efficiency of the regulations in force with a significant impact on citizens, businesses and public administrations, in order to confirm or correct the policies adopted, proposing integration, modification or abrogation measures.

In carrying out the M&E, the Administrations proceed, even in the absence of a previous RIA, to the comparison of the current social and economic situation with that existing at the time of the formulation of the rules, as well as to assess the registered impacts in relation to those expected.

Since the governmental nature of the New Code of Public Contracts of 2016, it falls within the cases of application of RIA and M&E, under the competence of the proposing central administrations, i.e. the Presidency of the Council of Ministers and the Ministry of Infrastructure and Transport. The relative Policy Cycle was then studied, in order to draw conclusions about the actual use of these instruments; the enactment was accompanied by a RIA, as was the issuance of the Corrective in 2017. This is despite the fact that the M&E from which the corrective action should have drawn its main preliminary basis has been defined by the Council of State as totally deficient, generic and inadequate (Council of State, 2017).

A public consultation on some specific topics of the Code

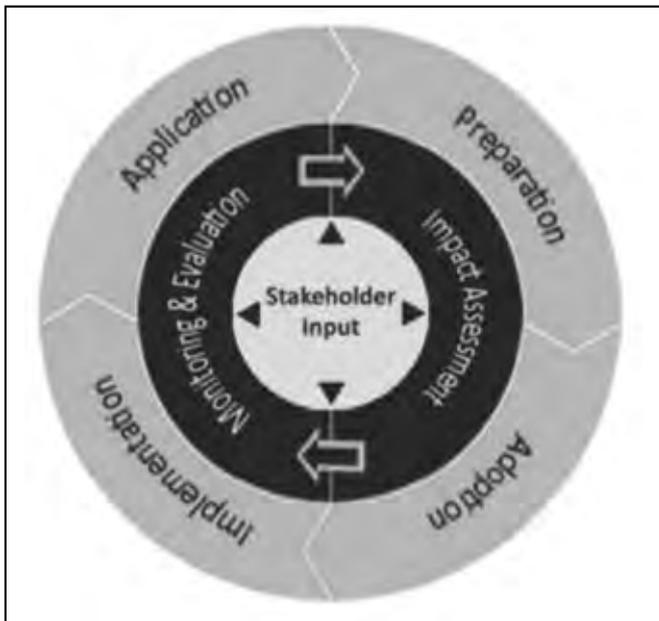


Figure 1 - EU Policy Cycle  
(Source: www.ec.europa.eu)

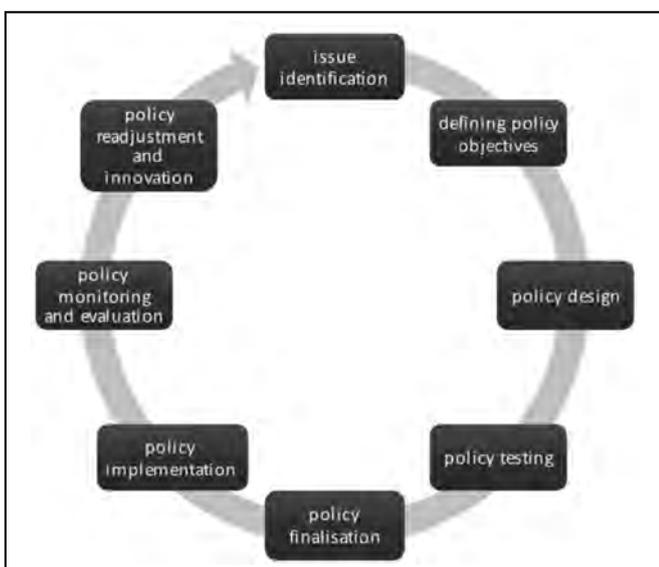
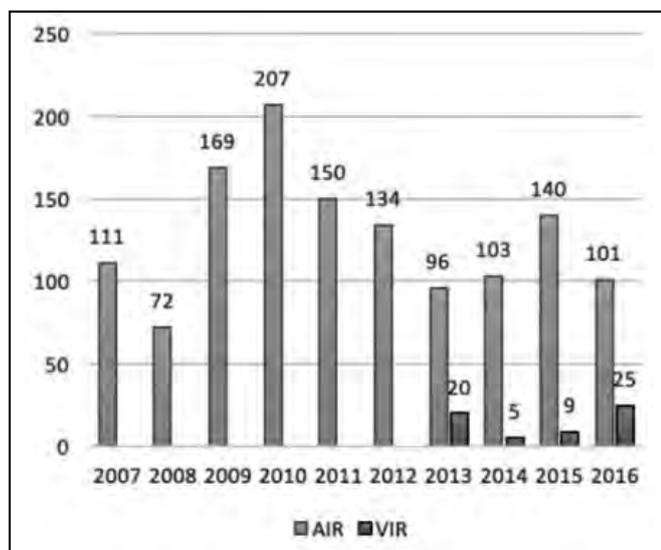


Figure 2 - Policy Cycle  
(Source: authors' elaboration from Tsoukiàs, 2013)

was then launched in 2018, but there is still no clarity on the current situation and future developments, given the conflicting views of stakeholders, and, at the same time, the limited information released by the Government about a new revision of the legislation.

It is therefore clear that the transition from theory to practice, at least in the case in point, is rather unsatisfactory, and this is in line with the statistical data on the use of these techniques in Italy, which is often seen as a mere bureaucratic fulfilment. It results in a lack of integration between RIA and M&E, at the various levels of government, and the incompleteness in evaluation cycle: only in very rare cases there is evidence of the approved acts having been monitored and evaluated ex-post (Senate of the Republic, 2018).



**Figure 3 - RIA and M&E reports by central administrations in Italy**  
(Source: authors' elaboration from the presentation to Parliament on the state of implementation of RIA, 2016)

## 2.2 Literature review

The main keywords that guided the survey of the indexed publications were Regulatory Impact Assessment, Monitoring&Evaluation, Policy Impact Assessment, Policy Cycle and Policy Quality. The first aspect that can be found through a comprehensive analysis of the results of this survey concerns the vastness and interdisciplinarity of the articles: in fact, applications have emerged for the ex-ante or ex-post evaluation of the implementation of a policy, having as subject (public) regulations concerning heterogeneous fields (energy, health, environment, biology, economy...), with wider and smaller areas of competence (policies at state, local and intermediate levels), and with approaches descending from very different disciplines (operational research, implementation science, economic sciences, political sciences, administrative law, social sciences).

