



Ecuadorian Migration Policy Analyzed from International Causality

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Abstract

The migration issue has been an inseparable part of the international scene since the beginning of the Third Millennium, together with its possibilities for transformation and development. If the regional, national, governmental, and civil society agendas are observed, they all have approaches to the issue of international migration. States have the right to regulate movements across their borders; international cooperation aimed at reducing irregular migration contemplates both a punitive aspect related to law enforcement and a protection and human rights approach. Ecuador is one of the few countries that has the dual quality of sending and receiving migrants. Added to this situation is the reception of displaced persons from other nations, a different but complementary phenomenon to migration, which has made it the first country of refuge in Latin America and lately the country of transit. Based on the analysis through the Analytic Hierarchy Process (AHP) multicriteria decision method, it is intended to evaluate the causes of international migration, and focus them on the current context of Ecuador, in the study of an adequate migration policy.

Keywords: States, law; migration policy; Ecuador

1. Introduction

The processes of international mobility of the population are impacted by the phenomenon of globalization. This has caused its increase in relation to previous historical stages and has modified its characteristics, causes, and consequences in the societies of origin and destination; having a notable impact on representative spheres of state interests such as the economy, health, employment, border security, and international relations.

Consequently, States regulate international population movements based on laws that implement migration policies, recreate unfavorable scenarios for the rights of immigrants, and affect essential legal rights for their material and spiritual development. As an essential objective, they prioritize the control of porous borders over the rights and guarantees of migrants, demonstrating the inability of their economies to solve the social problems related to migration. [1].

The new international order or disorder has raised the alarm of migrations, among the main issues of political relations and international relations of our days. From different social sectors and public opinion, governments are demanding more effective political responses to migratory events. You may wonder:

- To what extent does the problem have the dimension shown by the generalized perception?
- To what extent are the proposed policies adequate responses? And;
- Its oversizing, together with the application of erroneous, unrealistic policies, contribute to transforming the issue of migration into a source of new social and international conflicts? [2].

Strengthening the role of the States as articulating axes of the objectives of the International Community and societies, national and international macroeconomic strategies can be adjusted. This will contribute to solving the dichotomy that exists between the rights of equality and free movement of individuals and the principle of sovereignty of the States in the processes of ordering migration within the state territories.

Integration schemes are based on the principle of the free movement of people and goods. Hence, an important pillar in its formation turns out to regulate the free movement of people, with a coherent migration policy, which, based on the regulatory and transforming nature of Law, translates into International and Community Law in accordance and harmonious with the interests of everybody [3].

There are three models for the construction procedure of migration policies and they are [1]:

- The ideal one: It is the one proposed as desirable, based on the optimal relationship between migrations and the social, economic, cultural, and political situation of society.
- The real one: As its name indicates, it is the migratory situation as it occurs, with its causes, sometimes masked, its characteristics, often distorted, and its effects on more than one occasion misunderstood.
- The possible one: It is a mix between the ideal and the real with limits imposed by the elements of governance available and the rights of the individual, the communities, and the State.

International migration policies can act specifically on the trend of certain population flows, on their consequences, or some of their immediate causes. But these policies cannot be expected to modify the structural causes, which are what ultimately define the main population movements, which is why strategies are necessary to alleviate the causes of migratory movements as far as possible.

A migration policy is also defined by the way it is institutionalized. When it is formalized in terms of its objectives and actions through official discourse or relevant legislation, we are facing an explicit migration policy [4].

The lack of this formalization implies that the measures adopted are based on implicit conceptions of the objectives of current migration policies. In some cases, it is observed that there are general regulations explicitly formulated but that, in practice, they translate into actions that do not coincide with the stated objectives since, in the application, implicit policies of the opposite sign are being executed. Hence the existence of these types of migration policies: implicit and explicit ones.

An important element to define international migration policies is to know based on which migratory pattern one is going to work. This knowledge allows knowing, in turn, how the policy in question is going to be framed and will thus facilitate the elaboration of its programs, actions, and instruments.

