

# Strategic Management of Actors in Higher Education: A Multi-Case Prospective Analysis

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## ABSTRACT

The article addresses the importance of incorporating robust approaches into modern strategic planning, and highlights the role of structural analysis and stakeholder play, within the framework of strategic foresight. The main objective is to assess the contribution of these tools in decision-making at the University of the Armed Forces-ESPE, aimed at improving the competitiveness, quality and social impact of the institution. The research used structural analysis (MIC-MAC) to identify motor and dependent variables in the academic, administrative and innovation fields, relying on computer tools. Subsequently, the Actors' Game (MACTOR) was applied to map key actors, such as students, teachers, authorities and the productive sector, identifying their interests and power relations. The results showed convergences in areas such as educational quality and productive linkage, but also tensions in the allocation of resources and the pace of change. The article concludes that structural analysis, combined with the play of actors, contributes to strategic planning effectively, promoting participatory governance and facilitating policy implementation. It is suggested to replicate the study with a wider panel of experts, perform sensitivity analyses, periodically update the results and link the process with the construction of scenarios.

**Keywords:** Strategic foresight, stakeholder play, higher education, planning, Stakeholders.

**How to cite this article:** Adalid ARL, María Belén TH, Alfredo TTL, Sandra Patricia GT, Angie FL, German Gustavo BO, Neptalí RGO. Strategic Management of Actors in Higher Education: A Multi-Case Prospective Analysis. *Int J Drug Deliv Technol.* 2026;16(16s): 155-167. DOI: 10.25258/ijddt.16.16s.16

## 1 Introduction

The analysis of actors is based on the premise that each social actor pursues and safeguards its own interests; To do this, it mobilizes its power and the control it exercises over the system, designing strategies aimed at achieving its ends. MACTOR - Matrix of Alliances and Conflicts: Tactics, Objectives and Recommendations-, developed at LIPSOR (Paris) in the mid-eighties, allows us to infer, from the objectives assigned to each actor, the degrees of convergence and divergence between them, articulating their behavior typical of the "game of actors" with decision-making assumptions (León et al., 2018). To support a solid analysis of actors, it is pertinent to first apply the MICMAC structural method, which qualitatively examines the interrelationships between the variables that make up a system (organizational, social, sectoral or national). As part of the structural analysis, MICMAC relies on the qualitative judgment of actors and/or experts involved in the system studied (Garza & Cortez, 2011).

The University of the Armed Forces ESPE, recognized among the main institutions of higher education in Ecuador for its trajectory and academic

positioning, operates in a complex and dynamic environment, characterized by the interaction of multiple actors (students, teachers, administrative staff, communities, public entities and companies). At the same time, it faces the challenge of strengthening its institutional image and competing for state resources subject to indicators of academic performance, quality, reputation, levels of international visibility, among others.

Faced with this scenario, a systematic diagnosis of needs, expectations and demands of strategic – and peripheral – actors is required to serve as an input for decisions aimed at improving teaching, research and social engagement, contributing to sustainable development and institutional strengthening. For this reason, this research analyzes the potential of the stakeholder approach for a more comprehensive, efficient and results-oriented management. Methodologically, a mixed design is proposed that combines documentary analysis, consultation with experts and field information, with emphasis on structural analysis and stakeholder play, in order to formulate recommendations to optimize relational management.

The central objective is to apply and value the approach of the play of actors in the university, object of study, classifying and identifying groups by power, influence and other parameters to support informed decisions and the (re)calibration of their strategic planning. It is expected that the findings will contribute to research in university management, favoring effective strategies of institutional linkage and sustainability, and consolidating the role of the university as a key actor in the social and academic fields.

### 2 Theoretical Framework

The University of the Armed Forces ESPE has undergone a sustained institutional evolution since its creation in 1922 as the School of Officers of Engineers, with successive changes of name in 1936 and 1948, and a process of academic opening in 1972 that allowed the entry of civilian students. In 1977 it was established as the Polytechnic School of the Army and in 1982 it obtained official recognition as an institution of higher education. The expansion of its enrollment promoted the diversification of the offer and the incorporation of distance studies; the statute of 2001 reaffirmed the equivalence of its titles, and in 2010 it reached category "A" of CONEA. In 2013 it was consolidated as the University of the Armed Forces – ESPE through institutional merger and was reaccredited with category "A" in 2016 and 2020. Its current strategy prioritizes academic excellence, research, innovation, and service to the country, sustaining its national positioning (HISTORIA, 2025)

