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**6th INTERNATIONAL  
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PLACES AND TECHNOLOGIES**



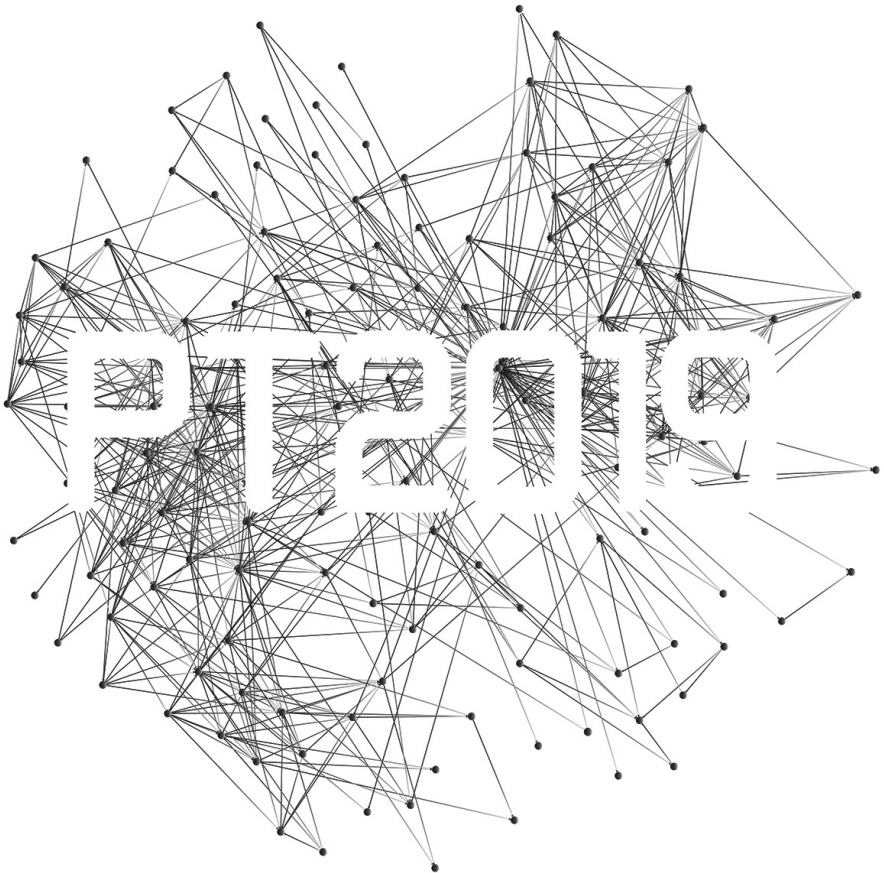
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6th INTERNATIONAL  
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# PLACES AND TECHNOLOGIES 2019

THE 6<sup>th</sup> INTERNATIONAL ACADEMIC CONFERENCE ON  
PLACES AND TECHNOLOGIES

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## **INCLUSIVE AND DEMOCRATIC METHODS FOR THE APPRAISAL AND THE EVALUATION OF URBAN INFRASTRUCTURES**

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## **ABSTRACT**

The implementation of urban infrastructures often generates conflicts between political-administrative decision-makers and local communities, mainly caused by choices made by the institutions without an effective consideration of the general interest and will. Since urban infrastructures, for their condition of collective fruition, are to be considered as community goods, it is appropriate, in the choices that concern them, to take into account the preferences expressed by the community involved.

To this end, in recent decades, in some countries, the direct involvement of citizens in decision-making processes concerning public interventions has been consolidated by activating transparent forms of information, consultation, and dialogue actions aimed at obtaining full democratic legitimacy, sharing of the choice, social and political consensus. Such inclusive processes therefore assume a democratic value, as they ensure that all the subject involved have the right to expression and the ability to influence and determine public choice.

As in other countries, a recent legislative decree also introduced in Italy the obligation of the public debate concerning projects of large-scale infrastructure. However, to achieve a shared and democratic choice of infrastructural interventions in urban areas, it would be advisable to go beyond the form of public debate, opting for the use of rational, fair and transparent evaluation approaches based on the active involvement of the community.

