



# Neutrosophic model for the analysis of administrative offences on sexual abuse in the ecuadorian educational system

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**Abstract.** The objective of this study is to analyze administrative infractions of sexual connotation, in order that the power of the state resolves to provide appropriate review resources to reduce cases of sexual abuse in Ecuador and particularly in the education system. Given that the administrative summaries issued by the Ministry of Education only review and affirm that each and every one of the administrative processes of sexual connotation show errors of fact and law in their resolutions, arguments that are supported by the establishment of District Conflict Resolution Boards that are not in disregard, in that they do not specify or single out specific cases. In order to achieve this objective, a neutrosophic model is proposed that helps to recommend which are the administrative infractions of sexual connotation in the Ecuadorian educational system.

**Keywords:** Administrative infractions, discretionary review appeal, sexual abuse, District Conflict Resolution Boards, neutrosophic model

## 1 Introduction

Sexual abuse and statutory rape are serious forms of abuse. It involves the imposition of a sexualized activity in which the offender obtains a gratuity, i.e., it is an intentional imposition based on a power relationship. This imposition can be exercised through physical force, blackmail, threat, seduction, intimidation, deception, the use of trust, affection or any other form of psychological pressure or manipulation [1].

[2] Refers that, although there are different definitions of sexual abuse, all of them identify the following common factors:

- Relationship of inequality or asymmetry of power between the aggressor and the aggressor, whether by maturity, age, rank, hierarchy, etc.
- Use of the assaulted person as a sexual object, involving him/her in sexual activities of any kind.
- Coercive maneuvers on the part of the aggressor, seduction, manipulation and/or threats.

Sexual abuse involves conduct of any sexual type that is performed, to deal with situations of mistreatment, harassment, sexual abuse or statutory rape in educational institutions, such institutions must act promptly in situations of mistreatment, harassment, sexual abuse or statutory rape, detect a situation of mistreatment, harassment, sexual abuse or statutory rape implies that an adult in the educational community becomes aware or suspects that a student is being harmed by the action or omission of another person, whether or not that person is a family member [1].

The aforementioned author refers that it is not the function of educational professionals to investigate or diagnose these situations, but to be alert and act in a timely manner, referring to specialized centers and making complaints in the event of mistreatment or sexual abuse. Based on the foregoing, the product of Higher Education includes the constant evaluation and reformulation of each process and is not limited to judging the delineation and distribution of curricula or to ascertaining whether or not the resources involved are sufficient[3].

In this sense, the discretionality of the review resource in administrative infractions is understood as the power of the public power to act on its administered, in merit of a subjective assessment, but outside the law. With regard to the remedy of review, which corresponds to the provision to activate by ministerial agreement, for cases of administrative infractions with a sexual connotation in the Ecuadorian educational system, assessments relating to whether or not compliance with

its conception was carried out, in order to obtain clarification and substantiation of the reason for this decision and not another in a general manner, for each specific case [4].

## 2 Development

In Ecuador there have been numerous judicial and administrative actions aimed at clarifying acts of corruption and responding to Ecuador's social outcry, as a result of multiple cases of sexual connotation that were known and forgotten and, in many cases, resolved in an unsatisfactory manner by the Ecuadorian authorities. In this sense, a supposed support to the affected citizens was manifested, having the same ministerial agreements given the origin of revision of all the processes of sexual connotation that did not end in destitution and sanctions.

It also points out that the decision related to the foregoing had an effect on the ministerial agreements issued by the Ministry of Education. This action corresponds to the social upheaval produced by the cases of sexual connotation detected at the level of the national education system, but in reality, neither the error of fact nor the error of law to which they allude in their substantiation are established in the literal or subjective content of the administrative acts they carried out.

In accordance with the foregoing and with regard to the effects of the ministerial agreements issued by the Ministry of Education, it is determined that the protection of students is an objective that must be achieved through the articulation of the various management instruments available to each institution. Through the diversity of tools [5].

Educational institutions have the opportunity to propose different types of actions that are consistent with this objective since, according to [6], the factors or experiences to which students are exposed in the classroom may or may not be harmonized with the natural systems of learning and memory of the brain, which will directly reflect on the development of brain potential. Thus, for example, in accordance with the School Coexistence Policy, it is necessary for each institution to construct a coexistence regulation that ensures the right to education for all students; a right that is explicitly found in this policy [7]. This regulation protects the entrance and the permanence of the students in the establishment, through the construction of norms that make clear what is expected of each member of the school community, what will be considered unacceptable, and the formative measures that will be applied to those who do not respect these indications.