The issue of regulatory impact assessment has been developed and adopted by US and Canadian legislation since the late 1970s; scientific production has evolved in parallel and accelerated since the 1990s (Turnpenny, 2009). From the accurate analysis of the state of the art, then, interesting points of view and applications on the subject emerged. For example, Ferretti, Pluchinotta & Tsoukiàs (2019) highlight how economists have shown interest in the matter, developing some of the most widely used Decision Making theories supporting the ex-ante and ex-post evaluation of public policies: Cost-Benefit Analysis, Real Options Analysis, Game Theory; Stem, Margoluis, Salafsky & Brown (2005) propose a review of trends and approaches to M&E applied in conservation ecology; Jacobs (2004) claims the opportunity offered by the systematic use of RIA by regulatory bodies, as a mean to relaunch the economy of states. A criticality arose too, related to the process of implementation of the policy evaluation tools in the various national regulatory frameworks: in this sense, the Best Practices at the international level are confirmed to be the United States (the first theoreticians of the method) and the United Kingdom, while some difficulties emerge in Italy (Council of State, 2017), due to the important implications *that innovations like RIA pose on administrative capacity and stakeholders' participation* (De Francesco et al., 2011). The obstacles in developing countries are even greater, linked to various issues such as *commitment, perception and quality of authorities, socialization, and the allocated budget*. (Kurniawan et al., 2018). An overview of the methods found out through literature review, that have proven to be most suitable to process data for policy impact assessment, is proposed in the table below.

The study of literature review has been useful to identify the most appropriate model of analysis, among those therein found, for the context of the policy under evaluation. The integration of the Logic Model with the approach of Realistic Evaluation has therefore allowed to develop the M&E with a methodology based on rigorous theoretical bases and also oriented to the management of empirical evidence.

This contribution focuses on a currently operating policy – the New Code of Public Contracts, transposition of the European Directives on public contracts (hereinafter the policy) – and therefore on the assessment of the impacts it generated on the relevant market. An analysis of the real data concerning public contracts for works above € 40,000, awarded in the Piedmont Region in the years under study will be proposed.

### 2.1 Content of the evaluation: the new anti-disturbance method in calls for tender

The New Code of Public Contracts represented an important regulatory change, both in formal terms and in terms of content: in order to summarise the main changes

introduced by Legislative Decree 50 and Legislative Decree 56, a distinction can be made between general, procedural and specific novelties, content related and formal, for the operators involved in the process (Prizzon & Rebaudengo, 2017). The main expected results of the policy include economic growth and employment, budgetary discipline, modernisation of public administration, the fight against corruption and collusion, market access for SMEs, increased confidence in public authorities and democracy, as well as innovation and sustainable growth at an environmental and social level (Directive 2014/24/EU). The heterogeneity of the field (all regional public contracts for works, services and supplies, with amounts up to 5.548.000 €), of the figures involved and directly concerned (public administrations, professional associations, production associations, companies), of the amounts in play (according to the Organisation for Economic Co-Operation And Development the public contracts sector accounted for 10.36% of GDP in 2015 in Italy) and of the socio-economic territorial contexts makes the evaluation of the impacts of the policy a complex process, in which stated

objectives and strategies adopted can present conflicts and interactions. The complexity of the problem requires the development of a model capable of: (i) being part of the regulatory and evaluation process in both the ex-ante and ex-post phases, to facilitate the exchange of feedbacks between them; (ii) allowing part analysis, while maintaining the link with the overall framework; (iii) reflecting the complexities of the policy, without making the mistake of excessive simplification; (iv) clarifying the logical relationships between the elements; (v) including empirical evidence and the link with the territorial context.

Following its creation, the model will be tested by carrying out a first analysis on one of the central themes emerging from the study of the policy, which, according to the authors, could fall within the strategic line of the Government linked to the fight against corruption and collusion: the new anti-disturbance method. In fact, *efficiency analysis of public contracts and development of corrupt risk indicators are closely related issues* (ANAC, 2018), and any contract award, after verification of the anomaly by the contracting authority on “mathematically”

**Table 1 - State of the art of the methods proven to be suitable for M&E of programs**

Method	Authors	Context
Logical frameworks	Ziviani <i>et al.</i> , 2011	Evaluation of the benefits of implementing social services for children with physical disabilities.
	Ruel-Bergeron <i>et al.</i> , 2019	Monitoring and evaluation of a humanitarian nutrition program in Malawi.
Logical frameworks and Realist Evaluation	Ebenso <i>et al.</i> , 2019	Realist evaluation of a community health worker program in Nigeria.
Return of Investment Evaluation	Hall & Millo, 2018	Use of ROI by government policy-makers as an accounting method to explain and rationalize non-profit policy actions.
Cost-Benefit Analysis	Hazilla & Kopp, 1990	Estimate the dynamic social cost of environmental quality regulations.
Real Options Analysis	Lee & Shih, 2010	Construction of an ex-ante policy evaluation model to quantitatively estimate the policy value provided by developing renewable energy.
Game Theory	Hermans <i>et al.</i> , 2014	Design a long-term monitoring and evaluation framework in the multi-actor system of coastal defense in Holland.
Multicriteria analysis	Norese <i>et al.</i> , 2016	Comparison of 21 municipalities to choose the best allocation of resources for safeguarding resilience.
	Spyridaki <i>et al.</i> , 2016	Determination of the most performing energy policy among 10 alternatives
Panel Data Analysis	Marques & Fuinhas, 2012	Evaluation of the effectiveness of policies for renewable energy promotion in 23 European countries.
	Liu <i>et al.</i> , 2018	Evaluation of the effectiveness of policies for renewable energy promotion in 29 European and Asian countries.

anomalous bids, to one of these, could certainly fall within the mentioned indicators.

The problems related to corruption in public contracts that the Code was supposed to solve are essentially: the extension of the time taken to award contracts, the complexity of the regulations, the decrease in the number of tenders and in the average value, the large number of contracts awarded with a single bidder, the high spread of the corrupt phenomenon and the unexpected costs, mostly due to project variations in progress (Regulatory Impact Analysis - Code of Public Procurement and Concession Contracts, 2016). Among the strategies adopted to reduce these criticalities, we will analyse here the anti-disturbance method and its short-term impacts.

The influence that regulation on abnormal bids can have on the development and award of a tender, and consequently on the performance of the entire market of public contracts, is high, as well as the interest found in this topic from the investigation of literature: the existing studies have examined various and interesting facets of this theme, such as the distribution of bids and the predictability of the threshold (Ballesteros-Pérez *et al.*, 2013; Ballesteros-Pérez & Skitmore, 2016; Ballesteros-Pérez, Skitmore, Pellicer & Zhang, 2016), as well as the possibility of developing red flags for measuring corruptive risk (Fazekas, Tóth & King, 2016); impact studies have also emerged (Gunduz & Karacan, 2008; Gunduz & Karacan, 2017), which however were conducted through interviews with stakeholders, while, to the knowledge of the authors, there are no previous attempts by the scientific community to assess the impact in terms of regulation.