The Migration Policy proposals will be aimed at producing effects on existing "migration patterns" or intentionally developing them. These can be defined based on different criteria: directionality, temporality, selectivity, voluntariness, and composition of migrations [5].

States have the right to regulate movements across their borders. International cooperation aimed at reducing irregular migration contemplates both a punitive aspect related to law enforcement and a protection and human rights approach. Each State demonstrates its power in terms of migration from the migratory policies they assume.

Special mention deserves the function of integration, considering as such that the Law comes to essentially establish the social order or, as Añón said, "The Law would be characterized because its rules would serve to resolve conflicts once they have occurred". But without a doubt that in the

conception that the Law has the essential function of integrating society, it is understood that its objective is not so much to resolve conflicts, as to anticipate them and guide society so that such conflicts do not arise. [6].

This function shows that in migration matters, the law is responsible for integrating the migrant into society and ensuring that their rights are respected according to the principles of human rights. It is thus that the Law becomes a tool to materialize the migratory policy, a policy that is based on assumptions for its construction.

The objective of this work is to carry out an analysis of the Ecuadorian migratory policy, and the point of view of the causes that originate them in the international sphere.

2. Materials and methods

For the development of the research, the following methods were developed:

- Qualitative methodology: it allows to determine and group the causes of international migration and make an assessment of its behavior in Ecuador.
- Documentary research method, bibliographic, field, and observation research.
- Inductive/deductive method through results aimed at different institutions and sectors collects information, which allows extracting causes and effects that lead to an analysis of the migratory phenomenon with a focus on law.

2.1 Fuzzy Cognitive Maps

Fuzzy Cognitive Maps (FCM) span the interval $[-1,1]$ to indicate the strength of causal relationships, see [7]–[10]. They describe the strength of the relationship by using fuzzy values. They allow expressing the causal relationships between variables, where each edge is associated with a weight in the set $[11]$, where 0 means that there is no causal relationship between the variables, -1 means that the causal relationship is inverse (if one variable increases the other decreases and vice versa), and 1 means that there is a direct causal relationship (both variables increase or both decrease).

These three values do not capture the uncertainty that exists in these causal relationships, which is why the Fuzzy Cognitive Maps arise. [8], where a gradation is introduced to the previous set of weights that is defined in the continuous interval $[-1,1]$ [11]–[13]. A FCM can be represented by a weighted directed graph. [14]. An adjacency matrix is built from the values assigned to the arcs, usually numerically. [15].

In FCM there are three possible types of causal relationships between concepts:

- Positive causality ($W_{ij} > 0$): Indicates a positive causality between the concepts C_i and C_j , that is, the increase (decrease) in the value of C_i leads to the increase (decrease) in the value of C_j .
- Negative causality ($W_{ij} < 0$): Indicates a negative causality between the concepts C_i and C_j , that is, the increase (decrease) in the value of C_i leads to the decrease (increase) in the value of C_j .
- Non-existence of relationships ($W_{ij} = 0$): Indicates the non-existence of a causal relationship between C_i and C_j .

In this paper, the calculation will be developed as follows:

1. Selection of relevant causes.
2. Elaboration of the adjacency matrix.
3. Static analysis: they are calculated for the absolute values of the adjacency matrix:
 - a) Outdegree, denoted by $od(v_i)$, is the sum for each row of the absolute values of a variable in the fuzzy adjacency matrix. It is a measure of the cumulative strength of existing connections in the variable.

- b) Indegree, denoted by $id(v_i)$, is the sum for each column of the absolute values of a variable in the fuzzy adjacency matrix. Measures the cumulative input force of the variable.
- c) The centrality, or total degree, of the variable is the sum of $od(v_i)$, with $id(v_i)$, as indicated below:

$$td(v_i) = od(v_i) + id(v_i) \quad (1)$$

- d) Finally, the variables are classified according to the following criteria:
- Transmitting variables are those with $od(v_i) > 0$ and $id(v_i) = 0$.
 - Receiving variables are those with $od(v_i) = 0$ and $id(v_i) > 0$.
 - Ordinary variables satisfy both $id(v_i) \neq 0$ and $od(v_i) \neq 0$.

