



Validation of a Reform Project for Article 223 of The Ecuadorian Civil Code Through the Use Of Iadov Techniques and Neutrosophic Logic

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Abstract. The objective of this investigation is to validate a reform project for Article 223 of the Ecuadorian Civil Code, which implies the inclusion of a clause establishing that, in the case of controversies regarding the recognition of the common law, whoever demands the declaration of the common law, may request the precautionary measures on the profits that could correspond to him/her. The IADOV technique was adapted to measure the conformity of legal professionals with the proposed reform, as well as elements of neutrosophic logic to complement the analysis of the indetermination associated with the application of this technique.

Keywords: Iadov technique, Satisfaction Index, Indeterminacy, Neutrosophic logic.

1 Introduction

The Ecuadorian constitutional law since 1978, recognizes the legality of the common law union, transforming and protecting the patrimonial order of the family, outside the marriage. The Constitution of the Republic of Ecuador of 1998 established fundamental requirements that guaranteed this legal figure. However, in the Constitution of 2008 (in force), the previous concepts are absolutely disrupted, guaranteeing and recognizing families with a marital bond and families free of a marital bond, generating the personal principles of rights and obligations[1, 2].

The Ecuadorian Civil Code [3] clearly determines the right of a common-law marriage, perfecting it with fundamental principles of inalienability and legality, and provides that common-law marriages are stable and monogamous, between a man and a woman free of marriage, and that they live together for more than two years, treating each other as husband and wife within society.

The judge to establish the existence of this union will consider the circumstances or conditions in which it has developed. The judge will apply the rules of healthy criticism in the appreciation of the corresponding evidence and will verify that it is not a question of any of the persons listed in the article 95.

On the other hand, not all the common law unions are recognized during their existence, since the persons in voluntary form do not solemnize such union.

This often forces the partners to apply for recognition through the judicial process once the separation has occurred or after the death of one of the partners, in order to ensure the benefits of the assets that correspond to them by virtue of such union.

The assets acquired within the common-law marriage do not correspond to the assets of the partnership, but when the marriage is legally recognized. This implies that the partner under whose name the goods are registered has the exclusive power to dispose of them without the authorization of the other partner.

On many occasions, when the domestic partnership ends, the partner having the ownership of the goods he/she acquired, transfers his domain, leaving the other partner without the possibility of claiming his share. In practice, one of the spouses takes with him all the patrimony acquired jointly, while the other remains helpless, looking for

the judicial route to make his/her rights be worth, while the benefited partner alienates and administers freely the goods he/she had during the union.

However, there is no provision in the Ecuadorian legislation that enables to request precautionary measures at the time of filing a lawsuit for a judicial declaration of a common-law relationship to protect the assets that are part of the common-law company[4].

Until such provision is established, there is still a risk that the assets of one of the former partners will be damaged, since the other or his heirs may freely dispose of the assets, which violates the rights and guarantees enshrined in the Constitution of the Republic of Ecuador.

Therefore, the following is proposed before the Civil Code Reform Bill.

Article 1.- A paragraph should be added to Article 229 of the Civil Code, containing the following:

During the dissolution or termination, recognition of the domestic partnership, judicially, at the request of the partner, who does not have the extraordinary administration of their assets, may request precautionary measures such as the seizure, retention and prohibition of disposal as security measures of the assets, while the trial lasts.

Art. 2 . - The partner who will not be able to justify the common law union, according to the requirements, will be punished with the payment of legal costs in favor of the other party, leaving safe the legal actions that assist him.

The aim of this research is to validate the above mentioned reform Project through the application of Iadov technique and neutrosophic logic.

2 Methods

This research was carried out in the Canton of Santo Domingo, that according to the national census (2010), it has a population of 368,013 inhabitants, 27% of which, according to the National Institute of Statistics and Censuses (NIEC), lives in free association.

In the Judicial Unit of Family, Women, Children and Adolescents of the Canton of Santo Domingo, the concern of legal professionals regarding the lack of precautionary measures in this type of litigation was evident.