To this end, the paper proposes innovative economic appraisal and evaluation techniques, to supplement the conventional ones, that include the individual citizens in a decision-making process based on the theoretical principles of deliberative democracy. The proposed methodological process enable the members of the community involved, through an informed

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and discursive approach, to appraise in monetary form the economic value of the infrastructural good to be realized and to obtain a unitary and shared multi-criteria, non-monetary, judgment of choice of the alternative design hypotheses of intervention.

**Keywords:** deliberative appraisal and evaluation, shared economic value, shared economic appraisal and evaluation, inclusive and democratic appraisal and evaluation methods

## INTRODUCTION

Infrastructural projects are considered strategic for the development and modernisation of Italy and they play a decisive role in driving Italy's economic growth and realign the country's infrastructural conditions with the more advanced European standards. In the Italian regulatory framework, the two main investment-planning tools are a transportation plan and a programme for strategically important infrastructure projects (Program of Strategic Infrastructure, 2015); the need to coordinate the infrastructural interventions linked to national requirements with the main transport policies at European Community level implied the thorough revision of Italy's legislation regarding both project planning and prioritising.

The infrastructure planning and programming process has been innovated also thanks to several procedural changes introduced with Legislative Decree 50/2016, or the New Procurement Code (NPC). The most important innovations include: a) the feasibility projects; b) Public Debate in the decision-making process for the creation of infrastructures. The purpose of the feasibility project introduced and regulated in Arts. 23 and 202 of the NPC is to improve the quality of infrastructural planning, programming and design. The objective of design at this level is to verify the technical, economic, environmental and territorial conditions for the creation of infrastructures by selecting the best for the community. Moreover, the forms of participation are recognized in national regulations with the introduction of a structured process that involves communities in the decision making regarding infrastructure projects, i.e. Public Debate pursuant to Art. 22 of the NPC. Although timing, modalities and techniques have still to be established through future implementing decrees, the NPC clearly states that local administrations have to make public the feasibility projects regarding infrastructural and architectural interventions of social importance with a significant impact on the environment, the city and the territory. The outcomes of the public consultations including the minutes of meetings held and debates with the stakeholders also have to be published. Currently, open conferences with the participation of administrations, stakeholders and citizen committees are foreseen. This process will be mandatory for large infrastructure projects and an ad hoc decree will establish size thresholds and what kind of project will undergo Public Debate. The debate will focus on the feasibility project to give the proposing institutions the possibility to listen and receive information and suggestions on every aspect of the project, and to add new ideas and further clarifications if necessary.

Over the last two decades, the topic of conflict and consensus when it comes to creating large infrastructures, and public choice in general, has influenced Italy's political agenda. Albeit later compared to other countries, Italy has also put in place inclusive procedures to cope with the main decisional stumbling blocks linked to public works. Initially, a few regional laws were introduced, e.g. those of the Regions of Tuscany and Emilia Romagna, and local council regulations such as those introduced in Rome and Milan that regulate participatory practises. The adjustment process for the adoption of these practises at national level was finally regulated in the recent NPC with the introduction of Public Debate. Forms of public consultation are

the innovative aspect introduced by the NPC of contracts for the designing of infrastructures shared with local territories, thus avoiding opposition while work is in progress and ensuring the completion of the works with respected deadlines and reasonable costs. The opposition often leads to missed deadlines, overspending compared to the estimated budget, rejected projects, economic losses and social tensions that lead to conflicts that undermine the idea behind the original planning and programming. In literature, this kind of opposition is called the NIMBY (Not In My Back Yard) syndrome. As the local community does not identify itself in the choices of the decision makers and believes the consequent transformation will prove detrimental to local interests, it begins to protest against the implementation of the project in question. Currently in Italy, according to the Nimby Forum, there are more than 350 ongoing projects affected by the protests of local residents. By subdividing these conflicts according to the category of project in question, it is possible to see that approximately one in every ten is due to an infrastructural intervention. There are ongoing conflicts linked to 5 out of the 25 strategic projects: the Turin-Lyons high-speed train link, the Valico dei Giovi railway, the Pedemontana Lombarda motorway, the Tangenziale Est in Milan and the Experimental Electromechanical Module MOSE. The lack of social consensus is affecting all these public works in terms of delays and increased costs. In addition, the progress of work on the 25 strategic projects (Figure 1) does not mean that further protests will not arise.

