

NEUTROSOPHIC ANALYSIS OF SENTIMENTS IN ECUADORIAN LEGAL PROCESSES

Pablo Emerley Espinosa Pico ¹, Ivan Xavier Leon Rodriguez , Luis Ramiro Ayala Ayala

^{1,2,3}Autonomous University of the Andes, Ecuador.

ABSTRACT.

This study addresses a central problem in the Ecuadorian legal field: the intersection between legal protection, admissibility of evidence, the origin of conflicts and the resources available within the justice system, all analyzed through an innovative approach based on applied neutroalgebra. In a context in which legal systems face challenges arising from social complexity and the uncertainties inherent to judicial cases, it is crucial to have tools that allow these situations to be analyzed comprehensively. Although the legal literature has widely explored issues related to rights and legal resources, few investigations have incorporated methods that explicitly consider the sentimentss, subjectivity and contradictions present in legal processes, leaving a significant theoretical and practical gap. This study uses neutrosophic analysis to evaluate sentimentss and perceptions in specific cases, integrating neutroalgebra as the main analytical tool. The results highlight how protection, admissibility and the origin of legal conflicts can be interpreted more accurately by incorporating dimensions of truth, falsehood and indeterminacy. These perspectives reveal patterns and biases that traditional methods fail to capture, offering a more holistic and dynamic view of the legal landscape in Ecuador. The implications are profound: in theoretical terms, an innovative framework is introduced that expands the boundaries of legal analysis; in practical terms, concrete strategies are proposed to improve transparency and effectiveness in judicial processes. This work not only redefines contemporary legal analysis but also sets a precedent for future interdisciplinary research that integrates neutrosophic logic with law.

KEYWORDS: Protection, admissibility, origin, appeal, neutrosophic analysis, neutroalgebra

MSC: 03B52, 68T37, 91D10, 93A30, 62P25.

RESUMEN.

El presente estudio aborda un problema central en el ámbito jurídico ecuatoriano: la intersección entre la protección legal, la admisibilidad de pruebas, el origen de conflictos y los recursos disponibles dentro del sistema de justicia, todo ello analizado a través de un enfoque innovador basado en la neutroálgebra aplicada. En un contexto en el que los sistemas jurídicos enfrentan retos derivados de la complejidad social y las incertidumbres inherentes a los casos judiciales, resulta crucial contar con herramientas que permitan analizar estas situaciones de manera integral. Aunque la literatura jurídica ha explorado ampliamente temas relacionados con derechos y recursos legales, pocas investigaciones han incorporado métodos que consideren de manera explícita los sentimientos, la subjetividad y las contradicciones presentes en los procesos legales, dejando un vacío teórico y práctico significativo. Este estudio utiliza el análisis neutrosófico para evaluar sentimientos y percepciones en casos específicos, integrando la neutroálgebra como herramienta analítica principal. Los resultados destacan cómo la protección, la admisibilidad y el origen de los conflictos legales pueden ser interpretados de manera más precisa al incorporar dimensiones de verdad, falsedad e indeterminación. Estas perspectivas revelan patrones y sesgos que los métodos tradicionales no logran capturar, ofreciendo una visión más holística y dinámica del panorama jurídico en Ecuador. Las implicaciones son profundas: en términos teóricos, se introduce un marco innovador que expande los límites del análisis legal; en términos prácticos, se proponen estrategias concretas para mejorar la transparencia y la eficacia en los procesos judiciales. Este trabajo no solo redefine el análisis jurídico contemporáneo, sino que también establece un precedente para futuras investigaciones interdisciplinarias que integren la lógica neutrosófica con el derecho.

PALABRAS CLAVE: Protección, admisibilidad, origen, recurso, análisis neutrosófico, neutroálgebra

1. INTRODUCTION.

The relationship between legal frameworks and their ability to protect rights, ensure the admissibility of evidence, establish the origin of conflicts and offer effective remedies constitutes a central axis in the study of comparative law [18]. In the Ecuadorian context, the complexities of these legal processes are intensified due to the diversity

¹ jurisprudencia@uniandes.edu.ec , us.ivanleon@uniandes.edu.ec , ur.luisayala@uniandes.edu.ec