They are ordered in ascending order according to the degree of centrality.

When a set of individuals (k) participate, the adjacency matrix is formulated through an aggregation operator, such as the arithmetic mean. The simplest method is to find the arithmetic mean of each of the connections for each expert. For k experts, the adjacency matrix of the final FCM (E) is obtained as [14]:

$$E = \frac{(E_1 + E_2 + \dots + E_k)}{k} \quad (2)$$

This ease of aggregation allows the creation of collective mental models with relative ease.

AHP method

Multi-criteria analysis is used to make a comparative judgment between projects or heterogeneous measures and the field of evaluation. Called Analytic Hierarchy Process (AHP) is an effective way to define measures for such elements and use them in decision-making processes [16]. The process is based on several stages or steps as detailed below [16]:

- Prioritization of the elements of the hierarchical model (see Table 1)
- Binary comparison of elements
- Evaluation of elements by assigning weights
- Ranking of the alternatives according to the given weights
- Synthesis
- Sensitivity analysis

Table 1: Saaty's Rating Scale (Verbal Judgment Rate). Source: [16]

Scale Value	Saaty's Scale
9	Extremely preferred
7	Very powerfully preferred
5	Powerfully preferred
3	Moderately preferred
1	Equally preferred

An algorithm for calculating this is presented below (this must be applied to all criteria):

- For each line of the pairwise comparison matrix, determine a weighted sum based on the sum of the product of each cell by the priority of each corresponding alternative or criterion
- For each line, divide its weighted sum by the priority of its corresponding alternative or criterion
- Determine the mean $\lambda_{\max}$ of the result of the previous stage
- Calculate the consistency index (CI) for each alternative or criterion

$$CI = \frac{\lambda_{max} - m}{m - 1} \quad (3)$$

where m is the number of alternatives

- Determine the Random Index (RI) from Table 2
- Determine the consistency index ratio (the ratio of the consistency index to the random index)

Table 2: Random index for the calculation of the consistency coefficient. Source: [16]

Number of alternatives for decision n	Random Index	Number of alternatives for decision n	Random Index
3	0.58	7	1.32
4	0.9	8	1.41
5	1.12	10	1.49
6	1.24		

3. Discussion and results

Ecuador is one of the few countries that has the dual quality of sending and receiving migrants, a situation to which is added the reception of displaced persons from other nations. Different phenomenon but complementary to migration, which has made it the first country of refuge in Latin America and lately the country of transit.

After the acute economic and financial crisis of 1999, it is estimated that more than three million Ecuadorians left the country for different destinations, most of them going to USA, Spain, and Italy. There was also emigration to other countries such as Venezuela (in the '80s and '90s), Chile (with a good number of medical professionals or those linked to this area), Canada (technical professionals), and, to a lesser degree and for various reasons, towards Israel, Belgium, Mexico, and the United Kingdom. The emigration continued throughout the early years of the 21st century [1], [17].

After 2002 emigration was reduced, year after year, with economic stability. It fell more strongly with the beginning of the first world crisis in 2007 and the significant development of the national economy. In addition, since 2010 it has been practically limited to migration for reasons of student scholarships and merely for tourist or commercial reasons. [6].

But despite a long migration from Ecuador, it has received immigrants throughout its history and currently receives tens of thousands of people from different countries who had to leave their countries of origin for different reasons.

The better standard of living and the US dollar which is valued at more than 40% to 60% than the currency of their country of origin is another reason for immigration from Peru, Cuba, Haiti, Bolivia, and China and to a lesser extent, from other American and Asian countries. They arrive in Ecuador mainly in search of jobs attracted by the positions abandoned by Ecuadorian migrants and a good economic, productive, and social boom that the country has offered [2], [18].

Especially since 2005 with laws that protect migrants and the participation that has been given to them in the social and political sphere, after the crisis unleashed in Europe and North America. Which has caused the return home of many tens of thousands of Ecuadorians with facilities to establish themselves with a job and adequate conditions for their residence. [3].