#### *The Actors' Game*

In mid-1955–1960, Gastón Berger consolidated the conceptual foundations of foresight and promoted its institutionalization through the creation of the International Center for Foresight, which facilitated its European diffusion and subsequently its adoption in Asia and Latin America in the 1970s (particularly in Argentina, Brazil, Colombia, Cuba, and Mexico). Its operational roots include futures studies originating in the U.S. military after World War II and then transferred to the social sciences. In Ecuador, multiple centers and universities use the notions and methodologies contemplated in this technique (Pérez, 2018). The most influential methodological development came from Michel Godet, whose prospective exercises with companies led to the creation of the Research Laboratory on Foresight and Strategy of Organizations (LIPSOR), aimed at professional training for the construction

of futures in public and private organizations (Pérez, 2018).

Foresight models possible futures of a phenomenon, analyzes courses of action, probable scenarios and determining actors; when it is integrated with the strategy, it is called strategic foresight and is used to anticipate decisions and generate alternatives (Pérez, 2018). In operational terms, it is conceived as a future-oriented analysis that estimates the impact of key variables on a phenomenon and enables planning to achieve objectives and mitigate problems (Arango Morales & Cuevas Pérez, n.d.). Initially, the MICMAC structural analysis diagnoses the network of relationships between variables and their degree of motricity/dependence for the design of scenarios. Next, the MACTOR tool (actor positioning) is applied and can then be followed by SMIC (probabilistic cross-impacts) (Hernández, 2020).

#### *Structural analysis as an input*

Before the application of the actor game, the system must go through a structural analysis. The MICMAC method (*Matrice d'Impacts Croisés – Multiplication Appliquée à un Classement*), formalized by Godet, is a cognitive structuring procedure for complex systems. Based on a matrix of direct influences, he orders the variables on an influence-dependence plane: the vertical axis reflects the intensity of influence and the horizontal axis the degree of dependence, facilitating the description and organization of the system (Godet, 2000; Borges, 2018). The purpose of structural analysis is to discriminate motor and dependent variables critical to the evolution of the system. Operationally, it is developed in three phases: (i) inventory of variables, (ii) qualitative characterization of the relationships between them, and (iii) identification and hierarchy of key variables (Pérez, 2018).

MICMAC is used to organize collective reflection on the future of organizations, sectors, or territories, describing the system through a matrix that links its components to the explanatory environment and makes the essential variables for its dynamics emerge (Storti, 2023). In instrumental terms, it is based on a list of structural variables and the matrix of direct influences to detect key variables with the support of tables and visualizations (motricity-dependency plans), enabling the modeling of the problem (Niño Liévano et al., 2023).

#### *MIC-MAC outputs*

Once the variables have been inventoried, the MICMAC method is operationalized by means of a

double-entry matrix in which rows and columns correspond to factors of the global environment, the specific context and the internal system; this structuring allows us to systematically estimate the influences and dependencies between variables (Arango Morales & Cuevas Pérez, 2014; Godet & Durance, 2011). In matrix interpretation, diagonal blocks synthesize intragroup interrelationships (subsystems), while non-diagonal blocks represent couplings between subsystems; the qualitative assessment of direct influences – and their intensity – underpins structural readings and prepares subsequent phases of prospective analysis (Arcade, Godet, Meunier, & Roubelat, 2009; Arango Morales & Cuevas Pérez, 2014).

From the influence-dependence plane, four categories are distinguished: (1) motor variables (high influence, low dependence); (2) risk/unstable variables (high influence, high dependence); (3) autonomous variables (low influence, low dependence); and (4) outcome variables (low influence, high dependence). In the intersection zone, the "lever variables" or regulators emerge, whose management conditions the dynamics of the system (Godet & Durance, 2011).

**3 Methodology**

This research is based on the postulates about stakeholders, especially the notion that collectives design "rules of the game"—formal and informal institutions—to structure interactions and reduce the uncertainty inherent in their transactions and relationships (North, 1990). According to the specialized literature, stakeholder theory is nourished by four disciplines of the social sciences: sociology, economics, political science, and ethics, which explains its broad analytical and normative scope in complex organizational contexts (Mainardes, Alves, & Raposo, 2011). The research applies the MIC-MAC approaches and the play of actors, following the procedures described below.