The formula was applied to calculate the sample size from the size of the universe of professionals [5-7]:

$$n = \frac{N}{E^2(N-1)+1} \quad (1)$$

Where:

n = sample size

N= Population

E= Margin of error

A simple stratified random sampling was applied, taking as a stratum the position of the professional to be surveyed. The data regarding the sample sizes obtained from the universe of each population and according to each category are shown in table 1.

Law Professionals Population	Universe	Sample
Judges	9	8
Judicial Servers	64	39
Lawyers in free practice	1331	93
TOTAL	1404	140

Table 1. Data from the selected sample. Source: Authors' elaboration

The Iadov technique is generally used to measure a general satisfaction index from individual satisfaction indexes [8, 9] about a product or service, the implementation of a scientific result or a proposed solution to a problem in a general sense.

In this case it will be used to measure the degree of satisfaction (acceptance) of the law professionals surveyed, with respect to the proposed reform. Although this is not a common use for this technique, it is clearly robust for evaluation through expert consultation prior to its implementation as an amendment to the Civil Code.

A survey was conducted among the selected legal professionals, with the objective of measuring the level of satisfaction they have regarding the validity of the proposed reform to the Civil Code. The survey consisted of 5 questions, three closed questions and two open questions, one of which served as an introduction and the other as a reaffirmation and support of the objectivity of the respondents.

The three closed questions correspond to the "Iadov Logical Framework", which is presented and adapted to this investigation and is shown in table 2.

Question 5: What do you think of this initiative to reform the Civil Code, which recognizes and empowers cohabitants to request precautionary measures, to ensure the estate of the goods, while the judicial declaration of the Union of Fact is resolved?	Question 1: Do you think that the current Constitution of the Republic of Ecuador guarantees equal rights and guarantees in the administration of the assets within the common law union?								
	NO			I DONT KNOW			YES		
Question 3: Do you consider that Article 229 of the Civil Code, currently in force, concerning the assets of this society and its burdens, needs to be amended in order to guarantee legal equality between marriage and common-law marriage?									
	YES	I DONT KNOW	NO	YES	I DONT KNOW	NO	YES	I DONT KNOW	NO
I like it very much	1	2	6	2	2	6	6	6	6
I like it more than I dislike it	2	2	3	2	3	3	6	3	6
I don't care	3	3	3	3	3	3	3	3	3
I dislike it more than I like it	6	3	6	3	4	4	3	4	4
I don't like it at all	6	6	6	6	4	4	6	4	5
I don't know what to say	2	3	6	3	3	3	6	3	4

Table 2. The logical picture of the Iadov technique for legal professionals surveyed. *Source: Authors elaboration*

In the 1980s, began the international movement called Paradoxism. It is based on the use contradictions in science and literature. Was Romanian Scholar living in USA Florentin Smarandache, who then extended it to Neutrosophy, based on contradictions and their neutrals[10, 11]. Paradoxism is an international movement in science and culture, founded by Florentin Smarandache in 1980s, based on excessive use of antitheses, oxymoron, contradictions, and paradoxes[12-14]. During three decades (1980-2020) hundreds of authors from tens of countries around the globe contributed papers to 15 international paradoxist anthologies[14, 15]. In 1995, the author extended the Paradoxism (based on opposites) to a new branch of philosophy called Neutrosophy (based on opposites and their neutral), that originated many other scientific areas [16-19].

The resulting number of the interrelation of the three questions indicates the position of each subject in the satisfaction scale, that is, the individual satisfaction. This satisfaction scale is expressed by SVN numbers [10]. The original definition of true value in the neutrosophic logic is shown below:

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

$$v(p) = (T, I, F)$$

(2)

In order to ease the practical application to a decision making and engineering problems, it was carried out the proposal of single valued neutrosophic sets (SVNS) since this allows the use of linguistic variables, and this increases the interpretation of models of recommendation and the usage of the indetermination [20-22].

