



Use of the neutrosophic IADOV technique to diagnose the real state of citizen participation and social control, exercised by young people in Ecuador

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Abstract. The rights of individuals, as well as the exercise of those rights, are fundamental in the development of any society, which is why the current Constitution opened a field of action for citizen participation, based on the precept that sovereignty lies in the people and whose will is the basis of the authority exercised through the organs of public power and the democratic means provided for. The field study and specifically the survey revealed that the young people of the province are unaware not only of their rights as citizens, but also of the existence of mechanisms for citizen participation, such as the empty chair. With the purpose of diagnosing the real state of citizen participation and social control exercised by young people in Ecuador, survey instruments were applied that evaluated through a complex methodology that integrates the IADOV method and the neutrosophic logic, the transcendence of the reversal of the burden of proof over the non-existence of untimely dismissal in Ecuador.

Keywords: Citizen participation, mechanisms of participation, sovereignty, neutrosophic IADOV technique

1 Introduction

In a democratic state like Ecuador, citizen participation is fundamental for the development of the state administrative apparatus, since democracy, which is the will of the people, must be respected in all spheres of public power; citizen participation being understood as "the incidence of individuals and social groups in the different stages in which matters of public interest are resolved, that is, in consultation, discussions, proposals, and all kinds of activities in which the state and citizens interrelate for the progress of the community" [1]. Despite the fact that Ecuador was born as a democratic republic, the recognition of citizen participation in decision-making by state powers in a more direct and participatory manner has only recently been conceptualized. It has gained strength in the last three decades, especially since the 2008 Montecristi Constitution came into force, in response to the need to confront rampant corruption in the public sector [2].

The specific solution to the problem of corruption consisted of delegating to the citizen the task of monitoring and being attentive to the activity carried out by the public official, so that in this way he or she would be the first to denounce and bring to light any acts of corruption that might arise. However, in order for the citizen to carry out this monitoring activity, it was necessary to incorporate in the Constitution a new function of the state and this is how it is in the 2008 Constitution (Art. 204. Inc.2) incorporates that of "Transparency and Social Control" with the purpose of promoting and encouraging through the citizenry the control of public sector entities and organizations and natural or legal persons from the private sector that provide services or develop activities of public interest, thus protecting the exercise and enforcement of rights and prevent and combat corruption. In some cases, its application has been proven in practice and its effectiveness has been demonstrated in the field [2].

Article 72 of the Organic Law of Citizen Participation (LOPC)[3], establishes as participation mechanisms: public hearings, popular councils, the empty chair, observatories and advisory councils; and also defines citizen participation mechanisms as "instruments with which citizens individually or collectively have to participate in all levels of government established in the Constitution and the Law" (2010). The body in charge within the Transparency and Social Control Function of promoting the use of participation mechanisms among citizens is the Council for Citizen Participation and Social Control (Constitution of the Republic of Ecuador, 2008. Art.207), which is called informing, educating citizens so that they may exercise the rights related to citizen participation, but in addition to citizenship, it also works with the different public entities, so that within each one citizen participation in decision-making is promoted and facilitated.

Within this sphere of action, the Provincial Delegation of the Council for Citizen Participation and Social Control of the Province of Santo Domingo manages and carries out information campaigns for citizens on the rights of citizen participation. Unfortunately, this delegation has focused mainly on local social organizations that are not related to the youth population of the province; For this reason, the objective of this work is to diagnose the participation of young people in the use of mechanisms of citizen participation specifically in the so-called "empty chair", in the decentralized autonomous governments of the province of Santo Domingo de los Tsáchilas.

On the mechanism of citizen participation called empty chair, article 77 of the Organic Law of Citizen Participation states that the sessions of the decentralized autonomous governments are public and in them there will be an empty chair that will be occupied by one or one representative, several or several representatives of the citizenry, depending on the issues to be dealt with, in order to participate in the debate and decision making. The accredited person who participates in the debates and decision-making shall do so with voice and vote. On the basis of these regulations, in municipal council sessions in municipalities and in provincial council sessions - entities known as GAD's decentralized autonomous governments - there must be an "empty chair", which will be occupied by a representative of the citizenry depending on the issues to be discussed, with the purpose of participating in the debate and making decisions in matters of general interest [4].

The first is based on the fact that approximately 28% of the population in the province of Santo Domingo de los Tsáchilas is made up of young people between the ages of 16 and 29, and 30% of those under 16, according to INEC data, which makes it imperative for young people to become aware of the importance of their participation in the country's political life, in order to create a participatory culture that would be inherited by new generations. The second reason is based on a review of the history of Ecuador, in which we found that at the beginning of the last century youth movements whose formation was influenced by the socialist revolution in Russia and later the Cuban revolution, had a leading role in the political life of the country; organizations such as the Federation of University Students of Ecuador (FEUE) or Communist Youth of Ecuador (JCE), or Socialist Youth of Ecuador (JSE) had the power to convene young people to such an extent that more than once they were direct actors in overthrowing dictatorial governments. He refers [3] that although these movements and others still exist, the participation of young people has not been felt with the force that characterized this sector of the population, of course we must recognize that the economic, political, social and even technological situation of that time is far from the current ones and that the young people of the present live a reality totally different from those of yesteryear, but despite this they still have something in common and that is corruption in public administration. According to the identification, definition and improvement of processes and procedures are articulated to an inevitable strategic intention for development that guarantees the achievement of a dynamic of continuous improvement.