The aforementioned author quotes that the reasons referred to above are not proven with clarity or precision, the statements to be understood by administrative means do not have the will to clarify this type of facts, the personnel are not adequate since they do not have sufficient expertise, nor the adequate means to guarantee adequate scientific-technical work.

On the other hand, the Ecuadorian educational system has a coexistence manual; in the manual, there are duties and rights that must be fulfilled by each student, the role that teachers play in certain institutions, and the role of the representative or parent. By allowing a normative instrument to prevent violence, harassment, bullying or school harassment, providing the teachers with the information they need, elements that help the educational community to apply the corresponding Law [8].

There are sanctions for each teacher's misconduct according to its severity and in accordance with the code of cohabitation the admonitions can be verbal or written, between the most serious offense is to commit sexual violence, abuse, or other sexual crimes.

According to Art. 354 chapter XI of the infractions of sexual connotation, it refers that:

For the purposes of disciplinary punishment, sexual harassment or harassment in education, without prejudice to the provisions of the Criminal Code and the Childhood and Adolescence Code, means any conduct with a sexual content that is carried out in isolation or repeatedly, in writing or verbally, gesturally or physically. The following conduct or manifestations are considered for this purpose:

1. A requirement of sexual favors involving the offer, by a teacher, manager or administrative, aimed at improving the academic status of a student in exchange for any favor of a sexual nature;
2. Implicit or express threats, physical or moral, of damages and punishments, referring to the current or future situation of the student, which could be avoided if favors of a sexual nature were granted;
3. Use of written or oral words of a sexual nature or connotation, directed at one or more students in a specific or individual manner;
4. Displaying sexually oriented images, constant in pictures, movies, magazines, or other media that depart from the educational purpose;
5. Displaying pornographic images, constants in pictures, movies, magazines, or other media;
6. Making gestures, gestures, or any other nonverbal conduct of a sexual nature or connotation; and,
7. Body approaches and other physical contacts of a sexual nature or connotation".

The article in question states that sexual harassment in education is any conduct or sexual act that is carried out in written, verbal, gestural or written form. And article 355 of the Organic Law of Intersectoral Education states that:

"Art. 355.- Duty to denounce. Any authority or director of an educational establishment, teacher or administrative staff, student or any other person who has knowledge of any act of sexual harassment or harassment to the detriment of one or

more students, shall have the obligation to report the alleged harasser to the District Dispute Resolution Board. Failure to comply with this provision shall be considered as serious misconduct and shall be subject to the sanctions provided for in these Regulations".

According to art. 355, which indicates that any person or authority of the educational establishment, who knows that there is some act or sexual harassment that harms one or more students, will have the obligation and the power to report to the District Board of Dispute Resolution.

Based on the analysis carried out by [6], it is stated that there are mistakes in pretending that all the processes denounced are considered suitable for imposing a sanction, which is none other than the separation of this work activity for teachers.

On the other hand, and considering that the process for the review appeal is based on the decisions of the Educational zonal coordinations brought to the attention of the Ministry of Education, where the admission of the Extraordinary Review Appeal is accepted in order to dictate measures of protection against the accused, without taking into account that the measures supposedly were established to guarantee the removal of the alleged victims.

It is also considered in the analysis that at the beginning of the administrative summary, according to [9], where it alludes that the measures adopted were dictated and produced separation from the teaching student, which is unnecessary, since the only thing that is achieved is to stigmatize the teacher since he is in a new place of work trying to re-establish his labor activity and even more so when this teacher for obvious reasons was found without responsibility for what he was accused of.

Therefore, it is considered necessary to make it clear that all those teachers who were initiated the review process are those who, within the development of the Administrative Summaries instituted against them, was found not responsible for the acts of which they were accused and the only objective for them is to expel them from their work .[9]

With regard to the above-mentioned considerations and the fact that the education authorities in the city of Quito are carrying out, on a massive scale and in folders, the administrative summaries for the period 2014 to 2017, which were known in their own jurisdiction, in order to be investigated and prosecuted. On the other hand, it refers that the Quito education authorities studied different files on cases of sexual violence in educational institutions in that district and submitted them to the Attorney General's Office for judicial investigation. Those involved in these cases were separated from the educational entities, an action that is added to the documents already submitted by the Minister of Education.