Literature review on the anomaly of the supply at European level shows that *there are several existing systems in use by many countries that are intended to detect abnormally low bids* (Ballesteros-Pérez, Skitmore, Pellicer & González-Cruz, 2015). The most recurring method is essentially *an arithmetic system that measures the deviation of a particular bid from the average of all bids submitted*, applying different percentages of deviation or different averages depending on the Country (for example Belgium, France, Italy, Portugal, Spain and Greece have always used deviation ranges between 10% and 15%) (Ballesteros-Pérez, Skitmore, Pellicer & González-Cruz, 2015). Before 2016, therefore, the various systems used by the Member States were different, but conceptually similar, while the anti-disturbance approach introduced by the New Code has strongly differentiated the Italian regulatory framework from those of other European countries, at least with regard to this issue. This was because it had been found that, having known in advance the rule for determining the threshold of anomaly, it was possible for the tendering companies to drive the tender, by submitting offers with calculated and agreed discounts (Massari, 2017). It is precisely to counteract this phenomenon of cartels' formation, and respond to the problem of disturbance, that the new method has introduced, in cases of awarding at the lowest price, a draw for the method for calculating the

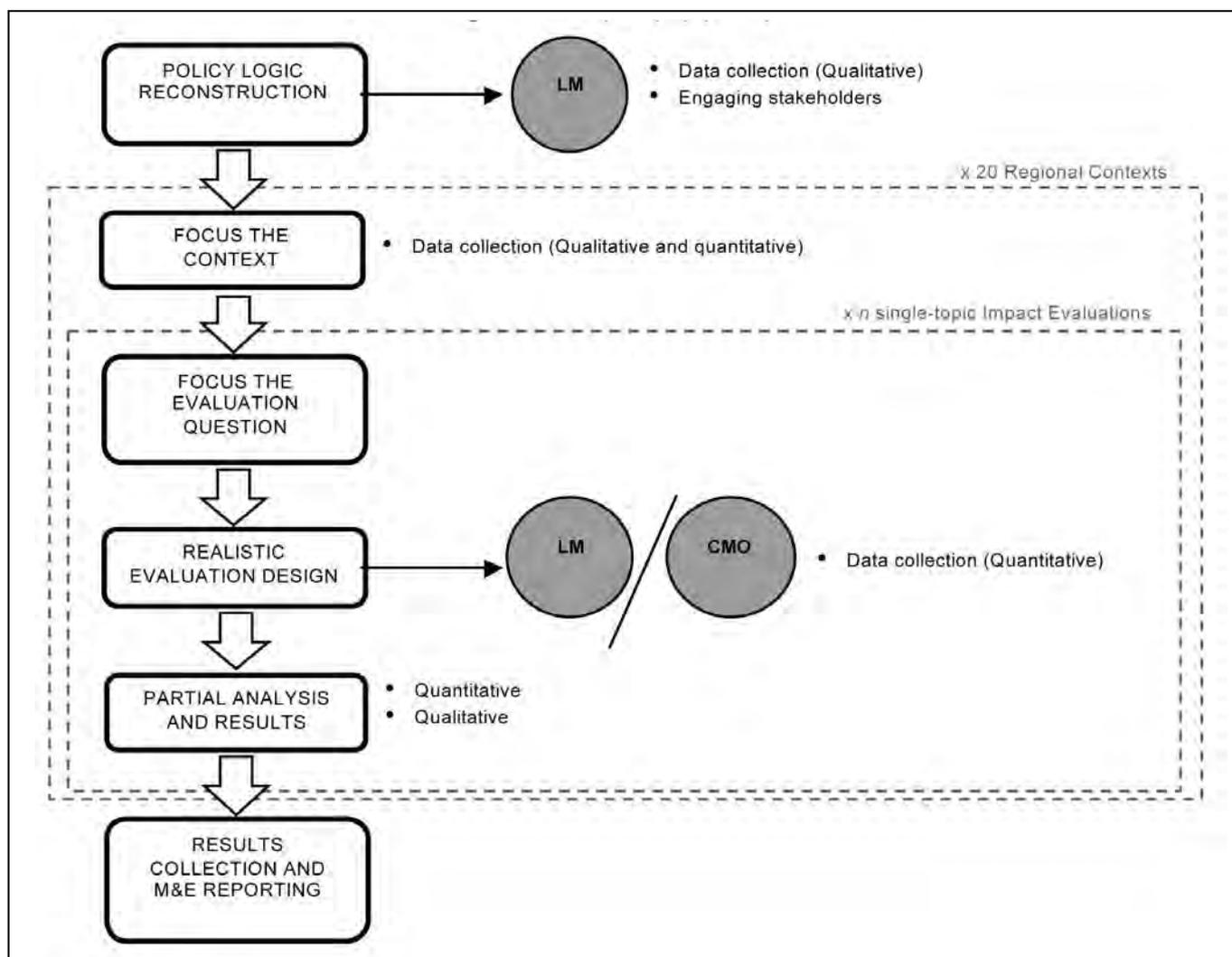
threshold of anomaly among eight possible ones, which can only take place after bids have been delivered. In addition, the anti-disturbance method provides, for contracts of less than 2 million euros awarded at the lowest price, the option of automatic exclusion of bids with discount percentages equal to or greater than the threshold of anomaly (art. 97, c. 8, Legislative Decree 50/2016), which should not only help to prevent corruption, but also to speed up procedures and thus unblock the market of public works.

### 3. METHOD

The methodology developed for this study is based, in addition to the analysis of the state of the art, on the contents of Guidelines for the evaluation of policies drawn up by the Dutch Ministry of Foreign Affairs (Policy and Operations Evaluation Department, 2009), one of the best practices at European level, and it can be summarized in the following steps.

*Step 1: Policy logic reconstruction.* The reconstruction of the New Code's logic is carried out from the perspective in which the evaluator aims to verify whether the cause-effect relations identified by the legislator are valid for obtaining the desired impacts and assess the extent to which the policy has reached its expected medium term impacts. This phase includes a period of technical-regulatory documents review [updated at January 2019] and research of the relevant literature and analysis, in order to collect the significant information for a deep understanding of the policy. With the same objective of creating a shared interpretation of the strategies adopted by the regulation, the main stakeholders were involved: experts in the sector and representatives of groups interested in the measure. This involvement took place directly, through workshops (in the case of experts and stakeholders at regional level, the Public Contracts Observatory of the Piedmont Region); or by extracting opinions and points of view from the available documentation, for the stakeholders at individual level (the population, through analysis of the results of the popular consultation; professionals and contracting authorities, also on the basis of the positions declared in the participation in numerous conferences on the subject) and at state level (the legislator, through an in-depth study of the RIA that accompanied the issuing of the Code and that of the Corrective).

In parallel to the collection of the documentation, adopting an iterative approach, the Logic Model was the technique used to obtain a valid, though simplified, representation of the complexities of the system introduced by the New Code (The Logic Model Guidebook, 2013). For the development of the LM, a multilayer format was adopted, which identifies, with an if-then conditional logic, the resources invested in the program (inputs), the practical actions (activities), the descriptive indicators of what the specific actions generate (outputs), and the short, medium and long term changes (outcomes and impacts).