The justification and design of migration policies are generally based on a series of proposals that make up their argumentative discourse. The axis of these discourses varies depending on the perspectives of the social sectors that intervene in their elaboration. The arguments historically used in the foundation

of migratory policies have focused on different presuppositions linked to migrations such as population settlements, the characteristics desired or not of migrants, the socio-economic impact of migrations, and the ethical dimension that underlies every migratory movement [5].

According to their characteristics, the causes of migration can be classified into:

- *Political causes* refer to the causes derived from the political crises that usually occur in certain countries. Many people who fear political persecution and revenge, leave one country to take up residence in another or at least try to leave. Although they can often even lose their lives when it comes to totalitarian regimes.
- *Armed conflicts* and other international conflicts constitute a true source of forced migration, which has given rise to massive displacement of the population, fleeing extermination or persecution by the victorious country or army.
- *Socio-economic* ones are the fundamental causes of any migratory process. There is a direct relationship between socioeconomic development and migration. Most of those who emigrate do so for economic reasons, seeking a better standard of living, better working conditions, and remuneration, or in more critical cases, access to a job. The situation of hunger and misery in many underdeveloped countries forces many emigrants to risk their lives or even lose them, to get out of their situation.
- Family causes are also an important factor in the decision to emigrate.
- Generalized catastrophes are also considered causes of human migration. The effects of great earthquakes, floods, prolonged droughts, cyclones, tsunamis, epidemics, and other catastrophes, both natural and social (or a combination of both, which is much more frequent), have caused large displacements of human beings throughout the ages. But they have been worsening in recent times due to population growth and the occupation of areas with a higher risk of occurrence of these catastrophes.

Through the following analyses, the influence of theoretical causalities in the Ecuadorian migratory context will be determined. Through the analysis carried out with the experts (Figure 1), the criteria proposed for the development of the study using FCM are shown.

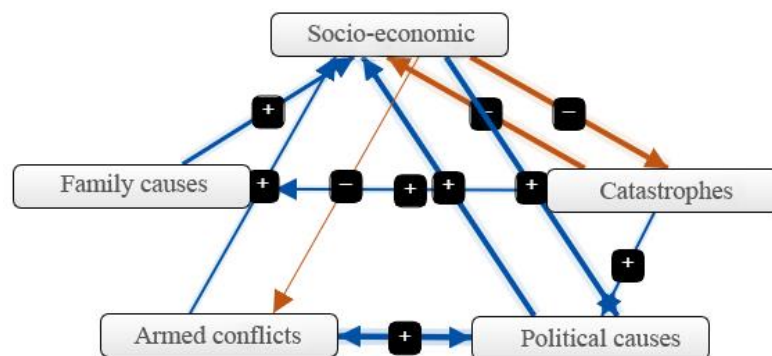


Figure 1: Fuzzy Cognitive Map on the causality of international migration. Note: Mental Modeler software was used to execute the method. Source: own elaboration.

Table 3: Adjacency Matrix associated with the FCM. Source: own elaboration

FCM	Catastrophes	Political causes	Armed conflicts	Family causes	Socio-economics
Catastrophes	0	0.31	0	0.38	-1
Political causes	0	0	1	0	1
Armed conflicts	0	1	0	0	0.2
Family causes	0	0	0	0	0.55

Socio-economics	-1	0.85	-0.08	0	0
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The centrality analysis for each element is as follows:

Table 4: Centralized analysis. Note: the Mental Modeler software was used to execute the method.
Source: own elaboration.

Component	Indegree	Outdegree	Centrality	Preferred State	Type
Catastrophes	1	1.69	2.69		ordinary
Political causes	2.16	2	4.16		ordinary
Armed conflicts	1.08	1.2	2.2800000000000002		ordinary
Family causes	0.38	0.55	0.93		ordinary
Socio-economic	2.75	1.9300000000000002	4.68		ordinary

As it was possible to verify, all the variables are ordinary, therefore they are causes and consequences. This translates into the fact that they pay tribute to each other, enhancing their action. However, bearing in mind that, even with these results, socio-economic aspects are the cause par excellence of migration. Other experts consider that political causes could have greater contrasts in the current scenario, considering that it is the reason for so many others derived from it.