of interpretations and the coexistence of formal and informal normative systems. This article proposes an innovative approach that combines tools of neutrosophic analysis and applied neutroalgebra to explore the dynamics of sentimentss, uncertainties and contradictions inherent in these processes. Such analysis is crucial in a legal system that faces constant challenges to adapt to a rapidly evolving social and technological environment [17]. Historically, legal systems have been designed to guarantee justice and equity, although they have not always managed to meet these aspirations. In Ecuador, events related to the interpretation of the law, the admissibility of evidence and the legitimacy of judicial resources have generated intense debates in recent decades [14]. Recent changes in national legislation, particularly in criminal and civil matters, reflect an effort to modernize the system and adapt it to international standards. However, these reforms have not succeeded in fully resolving the tensions that arise from the application of regulations in contexts characterized by high subjectivity and indeterminacy [7]. The specific problem that this study addresses lies in the lack of an analytical framework that comprehensively captures and assesses the sentimentss, perceptions, and contradictions present in the interpretation and application of legal norms in Ecuador. How can the coherence and effectiveness of judicial processes be guaranteed in a context where human emotions and uncertainty play such an important role? This question guides the research, underlining the need for an interdisciplinary approach that allows addressing the limitations inherent to traditional methods [1]. In this article, it is argued that neutrosophic tools and applied neutroalgebra offer a powerful framework for analyzing complex legal problems. By integrating concepts of indeterminacy, partial truth, and relative falsity, these methodologies allow capturing dynamics that escape conventional analyses. In this way, the neutrosophic approach not only provides a richer and more nuanced perspective but also opens up new possibilities for the design of public policies and legal strategies that are more inclusive and effective [15].

This paper is also distinguished by its emphasis on sentimentss and perceptions as essential elements of legal analysis. This approach recognizes that legal systems do not operate in a vacuum, but constantly interact with the expectations, emotions, and perceptions of stakeholders. These interactions can influence both the interpretation of norms and the perception of justice, making their incorporation into any analytical model that seeks to be comprehensive indispensable [16]. The existing literature on admissibility, legal remedies, and normative analysis in Ecuador, although extensive, presents notable shortcomings. Previous studies have predominantly focused on technical and doctrinal aspects, leaving aside the subjective and contradictory dynamics that influence legal practice. This theoretical and methodological gap is particularly problematic in contexts of high uncertainty, where legal interpretations and decisions can have significant and far-reaching consequences [3]. Therefore, the objectives of this study are: first, to develop an analytical model based on applied neutroalgebra that allows a comprehensive assessment of the sentimentss and contradictions present in legal processes in Ecuador; and second, to offer concrete recommendations to improve the transparency, coherence and effectiveness of these processes. This article ultimately seeks not only to contribute to theoretical advancement in legal analysis, but also to provide practical tools to address the challenges inherent in contemporary legal systems. With this research, we aim to fill a critical gap in the legal literature, proposing an innovative and methodologically sound approach. The findings have the potential to transform the way legal norms are analysed and applied in contexts characterised by high subjectivity and uncertainty, providing new perspectives for both academics and legal practitioners.

2. PRELIMINARIES.

2.1. LEGAL PROTECTION .

Legal protection, understood as the safeguarding of fundamental rights and guarantees, constitutes the backbone of any legal system. In this context, the concept of admissibility of evidence and arguments acquires crucial relevance in determining the viability of a case within the regulatory framework [4]. Likewise, the identification of the origin of conflicts and the availability of effective resources for their resolution are essential pillars to ensure the functionality of the justice system. These four elements—protection, admissibility, origin and resources—not only constantly interact, but also face specific challenges in societies characterized by cultural diversity, inequality and normative uncertainty [5]. From a theoretical perspective, legal protection has deep roots in the philosophy of law and is intrinsically linked to concepts of justice, equity and legitimacy [18]. For its part, admissibility is closely linked to procedural rules, being the criterion that regulates which evidence or arguments are considered valid before a court [8]. This mechanism, far from being purely technical, reflects underlying values in the legal system, such as objectivity and impartiality. However, its application in real contexts is subject to interpretations that can vary considerably depending on the social and cultural environment [10]. Identifying the origin of conflicts is an equally relevant aspect, as it allows for the analysis of the underlying causes that generate legal or social tensions [14]. This exercise not only sheds light on the roots of the problems but also facilitates the search for sustainable solutions [9]. Finally, legal resources represent the practical tools that individuals or organizations can use to resolve disputes or protect their rights [20]. In this sense, their design and availability are key indicators of the accessibility and effectiveness of the judicial system [16].

In practice, these four elements face significant challenges. For example, legal protection is often limited by structural inequalities that hinder access to justice [18]. The admissibility of evidence, despite its normative criteria, can be influenced by subjective biases or technological constraints [15]. Similarly, identifying the origin

of conflicts can be complicated in multicultural contexts where different legal interpretations coexist. Moreover, the effectiveness of resources depends not only on their existence but also on the capacity of actors to use them appropriately [12].

