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Measuring Legal and Socioeconomic Effect of the Declared Debtors Usign The AHP Technique in a Neutrosophic Framework

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Abstract. For the development of a business and its inherent economic requirements, the owners usually have to accept bank commitments that turn them into debtors. Many times situations may occur that make it impossible to deal with these debts, so insolvency must be declared, a process that has adverse effects on both the debtors and their families and employees. The current economically precarious situation in Ecuador has led to an increase in this kind of problem. Due to the affectation observed in the canton of Pastaza. The authors of this paper have a special interest in studying this phenomenon, which comprises several edges of society. That is why the objective of this investigation is to measure the legal and socioeconomic effects of the debtors declared in this region. An efficient and simple technique is required for multicriteria decision problems such as the AHP Saaty in its neutrosophic version and the Pareto chart.

Keywords: effects, debtors, Neutrosophic AHP Saaty, Pareto Chart.

1 Introduction

In general, we may say that man develops economic activities as a social entity to satisfy his needs. To do so, he constantly seeks financing that makes it possible to obtain resources. These actions are achieved by accepting contractual banking obligations, which is why these are called debtors, which may incur in arrears if they maintain a poor financial culture. A situation that compromises the legality of the business and the person responsible for it, since arrears lead to the implementation of legal actions against the debtors. That is why many of them end up in auctions and sell their assets to meet these commitments. In other cases, in front of the impossibility to pay those debts, a person may declare himself bankrupt, which has juridical and economic consequences.

In Ecuadorian legislation, to guarantee the fulfillment of debtors' obligations, legal standards have been established to pay the credit commitments of natural or legal persons. In these processes, the rights of both parties regulate the declaration of arrears. Which endorses the money collection procedures before the jurisdictional authorities issued the sentence that condemns the payment of interest, capital and procedural costs, the bankruptcy process and the subsequent declaration of insolvency are established. The last stage of this lack of income, known as the declaration of insolvency, has several kinds of consequences: judicial, social, economic, and psychological, both for the main actors and for the families that suffer from it, which is a general concern.

The aforementioned is strengthened by the fact that Ecuador is in an economic crisis exacerbated by COVID-19 caused by a new species of coronavirus that has generated a global health crisis. This leads to a group of complications with a high rate of infection and fatality. That is why health authorities worldwide have implemented mandatory measures to mitigate a health emergency in many countries on all continents [1]. What happened has led to limitation of movement throughout 2020, imposing constant permanence in homes. Due to which the regular operation of many sectors has been affected and drastic measures have been needed in a short period [2], as can be seen in the following data collected during 2020, figures from the National Survey of Employment, Unemployment and Underemployment (Enemdu) [3]:

- The country's unemployment rate grew from 3.8% to 13.3% after the health crisis

- Only 32.1% of workers in Ecuador had a suitable job
- 48.6% of people with employment were in the informal sector of the economy, which means that five out of 10 people with adequate or inappropriate employment work in "companies that are not incorporated into society", to avoid the expenses that the legality entails.

Due to the affectation observed in the canton of Pastaza, the authors of this paper have a special interest in studying this phenomenon, which comprises several edges of society. That is why the objective of this investigation is to measure the legal and socioeconomic effects of the debtors declared in this region. For which an effective and simple technique is required for multicriteria decision problems such as the AHP Saaty (Analytic Hierarchy Process) in its neutrosophic version along with the Pareto Diagram. The latter is a strategic analysis to discern trivial effects from vital ones. Decision-making methods integrate multiple data sets [4-7] and several authors confirm that they are highly adequate in multidimensional frameworks and require a series of steps in which decisions must be made, especially in environments of uncertainty caused by the analysis of psychosocial phenomena where the nature of the variables does not come from an exact science [8-12]. That is why the evaluation of the criteria in the AHP Saaty will proceed to use the assessments provided by neutrosophic science. The work algorithm to follow is illustrated below using a process approach:

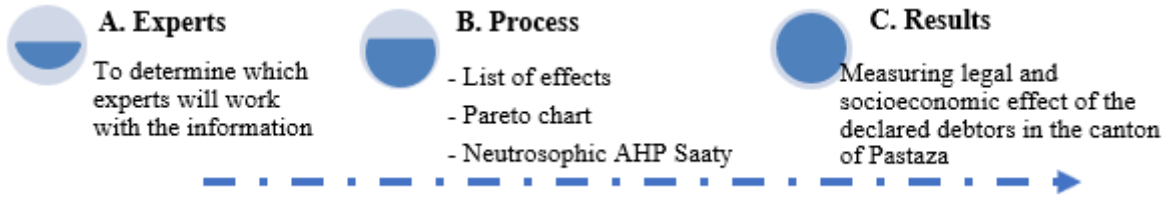

Figure 1. Guideline of the research.

2 Materials and Methods

The Analytic Hierarchy Process was proposed by Thomas Saaty in 1980 [13]. It is one of the most extensive methods in solving multicriteria decision-making problems. This method models the problem that leads to forming a hierarchy representative of the associated decision-making scheme. This hierarchy presents at the upper level the goal pursued in solving the problem and at the lower level, it includes the different alternatives from which a decision must be taken. The intermediate levels detail the set of criteria and attributes considered [14, 15].

The formulation of the decision-making problem in a hierarchical structure is the first stage. This stage is where the decision-maker must break down the problem into its relevant components. The basic hierarchy is made up of general goals or objectives, criteria, and alternatives [16-18]. The hierarchy is constructed so that each elements are of the same order of magnitude and can be related to some of the next levels.

In a typical hierarchy, the highest level locates the goal of the decision-making process. The elements that affect decision-making are represented at the intermediate level, the criteria occupying the intermediate levels. Finally, at the lowest level appear the decision options [13, 19-39]. Figure 2 shows the hierarchical structure of AHP.

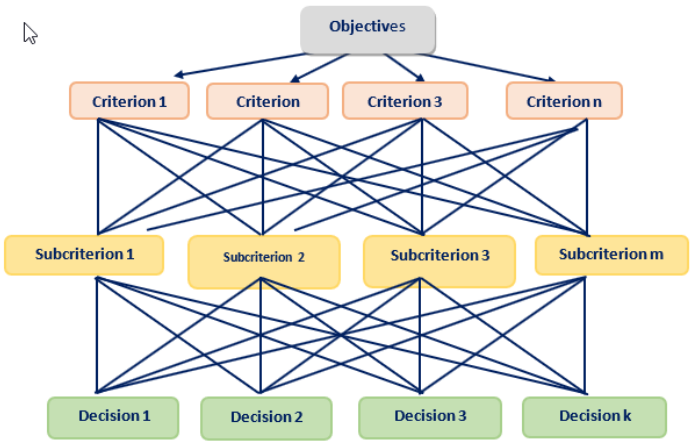

Figure 2. Scheme of a generic tree representing an Analytic Hierarchy Process. Source: [13]

For the description of the method, the following definitions are presented:

Definition 1: ([40, 41]) The Neutrosophic set N is characterized by three membership functions, which are the truth-membership function TA, indeterminacy-membership function IA, and falsehood-membership function FA, where U is the Universe of Discourse and $\forall x \in U$, TA(x), IA(x),FA(x) $\subseteq]-0, 1+[$, and $-0 \leq \inf TA(x) + \inf IA(x) + \inf FA(x) \leq \sup TA(x) + \sup IA(x) + \sup FA(x) \leq 3+$. Notice that, according to the definition, TA(x), IA(x) and FA(x) are real standard or non-standard subsets of]-0, 1+ [and hence, TA(x), IA(x) and FA(x) can be subintervals of [0, 1].

Definition 2: ([40, 41]) The Single-Valued Neutrosophic Set (SVNS) N over U is A = {<x; TA(x), IA(x), FA(x)>: $x \in U$}, where TA:U$\rightarrow$[0, 1], IA:U$\rightarrow$[0, 1], and FA:U$\rightarrow$[0, 1], $0 \leq TA(x) + IA(x) + FA(x) \leq 3$. The Single-Valued Neutrosophic Number (SVNN) is represented by N = (t, I, f), such that $0 \leq t, I, f \leq 1$ and $0 \leq t + I + f \leq 3$.