In this sense, the study was carried out through the Analytic Hierarchy Process (AHP Saaty), to compare the results and define the cause of migration with the bigger weight, and thus propose government strategies to prevent the exodus of nationals.

To optimize the handling of the information, each element was coded using an alphanumeric code as shown below:

C1: Political causes

C2: Socio-economic

C3: Family causes

C4: Armed conflicts

C5: Catastrophes

The experts selected for the development of the study are asked to carry out paired comparisons between each of the determined study causes. To obtain a single matrix of paired comparisons, the arithmetic mean of the experts' considerations is used. Table 5 shows the resulting matrix.

Table 5: Decision matrix. Source: own elaboration.

Criteria	Catastrophes	Political causes	Armed conflicts	Family causes	Socio-economic
Catastrophes	1	0.1428571	1	0.3333333	0.2
Political causes	7	1	7	5	5
Armed conflicts	1	0.1428571	1	0.3333333	0.2
Family causes	3	0.2	3	1	0.2
Socio-economic	5	0.2	5	5	1

Table 6: Normalized decision matrix. Source: own elaboration.

Criteria	Catastrophes	Political causes	Armed conflicts	Family causes	Socio-economic
Catastrophes	0.06	0.08	0.06	0.03	0.03
Political causes	0.41	0.59	0.41	0.43	0.76
Armed conflicts	0.06	0.08	0.06	0.03	0.03
Family causes	0.18	0.12	0.18	0.09	0.03
Socio-economic	0.29	0.12	0.29	0.43	0.15

After elaborating the matrix of paired comparisons and continuing with the logic of the method, the vector of weights of each of the factors analyzed is obtained. **Error! Reference source not found.** 7 shows the vector of weights obtained, the approximate eigenvalues, as well as the calculated Consistency Index.

Table 7: Causes analyzed, eigenvalues , and vector of weights. Source: own elaboration.

Criteria	W x Weight	Approx. eigenvalues	Weights vector	Ranking
Catastrophes	0.22	5.158080412	0.04	4
Political causes	2.61	6,006185159	0.43	1
Armed conflicts	0.22	5.158080412	0.04	4
Family causes	0.49	4.991773107	0.10	3
Socio-economic	1.23	5.717502271	0.21	2

The technique yields a consistency value of 0.9, which is acceptable according to [16]. For better visualization of the results of the analysis: Figure 2 is shown below with the rankings of both techniques:

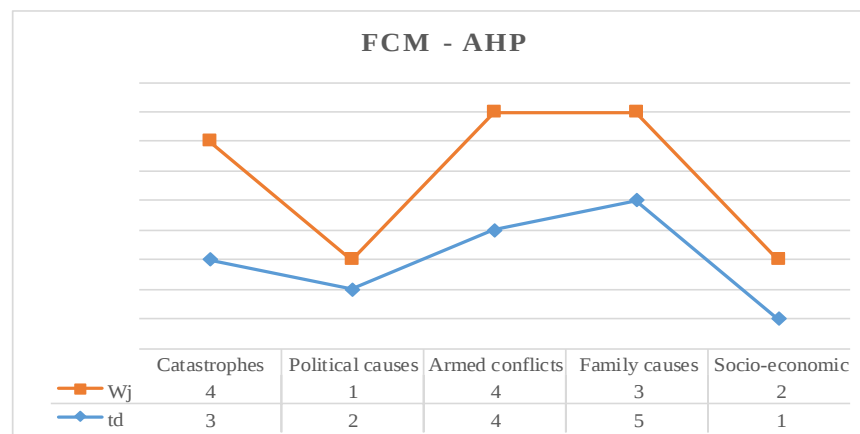


Figure 2: Comparison of the rankings of both techniques. Source: own elaboration.