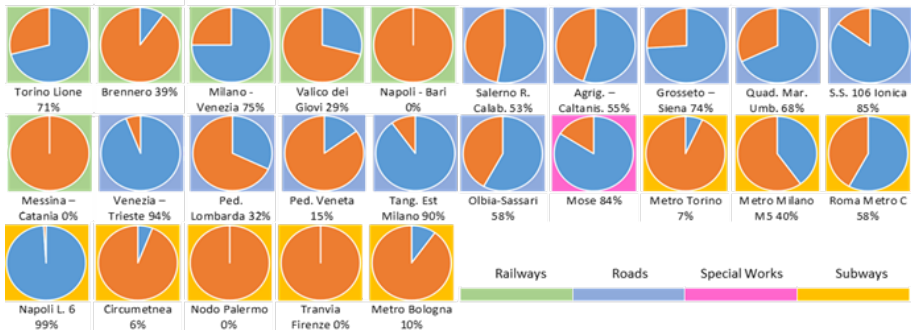


Figure 1. Progress of Work on the 25 Strategic Projects. (Source: our re-elaboration of data extracted from [www.opencantieri.mit.gov.it](http://www.opencantieri.mit.gov.it)).

In Italy’s new infrastructural programme, the inclusion of citizens in the decision-making process is considered crucial to the success of the interventions. However, to achieve a shared and democratic choice of infrastructural interventions in urban areas, it would be advisable to go beyond the form of public debate, opting for the use of rational, fair and transparent evaluation approaches based on the active involvement of the community.

With the expression “community goods” we indicate goods that are characterized by their non-exclusive use, without any reference to their ownership regime. Enjoying these goods allows the members of a community to satisfy their collective and primary needs; for these prerequisites, the concept of sharing a good is crucial. In light of the characteristics that define the economic nature of these goods, urban infrastructures can be considered community goods.

Since the effects of the urban infrastructure projects have an impact on and concern entire communities, it follows that every procedure adopted to appraise and evaluate these effects must be implemented along with a Social Impact Assessment (Lichfield, 1988); impacts are the consequences of actions that directly and/or indirectly influence the members of any given community. With the term “impact”, we intend an effect perceived (interpreted with the aim of establishing a value or making a choice) and, above all, stated “directly” by the members of the community in question (Lichfield, 1985).

The economic valuation applied to the effects of infrastructures can be utilized for the estimation of the value of the impact produced by the infrastructure and for the evaluation for the selection of alternative infrastructure projects.

For the purpose of appraising and assessing the impacts on the community, produced by the infrastructures on the basis of a judgment democratically formed and expressed by the citizens in a direct, collective, unitary and shared way, the application of conventional economic valuation procedures highlights some specific limitations which emerge when they are used to measure collective, unitary and shared values, directly stated by the members of a community. Since an impact expresses the interpretation of an effect directly stated by each single member of a community, the appraisal and evaluation of the impacts must necessarily consider the points of view of the entire and heterogeneous population that goes to form the community involved. If this does not occur, the resulting decisions will not take into account the general interests nor the will of the entire community.

## **THE PROPOSAL: INCLUSIVE AND DEMOCRATIC METHODS OF APPRAISAL AND EVALUATION**

In order to arrive at integrative and complementary knowledge related to urban infrastructures, compared to that obtained through the consolidated procedures, the paper proposes associating appraisal and evaluation techniques that include the individual citizens in a bottom-up decision-making process, based on the theoretical principles of deliberative democracy, to conventional approaches.

The progressive mistrust of the civil society in the public choices made by the governing political representation, that began to emerge in the second half of the 20th century in the various countries with a mature representative democracy regime, led to the use of inclusive approaches extended to all citizens of the community involved (Miccoli et al., 2014 B). Hence, the urgent demands of the governed citizens who require their involvement in the decision-making processes that concern them.

The valuation approaches that derive from the concept of inclusion are based on a structured, active and conscious involvement in the process of appraisal and evaluation of the relevant subjects of the issues in question, with the aim either to contribute to the decision or to take it directly (Young, 2000). They are approaches that provide for the exchange, interaction and reciprocity of information either between citizens and public institutions or among the members of the community, and give rise to two different decision-making procedures: participatory approaches and deliberative approaches.

Participatory approaches rely on the interaction between citizens and the institutional public decision maker in a continuous and synergistic process of cooperation (Pateman, 1970).