First, it is imperative to recognize that legal protection, although widely recognized as a fundamental right, faces significant limitations in its practical implementation [7]. The gap between written laws and their application is a recurrent phenomenon in many countries, especially in those with fragile judicial systems. This mismatch can lead to situations of injustice, where legally protected rights are not accessible to all citizens [21]. On the other hand, the admissibility of evidence raises questions about the balance between technical rigor and procedural fairness [8]. While the rules of evidence are essential to ensure fair trials, their interpretation can be restrictive or exclusionary, especially in cases where the available evidence does not meet established standards. In this regard, a critical analysis of the admissibility criteria is necessary to ensure that they do not perpetuate pre-existing inequalities [3]. Regarding the origin of conflicts, it is observed that a superficial understanding of the underlying causes can lead to temporary solutions that do not address the problem in its entirety [15]. This approach is not only ineffective but may also exacerbate long-term tensions. Identifying and addressing the structural causes of conflict is therefore a priority task for any justice system that aspires to be truly functional [16]. Legal remedies must also be accessible and effective, not only in theory but also in practice [20]. This involves ensuring that individuals are aware of their rights and the tools available to protect them. Furthermore, remedy systems must be designed taking into account the socio-economic realities of users, ensuring that they are inclusive and do not discriminate against the most vulnerable [12]. A crucial aspect that deserves attention is the interaction between these four elements. Legal protection loses its meaning if there are no accessible resources to make it effective [9]. Similarly, the admissibility of evidence lacks relevance if it is not contextualized within a framework that allows the origin of conflicts to be identified appropriately [10]. This integrative approach is essential to understanding and improve the judicial system as a whole.

In practical terms, reforms are needed that address the shortcomings observed in each of these elements. These reforms must be guided by empirical research that analyses the impact of existing policies and proposes evidence-based solutions [1]. The adoption of innovative approaches, such as the use of advanced technologies or interdisciplinary methodologies, can play an important role in this process [22]. Finally, the interaction between the social and cultural context and the judicial system should not be underestimated [3]. Legal systems do not operate in a vacuum, but are deeply influenced by power dynamics, cultural norms and societal expectations. Therefore, any analysis of protection, admissibility, origin and resources must consider these dimensions to be truly effective and relevant [15].

2.2. Sentiment analysis

Sentiment analysis employs advanced natural language processing tools, combined with text mining and computational linguistics techniques, to identify and extract subjective information present in various sources [6]. In the context of text mining, this methodology is frequently used to classify large volumes of data according to their polarity, allowing trends and opinions to be discerned efficiently. Among the main categories in this discipline, approaches such as lexical affinity, statistical methods, and conceptual techniques stand out. However, evaluating sentiments, whether at an individual or collective level, represents an intrinsic challenge due to the complexity of emotional subjectivity. This is because affective states are often ephemeral and dynamic, and can change significantly in a matter of moments, which adds uncertainty to the analysis process [11].

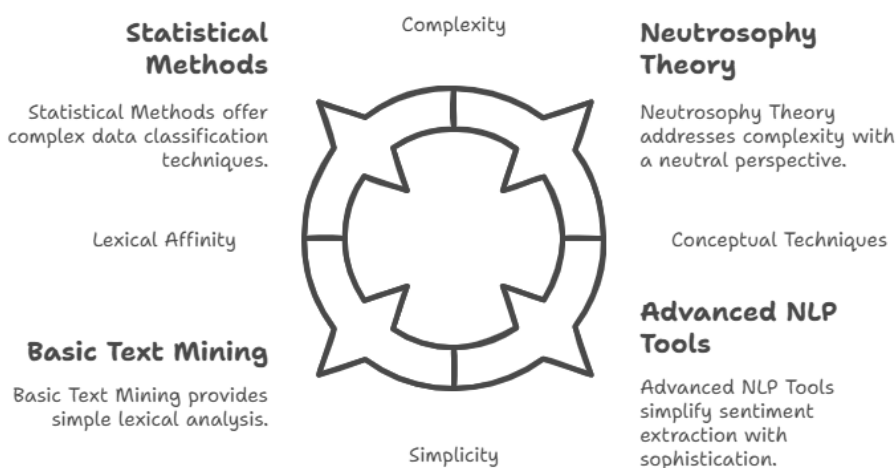


Figure 1. Sentiment Analysis Methodologies and Challenges

Regarding measurement scales, researchers emphasize the need to include neutral options. This is because a person

may be unsure of categorizing their emotional state as positive or negative, or they may be in a state of complete neutrality that does not align with any of the usual categories [2]. In this framework, the Neutrosophy theory becomes highly relevant, as it addresses not only positive and negative aspects, but also neutrality. This approach is particularly useful for analyzing the connotative load of words within a text, which adds a dimension of complexity to the evaluation process [17].

2.2 Neutrosophic Sentiment Analysis Using NeutroGroup in Prospector

The proposed sentiment analysis process integrates neutrosophic logic to capture positive, negative, and indeterminate sentiments within textual data. By leveraging NeutroGroup (NG) operations, the method systematically evaluates sentiment indicators such as integrity, transparency, and accountability. The approach accounts for linguistic intensity modifications, negation handling, and complex cases like ambiguous punctuation and emoticons. Through preprocessing techniques, including spell checking and natural language processing (NLP), relevant sentiment values are extracted and assigned a score on a -5 to 5 scale, or marked as indeterminate (I) when ambiguity arises. Finally, sentiment scores are aggregated across multiple individuals, allowing for a comprehensive and structured sentiment evaluation in organizational or analytical contexts.