Definition 3: ([40-43]) the single-valued trapezoidal neutrosophic number, $\tilde{a} = \langle (a_1, a_2. a_3, a_4); \alpha_{\tilde{a}}, \beta_{\tilde{a}}, \gamma_{\tilde{a}} \rangle$, is a neutrosophic set on $\mathbb{R}$, whose truth, indeterminacy and falsehood membership functions are defined respectively:

$$T_{\tilde{a}}(x) = \begin{cases} \alpha_{\tilde{a}}\left(\frac{x-a_1}{a_2-a_1}\right), & a_1 \leq x \leq a_2 \\ \alpha_{\tilde{a}}, & a_2 \leq x \leq a_3 \\ \alpha_{\tilde{a}}\left(\frac{a_3-x}{a_3-a_2}\right), & a_3 \leq x \leq a_4 \\ 0, & \text{otherwise} \end{cases} \quad (1)$$

$$I_{\tilde{a}}(x) = \begin{cases} \frac{(a_2-x+\beta_{\tilde{a}}(x-a_1))}{a_2-a_1}, & a_1 \leq x \leq a_2 \\ \beta_{\tilde{a}}, & a_2 \leq x \leq a_3 \\ \frac{(x-a_2+\beta_{\tilde{a}}(a_3-x))}{a_3-a_2}, & a_3 \leq x \leq a_4 \\ 1, & \text{otherwise} \end{cases} \quad (2)$$

$$F_{\tilde{a}}(x) = \begin{cases} \frac{(a_2-x+\gamma_{\tilde{a}}(x-a_1))}{a_2-a_1}, & a_1 \leq x \leq a_2 \\ \gamma_{\tilde{a}}, & a_2 \leq x \leq a_3 \\ \frac{(x-a_2+\gamma_{\tilde{a}}(a_3-x))}{a_3-a_2}, & a_3 \leq x \leq a_4 \\ 1, & \text{otherwise} \end{cases} \quad (3)$$

Where, and. $\alpha_{\tilde{a}}, \beta_{\tilde{a}}, \gamma_{\tilde{a}} \in [0, 1]$ $a_1, a_2, a_3, a_4 \in \mathbb{R} a_1 \leq a_2 \leq a_3 \leq a_4$

Definition 4: ([40-43]) given $\tilde{a} = \langle (a_1, a_2, a_3, a_4); \alpha_{\tilde{a}}, \beta_{\tilde{a}}, \gamma_{\tilde{a}} \rangle$ and $\tilde{b} = \langle (b_1, b_2, b_3, b_4); \alpha_{\tilde{b}}, \beta_{\tilde{b}}, \gamma_{\tilde{b}} \rangle$ two single-valued trapezoidal neutrosophic numbers and λ any non-null number in the real line. Then, the following operations are defined:

Addition: $\tilde{a} + \tilde{b} = \langle (a_1 + b_1, a_2 + b_2, a_3 + b_3, a_4 + b_4); \alpha_{\tilde{a}} \wedge \alpha_{\tilde{b}}, \beta_{\tilde{a}} \vee \beta_{\tilde{b}}, \gamma_{\tilde{a}} \vee \gamma_{\tilde{b}} \rangle$

Subtraction: $\tilde{a} - \tilde{b} = \langle (a_1 - b_4, a_2 - b_3, a_3 - b_2, a_4 - b_1); \alpha_{\tilde{a}} \wedge \alpha_{\tilde{b}}, \beta_{\tilde{a}} \vee \beta_{\tilde{b}}, \gamma_{\tilde{a}} \vee \gamma_{\tilde{b}} \rangle$ (4)

Inversion: $\tilde{a}^{-1} = \langle ({a_4}^{-1}, {a_3}^{-1}, {a_2}^{-1}, {a_1}^{-1}); \alpha_{\tilde{a}}, \beta_{\tilde{a}}, \gamma_{\tilde{a}} \rangle$, where $a_1, a_2, a_3, a_4 \neq 0$.