**Figure 4 -** Diagram summarizing the process for evaluating policy impacts through the application of Logic Modeling within a realistic approach  
(Source: authors' elaboration)

*Step 2: Focus the context and the evaluation question.* The realistic approach assessment is based on the hypothesis that a *mechanism* can work differently in different contexts, and has a focus on understanding how this happens. Since the object of the evaluation is a state level policy, and since the national data collection system allows the breakdown of the data by Region, it has been chosen here to consider the territorial context of the Regions, intended as spaces that have socio-economic and political characteristics more homogeneous than the national ones; another possible interpretation could be operating by size of municipalities, but it would certainly be particularly complex, given that the national data collection system is carried out on a regional, and not municipal basis. Once the territorial scale of the evaluation has been selected and the context of reference has been specified, it must be described by its

socio-economic characteristics relevant to the evaluation. In this study, they can be deduced by analysing the trends of the market of Public Contracts in the Piedmont Region.

Another choice to make concerns the thematic focus: in fact, concentrating the examination of all impacts in a single assessment is not possible in the case in question, and the Logic Model can be used as a tool to identify and select on a case-by-case basis specific sections or components of the policy on which to focus the partial analysis. This logic is further confirmed by the latest literature, which only partially addresses the issues related to the New Code (Manzone *et al.*, 2019, Rebaudengo *et al.*, 2019).

In the light of these methodological hypotheses, the second step ends with the precise identification of one or more questions to be answered through the analysis.

*Step 3: Realistic Evaluation.* Once the context has been

identified, the Realistic Evaluation foresees the identification of one, or all, the possible mechanisms that can contribute to answering the evaluation question: in this sense, LMs are tools for the accomplishment of the first step of the evaluation (description of the program and theoretical basis) and also means for the identification of all the possible CMOs configurations, which arise precisely from the links between inputs, outputs, outcomes (Ebenso *et al.*, 2019).

The CMO hypothesis, identified and extracted from the general Logic Model, is the starting point for the following analysis phase.

*Step 4: Partial analysis and results.* This step provides empirical content to the theoretical framework described so far. In this sense, it was essential to having access to the largest existing database on public contracts awarded in Piedmont Region. It consists of a collection system in which each tender is associated with an Identification Code; the local Administrations are then responsible for filling in the tender form in all its parts (timing, bids, awards, anomalies, etc.), while the management and control operations are jointly managed by the Regional Observatories of Public Contracts and the ANAC (i.e. Italian National Anti-Corruption Authority).

*Step 5: Reiteration for regional contexts and for single-topic questions.* Through the focus on different Evaluation Questions and the selection of multiple CMO hypotheses, mono-thematic assessments can be set up starting from the same LM and the study of contextual factors.

*Step 6: Partial results collection and drafting of the report.* This phase is essential and should not be underestimated: the aim is to facilitate the legislator in reading the conclusions of the analysis, i.e. to understand how and why certain phenomena were observed in response to the issuance of the policy.

#### 4. ANALYSIS AND RESULTS

Following the reconstruction of the policy logic (Legislative Decree 50/2016 *et seq.*, figure 5), a first consideration on the context (step 2) concerns the correspondence between the trend of the public contracts market in the Region under analysis and that of the national framework.

As can be seen from the comparison between Graphs 1 and 2, the regional context is representative of the national situation, especially as concerns the public works market, both in terms of the average amount and the distribution of values of tender over time.

Meanwhile, the dynamics of services and supplies contracts market appear different, particularly in the year 2016, when Piedmont Region invested more than in 2015, going counter-trend compared to national situation. It is therefore believed that the analysis by regional databases, as well as simplifying the process of analysis – since it involves small number of data compared to the national sample – can be a useful approach to the fragmentation of

the problem for homogeneous contexts. As mentioned above, in order to assess the impact of the regulation, it is necessary to refer to two precise time periods: one before (2015) and one after (2017) the implementation of the new Code. The picture of the public contracts market in Piedmont at those moments is shown in Table 2. The sample referred to is an appropriate subset of information, transmitted by the Piedmontese contracting authorities to the Regional Observatory, which concerns, more generally, all the phases of development of a public contract, from the planning phase to the testing phase. The mentioned sample includes, for 2015, more than 7.000 contracts, that were awarded for works, services and supplies, with amounts higher than the threshold of €40.000. The same sample increases to about 8.400 contracts in 2017; if the proportions in numerical terms remain almost unchanged, this does not happen in terms of distribution of values, with a strong growth in the percentage incidence of the sums invested in supplies and a consequent reduction in those engaged in works and services. The following table then collects the representative graphs, for each year and by type of contract (works, services and supplies), of the distribution of the contract awards (number and values) in the six classes of amount referred to in the legend, which contribute to the characterization of the context.

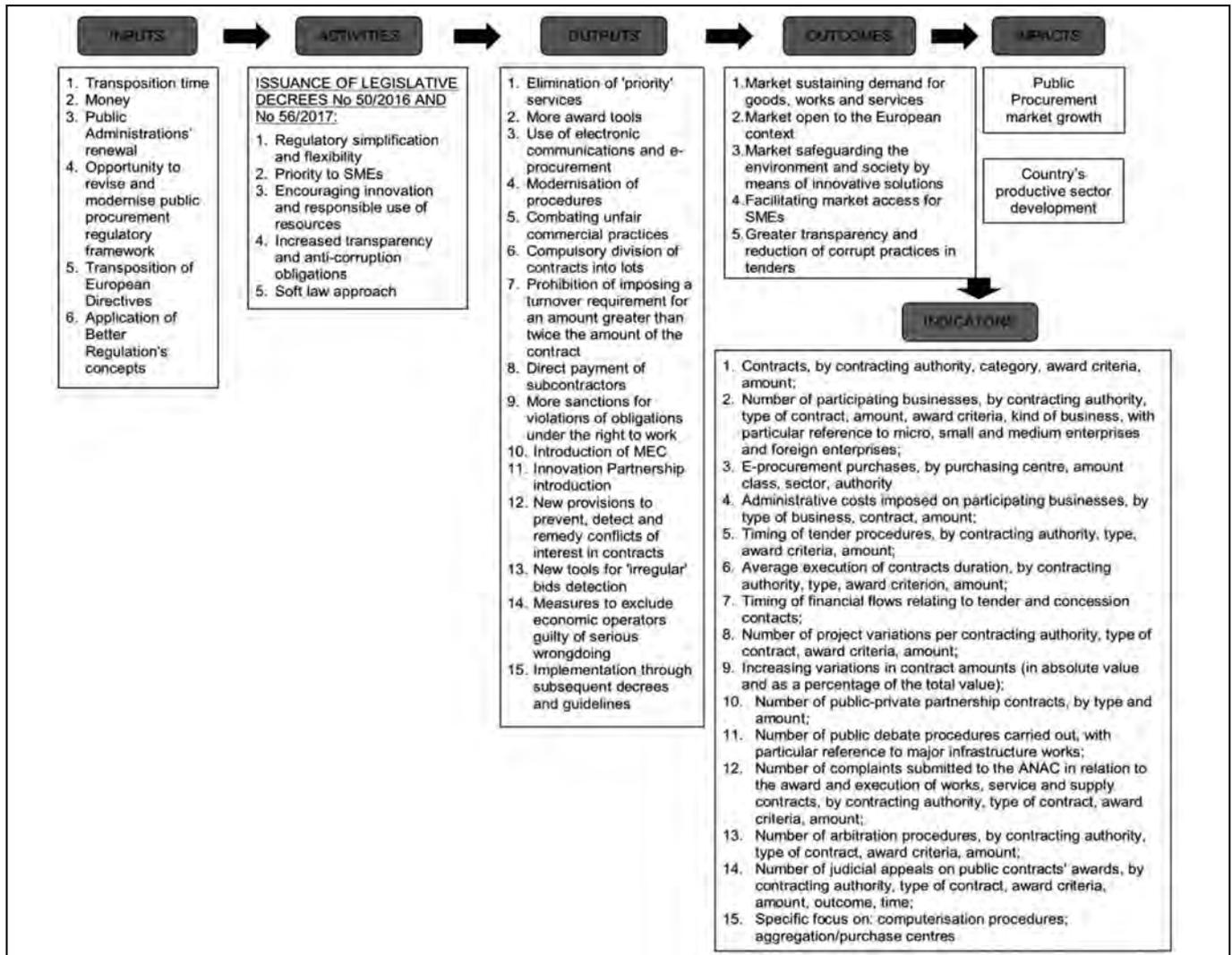
In order to complete the second step of the model (Figure 4), it is necessary to introduce the question that will guide the following analyses.