Society, like current politics, bears little resemblance to that of those societies [5], young people are affected by a series of tensions and paradoxes, such as, for example, "greater access to education, less employment, more access to information and less access to power, more skills for the communication society and fewer autonomy options, more cohesive within but more segmented into heterogeneous groups with greater impermeability to the outside; more suitable for productive change but more excluded from it. In this world of paradoxes, the pressure of the increasingly demanding labor market is added to competitiveness, so that young people focus their efforts on studies and obtaining a job, becoming mere spectators of the political or social events that occur in their environment.

It should also be noted that there is no real interest on the part of governments to involve young people in the political life of the country, since these are statistically considered as problems to be solved [6]: unwanted pregnancies among young people, delinquency, drug addiction, school desertion, unemployment, and other are the issues that fill the agendas of the authorities in office, forgetting that young people are the "strategic actors of the country's development" (CRE, 2008, Art. 39) and that it is this sector of the population that should be educated on issues of citizen participation, so that they can effectively fulfill this role of strategic actors. Under this scenario, it is very difficult for governments to be aware that it is in the youth population where three aspects must be developed: the interest of young people to participate in political, social and economic issues; the possibility of participation by creating spaces and scenarios for them; and, training according to the need to participate. Statistics show that only 1.2% of young people between the ages of 20 and 29 would have participated in a political party or movement and the causes are found in their lack of interest in forming new cadres and promoting young leaders. In Ecuador, it is characteristic of these political movements to develop under the shadow of a "caudillo" who captures all the attention, so much so that political parties are not identified by their ideologies but by the face and name of those who lead them; this has caused them to lose strength among voters over time and to gain their apathy for the lack of renewal of leaders, ideologies and proposals.

Despite the fact that the 2008 Constitution includes the function of Transparency and Social Control as a means to curb corruption, in the last decade the indices that measure this evil have not dropped, as Ecuador ranks 107th out of 167 countries; The explanation for this contradiction can be found in the fact that the aforementioned function has not been able to reach citizens with the necessary information to exercise the oversight power contemplated in the Constitution. Ordinary citizens are unaware of this right, which is why the objective of our

research is to determine the participation of young people in the empty chair in the Gads of the Province of Santo Domingo de los Tsáchilas and to make proposals that encourage them to participate in this mechanism.

2 Methods

This research followed a quantitative integrative approach, the group of researchers had access to the information contained in documents and after their respective analysis, they were able to follow up, in order to know, monitor, comment, present observations, demand accountability and contribute to the improvement of the administration precisely with the increase of the participation of young people. Theoretical methods such as analysis and synthesis, induction and deduction were used, which, as mental processes, made it possible to reveal the essential relationships of the phenomena studied and, consequently, elaborate the proposal aimed at promoting the participation of young people in the "Empty Chair" mechanism.

As a method applied to the collection of information, different techniques were used, including the analysis of documents, especially the minutes of the sessions of the municipal council and the provincial council from May 2014 to December 2017, in order to determine citizen participation, especially of young people in the mechanism of the empty chair, obtaining results that will be presented later.

Interviews were conducted with different public officials of the provincial Gads involved in the application of the empty chair; all results were processed through percentage analysis, but the numerical data obtained was also interpreted. In the same way, surveys were applied to the community defenders of the province and it was decided to survey this group of the population, since due to their activity as leaders they are citizens who would have a greater option in making use of the empty chair. The survey was elaborated with 7 questions, three closed-ended questions interspersed in four open-ended questions; of which 1 fulfilled the introductory function and three functioned as a reaffirmation and support of objectivity to the respondent.

The questionnaire used in the survey was useful to diagnose the real state of citizen participation and social control, exercised by young people in Ecuador, was taken into account a total of five questions, three of it closed and two open. The three closed-ended questions correspond to the "Iadov Logical Chart", which is presented adapted to the present research and is shown in Table 1.

	Would it be opportune to dispense with the citizen participation and social control exercised by young people in Ecuador?									
	No			I don't know			Yes			
	Yes	I don't know	No	Yes	I don't know	No	Yes	I don't know	No	No
8. Does the application of the analysis to diagnose citizen participation and social control by young people in Ecuador meet your expectations?	9.If you could choose freely, an option to diagnose citizen participation and social control, exercised by young people, would you choose one with characteristics similar to those of Ecuador?									
Very satisfied.	1	2	6	2	2	6	6	6	6	6
Partially satisfied.	2	2	3	2	3	3	6	3	3	6
I don't care.	3	3	3	3	3	3	3	3	3	3
More unsatisfied than satisfied.	6	3	6	3	4	4	3	4	4	4
Not at all satisfied.	6	6	6	6	4	4	6	4	4	5
I don't know what to say.	2	3	6	3	3	3	6	3	3	4

Table 1: Logical chart by V.A. Iadov to diagnose the real state of citizen participation and social control exercised by young people in Ecuador. Source: Prepared by the authors.