Multiplication by a scalar number:

$$\lambda\tilde{a} = \begin{Bmatrix} \langle (\lambda a_1, \lambda a_2, \lambda a_3, \lambda a_4); \alpha_{\tilde{a}}, \beta_{\tilde{a}}, \gamma_{\tilde{a}} \rangle, & \lambda > 0 \\ \langle (\lambda a_4, \lambda a_3, \lambda a_2, \lambda a_1); \alpha_{\tilde{a}}, \beta_{\tilde{a}}, \gamma_{\tilde{a}} \rangle, & \lambda < 0 \end{Bmatrix}$$

Definitions 3 and 4 refer to single-valued triangular neutrosophic number when the condition $a_2 = a_3$, [44-46]. For simplicity, we use the linguistic scale of triangular neutrosophic numbers (see Table 1 and compare it with the scale defined in [47]. The levels of importance or weighting of the criteria are estimated using paired comparisons between them. This comparison is carried out using a scale, as expressed in equation (6)[48].

$$S = \left\{\frac{1}{9}, \frac{1}{7}, \frac{1}{5}, \frac{1}{3}, 1,3,5,7,9\right\} \quad (5)$$

We can find in [47] the theory of the AHP technique in a neutrosophic framework. We can model the indeterminacy of decision-making by applying neutrosophic AHP (NAHP) . Equation 7 contains a generic neutrosophic pair-wise comparison matrix for NAHP.

$$\tilde{A} = \begin{bmatrix} \tilde{1} & \tilde{a}_{12} & \cdots & \tilde{a}_{1n} \\ \vdots & & \ddots & \vdots \\ \tilde{a}_{n1} & \tilde{a}_{n2} & \cdots & \tilde{1} \end{bmatrix} \quad (6)$$

Matrix $\widetilde{A}$ must satisfy condition $\tilde{a}_{ji} = \tilde{a}_{ij}^{-1}$, based on the inversion operator of Definition 4.

To convert neutrosophic triangular numbers into crisp numbers, there are two indexes defined in [47], the score and accuracy indexes, respectively, see Equations 7 and 8:

$$S(\tilde{a}) = \frac{1}{8}[a_1 + a_2 + a_3](2 + \alpha_{\tilde{a}} - \beta_{\tilde{a}} - \gamma_{\tilde{a}}) \quad (7)$$

$$A(\tilde{a}) = \frac{1}{8}[a_1 + a_2 + a_3](2 + \alpha_{\tilde{a}} - \beta_{\tilde{a}} + \gamma_{\tilde{a}}) \quad (8)$$

Saaty's scale	Definition	Neutrosophic Triangular Scale
1	Equally influential	$\tilde{1} = \langle(1,1,1);0.50,0.50,0.50\rangle$
3	Slightly influential	$\tilde{3} = \langle(2,3,4);0.30,0.75,0.70\rangle$
5	Strongly influential	$\tilde{5} = \langle(4,5,6);0.80,0.15,0.20\rangle$
7	Very strongly influential	$\tilde{7} = \langle(6,7,8);0.90,0.10,0.10\rangle$
9	Absolutely influential	$\tilde{9} = \langle(9,9,9);1.00,1.00,1.00\rangle$
2, 4, 6, 8	Sporadic values between two close scales	$\tilde{2} = \langle(1,2,3);0.40,0.65,0.60\rangle$
		$\tilde{4} = \langle(3,4,5);0.60,0.35,0.40\rangle$
		$\tilde{6} = \langle(5,6,7);0.70,0.25,0.30\rangle$
		$\tilde{8} = \langle(7,8,9);0.85,0.10,0.15\rangle$

Table 1. Saaty's scale translated to a neutrosophic triangular scale.

Step 1 Select a group of experts.

Step 2 Structure the neutrosophic pair-wise comparison matrix of factors, sub-factors, and strategies, through the linguistic terms shown in Table 1.

The neutrosophic scale is attained according to expert opinions [49]. The neutrosophic pair-wise comparison matrix of factors, sub-factors, and strategies are as described in Equation 6.