However, the reality is that this has transcended to the rest of the country and has allowed the inclusion of many of the cases without having been charged in the criminal system, highlighting the following factors related to the recourse to review in administrative infractions of sexual connotation in the Ecuadorian educational system.

1. It is reported that with the dismissal of teachers who were involved in the administrative processes of sexual connotation, that is to say that there was no certainty that they were guilty of what they were accused of and even so, they were dismissed.

2. It is not possible to exonerate teachers who have already been placed in other educational units where they could develop normally and without any social prejudice because of the accusation made against them, since they are again separated from the new educational establishment and a clear and proven assumption is stigmatized that the responsibility that was denounced did not exist.

3. The families of the persons summarized again by the same process are again emotionally charged because having already determined that there was no responsibility and having in their clear knowledge the idea that this was a forgotten matter, now again a process appears in which the opposite is said, leaving the reputation of the summarized person in between, generating labor instability.

Based on an analysis of the factors related to the appeal for review of administrative offences with a sexual connotation in the Ecuadorian education system, there is a need for the State's decision, when issuing ministerial agreements, to initiate appeals for review of summaries in the education sector, which renders ineffective the administrative action taken, in order to provide for sanctions to be taken in a manner different from those previously sanctioned, through the integrated development of an already systematized process with a minimum guarantee.

The above-mentioned filing contributes to the fact that no severe sanctions are imposed and that sanctions are only imposed on the basis of what has been denounced. Essentially, denouncing an act of sexual connotation is equivalent to separating a teacher from his or her work, thereby putting an end to his or her career, leaving no room for doubt that what was denounced may not be entirely true, hence the fact that we must also consider that there is never 100% certainty in cases in which an act is denounced.

From a methodological and practical point of view, there is no evidence of teaching resources that would promote individual and social development, capable of fostering independence and creation . Consistent with the above-mentioned considerations, it is important to develop a neutrosophic model for the analysis of administrative infractions on sexual abuse in the Ecuadorian education system, given that in these cases there are countless linguistic terms, which constitute a set of terms obtained from the documentary analysis of educational processes in each education system.

According to the above, the sets of terms are composed of ideas, intuitions, for that reason to treat these sets is made use of neutrosophy and in particular the neutrosophic sets, which generalize the diffuse set (especially the diffuse and intuitionist set), as well as the set for consistent and the intuitive set. Neutrosophy was proposed by Smarandache[10] for

the treatment of neutrality. It has formed the basis for a series of mathematical theories that generalize classical and diffuse theories such as neutrosophic sets and neutrosophic logic [11].

With the purpose of facilitating practical application to problems of decision-making and engineering, the proposal was made the single-value neutrosophic sets [10] (SVNS) which allow the use of linguistic variable [12] which increases the interpretability in recommendation models and the use of indetermination.

In view of the above, this study makes use of neutrosophy to recommend which are the administrative infractions to address the sexual connotation in the Ecuadorian educational system.

### 3 Materials and methods

Documentary analysis was carried out, in particular of the informative materials in order to know information that was contrasted with the regulations exposed within the introduction and the doctrinal contributions inherent in explaining the concept of the Constitution, neo-constitutionalism and guaranteeism. The process was carried out by means of qualitative research techniques that allow the systematized and specific study of the procedural pieces detailed above, losing us the sense to carry out a study in a determined space and applicable to our present time since the facts submitted to study took place in our country equator, specifically in the province of Pichincha, canton Quito, and in the resort of the present year.

The analytical method was applied to arrive at a result through the decomposition of a phenomenon in its constitutive elements, taking into account that there are multiple and very diverse species of analysis, which are indicated by the nature of the analyzed. Also, the grammatical method was employed since it allows to establish the senses and scope of the law making use of the tenor of the own words of the law, that is to say, to the meaning of the terms and phrases that the legislator used to express and to communicate his thought. This method concentrates on paying attention to the way in which the legal disposition was written by the legislator, that is to say, to analyze through the grammatical and language rules to find meaning to what is mentioned there, to simply analyze the expressions. Let's remember that the legislator by obligation should write a law so that any citizen could interpret it. Consequently, it will be used to look for meaning from what, grammatically expressed in the Constitution, in relation to executive decrees and administrative acts, so that it allows us to understand the scope and limits set in their conception and the laws that must be respected, with absolute subjection.