Let X be a universe of discourse. A SVNS A on X is an object of the form:

$$A = \{(x, u_A(x), r_A(x), v_A(x)): x \in X\} \quad (3)$$

Where:

$$u_A(x): X \rightarrow [0,1], r_A(x): X \rightarrow [0,1] \text{ and } v_A(x): X \rightarrow [0,1]$$

With:

$$0 \leq u_A(x) + r_A(x) + v_A(x) \leq 3 \text{ for all } x \in X.$$

The intervals $u_A(x), r_A(x)$ and $v_A(x)$ denote the memberships to true, indeterminate and false of x in A, respectively [20, 23, 24].

For convenience reasons, an SVN number will be expressed as $A = (a, b, c)$, where $a, b, c \in [0,1]$, and $a + b + c \leq 3$

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

$$s(V) = T - F - I \quad (4)$$

In the event that the assessment corresponds to indeterminacy (not defined) (I) a process of de-neutrosophication developed as proposed by Salmerón and Smarandache [25]. In this case, $I \in [-1,1]$. Finally, we work with the average of the extreme values $I \in [0,1]$ to obtain a single one:

$$\lambda([a_1, a_2]) = \frac{a_1 + a_2}{2} \quad (5)$$

Subsequently, the results are aggregated and the weighted average aggregation operator is used to calculate the group satisfaction index (GSI). The weighted average (WA) is one of the most mentioned aggregation operators in the literature. A WA operator has associated a vector of weights V , with $v_i \in [0,1]$ and $\sum_1^n v_i = 1$, having the following form[26]:

$$WA(a_1, \dots, a_n) = \sum_1^n v_i a_i \quad (6)$$

Where v_i represented the importance of the source. This proposal, allows to fill a gap in the literature of the Iadov techniques extending it to deal with indeterminacy and importance of user due to expertise or any other reason [8, 9, 27].

Scale used with individual satisfaction and its corresponding score is shown in Table 3.

Expression	Number SVN	Scoring
Clearly pleased	(1, 0, 0)	1
More pleased than displeased	(1, 0.25, 0.25)	0.5
Not defined	I	0
More displeased than pleased	(0.25, 0.25, 1)	-0.5
Clearly displeased	(0, 0, 1)	-1
Contradictory	(1, 0, 1)	0

Table 3. Scale used with individual satisfaction and its corresponding score. Source: [9]

3 Results

By applying the designed survey, it was possible to obtain the personal satisfaction indexes for each of the 140 law professionals surveyed about the proposal provided by this research and its relevance.

The following graph shows the results of the frequencies for each of the categories of personal satisfaction levels.

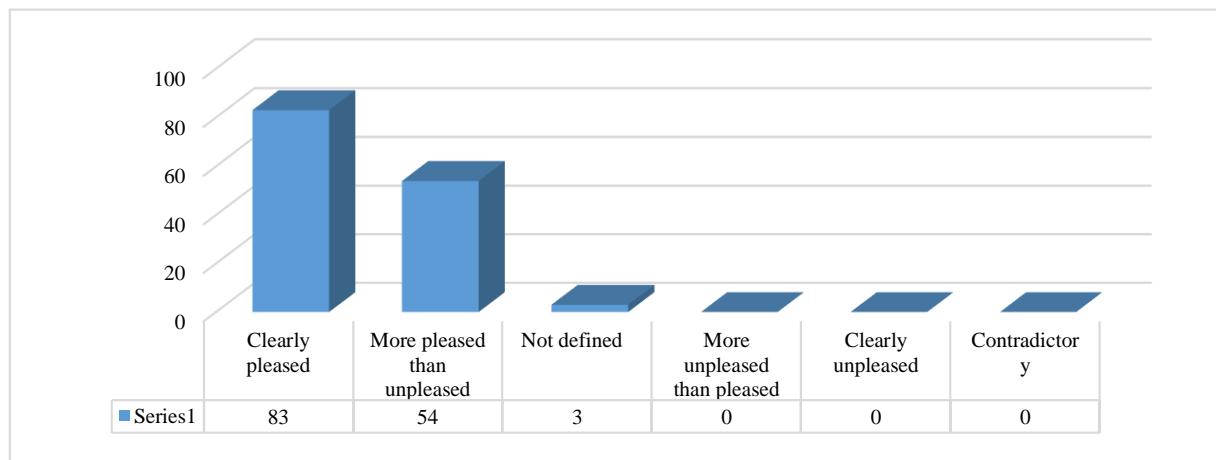


Figure 1. Frequencies observed of personal satisfaction levels. Source: Authors' elaboration