Step 3 Check the consistency of experts' judgments.

Step 4 Calculate the weight of the factors from the neutrosophic pair-wise comparison matrix, by transforming it into a deterministic matrix using Equations 9 and 10. To get the score and the accuracy degree of $\tilde{a}_{ji}$ the following equations are used:

$$S(\tilde{a}_{ji}) = {}^{1}\!/_{S(\tilde{a}_{ij})} \quad (9)$$

$$A(\tilde{a}_{ji}) = {}^{1}\!/_{A(\tilde{a}_{ij})} \quad (10)$$

With compensation by accuracy degree of each triangular neutrosophic number in the neutrosophic pair-wise comparison matrix, we derive the following matrix:

$$A = \begin{bmatrix} 1 & a_{12} & \cdots & a_{1n} \\ \vdots & & \ddots & \vdots \\ a_{n1} & a_{n2} & \cdots & 1 \end{bmatrix} \quad (11)$$

Determine the ranking of priorities, namely the Eigen Vector X, from the previous matrix:

1. Normalize the column entries by dividing each entry by the sum of the column.
2. Take the total of the row averages.

Note that Step 3 refers to consider the use of the calculus of the Consistency Index (CI), which is a function depending on λ max, the maximum eigenvalue of the matrix. Saaty establishes that consistency of the evaluations can be determined by the equation:

$$CI = \frac{\lambda_{max} - n}{n-1} \text{ [50]}, \quad (12)$$

where n is the order of the matrix. In addition, the *Consistency Ratio* (CR) is defined by the equation:

$$CR = \frac{CI}{RI} \quad (13)$$

RI is given in Table 2.

Order (n)	1	2	3	4	5	6	7	8	9	10
RI	0	0	0.52	0.89	1.11	1.25	1.35	1.40	1.45	1.49

Table 2: RI associated with each order.

If CR≤0.1 we can consider that experts' evaluation is sufficiently consistent and henceforward we can proceed to use NAHP. We apply this procedure to matrix "A" in Equation 12.

The Pareto chart was presented in 1930 by Jurán in his Quality Control Manual based on what was described in 1909 by Vilfredo Pareto under the principle of "the few vital the many trivial". This diagram is based on the analysis of the problem and is used to present data, drawing attention to the causes of great incidence in the problem being analyzed. It aims to determine 20% of the causes that provoke 80% of the problems [51, 52].

Its main advantages are:

- It allows you to focus on the aspects whose improvement will have the bigger impact, thus optimizing efforts.
- Provides a quick and easy view of the relative importance of issues.
- It helps prevent some causes from getting worse by trying to fix other less significant ones.
- His graphical view of the analysis is easy to understand and encourages the team to continue to improve.

It runs according to the following algorithm:

1. To collect the data and tabulate it.To calculate absolute and cumulative frequency, unit and cumulative relative frequency.
2. To make a graph by locating all the causes along the coordinate axis, ordered from highest to lowest incidence and match them with their corresponding percentages along the ordinate axis. Finally, the cumulative polygonal line is constructed, and the causes that are up to 80% will be those with the highest incidence

3 Results

Experts of diverse origins were selected for the investigation, all belonging to the region under study: Pastaza. The majority of this sample group was made up of process actors for this subset to represent the population to be studied faithfully. Within the population of interest, the sample was randomly chosen among legal professionals residing in the province of Pastaza. The mathematical exercise began with a round of individual interviews on a questionnaire designed to obtain data in three phases:

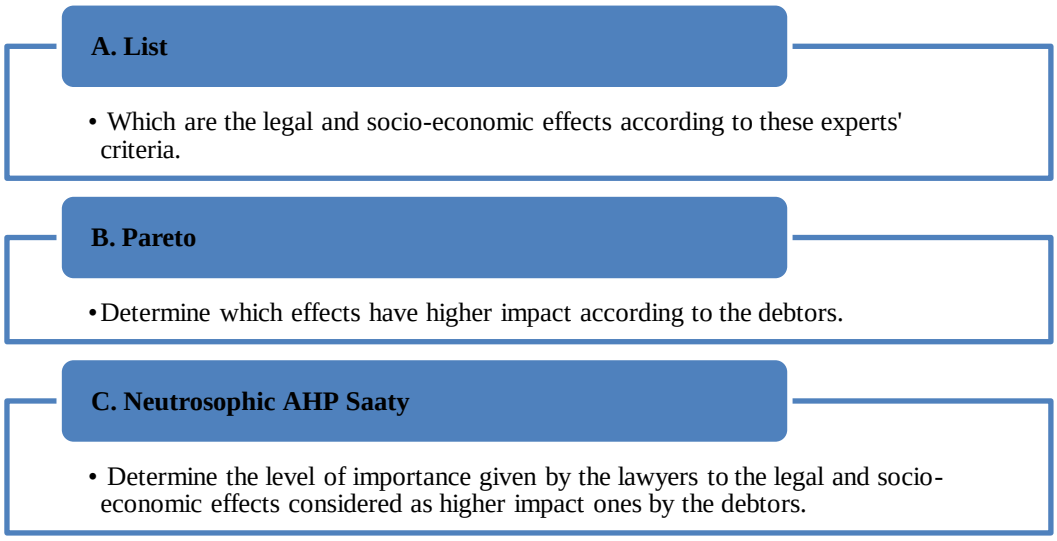

Figure 3. Guidelines for processing the results.

From the interviews carried out to the debtors, the following list of legal and socio-economic effects is shown:

1. Conjectures and accusations are initiated, so in this case, bad faith is judged, as well as the intention of not fulfilling its obligations to the detriment of its creditors
2. Inclusion of their identities in the Risk Center of the Ecuadorian Financial System, in the National System of Public Data, Ownership Registry, Databases of the Financial System, among others.
3. The property of the patrimony remains suspended, granting a transitory title to the trustee who represents it.
4. It produces discrimination towards the debtor declared as bankrupt, generating his rejection in his social circle, due to the decrease in his credibility for businesses
5. Impediment for the administration of assets, whether personal or others as a legal representative (which will not include family assets).
6. He will lose all the rights enshrined in the Constitution, except for the right to life, health, and education.
7. Impossibility of working in public entities, not being an employer or an employee, accessing credits, or entering into contracts).
8. Possibility of a criminal process leading to imprisonment
9. Automatic start of the tax investigation followed by a criminal process that can take away the right to liberty of the person if signs of Fraudulent Insolvency are found.
10. Impossibility of socially and economically rebuilding the life of the declared debtor.
11. The patrimony is submitted to the action and insolvency execution for which its administration, usufruct and disposition are deprived.

The resulting Pareto chart is shown below:

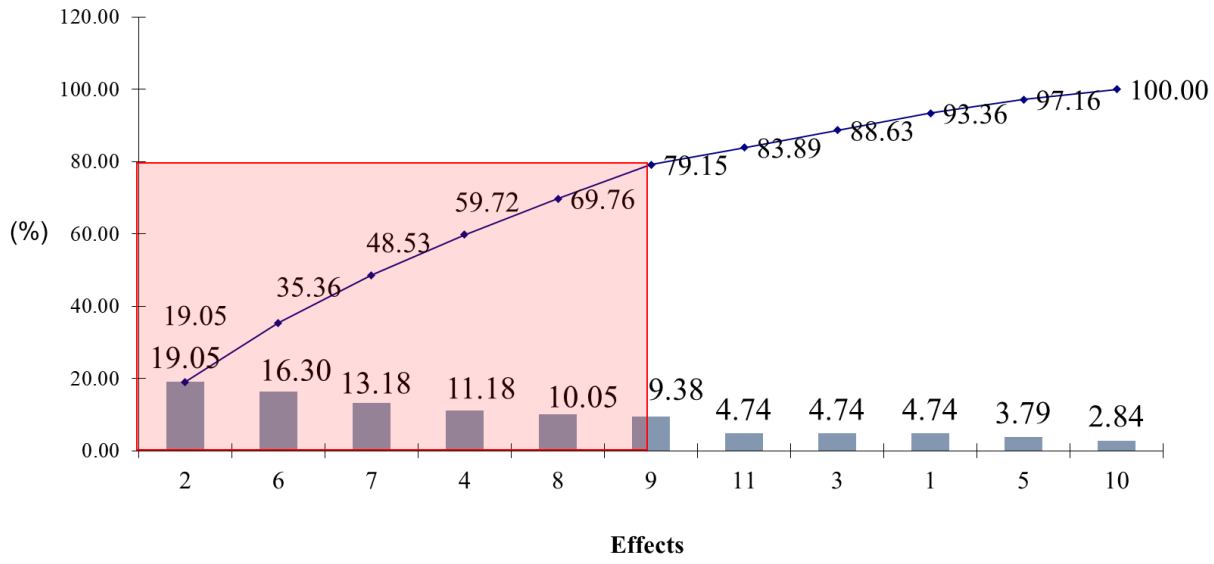

Figure 4. Pareto chart.

One of the benefits of the Pareto Chart is determining what is the key to a problem, separating them from other keys also present, but less important. Which is used both to investigate effects and to analyze causes. Therefore, following his 80-20% theory, it can be said that to continue the analysis, the following effects will be discarded:

- Conjectures and accusations are initiated, so in this case, bad faith is judged, as well as the intention of not fulfilling its obligations to the detriment of its creditors.
- The property of the patrimony remains suspended, granting a transitory title to the trustee who represents it.
- Impediment for the administration of assets, whether personal or others as a legal representative (which will not include family assets).
- Impossibility of socially and economically rebuilding the life of the declared debtor.
- The patrimony is submitted to the action and insolvency execution for which its administration, usufruct and disposition are deprived.

The execution of the AHP Saaty Neutrosophic analysis to determine the hierarchy in the measurement of the

effects according to their weights was as follows:

A. He will lose all the rights enshrined in the Constitution, except for the right to life, health, and education.
B. It produces discrimination towards the debtor declared as bankrupt, generating his rejection in his social circle, due to the decrease in his credibility for businesses.
C. Inclusion of their identities in the Risk Center of the Ecuadorian Financial System, in the National System of Public Data, Property Registry, Databases of the Financial System, among others.
D. Impossibility of working in public entities, not being an employer or an employee, accessing credits, or entering into contracts.
E. Possibility of criminal proceedings leading to imprisonment.
F. Automatic start of the tax investigation followed by a criminal process that can take away the right to liberty of the person if signs of Fraudulent Insolvency are found.

Effects	A	B	C	D	E	F
A	1	⟨(2,3,4); 0.30,0.75,0.70⟩	⟨(6,7,8); 0.90,0.10,0.10⟩	⟨(2,3,4); 0.30,0.75,0.70⟩	⟨(2,3,4); 0.30,0.75,0.70⟩	⟨(2,3,4); 0.30,0.75,0.70⟩
B	⟨(6,7,8); 0.90,0.10,0.10⟩	1	⟨(2,3,4); 0.30,0.75,0.70⟩	⟨(4,5,6); 0.80,0.15,0.20⟩	⟨(3,4,5); 0.60,0.35,0.40⟩	⟨(6,7,8); 0.90,0.10,0.10⟩
C	⟨(6,7,8); 0.90,0.10,0.10⟩	⟨(6,7,8); 0.90,0.10,0.10⟩	1	⟨(6,7,8); 0.90,0.10,0.10⟩	⟨(7,8,9); 0.85,0.10,0.15⟩	⟨(5,6,7); 0.70,0.25,0.30⟩
D	⟨(6,7,8); 0.90,0.10,0.10⟩	⟨(4,5,6); 0.80,0.15,0.20⟩	⟨(2,3,4); 0.30,0.75,0.70⟩	1	⟨(1,1,1); 0.50,0.50,0.50⟩	⟨(2,3,4); 0.30,0.75,0.70⟩
E	⟨(7,8,9); 0.85,0.10,0.15⟩	⟨(3,4,5); 0.60,0.35,0.40⟩	⟨(2,3,4); 0.30,0.75,0.70⟩	⟨(1,1,1); 0.50,0.50,0.50⟩	1	⟨(1,1,1); 0.50,0.50,0.50⟩
F	⟨(5,6,7); 0.70,0.25,0.30⟩	⟨(6,7,8); 0.90,0.10,0.10⟩	⟨(2,3,4); 0.30,0.75,0.70⟩	⟨(2,3,4); 0.30,0.75,0.70⟩	⟨(1,1,1); 0.50,0.50,0.50⟩	1

Table 3. Paired matrix Neutrosophic AHP Saaty.