“Given the (numerous) regulatory changes introduced by Legislative Decree 50/2016, subsequent amendments, and reference framework, has the introduction of the anti-disturbance method (Articles 95 and 97 of the Code) produced the impacts that the legislator had hoped for – i.e. market growth, reduction of corruption and improved effectiveness of public expenditure –?”

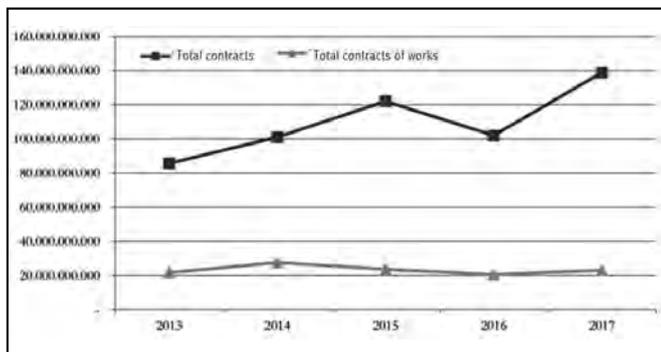
Proceeding with the Realistic Evaluation (step 3, Figure 4) means to give an answer to this question, through the formulation of a hypothesis of policy functioning, and its subsequent verification through the study of empirical data. In theory, in response to the modification of a context, several mechanisms creating impacts can be analysed, and can be considered separately in the formulation of the hypotheses of operation. Here, the mechanism under study links the intervention on the regulations concerning the definition of anomalous bids with any signs of market recovery.

In order to assess the impact – i.e. the achievement of the long-term objective – some short-term variables (outcomes) can be observed; some examples of variables linked to the mechanism under analysis are time reduction (for awarding, construction of works, testing, ...), costs (fewer project variations in progress and reduced increase in costs compared to the award amount, ...) resulting from the formulation of a more appropriate bid compared to the value at the base of the tender, which corresponds to a lower award discount and not to the limits of sustainability for the company.

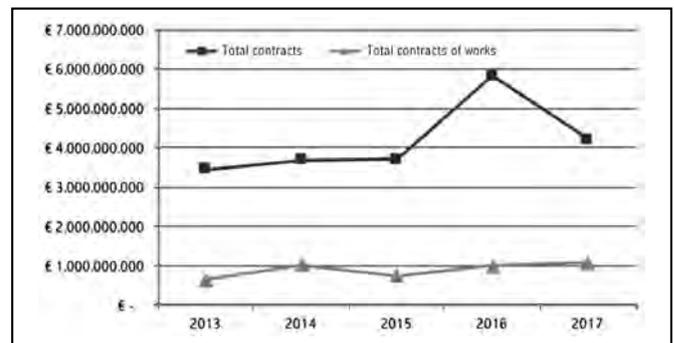
# Monitoring and Evaluation of anti-disturbance Policy in Public Procurement: works, services and supply contracts in Piedmont Region



**Figure 5 - Logic Model for the impact assessment of the New Code of Public Contracts**  
(Source: authors' elaboration)



**Graph 1 - Contract awards 2013-2017**  
(Source: ANAC, 2018)



**Graph 1 - Contract awards 2013-2017 in Piedmont Region**  
(Source: authors' elaboration from Regional Observatori database)

In this context, in which economic actors can operate without pushing competitiveness to excess, an indirect growth of the market is desirable, both in terms of the

number and the amount of calls for tender issued. Having said that, however, before undertaking the analysis, it is necessary to specify a limitation that has influenced the

**Table 2 - Public Procurement market and contract award distribution in Piedmont: 2015-2017 comparison**  
 (Source: authors' elaboration from Regional Observatory database)

	2015	2017
Number of contracts awarded in Piedmont by contract category (Works, Services, Supplies)		
Total value of contracts awarded in Piedmont by contract category (Works, Services, Supplies)		
WORKS. Number of contract awards.		
WORKS. Public procurement by class of amount.		
SERVICES. Number of contract awards.		
SERVICES. Public procurement by class of amount.		
SUPPLY. Number of contract awards.		
SUPPLY. Public procurement by class of amount.		

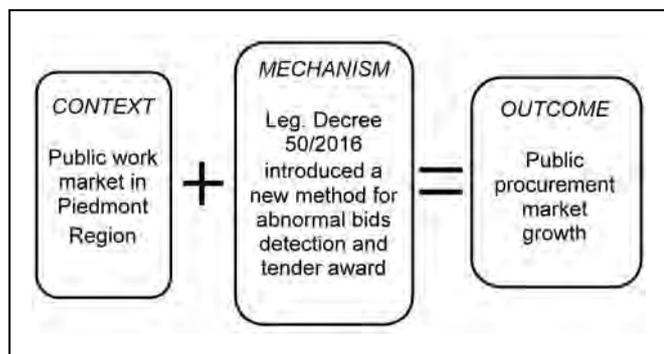


Figure 6 - CMO under evaluation

authors in the choice of the indicators of comparison (in particular in terms of time and/or costs reduction): the analysed database is not yet able to provide two frameworks of significant data, being more than a year the time of return of information on the progress of each contract. With regard to the information concerning the overall deviation from the signed contract – potential delays and costs increases during work execution – it is necessary to wait for the database, which is currently 33% complete, to reach a good level of significance, at least for the year 2017, at around 50%.