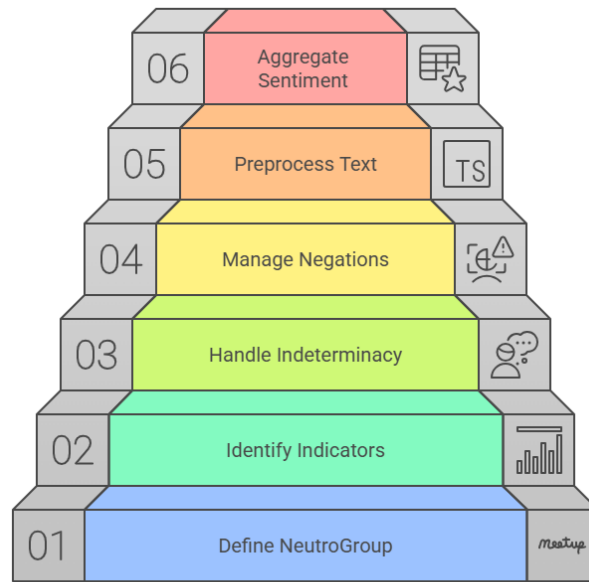


Figure 2. Flowchart of the Sentiment Analysis Process Based on Neutrosophic Logic

For a given natural number $n > 0$, NeutroGroup is defined from the combinator function of Prospector. Prospector is the well-known expert system used to model mining problems [15]. The set NeutroGroup consists of all integers between $-n$ and n plus the symbolic element I to represent indeterminacy. This is $NG_5 = \{-5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5, I\}$ and \oplus_5 is used. This is defined according to the following Cayley table:

\oplus_5	-5	-4	-3	-2	-1	0	Yo	1	2	3	4	5
-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	Yo
-4	-5	-5	-5	-5	-4	-4	-4	-4	-4	-3	-2	5
-3	-5	-5	-5	-4	-4	-3	-3	-3	-2	-1	0	5
-2	-5	-5	-4	-4	-3	-2	-2	-1	0	1	3	5
-1	-5	-4	-4	-3	-2	-1	-1	0	1	2	4	5
0	-5	-4	-3	-2	-1	0	Yo	1	2	3	4	5
Yo	-5	-4	-3	-2	-1	Yo	Yo	Yo	Yo	Yo	Yo	Yo
1	-5	-4	-2	-1	0	1	Yo	2	3	4	4	5
2	-5	-3	-1	0	1	2	Yo	3	3	4	5	5
3	-5	-2	0	1	2	3	Yo	4	4	4	5	5
4	-5	0	2	3	4	4	Yo	4	5	5	5	5
5	Yo	5	5	5	5	5	Yo	5	5	5	5	5

Table 1. Cayley table corresponding to \oplus_5 . Source: [15].

\oplus_5 It satisfies the properties of commutativity and associativity and has 0 as a null element. In addition , it satisfies each of the following properties :

- If $x, y < 0$ then $x \oplus_5 y \leq \min(x, y)$,
- If $x, y > 0$ then $x \oplus_5 y \geq \max(x, y)$,
- If $x < 0$ and $y > 0$ or if $x > 0$ and $y < 0$, then we have $\min(x, y) \leq x \oplus_5 y \leq \max(x, y)$.
- $\forall x \in G, x \oplus_5 0 = x$.
- $(-5) \oplus_5 5 = 5 \oplus_5 (-5) = I$.

Sentiment analysis, through the neutrosophic method, focuses on assessing integrity, transparency, and accountability within organizations. Using this theory, opinions and perceptions are examined by considering the degrees of positivity, negativity, and indeterminacy. This approach not only captures clear sentiments, such as positive and negative ones, but also addresses those that are neutral or ambiguous, thus achieving a more accurate assessment and a better understanding of how these aspects are perceived in the organizational environment.

This method, particularly effective in the analysis of short and informal texts, as described in the technique mentioned above, requires the identification of a set of words that are classified as positive, negative or neutral, each with a strength value evaluated in a range from -5 to 5, or that are marked as indeterminate. Indeterminacy occurs when it is not possible to clearly decipher the individual's thoughts on the subject in question, which may occur due to a lack of clarity in the semantics of the text or because the text is unintelligible. Furthermore, in certain cases, it is possible that in the same text extreme evaluations of positivity (+5) and negativity (-5) are presented for the same variable, which generates a contradiction that is classified as indeterminate, marked with the letter I. This indeterminacy can have different origins, which becomes evident when the function used in the PROSPECT expert system, which evaluates the degree of evidence of an expert on a particular aspect, finds maximum evidence but in opposite directions for two different aspects.