As can be seen, both techniques agree that the main causes are political and socioeconomic ones. The information from another point of analysis was contrasted as shown in Figure 3. The latter shows a graphical analysis of the results obtained from the applied method. Only the causes that had at least

20% of the total weight were chosen. As can be seen, according to the experts' criteria, the most significant competencies are political and economic.

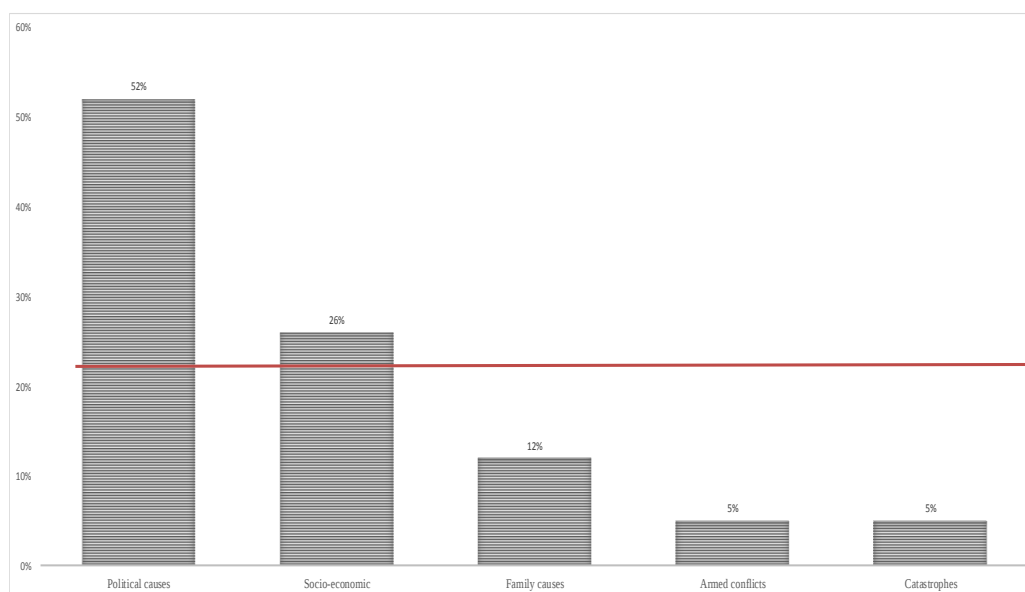


Figure 3: Graphic representation of the weights obtained according to the applied method. Source: own elaboration.

Given the results of the study, it is noted that Ecuador, considering the enormous social, economic and political importance of the phenomenon of emigration, has strengthened its policy of protection and support for migrants. It corrects, above all, the socioeconomic aspect of its nationals [19].

Proof of this, it turns to the objectives of its immigration policy. Ensure respect for human rights under current international conventions and instruments. Assist within the framework of the laws and regulations of the receiving countries. Seek the regularization of emigrants who are in irregular conditions. Seek the conclusion of bilateral agreements for the regulation and order of migratory flows. Protect the families of migrants and promote their reunification.

Combat labor exploitation, human trafficking, migrant smuggling, and related crimes. Support the strengthening of Ecuadorian organizations abroad. Promote the application of the principle of shared responsibility in international relations on migration, particularly through co-development projects. Promote effective international cooperation on repatriation. Strengthen relations with receiving States to coordinate joint actions for the design and execution of plans, programs, and projects for the benefit of Ecuadorian emigrants [4], [20].

4. Conclusions

In Ecuador, it favors migrants with laws that protect them and the participation that they have been given in the social and political sphere after the crisis unleashed in Europe and North America. It has even caused the return home of many tens of thousands of Ecuadorians with facilities for their return, to establish themselves with a job and adequate conditions for their residence.

Ecuadorian migration is considered positive for its labor contribution, to social security, and in general, the benefits it provides to foreign companies and families. We can conclude then that in general, the Ecuadorian migration policy responds preferably to social interests. The right to migrate must be transformed into the right not to migrate, that is, the right to development.

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