Effects	A	B	C	D	E	F	WEIGHT		
A	0.08	0.04	0.08	0.17	0.17	0.14	**0.11**	0.73	6,384
B	0.08	0.11	0.25	0.29	0.22	0.33	**0.21**	1.46	6,775
C	0.58	0.78	0.58	0.40	0.44	0.29	**0.51**	3.92	7,632
D	0.08	0.02	0.03	0.06	0.06	0.14	**0.06**	0.40	6,151
E	0.07	0.03	0.03	0.06	0.06	0.05	**0.05**	0.31	6,491
F	0.10	0.02	0.03	0.02	0.06	0.05	**0.04**	0.27	6,115

Table 4. Determination of the weights of criteria applying the Neutrosophic AHP method.

The analysis of the consistency of the method showed that its Eigen value is 6.591, IC = 0.12 and RC = 0.09, so it is confirmed that the exercise was correct.

Conclusions

- The correct economic management for a business is of paramount importance, as it ensures survival in the market, obtaining profits and the prestige of the owners and family members. Specific laws in Ecuador regulate the process. It needs a quick response to avoid the effects on the part of the debtors, who must establish strategies in good faith.
- A declaration of insolvency implies negative effects in a wide range of actions; these can be legal, social, economic, and psychological both for the debtor and the people around them, whether they are family members or employees. Due to the unpredictable nature of uncertainty, given that it is a social

phenomenon, the use of neutrosophic language was appropriate for the fulfillment of the objective of this research.

- To measure the effects, the techniques used were accurate. According to the Pareto chart for the socio-economic effects of the debtors in the Canton of Pastaza, it showed that once the state of insolvency has been declared, the greatest impact lies in the social consequences rather than the economic ones. This is mainly due to the psycho-family issues that they bring along. Issues such as the power over property and the administration and/or representation of one's own and/or other people's property go to the background in front of the idea of a criminal process or the possibility of imprisonment, as well as the rejection that is experienced at the social level.
- In the case of the analysis carried out using the AHP Saaty Neutrosophic technique, it complemented what was stated in Pareto. It revealed that in order of importance, the lawyers and debtors confer the following hierarchical order of the effects described:

I. Inclusion of their identities in the Risk Center of the Ecuadorian Financial System, in the National System of Public Data, Property Registry, Databases of the Financial System, among others.
II. It produces discrimination towards the debtor declared as bankrupt, generating his rejection from his social circle, due to the decrease in his credibility for businesses.
III. He will lose all the rights enshrined in the Constitution, except for the right to life, health, and education.
IV. Impossibility of working in public entities, not being an employer or an employee, accessing credits, or entering into contracts).
V. Possibility of criminal proceedings leading to imprisonment.
VI. Automatic start of the tax investigation followed by a criminal process that can take away the right to liberty of the person if signs of Fraudulent Insolvency are found.

- The need to reconstruct life after the legal and economic effects is imposed in the measurement of the Neutrosophic AHP Saaty. Faced with demoralization as a social entity and the possibility of not reconstructing itself economically is what weighs most heavily in the analysis since once the identity of the debtor is included in the national databases, he loses civil rights and this possibility of rebirth is diminished in a considerable percentage.
- As one of the strategies to be followed proposed by the authors of this paper, it is recommended to promote a policy of debtors in good faith, where they can eliminate the arrears in payments as agreed. Similarly, it is necessary to legally reform the legislation according to the Basic Guarantees of Due Process to allow the bankrupt to submit payment proposals and to achieve the long-awaited rehabilitation of the right to representation, administration, and ownership of properties and assets.

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