The deliberative procedures (Gbiłpi, 2005) are characterized by two essential aspects:

- a) the valuation is expressed directly by the universe of a community (or a fully representative sample of it), after appropriate information and discussion (Bohmann, 1996; Elster, 2000);
- b) the only instrument used to reach a decision is the “rational argument regarding the common good” (Dryzek, 1990). This criterion goes to substitute preferences stated individually in favour of a single shared preference taken unanimously by the community or, sub-optimally and for operational needs, by a qualified majority.

The incorporation of deliberative methods within a structured valuation process leads to the expression of shared choices or values formulated by citizens, able to overcome individual positions (Christie et al. 2012; Kallis, Gómez-Baggethun, and Zografos 2013; Kenter et al. 2016;



Orchard-Webb et al. 2016).

Given the series of effects that a single infrastructure generates on a community, the methodological process we propose in this paper, characterized by a direct, informed and discursive approach, enable the citizens involved to appraise the Shared Economic Value (SEV) of the impact produced by the infrastructure and obtain a non-monetary Shared Multi-criteria Judgment of alternative infrastructure projects.

Esteem Value is an economic value formulated and measured on the combination of the basic attributes of an economic good (utility, availability and scarcity), deriving from the appreciation given to the good by the valuation subject. In the procedure presented in this paper, the SEV is formulated on the basis of the appreciation stated (in a shared, unitary and direct manner) by the members of the community involved, taking into account direct and indirect, real and potential, current and future effects, and by considering externalities and intangibles produced by the infrastructure.

The economic value is formulated by examining the various characteristics of the good on the basis of preliminary and in-depth information, and results from the free and conscious sharing by all the valuation subjects involved in a deliberative process. The economic judgment, formulated according to the modality of sharing, is capable of conferring a general validity to the value estimated.

In order to assess the SEV, firstly, it is necessary to identify the community affected by the impact generated by the infrastructure (target population-TP); secondly, a random sample of citizens who will go to form the Valuation Group (VG) is drawn. The VG, which has to be statistically representative of the community in question, is asked to express a shared value related to its perception of the impact the infrastructure. The valuation of the VG is the outcome of informed aware preferences, based on the opinions of the single members, discussed and possibly changed from their initial positions (Miccoli, et al., 2014 A). After an introductory step related to the valuation process, the VG will have a series of meetings with experts and stakeholders during which they will be given the information necessary to enable them to put forward valid awareness-based arguments. At the end of the meetings, the VG will have one or more group sessions during which they will discuss and try to reach a monetary measure of the shared value, expressed through the Willingness to Pay/Willingness to Accept principle (Figure 2).

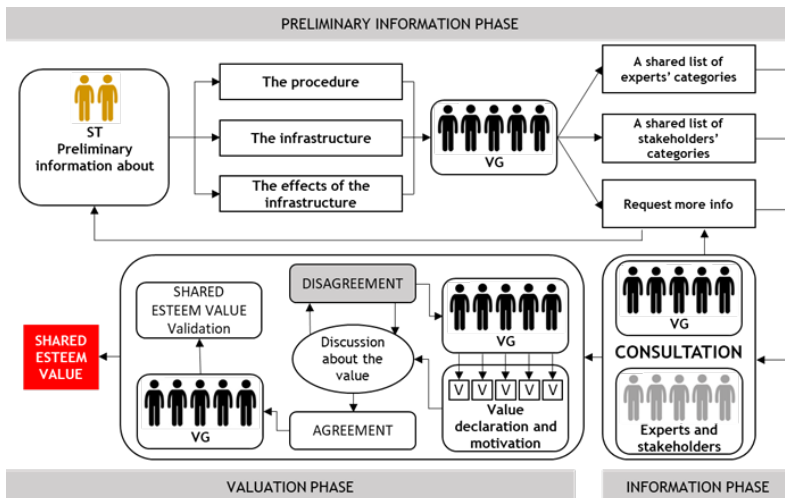


Figure 2: Procedural pattern for the Shared Esteem Value

The purpose of the Shared Multicriteria Judgment is the choice of the intervention preferred by the community in a perspective of general interest. From an operative viewpoint, the evaluation procedure links the operative practices of the deliberative processes with multi-criteria evaluation techniques (Miccoli et al., 2017 B).