This method, which borrows some elements from the SentiStrength sentiment strength detection algorithm [16], allows terms related to the analyzed variables to be classified as Positive, Negative or Neutral in a list using linguistic values. Each of these terms is associated with a value between -5 and 5, or even I, depending on the intensity of its positive or negative charge. For example, the term "I like" increases its positive value if expressed as "I like it a lot", while "I don't like it" becomes more negative when saying "I don't like it a lot". What applies is that for the word "much" or "a lot" that modifies one of the positive or negative classifier words, is used $x \oplus_5 x$, and for "too much" $x \oplus_5 x \oplus_5 x$, where x is the value that is associated with the word. For example, $x > 0$ it results in "very" with an even more positive value. On the other hand, when $x < 0$, the result is more negative.

Also, the modification of "quite" is converted to $\lfloor \text{sig}(x) \sqrt{|x|} \rfloor$.

- They take into account words that reverse the meaning of what is said. In this case, the sign is changed. For example, "I like" has a value of $x = 3$, when it comes to "I don't like" it is calculated as $x = -3$, both have the same strength, but with opposite meaning.
- In this algorithm, very complex cases, where there are exclamation or question marks, are ignored, since we want to evaluate what the members of the organization or clients write, if it makes sense, about each of the twelve aspects of ethics mentioned in the previous points.
- Another aspect that is taken into account in the proposed algorithm taken from the previous one is the evaluation of the emoticons.
- Spell checking also applies here.

The next step is the evaluation of a short informal text written by a person. To do this, natural language processing is performed, where words that express sentiments or opinions about each of the twelve aspects mentioned above are searched for. Let us denote these aspects as $V = \{v_1, v_2, \dots, v_{12}\}$:

Then, within the text processing, the words referring to each of these variables are identified. These words are identified with a value from -5 to 5 or I. Let us denote this as follows, for the i -th variable, the set X_i of word ratings that appear in the text:

$v_i \rightarrow X_i = \{x_{i1}, x_{i2}, \dots, x_{im_i}\}$, where x_{ij} It is the set of elements between -5 and 5 or I, used to qualify the words that refer to the i -th variable.

Note that even the individual evaluation of each word can be complicated. For example, when modifiers such as "very" appear, the value of the modified word changes. Also when there are spelling errors that make an evaluation illegible, it is necessary to use the value I. The final value associated with each v_i is:

$$x_{total,i} = x_{i1} \oplus_5 x_{i2} \oplus_5 \dots \oplus_5 x_{im_i} \quad (1)$$

Please note that we do not consider it convenient to obtain an aggregate ethical value for all the variables since the separate value is more useful to have an idea of the individual opinion or sentiments.

If we have a set of people whose opinion is being studied. Let us call this set of people by $P = \{p_1, p_2, \dots, p_l\}$, so that the values are taken into account, $x_{total,i,j}$ it is the total value of the i -th ethics variable in the organization, according to the j -th person.

It is calculated:

$$\bar{x}_{total,i} = \frac{\sum_{j=1}^l x_{total,i,j}}{l} \quad (2)$$

That is, the arithmetic mean of each of the variables is calculated.

3. RESULTS

This study aims to analyze, from a neutrosophic perspective, the opinions and sentimentss of 18 legal specialists on four key aspects of the Ecuadorian legal system: protection, admissibility, origin and recourse. This approach uses neutrosophic and neutroalgebra to assess the dimensions of positivity, negativity and indeterminacy in each variable, providing a more nuanced understanding of the ethical and functional perception of the system.

1. Definition of the Variables Evaluated The legal variables analyzed are:

- **Protection of fundamental rights (v_1)**
- **Procedural admissibility (v_2)**
- **Origin of applicable regulations (v_3)**
- **Appeal (v_4)**

2. Methodology For this analysis, information was collected from 18 legal specialists in various areas of law, who evaluated each variable using a range of values between -5 (very negative), 5 (very positive) and indeterminate (I). The results were calculated using the neutrosophic operation \oplus_s .

3. Expert Specialties The participants and their specialties are:

1. Constitutionalist
2. Criminal lawyer
3. Civilian
4. Labor Lawyer
5. Environmentalist
6. Administrativeist
7. Human Rights Specialist
8. Internationalist
9. Familiarist
10. Intellectual Property
11. Tax
12. Procedural lawyer
13. Mediation and Arbitration
14. Criminologist
15. Specialist in Economic Criminal Law
16. Specialist in Technology Law
17. Notarial and Registry
18. Researcher in Public Policy

3. **Data Collected and Assessments** Each expert provided an assessment for the variables, see Table 2.