Since Contracting Authorities systematically (though not completely) transmit the communications to the Observatory, it is expected that a new data extraction at the end of 2019 will allow to conclude in a more comprehensive and exhaustive way the elaborations discussed in this paper.

To this day, data analysis allows a characterization of the market by dynamism and impact; the graphs on the following pages (Table 3) make it possible to compare works contracts awarded by year and by homogeneous classes of amount, with particular attention to four indicators considered significant: number of companies bidding, awarded discount, threshold of anomaly and number of companies above the threshold of anomaly.

Clearly the aim was to carry out the analyses on a smaller sample of contracts than those considered in the context characterisation, which, however, was significant in terms of representativeness of the sample, both for information concerning the award discount and the anomaly of the offer. As mentioned above, the regional database contains a great amount of data about the execution of public contracts in the territory, without, however, paying particular attention to the quality of this information, except for some strictly procedural ones (personal data, tender information code, amounts, ...). Therefore, for the following elaborations, the analysis has been limited to the communications of works contracts awarded (about 1,750 in 2015 and about 1,520 in 2017, about 70% of the total works awarded in each year) containing simultaneously information on the discount and the anomaly. For both 2015 and 2017, the most populated value class - in terms of

awards - is the first, contracts equal to or greater than € 40.000 but less than € 500.000, mainly (84% in 2015; 90% in 2017) awarded at the maximum discount/lower price, and this phenomenon is clearly shown by the almost complete overlapping of the lines of the relative graphs on the next page.

The radial representation of Table 3 clearly shows the deviations or similarities of each class of amount compared to the average award of the year; comparing 2015 and 2017 respectively, there was a reduction in the average number of bidders (from 19.42 to 17.02), in the award discount (by about 3 percentage points, from 27.4% to 24.07%), in the anomaly threshold (by more than 5 percentage points, from 29.85% to 24.47%) and, finally, a slight increase in the number of bids placed above the anomaly threshold.

More specifically:

- in the class of amount 40.000€-499.999€ the average number of bidding companies is slightly reduced and, however, the number of bids placed above the threshold of anomaly increases;
- in the class of amount 500.000€-999.999€, the number of bidders and, at the same time, the number of bids above the threshold of anomaly increase (by doubling or even tripling);
- in the class of amount 1.000.000€-1.999.999€ the number of bids above the threshold is reduced, but the threshold slightly increases;
- in the higher amount classes, 2015 well represents the inverse correlation between competition level and contract's amount, mainly due to the reduction in the number of economic operators meeting the qualification requirements; 2017, however, shows some errors in the regional database (these subsets should not, in fact, be more "populated" after the entry into force of the New Code, which – for works – provides for the use of the lower price up to 2M€).

The presented analysis, summarized in Table 3, apply the elaborated methodology to the case study of the Piedmont Region, assuming that we can proceed in a similar way (through the same in – depth studies and the same data sources – Regional Observatories) to characterize the phenomenon on a national scale.

Although they were outlined in the model, in this phase of the research the last two stages of the assessment (steps 5 and 6), were not conducted. They would have included similar analysis – at regional level – on services and supplies (fields in which, however, the effect of changes to the legislation had less impact, acting with a different rule and easier to apply), then the same for other regional realities and, in sequence, for other issues mentioned above (Figure 4).

## 5. CONCLUSIONS

The work summarised so far is the result of an interdisciplinary research, still in progress, whose long-

**Table 3 - Contract awards, Piedmont Region: 2015-2017 comparison**  
 (Source: authors' elaboration from Regional Observatory database)

2015	2017
	<div style="background-color: #cccccc; height: 100%; width: 100%;"></div>

term objective - in some respects a bit ambitious - is represented by the evaluation of the impact of regulation on the theme of abnormal bids. This required an initial in-depth study of the relevant regulatory framework, and on the application of the dedicated tools, which revealed an interesting picture of visions and techniques applied to the world of policy evaluations; in particular, in the Italian context, an important gap emerged between the level of detail required in the development of these tools, the interest shown in them by some bodies, such as the AIR Observatory and the Tuscany Region (Natalini & Sarpi, 2019), and their effective application by the institutions in charge.

The next step was to study the evidence from the public contracts database of the Regional Observatory, a research partner: this phase raised some interesting issues for reflection and opened up new paths of investigation. The first consideration concerns the quality of the information, which is often incomplete, to be checked on a case-by-case basis, and therefore statistically insignificant; the data are collected and are available, but what realities can they really describe in this way? The cause of this situation can be found in the manner in which the collection is implemented, bearing in mind that if the purpose is monitoring, the survey must be as systematic as possible. Another possible cause is the transparency of information, a principle which, with its obligations, has heavily invested the contracting authorities, perhaps leading to a further deterioration in the quality of the databases.

For the subject under discussion, it is considered that the data is anyway significant, but, even just because of the necessary time lag between the moment when contract awards are finalized and the time when all the requested information is transmitted, the time needed for some processing can be extended excessively. Perhaps it would be necessary to rethink the purposes for which data are collected, even by introducing automatic methods of control, in order to reduce the phase of punctual intervention by those who investigate one or more phenomena. Waiting for a future extraction from the regional DB, which will allow to complete the analysis of the impact also in terms of time and costs, for now we can observe some effects related to recent regulatory changes, in particular a slight contraction of the market as a result of the introduction of a mechanism – the “random” determination of the threshold of anomaly – which has

partly reduced competition (consequence, also, of the crisis in the sector) and has contracted – as desired by the legislator – award discounts and thresholds of anomaly. Even though, as mentioned above, the reduction of average award discounts is a good sign, which indicates -on the one hand – that the sum at the basis of the calls for tenders are correctly determined and – on the other- that economic operators formulate their bids in a more appropriate manner and therefore prefigure fewer risks for the execution phase, however, the issue of how the threshold of anomaly value is determined should be re-examined.

The regulatory intervention has transposed into law the necessity of making impossible the determination of the anomaly threshold before the submission of bids. However, recent studies (Grosso *et al.*, 2018) show a sometimes excessive range of anomalies which, in order not to be too small and therefore easy to determine in advance, risks to exclude a growing number of businesses, as seen in the graphs in Table 3, which are still likely to be “adequate” in terms of supply. This also happens because the Contracting Authorities make great use of the automatic exclusion of bids above the anomaly threshold. In this direction, i.e. through the study of the size of the anomaly range in relation to number of calls for tenders, distribution of rebates and classes of amount, for case studies representative of the sample, possible simplifications of the methods of calculating the threshold value are being defined which, for the reasons mentioned above, can only remain unknown a priori as currently provided for by the regulations.