**3.1 Phases of the MICMAC Method**

**Phase 1: Inventory of System Variables**

The process begins with the identification of the variables that characterize the system and its environment, as established in the classic formulation of the MICMAC method (Godet, 2006). This list must include both internal and external qualitative factors, whose definition must be precise and concise to facilitate their identification and subsequent relational analysis (Valarezo, 2018; López, 2018). According to Godet's recommendations, between 70 and 80 variables should be included for manageability

reasons; however, in practical applications, it is possible to work with a reduced set of approximately 10 variables, or to segment the exercise into several sessions if the number of variables exceeds 20, in order to avoid bias and confusion (Arango, 2017). The validation of the list by a panel of experts is essential to debug redundancies and agree on meanings (Arango, 2017).

**Phase 2: Characterization of intervariable relationships**

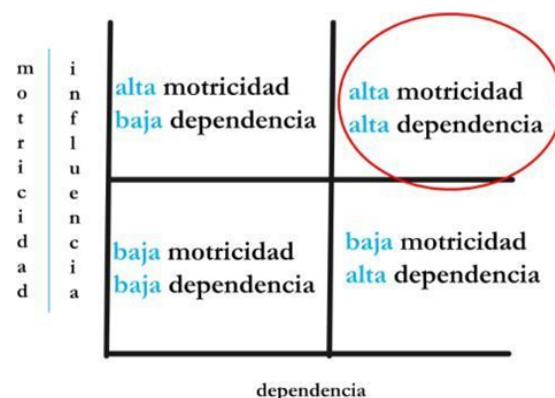
The structural analysis is operationalized through a matrix of direct impacts, in which each variable interacts with the rest, using abbreviated denominations to save space (Arias, 2018). The completion of this matrix is qualitative and is carried out by experts called to the study, who evaluate for each pair of variables (i, j) whether there is a direct influence of i on j and, if so, what is the intensity of this influence: null (0), weak (1), moderate (2), strong (3) or potential (P) (Godet & Durance, 2011; Arango, 2017).

The matrix of direct relationships allows estimating the degree to which one variable influences another, which is crucial to identify the causal relationships that structure the system. This step is decisive in identifying strategic variables, with a view to the design of future scenarios (Storti, 2023). The coding scale used is as follows:

- 0 = Zero direct influence
- 1 = Weak direct influence
- 2 = Moderate direct influence
- 3 = Strong direct influence
- P = Potential (future) influence

**Figure 1**

Interpretation of the Plan



*Note: Adapted from Arbey Flórez – Strategic Foresight (2019)*

**3.2 Actors' Game Approach (MACTOR)**

The MACTOR approach is used to assess the power relations between actors and to analyse their convergences and divergences in relation to a set of positions and objectives. This analysis provides key inputs for decision-making regarding alliance policies and conflict management (Vitale & Ragno, 2008). The operationalization of MACTOR combines two matrices: an "actors× actors" matrix, which estimates the direct and indirect influences between the parties, and a "× objectives" matrix, which positions each actor against previously defined objectives, typically derived from the MICMAC structural analysis (León et al., 2018). These outputs allow us to understand the logics of intervention, dependencies, and possible coalitions or tensions around the project's objectives (Boudoukha & Kachef, 2022).

In the field of strategic foresight, the MACTOR method allows actors to be analysed in terms of their aims, projects and means of action, with the aim of identifying key issues for the future, as well as points of convergence and divergence (Elmsalmi & Hachicha, 2014). Recently, the literature has systematized six analytical elements – key issue, actor, position, salience, influence, and control – that facilitate the comparative evaluation of power and the alignment of interests in multi-stakeholder contexts (Ilhami et al., 2024).

**3.3 Stages of Analysis**

*1. Identification of relevant actors*

This step consists of analyzing those actors that are part of the object of study and that have a significant degree of influence on the functioning of the system. A list of all the actors that could participate in the specific project or action plan should be drawn up (León et al., 2018).

*2. Identification of strategic objectives*

Once the actors have been identified, this stage aims to highlight the objectives of each one, so that this information can be complemented with the means and resources available, which allows a deeper understanding of their capacities (León et al., 2018).

*3. Evaluation of direct influences between actors*

This step involves prioritizing the actors through a matrix of direct influences, using a scale that allows the influence of one actor on another to be assessed. Possible assessments are:

4: Dominant actor: strong influence and low dependence.