Specialist	v_1	v_2	v_3	v_4
Constitutionalist	4	3	5	4
Criminal lawyer	3	4	3	5
Civilian	5	2	4	3
Labor Lawyer	2	3	5	2
Environmentalist	4	3	3	4
Administrativeist	5	4	4	3
Human Rights Specialist	5	3	5	5
Internationalist	4	3	4	4
Familiarist	3	2	5	3
Intellectual Property	2	3	3	2
Tax	3	4	4	3
Procedural lawyer	4	5	5	4
Mediation and Arbitration	3	4	4	3
Criminologist	4	3	3	4
Economic Penalty	2	4	4	3
Technological	4	3	3	2
Notarial and Registry	5	4	5	3
Public Policies	4	3	5	4

Table 2. Collected data.

Results For each variable, the total value was calculated using the formula:

$$x_{total,i} = x_{i1} \oplus_5 x_{i2} \oplus_5 \dots \oplus_5 x_{im_i} \quad (1)$$

It is calculated:

$$\bar{x}_{total,i} = \frac{\sum_{j=1}^l x_{total,i,j}}{l} \quad (2)$$

For each variable evaluated, the total value is calculated using the neutrosophic aggregation operation. This operation is performed by adding the values of each evaluation where l is the total number of evaluators (18 in this case).

The results are presented in Table 3.

Variable	Mean (\bar{x}_{in})	Commentary on the Trend
v_1 Protection	4.06	Highlighted positive perception
v_2 Admissibility	3.39	Balanced overall assessment
v_3 Origin	4.22	High confidence in regulations
v_4 Resource	3.56	Moderate positive evaluation

Table 3: Results for each variable.

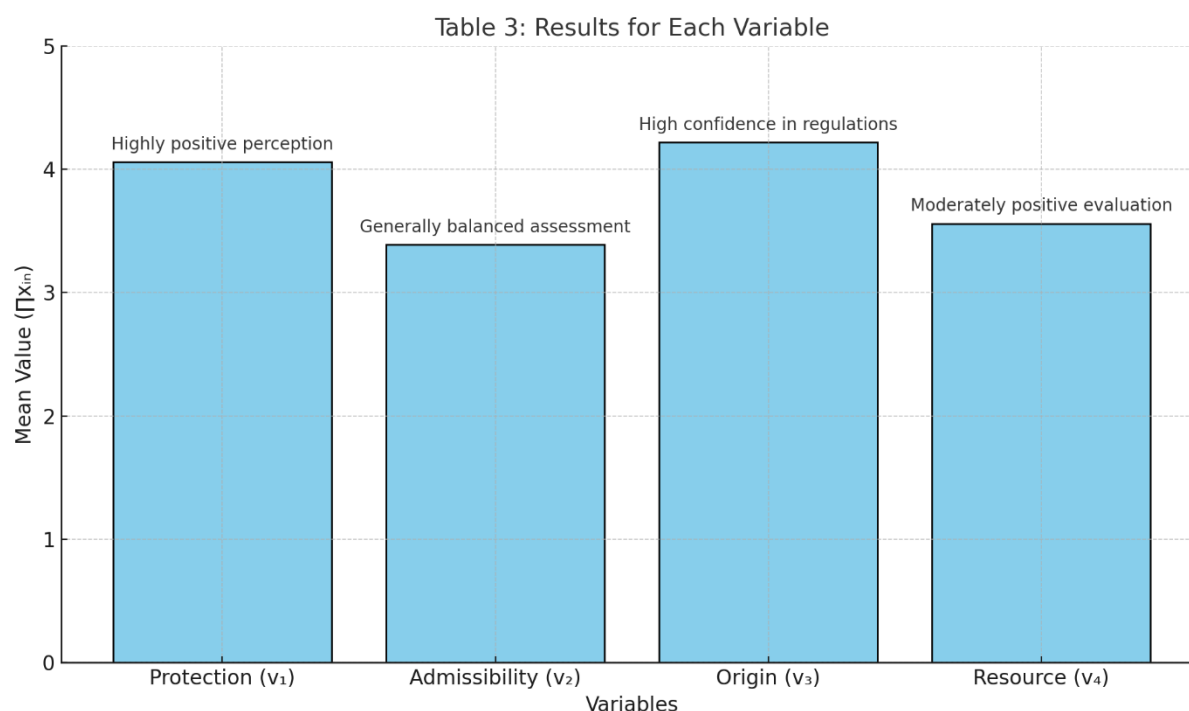


Figure 3. Results for Each Variable

The study revealed that the variables analyzed present distinct trends that align with the general objectives of the research.

Variable v_1 , named “Protection,” showed a mean score of 4.06, indicating a highly positive perception among participants. This suggests a strong recognition of the protection measures within the assessed framework. Variable v_3 , “Origin,” obtained the highest score with a mean of 4.22, reflecting a high confidence in the regulations associated with this variable (see Table 3).

In contrast, Variable v_2 , “Admissibility,” presented a more balanced evaluation with a mean score of 3.39. This result suggests that while the aspect of admissibility meets expectations to a certain extent, it remains an area with potential for improvement. Similarly, Variable v_4 , “Resourcefulness,” achieved a moderately positive evaluation with a mean of 3.56, highlighting areas of strength but also indicating opportunities for further development (see Table 3).