In addition, use was made of the axiological method, since Juridical Axiology, which is also known as Theory of Just Right, is a part of Juridical Philosophy that seeks to discover the values in which the Positive Juridical Order must be inspired, elucidating a model that will prevail, a smooth Theory of Justice. In this sense, Axiology is the science that deals with values. The Philosophy of Law, as the foundation of its existence, has a double purpose: to investigate the origins of law in search of the most adequate concept, as well as in relation to its values. The latter includes the Juridical Axiology, dedicated to dealing with the valuation purposes of law, finding them, analyzing them, qualifying them and even hierarchizing them. Consequently, the application of this method will explain the values that the Constitution of the Republic of Ecuador truly developed in reality and the purpose that it had for executive decrees to be carried out.

According to the results obtained when applying the above-mentioned methods, neutrosophy is used for the analysis of the linguistic terms obtained and related to administrative infractions on sexual abuse in the Ecuadorian educational system. In particular, a model based on the aggregation of information was used.

Aggregation of information is the fusion of information and consists of the process of combining different data to provide a single output. Aggregation operators are a type of mathematical function used for the purpose of merging information. They combine  $n$  values in a domain  $D$  and return a value in that same domain [13].

The workflow is proposed in Figure 1.



**Fig. 1.** Model based on the aggregation of information for the analysis of administrative infractions on sexual abuse in the Ecuadorian education system. Source: Prepared by the authors.

To obtain results, linguistic terms and indetermination are used using single-value neutrosophic numbers (SVNs) [8, 9], based on the aggregation of information. SVNs is expressed as  $A = (a, b, c)$ , which are represented by tuples. For this reason, this study takes into account the set of linguistic terms, defined by , which are shown in Table 1.

Linguistic term	SVN Numbers
Extremely good(EG)	(1,0,0)
Very very good (VVG)	(0.9, 0.1, 0.1)
Very good (VG)	(0.8,0.15,0.20)
Good(G)	(0.70,0.25,0.30)
Medium good (MDG)	(0.60,0.35,0.40)
Average(M)	(0.50,0.50,0.50)
Medium Bad (MDB)	(0.40,0.65,0.60)
Bad (B)	(0.30,0.75,0.70)
Very bad (VB)	(0.20,0.85,0.80)
Very very bad (VVB)	(0.10,0.90,0.90)
Extremely bad (EB)	(0,1,1)

Table 1: Linguistic terms used [18].

The detailed description of each activity in the proposed model (figure 1) for the analysis of administrative infractions on sexual abuse in the Ecuadorian education system is presented below.

1. Establish evaluation framework

The criteria and alternatives to be evaluated are selected in order to prioritize the latter. The framework is defined as follows:

- $C = \{c_1, c_2, \dots, c_n\}$  with  $n \geq 2$ , a set of criteria
- $E = \{e_1, e_2, \dots, e_k\}$  with  $k \geq 1$ , a set of experts
- $X = \{x_1, x_2, \dots, x_m\}$  with  $m \geq 2$ , a finite set of alternatives

2. Gathering information

At this stage, information is obtained on the preferences of decision-makers. The utility vector [80] is represented as follows:

$$P_j = \{p_{j1}, p_{j2}, \dots, p_{jk}\}, \text{ where } p_{jk} \text{ is the preference in relation to the criterion } c_k \text{ of the alternative } x_j$$

3. Rating alternatives

In order to evaluate the alternatives, the alternative where the aggregation operators are used is constructed.

4. Ranking

At this stage the alternatives are classified and the most convenient is chosen by the scoring function [81, 82]. According to the scoring and precision functions for SVN-sets, a ranking order of the set of alternatives can be generated [83]. Select the option(s) with higher scores.

A scoring function defined by [14] is used to sort alternatives:

$$s(V_j) = 2 + T_j - F_j - I_j \tag{1}$$

In addition, the precision function is defined as follows:

$$a(V_j) = T_j - F_j \tag{2}$$

and then:

- If  $s(V_j) < s(V_i)$ , then  $V_j$  is less than  $V_i$ , denoted as  $V_j < V_i$
- In case of  $s(V_j) = s(V_i)$
- If  $a(V_j) < a(V_i)$ , then  $V_j$  is minor  $V_i$ , denoted by  $V_j < V_i$
- If  $a(V_j) = a(V_i)$ , then  $V_j$  and  $V_i$  are equal, denoted by  $V_j = V_i$

The ranking is carried out according to the scoring function of the evaluated alternatives.