The calculation of the score is carried out and it is determined by I. In this case, it was given different values to each low professional as shown on table 4.

Professional	v_i
Judges	0,4
Judicial Servers	0,3
Lawyers in free practice	0,3
TOTAL	1

Table 4. Weighted index for professional. Source: Authors' elaboration

$$\text{Applying } WA(a_1, \dots, a_n) = \sum_1^n v_i a_i$$

The overall satisfaction index was obtained for the total number of respondents GSI=0.808. The result is positive, which certifies the effectiveness of the proposal as shown in the graph of figure 2.

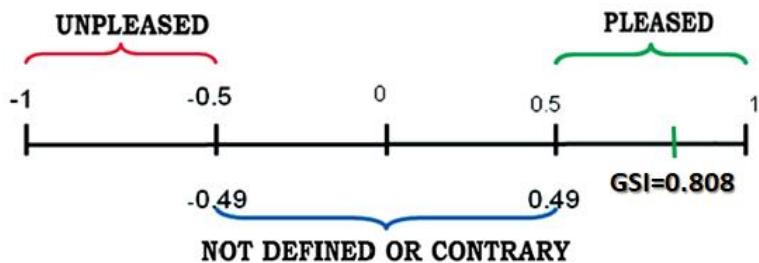


Figure 2. Scale with group satisfaction index (GSI). Source: Authors' elaboration

Conclusions

The dissolution of the corporation is the main reason for declaring a common-law marriage before a judge. However, the deficiencies in the legal system imply that the assets of the corporation are not safeguarded and are left at the disposal of one of the partners.

The use of the Iadov technique, complemented with tools of neutral logic, made it possible to validate the viability of the proposal to modify Article 223 of the Ecuadorian Civil Code through the creation of norms that regulate the precautionary measures in the case of the Declaration of a Union of Fact and other conflicts between cohabitants or their heirs.