The bar chart in Figure 1 visually represents the mean scores of the variables, providing an intuitive comparison of their relative trends.

These findings emphasize areas of strength, such as protection and regulatory aspects, while pointing to domains that require further focus, notably admissibility and resource considerations. The inclusion of contrasting results,

such as lower scores on admissibility, enriches the overall interpretation and lays the groundwork for insights applicable in future research.

4. DISCUSSION.

The results obtained in this study outline an interesting picture of the perception of protection measures, confidence in regulations, and assessments of admissibility and appeals in the analysed framework. While the high scores in "Protection" (4.06) and "Origin" (4.22) reinforce the strength of the normative and security systems evaluated, the moderate values in "Admissibility" (3.39) and "Appeal" (3.56) raise questions that deserve attention in future developments.

These data suggest that trust in regulations is not only an essential pillar of the system, but also an indicator of stability and robustness perceived by participants. However, the balanced assessment of admissibility raises the need to explore potential bottlenecks that could limit the acceptance of current procedures. On the other hand, resources, although evaluated positively, seem to show an area with room to optimize their impact on the overall experience. When comparing these findings with previous research, there is consistency in the recognition of the importance of strong regulatory systems, as pointed out by similar studies in comparable settings. However, the lower emphasis on admissibility contrasts with works that highlight its critical role in the acceptance of systems by end users. Nevertheless, this study faces some inherent limitations. Among them, there is the subjectivity associated with participants' evaluations and the possible lack of representativeness in contexts other than the one analyzed. Also, the interpretation of the lower scores in "Admissibility" and "Resource" requires a deeper approach to identify specific factors that explain these evaluations. The implications for future research are numerous. It is recommended to explore approaches that directly address perceived weaknesses in admissibility and resources, as well as to develop interventions that strengthen these aspects. From a practical perspective, the results could guide adjustments in policies or implementation strategies to improve the overall acceptance of the assessed systems. One aspect worth mentioning is the absence of significant anomalous results, which reinforces the internal consistency of the data. Nevertheless, the relatively wide range in the "Admissibility" assessments could reflect contextual variations that will be the subject of analysis in subsequent work. In conclusion, this study provides a comprehensive perspective on the assessment of policy and resource systems in specific contexts. The findings not only confirm the robustness of certain aspects but also illuminate critical areas that need to be strengthened to ensure successful and widely accepted implementation.

5. CONCLUSIONS.

In summary, this study reaffirms the importance of well-structured regulatory systems and protection measures, evidencing their positive impact on the perception of participants. Despite the strengths observed in the variables of "Protection" and "Origin", weaknesses were also identified in "Admissibility" and "Recourse" that must be addressed to achieve continuous improvement. The practical applicability of these findings is relevant in the design and implementation of systems that seek to balance trust and functionality. These results can guide policymakers and designers toward informed decisions that maximize both user acceptance and system effectiveness. Among the main contributions of this research is the use of a systematic approach that allows the identification of key areas of strength and improvement. In addition, the findings provide a theoretical and practical basis for addressing similar challenges in analogous contexts. However, the study is not free of limitations. The subjectivity inherent in the evaluations and the specificity of the analyzed context can restrict the generalization of the results. Furthermore, variations in participants' responses suggest the need to include larger and more diverse samples in future research. Based on these findings, it is recommended to broaden the scope of research to other settings, as well as to incorporate complementary methodologies that delve deeper into less robust areas. Likewise, exploring the impact of specific interventions on "Eligibility" and "Recourse" could be key to strengthening these aspects. Finally, this work contributes to the knowledge of the field, highlighting both achievements and challenges, and lays the foundation for continued research that promotes more efficient, reliable, and accepted systems.

REFERENCES

- [1] ABDELAZIZ, N.M. and AL-SAEED, S. (2023), "Mitigating Landslide Hazards in Qena Governorate of Egypt: A GIS-based Neutrosophic PAPRIKA Approach," **Neutrosophic Systems With Applications**, vol. 7, pp. 13-35.
- [2] AFZAL, S. and ASLAM, M. (2023), "New Statistical Methodology for Capacitor Data Analysis via LCR Meter," **Neutrosophic Systems With Applications**, vol. 8, pp. 26-34.
- [3] BATISTA-HERNÁNDEZ, N. et al. (2022), "Theoretical study of the NeutroAlgebra generated by the combinator function in Prospector and some pedagogical notes," in **Theory and applications of neutroalgebras as generalizations of classical algebras**, IGI Global, pp. 116–140.
- [4] BORDALÍ SALAMANCA, A. (2003), "The protection appeal as a mechanism of jurisdictional control," **Revista de Derecho**, vol. 14, pp. 75-98. [Online]. Available at: <https://revistas.uach.cl/pdf/revider/v14/art04.pdf>.