As for the SEV, also the multi-criteria valuation requires the identification of the TP and the formation of a VG, fully representative of the relevant community. The first operation that involves the VG is a preliminary informative phase regarding the object to be assessed, during which the characteristics of the infrastructure and the possible alternative projects are illustrated. This information is discussed in more detail during the meetings with the experts and stakeholders. At the end of this phase, the VG defines the key elements they will base their valuation on: a shared set of criteria, by means of which alternative projects proposal are assessed, and related indicators; a shared priority order among the criteria.

After a first debating phase, each member of the VG begins formulating an individual impact matrix in which he/she expresses the evaluation of the alternatives with respect to the collectively identified and weighted criteria; the matrices are subsequently given to the Steering Team (ST). The ST then creates a summary table highlighting: a) the elements for which the individual members of the VG have formulated the same or similar evaluation; b) the elements for which a slightly discordant evaluation was expressed; c) those with a completely different evaluation. This table is the starting point of the next deliberative phase.

The aim of the subsequent deliberative phase is to create a single impact matrix shared by all the members of the VG (Shared Impact Matrix). Then, the ST can apply multi-criteria methods with the aim of obtaining an overall valuation for each single alternative intervention and a ranking for the interventions. During a last phase of discussion, this result is submitted to the VG for final formal approval (Figure 3).

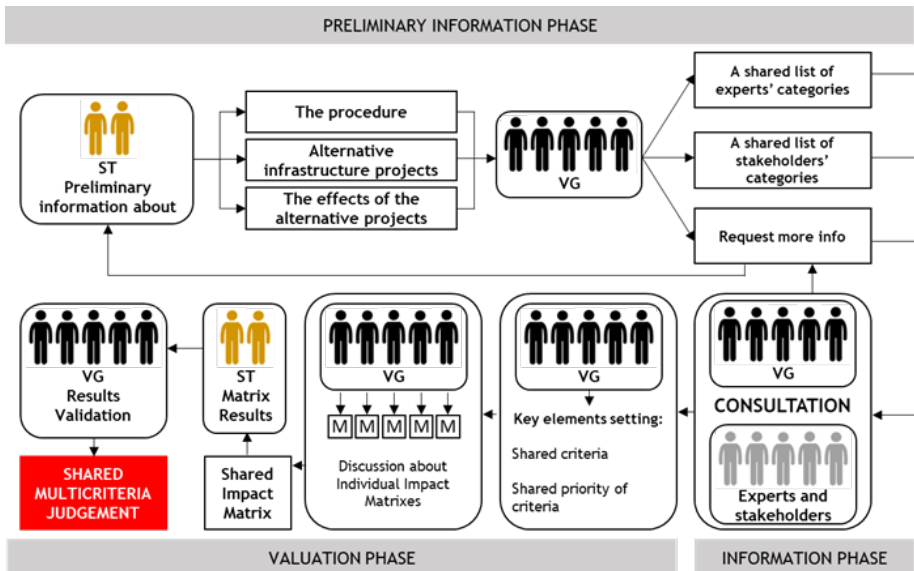


Figure 3: Procedural pattern for the Shared Multi-criteria Judgement

Before being tested on real-life cases, the deliberative method in question required preliminary applications and laboratory testing to perform a pre-feasibility check. Its immediate application in a real-life context would be unsuited for the purposes of the verification; in fact, these

operations need controlled environments where the introduction of modifications and additions, and the possibility of reiterating the experiment, make it possible to verify and clarify the method.

This is why the aim of the Experimental Valuation Laboratory (EVL), activated in the Sapienza University of Rome, is to reproduce in a controlled environment, with the participation of the students, the valuation procedures for the deliberative method of appraisal and evaluation (Miccoli et al., 2017 A). Once a real topic for the experiment has been identified, during the EVL the students are asked to represent a group of citizens taking part in a valuation process by acting out these roles in a role-playing game. To date, the EVL has performed a number of experiments (Miccoli et al., 2015 A; Miccoli et al., 2015 B) which have demonstrated that the procedures proposed are capable of providing shared and unitary judgements of value and choice, based on inclusive democratic approaches.

## CONCLUSIONS

The deliberative approach proposed in this paper, built on the basis of theoretical hypotheses and experimental outcomes previously elaborated, constitutes the starting methodological basis for its dual function: a) appraising the monetary economic value of the impacts on the citizens of a given community produced by the effects of infrastructure's project; b) choosing, among the possible alternative proposals, the most preferred by the community. In summary, this methodology is aimed to express democratically the general will of the members of a community after having built it rationally in the awareness of wishing to pursue the common good; in this aspect the methodology differs from conventional approaches of economic valuation, based on the behaviour, the rationality, the interests, the preferences of single individuals.