The number resulting from the interrelation of the three questions indicates the position of each respondent in the satisfaction scale, that is, their individual satisfaction. This satisfaction scale is expressed by SVN numbers. The original definition of truth value in neutrosophic logic is shown below[7].

Let $N = \{(T,I,F): T,I,F \subseteq [0,1]\}$ n, a neutrosophic valuation is a mapping of a group of propositional formulas to N, and for each sentence p we have:

$$v(p) = (T, I, F) \tag{1}$$

In order to facilitate practical application to decision-making and engineering problems, a proposal was made for single-value neutrosophic sets [8] (SVNS), which allow the use of linguistic variables [9], thus increasing the interpretability of recommendation models and the use of indetermination.

Let X be a universe of discourse. An S VNS A on X is an object of form.

$$A = \{(x, u_A(x), r_A(x), v_A(x)): x \in X\}d \tag{2}$$

Where:

$$uA(x): X \rightarrow [0,1], rA(x): X \rightarrow [0,1] \text{ y } vA(x): X \rightarrow [0,1], \text{ con } 0 \leq uA(x)+rA(x)+vA(x): \leq 3 \text{ for all } x \in X.$$

The interval $u(x)$, $rA(x)$ and $vA(x)$ represents the membership to true, indeterminate and false of x in A, respectively. An SVN number for diagnosing citizen participation and social control exercised by young people in Ecuador in this study is expressed as $A = (a, b, c)$, where $a, b, c \in [0,1]$, and $+ b + c \leq 3$. SVN numbers, which are obtained, are useful for referral systems.

In order to analyze the results, a scoring function is established. An adapted scoring function [10] is used to sort the alternatives:

$$s(V) = T - F - I \tag{3}$$

If the evaluation corresponds to indetermination (not defined) (I), a de-neutrosification process was developed as proposed by Salmeron and Smarandache [11]. In this case, $I \in [-1,1]$. Finally, we worked with the average of the extreme values $I \in [0,1]$ to obtain a simple value.

$$\lambda([a_1, a_2]) = \frac{a_1 + a_2}{2} \tag{4}$$

Where I saw corresponds with the importance of the source. This proposal fills a gap in the literature of Iadov's techniques, extending it to deal with indeterminacy and the importance of the user due to experience or any other reason [12].

Based on the above, the individual satisfaction scale shown in Table 2 was used to measure the individual satisfaction of each respondent.

Expression	SVN Number	Score
Clear Satisfaction	(1, 0, 0)	1
More satisfied than dissatisfied	(1, 0.25, 0.25)	0.5
Not defined	I	0
More dissatisfied than satisfied	(0.25, 0.25, 1)	-0.5
Clear dissatisfaction	(0,0,1)	-1
Contradictory	(1,0,1)	0

Table 2: Individual satisfaction scale. Source: [15].

3 Results

This led to the socialization among young people of the empty chair participation mechanism, through an awareness program whose objective was to encourage the citizen participation of young people in the province of Santo Domingo de los Tsáchila. During the development of the activities it was possible to verify that the objectives were met, since the university students were interested in knowing the procedures to be able to make use of the Empty Chair.

Based on the result obtained, the IADOV technique was applied to the criteria used in the survey to diagnose citizen participation and social control exercised by young people in Ecuador. The results of applying IADOV are shown in Table 3.

Expression	Total	%
Clear Satisfaction	14	66
More satisfied than dissatisfied	7	33
Not defined	0	0

More dissatisfied than satisfied	0	0
Clear dissatisfaction	0	0
Contradictory	0	0

Table 3: Results of the application of the IADOV technique to diagnose citizen participation and social control, exercised by young people in Ecuador. Source: Prepared by the authors.

On the results shown in table 3, we calculate the score obtained for each indicator of the expression of table 3 and calculate the Iadov, for our case study was assigned a value in the vector of equal weights $w_1 = w_2 = \dots = w_i = 0.0485$. The result of the method is ISG = 0.83, which means that the diagnosis of citizen participation and social control carried out by young people in Ecuador has a high satisfaction value.

Conclusion

The study shows that there are sufficient legal regulations in the country to exercise the rights of citizen participation. It also shows that citizen participation in Ecuador is not born with the Constitution of 2008, but is institutionalized with it by promoting the formation and participation of different social, economic and political groups in the country.

It shows that citizens in general and young people in particular are unaware of their rights to citizen participation and the different existing mechanisms, especially that of the Empty Chair. The activities aimed at disseminating the empty chair participation mechanism among young people and making them aware of the importance of it being occupied by them as the most important social sector generated great interest in assuming a leading role in the mechanisms of citizen participation.

The validation process using Iadov's neutrosophic technique to diagnose citizen participation and social control, carried out by young people in Ecuador, confirmed its feasibility of use. The results were expressed quantitatively in a high index of satisfaction of the group in the survey applied in our case study.

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