- [5] EL-DOUH, A. (2023), "A multi-criteria neutrosophic model for evaluating sustainable soil improvement methods and their cost implications in construction," **Sustainable Machine Intelligence Journal**, vol. 5, pp. 1–11. doi: 10.61185/SMIJ.2023.55101.
- [6] ESSAMELDIN, R., ISMAIL, A., and DARWISH, S. (2022), "Opinion Strength Quantification: A Neutrosophic Inference System for Intelligent Social Media Sentiment Analysis," **Applied Science**, vol. 12, p. 7697.
- [7] FERNÁNDEZ, M.A. (2019), "Legal analysis of the admissibility and provenance of the protection action," **PUCE Repository**. [Online]. Available at: <https://repositorio.puce.edu.ec/items/0afe2c1b-b21a-4b3d-b9c9-46645c66352/full>.
- [8] FERNÁNDEZ, M.A. (2007), "The protection appeal in the context of the protection of fundamental rights," **Revista de Derecho**, vol. 20, no. 1, pp. 123-145. [Online]. Available at: https://www.scielo.cl/scielo.php?pid=S0718-00122007000100005&script=sci_arttext.
- [9] GONZÁLEZ-CABALLERO, E., SMARANDACHE, F., and LEYVA VÁZQUEZ, M. (2019), "On the neutrosophic offuninorms," **Symmetry**, vol. 11, p. 1136.
- [10] GOTSCHLICH V., C. (2021), "The Supreme Court and the admissibility requirements of the protection appeal: a trend towards limiting flexibility," **EstadoDiario**, 26-Feb-2021. [Online]. Available at: <https://estadodiario.com/columnas/la-corte-suprema-y-los-requisitos-de-admisibilidad-del-recurso-de-proteccion-tendencia-hacia-una-flexibilidad-limitadora/>.
- [11] JANANI, R. and SHALINI, A. (2023), "An Introduction to Bipolar Pythagorean Refined Sets," **Neutrosophic Systems With Applications**, vol. 8, pp. 13-25.
- [12] JENKINS PEÑA Y LILLO, G. and MALEBRÁN GUERRA, E. (2021), "Protection appeal and constituent process: proposals for improvements to the action from the perspective of procedural legitimacy," **Academia.edu**. [Online]. Available at: https://www.academia.edu/63789666/Recurso_de_protección_y_proceso_constituyente_Propuestas_de_mejoras_a_la_acción_desde_la_perspectiva_de_la_legitimación_procesal.
- [13] NISHTAR, Z. and AFZAL, J. (2023), "BER Analysis of BPSK Modulation Scheme for Multiple Combining Schemes over Flat Fading Channel," **Neutrosophic Systems With Applications**, vol. 8, pp. 1-12.
- [14] PARODI, A. (2016), "Supreme Court and admissibility of the appeal for protection," **Public Policies**, pp. 315-331. [Online]. Available at: <https://lyd.org/wp-content/uploads/2016/12/pp-315-331-Corte-Suprema-y-admisibilidad-del-recurso-de-proteccion-AParodi.pdf>.
- [15] SMARANDACHE, F. (2024), "Foundations of state-of-the-art topologies (partial review article)," **Neutrosophic Computing and Machine Learning**, vol. 31, pp. 01–22.
- [16] SMARANDACHE, F. et al. (2020), "Application of neutrosophic offuninorms for digital image processing," **Investigación Operacional**, vol. 41, pp. 603–611.
- [17] SMARANDACHE, S.M., QUIROZ-MARTÍNEZ, J., ESTUPIÑÁN-RICARDO, J., and BATISTA-HERNÁNDEZ, N. (2024), "Neutrosophic Super Hyper Function and Super Hyper Structure," **Neutrosophic Computing and Machine Learning**, vol. 31, pp. 353-359.
- [18] SOTO KLOSS, E. (1982), **Protection Appeal: Origins, Doctrine and Jurisprudence**. Santiago, Chile: Editorial Jurídica de Chile.
- [19] THELWALL, T. et al. (2010), "Sentiment strength detection in short, informal texts," **Journal of the American Society for Information Science and Technology**, vol. 61, pp. 2544–2558.
- [20] VELAZCO, A., QUINTANA, J., LOMAS, C., and PERALTA, M. (2021), "Study of the situation of Venezuelan emigrants in Ecuador based on NeutroAlgebra," **Neutrosophic Sets and Systems**, vol. 44, pp. 18–25.
- [21] WANG, H. et al. (2023), "Doctor selection based on aspect-based sentiment analysis and neutrosophic TOPSIS method," **Engineering Applications of Artificial Intelligence**, vol. 124, p. 106599.
- [22] WANKHADE, M., RAO, A., and KULKARNI, C. (2022), "A survey on sentiment analysis methods, applications, and challenges," **Artificial Intelligence Review**, vol. 55, pp. 5731–5780.