#### 4 Results

The first result of our investigation is that definitively the conception of the ministerial agreement infers in a negative way since it is applied only in those processes in which there was no sanction with dismissal, but not in the other processes.

The issuance of the ministerial agreement in strict adherence to the Ecuadorian constitutional conception, is that it must be used, when the decision of the public authority is needed, by an imperious need of control of administration, organization or regulation, but not to the clamor of a social sector and for its own benefit.

As a third result of our investigation, we have that the admission order of these review resources is based solely and exclusively on a general error of fact and law that was never individualized and motivated for each specific case.

According to the results obtained, the neutrosophic model based on ideal distance is applied for the analysis of administrative infractions on sexual abuse in the Ecuadorian educational system. For our case study, the evaluation framework is composed of an expert who evaluates 3 alternatives, which are the factors related to the appeal for review in administrative infractions of sexual connotation in the Ecuadorian educational system.

x1: Removal of teachers who were involved in administrative processes of sexual connotation  
 x2: Stigmatization of clear and proven assumptions of the non-existence of reporting responsibilities  
 x3: Emotional burdens of the families of people repeatedly summarized by the same process that generates job instability.

The criteria to be considered for the evaluation of the 3 alternatives referred to above are:

- c1: Point of view
- c2: Perspective
- c3: Psychological affectation

The linguistic terms shown in Table 1 are used for the evaluation. Once the evaluation framework has been established, the information is collected and the results are shown in Table 2.

	x1	x2	x3
c1	MDG	EG	MG
c2	G	MDG	B
c3	MDG	MDG	G

**Table 2:** Results of the collection of information

The vector used for our case study has the following weights:  $W = (0.58, 0.28, 0.20)$ . The opinions of the decision-makers are then aggregated using the SVNWA aggregation operator, the result is shown in table 3.

	Agregación	Scoring	Ranking
x1	(0.53, 0.4, 0.56)	1.83	2
x2	(0.43, 0.0, 0.0)	2.53	1
x3	(0.66, 0.52, 0.63)	1.72	3

**Table 3:** Results for the evaluation

According to the scoring function, the alternatives are ordered as follows:  $x2 > x1 > x3$ , which means that there is a stigmatization of clear and proven assumptions of the non-existence of reporting responsibilities, which affects the dismissal of teachers who were immersed in the administrative processes of sexual connotation and all of this leads to the existence of emotional burdens of the families of people repeatedly summarized by the same process.

An analysis was also made of the novel aspects contributed in the present investigation, highlighting that the ministerial agreement and all administrative acts emanating from it, in the public sector in charge of knowing and processing the appeal for review, are carried out under the general protection of the provisions, but not in form or in substance, respecting the basic guarantees of due process that being a right to be considered in a fundamental way in any judicial or administrative process.

What derives from the ministerial agreement and all the administrative acts that make it impossible for lawyers to carry out technical defense, reduced in terms of possibilities of obtaining a favorable resolution, refers to the fact that there is no guideline other than that of the sanction with dismissal.

As a consequence of the above-mentioned results, the discretionality with which the executive decree provides

for initiating the review process clearly indicates that the tendency is only sanctioning and does not look at the opposition that should exist for people who could have been harmed by the bad actions of the public administration; what technically, does not fit within the discretionality of regulated powers nor discretionary powers, since in essence, it fits the norm but it does not have subjective background that supports correctly its conception, that if we look at it and focus from the constitutional point of view, should be tending to the protection of rights, but not to the detriment of the same ones when not observing the process that must be given to each citizen.

## Conclusions

It is noted that the inference of the ministerial agreement on administrative decisions in the education sector is not correct, given that only those teachers who have not been sanctioned with dismissal have been sought to initiate appeals for review and, on the contrary, the resolutions that separated other teachers have not been reviewed in order to clarify the commission of certain acts or the nonobservance of certain norms.

The admission orders of the extraordinary review appeals issued by the Ministry of Education, in cases of administrative summaries with sexual connotation are based solely and exclusively on an alleged error of fact and of law in a general sense, but it is never specifically identified which is for each case what makes it a resolution without motivation.

With the neutrosophic model based on ideal distance for the analysis of administrative infractions on sexual abuse in the Ecuadorian educational system, it was confirmed that there is a stigmatization of clear and proven assumptions of the non-existence of denunciation responsibilities, which affects the dismissal of teachers who were immersed in the administrative processes of sexual connotation and all of this leads to the existence of emotional burdens of families, of persons repeatedly summarized by the same process.

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