References

1. Santacruz-López, R. and J. Blanco-Rodríguez, La protección penal de las uniones de hecho en Latinoamérica. Vniversitas, 2015(130): p. 273-308.
2. Del Ecuador, A.C., Constitución de la República del Ecuador. Quito: Tribunal Constitucional del Ecuador. Registro oficial Nro, 2008. 449.
3. Ecuatoriano, C.C., Código Civil Ecuatoriano. 2011, PICHINCHA: LEXIS.
4. Vos, S.D., Comment of coding marital status in Latin America. Journal of Comparative Family Studies, 1999. 30(1): p. 79-93.
5. Smarandache, F., J.E. Ricardo, E.G. Caballero, M. Yelandi, L. Vázquez, and N.B. Hernández, Delphi method for evaluating scientific research proposals in a neutrosophic environment. Neutrosophic Sets and Systems, 2020: p. 204.
6. Rodríguez, M.D.O., C.A.M. León, C.D.N. Rivera, C.M.B.R. Cueva, and C.J.E. Ricardo, HERRAMIENTAS Y BUENAS PRACTICAS DE APOYO A LA ESCRITURA DE TESIS Y ARTICULOS CIENTIFICOS. 2019: Infinite Study.
7. Ricardo, J.E., Importancia de la investigación jurídica para la formación de los profesionales del Derecho. Dilemas Contemporáneos: Educación, Política y Valores., 2020.
8. Guerrón, S.X. and Y.N. Almeida Montenegro, Use of the Iadov method to measure the implementation of a program for sexual abuse prevention in Ecuador. Neutrosophic Sets and Systems, 2019. 26(1): p. 18.
9. Hernández, N.B., N.V. Izquierdo, M. Leyva-Vazquez, and F. Smarandache, Validation of the pedagogical strategy for the formation of the competence entrepreneurship in high education through the use of neutrosophic logic and Iadov technique. Neutrosophic Sets and Systems, 2018. 23(1): p. 5.
10. Smarandache, F., Neutrosophy, a new Branch of Philosophy. 2002: Infinite Study.
11. Smarandache, F., A unifying field in logics: Neutrosophic logic. neutrosophy, neutrosophic set, neutrosophic probability: Neutrosophic logic: neutrosophy, neutrosophic set, neutrosophic probability. 2003: Infinite Study.
12. Popescu, T., P. Georgelin, F. Smarandache, and L. Popescu, The aesthetics of paradoxism. 2002.
13. Smarandache, F., Paradoxism's Manifestos and International Folklore. 2010: Infinite Study.
14. Smarandache, F., Fifteenth International PhotoVideoAnthology on Paradoxism. 2020: Infinite Study.
15. Smarandache, F., Sixth International Anthology on Paradoxism. 2011: Infinite Study.
16. Centeno Maldonado, P.A., B.P. Adriano Caiza, C.S. Yuqui Vilacrés, and F.M. Guerra Alomía, Neutrosophic model for the analysis of the causes that lead to tax fraud. Neutrosophic Sets and Systems, 2019. 26(1): p. 19.
17. Elhassouny, A., S. Idibrahim, and F. Smarandache, Machine learning in Neutrosophic Environment: A Survey. 2019: Infinite Study.

18. Maldonado, P.A.C., Y.P. Martinez, and G.S. Escobar, Neutrosophic statistics methods applied to demonstrate the extra-contractual liability of the state from the Administrative Organic Code. *Neutrosophic Sets and Systems*, 2019: p. 27.
19. Vázquez, M.L. and F. Smarandache, *Neutrosofía: Nuevos avances en el tratamiento de la incertidumbre*. 2018: Infinite Study.
20. Altinirmak, S., Y. Gul, B.O. Okoth, and C. Karamasa, Performance evaluation of mutual funds via single valued neutrosophic set (svns) perspective: a case study in turkey. *Neutrosophic Sets and Systems*, 2018. 23(1): p. 10.
21. Mondal, K., S. Pramanik, and B.C. Giri, Hybrid binary logarithm similarity measure for MAGDM problems under SVNS assessments. *Neutrosophic Sets and Systems*, 2018. 20(1): p. 12-25.
22. Padilla, R.C., J.G. Ruiz, M.V. Alava, and M.L. Vázquez, Modelo de recomendación basado en conocimiento empleando números SVN. *Neutrosophic Computing and Machine Learning*, 2028. 1: p. 31-36.
23. Alava, M.V., S.P. Delgado Figueroa, H.M. Blum Alcivar, and M.Y. Leyva Vazquez, Single valued neutrosophic numbers and analytic hierarchy process for project selection. *Neutrosophic Sets and Systems*, 2018. 21(1): p. 13.
24. Arulpandy, P., Reduction of indeterminacy of gray-scale image in bipolar neutrosophic domain. *Neutrosophic Sets and Systems*, 2019. 28(1): p. 2.
25. Salmeron, J.L. and F. Smarandache, Redesigning Decision Matrix Method with an indeterminacy-based inference process. ArXiv, 2007. abs/cs/0703060.
26. Llamazares, B., A Behavioral Analysis of WOWA and SUOWA Operators. *International Journal of Intelligent Systems*, 2016. 31.
27. Cejas, M.N., M.C. Martínez, L.F. Piñas Piñas, and J.X. Iglesias Quintana, Neutrosophic Iadov for the analysis of satisfaction on the regularities in the international legal field concerning the human rights of migrant workers in Ecuador. *Neutrosophic Sets and Systems*, 2019. 26(1): p. 20.

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