In deliberative approaches the valuating citizens are well informed about the issue dealt with, are prepared to support a constructive debate oriented to pursue the common interest, are aware of the preferences expressed, are willing to converge on a unitary and shared decision. In all its operational phases the proposed method is explicitly inspired by the principles of transparency, rationality and equity. The fact that the valuation subjects are asked to state their opinion only after an in-depth well-structured information and debating phase allow both to produce results that are almost devoid of cognitive biases and to make the contribution of each individual member of the valuation group fully aware and responsible. Furthermore, thanks to the use of a rigorously stratified sample based on the main distribution statistics of the relevant population, it is possible to achieve a full representativeness of the community involved.

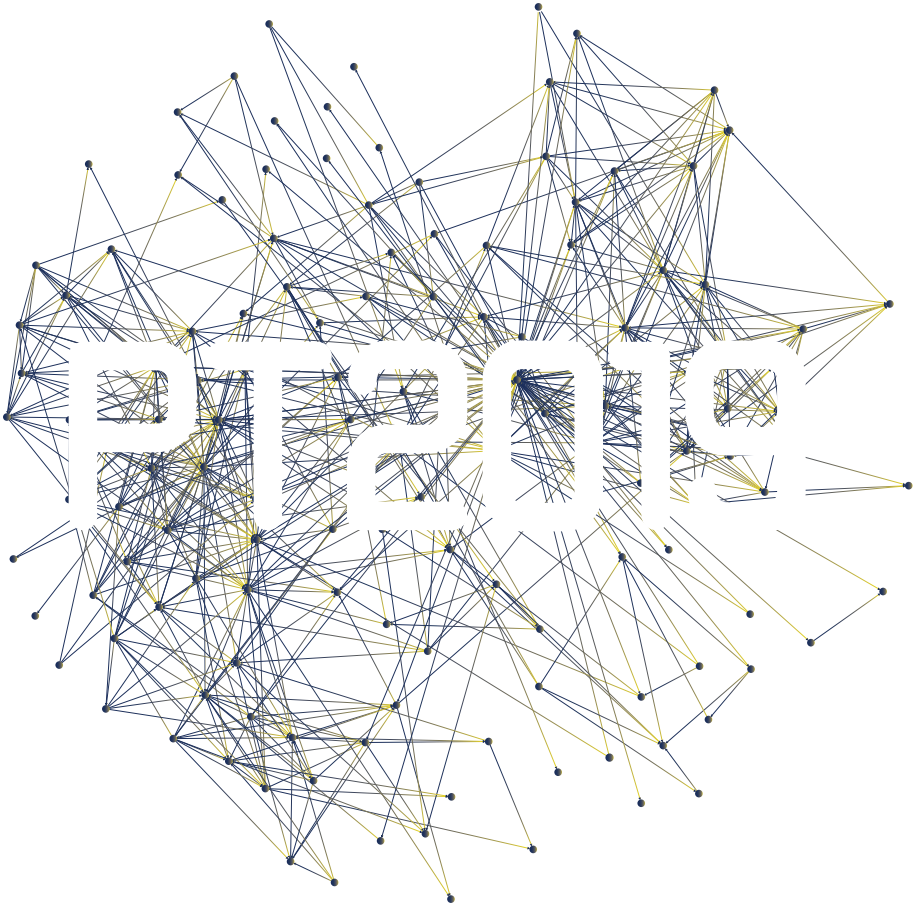
Within the framework of the appraisal and evaluation of public projects, the proposed method is likely to become an important element of democratic life over the next few years as it could become the basis to forge collective choices and mould new, different, non-standardized scenarios of public interest. Democratic appraisal and evaluation enable the members of a community to give voice to their fears, needs, and desires that otherwise would have remained unknown and it is possible to achieve adhesion and consensus, and lastly, to reach a shared view of alternative solutions to collective problems. The proposed approaches help to bridge the increasingly wider and more frequent gap between the preferences stated by citizens and the decisions taken by their institutional representatives; they become the tool to implement the social, cultural and economic changes that are taking place, because if the self-determination of citizens is disregarded, the very foundations of liberty and democracy risk being distorted.

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