Finally, a method was developed that could be sufficiently descriptive, for the Italian case, of the most recent legislation on public contracts and its impact on market, but at the same time replicable for other regulatory interventions and/or policies at regional or supra-regional level. Replicability is an intrinsic feature of the evaluation model that has been developed; starting from the initial Logic Model, setting up new CMO hypotheses and applying them to the different regional databases in a systematic way would lead to the construction of the complete picture, designed for monitoring and evaluation. An obstacle to such a project, however, is found in the current national context, in which new possible revisions/amendments of the legislation, announced in recent months, would end up calling into question what has been said so far.

\* **Rachele Grosso**, Department of Regional and Urban Studies and Planning (DIST), Politecnico di Torino.  
e-mail: [rachele.grosso@polito.it](mailto:rachele.grosso@polito.it)

\*\* **Francesco Prizzon**, Department of Regional and Urban Studies and Planning (DIST), Politecnico di Torino.  
e-mail: [francesco.prizzon@polito.it](mailto:francesco.prizzon@polito.it)

\*\*\* **Manuela Rebaudengo**, Department of Regional and Urban Studies and Planning (DIST), Politecnico di Torino.  
e-mail: [manuela.rebaudengo@polito.it](mailto:manuela.rebaudengo@polito.it)

## Bibliography

- BALLESTEROS-PÉREZ P., GONZÁLEZ-CRUZ M. C., CAÑAVATE-GRIMAL A., PELLICER E., *Detecting abnormal and collusive bids in capped tendering*, *Automation in Construction*, 2013, pp. 215-229, DOI: 10.1016/j.autcon.2012.11.036
- BALLESTEROS-PÉREZ P., SKITMORE M., PELLICER E., GONZÁLEZ-CRUZ M. C., *Scoring rules and abnormally low bids criteria in construction tenders: a taxonomic review*, *Construction Management and Economics*, Vol. 4, 2015, pp. 259-278, DOI: 10.1080/01446193.2015.1059951
- BALLESTEROS-PÉREZ P., SKITMORE M., *Estimating the number of new and repeated bidders in construction auctions*, *Construction Management and Economics*, Vol. 12, 2016, pp. 919-934. DOI: 10.1080/01446193.2016.1231408
- BALLESTEROS-PÉREZ P., SKITMORE M., PELLICER E., ZHANG X., *Scoring Rules and Competitive Behavior in Best-Value Construction Auctions*, *Journal of Construction Engineering and Management*, Vol. 9, 2016. DOI: 10.1061/(ASCE)CO.1943-7862.0001144
- CHEN H., *Practical program evaluation: Assessing and improving planning, implementation and effectiveness*, Sage, Thousand Oaks, CA, 2005.
- DE FRANCESCO F., RADAELLI C. M., TROEGER V. E., *Implementing regulatory innovations in Europe: the case of impact assessment*, *Journal of European Public Policy*, 2011, pp. 37-41. DOI: 10.1080/13501763.2011.607342
- EBENSO B., MANZANO A., UZOCHUKWU B., ETIABA E., HUSS R., ENSOR T., NEWELL J., ONWUJEKWE O., EZUMAH N., HICKS J., MIRZOEVI T., *Dealing with context in logic model development: reflections from using logic modelling as part of realist evaluation of a community health worker programme in Nigeria*, *Evaluation and Program Planning*, Vol. 73, 2019, pp. 97-110. DOI: 10.1016/j.cub.2012.01.050
- FAZEKAS M., TÓTH I.J., KING L.P., *An Objective Corruption Risk Index Using Public Procurement Data*, *European Journal on Criminal Policy and Research*, 2016, pp. 369-397. DOI: 10.1007/s10610-016-9308-z
- FERRETTI V., PLUCHINOTTA I., TSOUKIÀS A., *Studying the generation of alternatives in public policy making processes*, *European Journal of Operational Research*, Vol. 273, 2019, pp. 353-363. DOI: 10.1016/j.ejor.2018.07.054
- FULLAN M., *The new meaning of educational change* (3rd ed.), Teachers College Press, New York, 2001.
- GROSSO R., PRIZZON F., REBAUDENGO M., *Il sistema anti turbativa negli appalti pubblici: analisi critica e metodologica*, *Territorio Italia*, Vol. 2, 2018, accettato per pubblicazione.
- GUNDUZ M., KARACAN V., *Abnormally low tender problem in public works*, *International Conference on Management Science & Engineering*, Long Beach, USA, 10-12 settembre 2008. DOI 10.1109/ICMSE.2008.4669141
- GUNDUZ M., KARACAN V., *Assessment of abnormally low tenders: a multinomial logistic regression approach*, *Technological and Economic Development of Economy*, Vol. 23(6), 2017, pp. 848-859. DOI: 10.3846/20294913.2015.1071294
- HALL M., MILLO Y., *Choosing an Accounting Method to Explain Public Policy: Social Return on Investment and UK Non-profit Sector Policy*, *European Accounting Review*, Vol. 27, No. 2, 2018, pp. 339-361. DOI: 10.1080/09638180.2016.1261721
- HAZILLA M., KOPP R. J., *Social Cost of Environmental Quality Regulations : A General Equilibrium Analysis*, *Journal of Political Economy*, Vol. 98, No. 4, 1990, pp. 853-873. <https://www.jstor.org/stable/2937771>
- HERMANS L., CUNNINGHAM S., SLINGER J., *The usefulness of game theory as a method for policy evaluation*, *Evaluation*, Vol. 20, No. 1, 2014, pp.10-25. <https://doi.org/10.1177/1356389013516052>
- JACOBS S., *Regulatory Impact Assessment and the Economic Transition to Markets*, *Public Money and Management*, Vol. 24, No. 5, 2004, pp. 283-290. DOI: 10.1111/j.1467-9302.2004.00435.x
- KNOWLTON L. W., PHILIPS C. C., *The Logic Model Guidebook: Better strategies for great results* (2nd ed.), Sage, Thousand Oaks, CA, 2013.
- KURNIAWAN T., MUSLIM M. A., SAKAPURNAMA E., *Regulatory impact assessment and its challenges: An empirical analysis from Indonesia*, *Kasetsart Journal of Social Sciences*, Vol. 39, 2018, pp. 105-108. DOI: 10.1016/j.kjss.2017.12.004
- LEE S., SHIH L., *Renewable energy policy evaluation using real option model — The case of Taiwan*, *Energy Economics*, Vol. 32, 2010, pp. S67-S78. DOI: 10.1016/j.eneco.2010.04.010
- LIU W., ZHANG X., FENG S., *Does renewable energy policy work? Evidence from a panel data analysis*, *Renewable Energy*, Vol. 135, 2018, pp. 635-642. DOI: 10.1016/j.renene.2018.12.037
- MANZONE F., REBAUDENGO M., ZACCARO V. L., *The Italian response to sustainability in built environment: The match between law and technical assessment*, *Advances in Intelligent Systems and Computing*, Vol. 797, 2019, pp. 527-537. DOI: 10.1007/978-981-13-1165-9\_48
- MARQUES A. C., FUINHAS J. A., *Are public policies towards renewables successful ? Evidence from European countries*, *Renewable Energy*, Vol. 44, 2012, pp. 109-118. DOI: 10.1016/j.renene.2012.01.007
- MASSARI A., *La disciplina delle offerte anomale dopo il decreto correttivo D.lgs. 19 aprile 2017, n. 56*, *Appalti&Contratti*, Vol. 6, 2017, pp. 10-17.
- NATALINI A., SARPI F., *L'insostenibile leggerezza dell'Air*, *Giornale di Diritto Amministrativo*, Vol. 3, 2019, pp. 229-239.
- NORESE M.F., SCARELLI A., *Aiuto alla decisione nei processi di generazione e attuazione delle politiche pubbliche: un approccio multicriteri per la valutazione della resilienza territoriale*, *Territorio Italia*, Vol. 2, 2016, pp. 73-92. DOI: 10.14609/Ti\_2\_16\_4i
- PAWSON R., TILLEY N., *Realistic Evaluation*, Sage, London, 1997.
- PRIZZON F., REBAUDENGO M., *Il nuovo codice dei contratti pubblici, tra innovazioni e criticità*, *Territorio Italia*, Vol. 2, 2017, pp. 119-129. DOI: 10.14609/Ti\_1\_17\_5i

REBAUDENGO M., INNOCENTE G., CRISAFULLI A., *PPPs palatability to complete unfinished public works in Italy*, Smart Innovation, Systems and Technologies, Vol. 100, 2019, pp. 635-642. DOI: 10.1007/978-3-319-92099-3\_71

ROSATI C., *L'Analisi di Impatto della Regolazione*, Tesi di Dottorato in Diritto ed Economia, LUISS, Roma, 2010.

RUEL-BERGERON J.C., HURLEY K.M., KANG Y., ABURTO N., FARHIKHTAH A., DINUCCI A., MOLINAS L., WU L. S.F., MITRA M., PHUKA J., KLEMM R., WEST K., CHRISTIAN P., *Monitoring and evaluation design of Malawi's Right Foods at the Right Time nutrition program*, Evaluation and Program Planning, Vol. 73, 2019, pp. 1-9. DOI: 10.1016/j.evalprogplan.2018.11.001

SPYRIDAKI N.A., BANAKA S., FLAMOS A., *Evaluating public policy instruments in the Greek building sector*, Energy Policy, Vol. 88, 2016, pp. 528-543. DOI: 10.1016/j.enpol.2015.11.005

STAME N., *Valutazione Pluralista*, Franco Angeli, Milano, 2016.

STEM C., MARGOLUIS R., SALAFSKY N., & BROWN M., *Monitoring and Evaluation in Conservation: a Review of Trends and Approaches*, Conservation Biology, Vol. 19, No. 2, 2005, pp. 295-309. DOI: 10.1111/j.1523-1739.2005.00594.x

TSOUKIÁS A., MONTIBELLER G., LUCERTINI G., BELTON V., *Policy analytics: an agenda for research and practice*, EURO Journal on Decision Processes, Vol. 1, No. 1-2, 2013, pp. 115-134. DOI: 10.1007/s40070-013-0008-3

TURNPENNY J., RADAELLI C. M., JORDAN A., JACOB K., *The policy and politics of policy appraisal: emerging trends and new directions*, Journal of European Public Policy, Vol. 16, No. 4, 2009, pp. 640-653. DOI: 10.1080/13501760902872783

WEISS C.H., *Evaluation* (2nd ed.), Prentice Hall, Upper Saddle River, NJ, 1995.

ZIVIANI J., DARLINGTON Y., FEENEY R., HEAD B., *From policy to practice: A program logic approach to describing the implementation of early intervention services for children with physical disability*, Evaluation and Program Planning, Vol. 34, No. 1, 2011, pp. 60-68. DOI: 10.1016/j.evalprogplan.2010.05.001

## Laws, reports and other publications

ANAC (NATIONAL ANTI-CORRUPTION AUTHORITY), *Efficienza dei contratti pubblici e sviluppo di indicatori di rischio corruttivo*, Roma, 2018.

ANAC (NATIONAL ANTI-CORRUPTION AUTHORITY), *Relazione annuale 2017*, Senato della Repubblica, Roma, 2018.

STATE COUNCIL, Adunanza della Commissione Speciale del 22 marzo 2017, n. 782.

Legislative Decree No 50 of 18 April 2016, on "Code of Public Contracts".

LEGISLATIVE DECREE No 56 of 19 April 2017, on "Supplementary and Corrective Measures to Legislative Decree No 50 of 18 April 2016".

MINISTERIAL DECREE No 169 of 15 settembre 2017, on "Regulatory Impact Assessment, monitoring and evaluation, and consultation".

POLICY AND OPERATIONS EVALUATION DEPARTMENT, *Evaluation policy and guidelines for evaluations*, L'Aia, 2009.

MINISTRY OF INFRASTRUCTURE AND TRANSPORT, *Analisi di Impatto della Regolamentazione. Disposizioni integrative e correttive al D. Lgs. 18 aprile 2016, n. 50*, 2017.

MINISTRY OF INFRASTRUCTURE AND TRANSPORT, *Consultazione sul Codice dei Contratti*, Report 2018.

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, *Building a framework for conducting Regulatory Impact Analysis (RIA): tools for policy-makers*, Regulatory Policy Division Directorate for Public Governance and Territorial Development, Paris, 2007.

PRESIDENCY OF THE COUNCIL OF MINISTERS, MINISTRY OF INFRASTRUCTURE AND TRANSPORT, *Analisi di Impatto della Regolamentazione. Codice degli appalti pubblici e dei contratti di concessione*, 2016.

SENATO DELLA REPUBBLICA, *L'incompiuta. La valutazione degli atti normativi in Italia: criticità, prospettive e buone pratiche*, Ufficio Valutazione Impatto, 2018.

CRESME (CHAMBER OF DEPUTIES STUDY SERVICE), ANAC, *Il mercato dei contratti pubblici. Lavori, servizi, forniture nel periodo 2012-2016*, Report 2017.

## Web references

National anti-corruption authority (ANAC), <http://www.anticorruzione.it> (date of access 10/02/2019)

European Commission, [https://ec.europa.eu/info/law/law-making-process/planning-and-proposing-law/better-regulation-why-and-how/better-regulation-guidelines-and-toolbox\\_en](https://ec.europa.eu/info/law/law-making-process/planning-and-proposing-law/better-regulation-why-and-how/better-regulation-guidelines-and-toolbox_en) (date of access 22/02/2019)

Organisation for Economic Co-Operation And Development, <http://www.oecd.org> (date of access 12/02/2019)

Regulatory Impact Assessment Observatory (AIR), <http://www.osservatorioair.it> (date of access 22/02/2019)