3: Link actor: influences and depends at the same time, contributing to the stability or instability of the system.

2: Autonomous actor: maintains independence within the system.

1: Dependent actor: highly dependent, with minimal influence.

*4. Positioning of the actors with respect to the objectives*

It is important to know the attitude of each actor towards the established objectives, considering whether their position is opposite, neutral, indifferent or favorable.

*5. Convergence and divergence analysis*

Convergence indicates that actors share goals or are aligned in their positions, which can lead to the formation of alliances and collaborations. In contrast, divergence indicates that actors have contradictory objectives or positions, which can generate conflicts (Vitale & Ragno, 2008).

*6. Assessment of stakeholder competitiveness*

MACTOR analysis allows us to identify the capacity of actors to influence others, which is key to understanding power dynamics and possible evolutions of the system. However, this analysis has limitations, since it treats all actors equally, without considering that they can exercise different power on specific issues (Bendahan et al., 2003).

In conclusion, the methodology adopted in this study makes it possible to identify and analyze the power relations and dynamics between the key actors within the system, which facilitates strategic decision-making and policy formulation to achieve the project's objectives

**4 Results and discussion**

**4.1 Actor Game – MACTOR**

Through the MACTOR methodology, highly influential actors were identified, such as national universities (UNI\_NACIO), international higher education organizations (ORGA\_INTER), and productive companies (EMP\_PRODUC), which play a crucial role in the definition of academic policies, technology transfer, and linkage with the productive sector. In addition, local actors such as the Municipality of Rumiñahui (MUN\_RUMI) stood out for their high influence on community and territorial development projects, while more peripheral actors, such as parents (PADRE) and non-governmental organizations (NGOs), had less influence, but are crucial for decision-making in specific processes of the educational community.

**Table 1**

Key Actors and Their Influence

N	Long title	Short title	Description
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o			
1	Armed Forces	Armed Forces	He defends the republic, maintains public order and upholds the laws.
2	Managers	DIREC	Guides employees, coordinates tasks and organizes the operation of the Institution.
3	Teachers	DOZEN.	Guide and accompany students in the individual and collaborative construction of knowledge.
4	Department Directors	DREC_DEPAR	Responsible for teams and departments, they supervise activities, processes, resources and information.
5	Military	MILITARY	It preserves sovereignty, defends integrity and independence, and guarantees the legal system.
6	Administrative Workers	TRABA_ADM	Write, file, and review documents, gather information, and generate reports.
7	Guarding, maintenance, and cleaning	GUAR_MANTE	Improve university safety with methodologie

			s to effectively reduce risks
8	Suppliers	PROVIDE	It provides resources and products to companies to support their economic activity.
9	Students	STUDY	Contribute to the university and the community.
10	National and International Research Networks	REDES_INVEST	It stimulates critical thinking and creativity.
11	Research Groups	GRUP_INVES	Research and create knowledge according to a work plan.
12	National and International Researchers	INVES_NA	Prepares and executes the study plan, monitors safety, collects and analyzes data, and reports results.
13	SENESCYTE	STUDENTS	It fosters higher education, science, technology, and innovation in Ecuador.
14	University Council	WITH	Defines policies and makes academic and administrative decisions at a university.
15	Community / Society	COMU_SO	It works to improve life

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			and the physical environment.				of a specific career within a university.
16	National and International Universities	UNI_NACIO	They provide higher education and contribute to research.	24	Area of Knowledge Coordinators	COORDINATE S	They organize and supervise academic and research activities within a specific area of knowledge.
17	Media Press	COM MEDIA	It provides a way to interact with peers and teachers.	25	State financing entities	ENTI_FINA	Ministry of Finance
18	Observatories	OBSERVE	Support for students and teachers for their training	26	CACES	CACES	Institution that evaluates and accredits the quality of Ecuadorian universities
19	Clubs	CLUBS	Develop recreational activities	27	Rector	RECTORS	Authority in charge of institutional management and representation
20	Foundations	CASE	Their objective is to carry out actions and general.	28	Student unions	GREMI_ES	Associations that represent students and defend their rights.
21	Educational Institutions	INSTI_RDU	It provides a space for individual training for the development of social identity.	29	CES	CES	Regulatory body of Ecuadorian universities in charge of regulations and accreditation
22	Vice-Rectors	VICERREC	It supports the rector in institutional management and in the implementation of educational and research policies.	30	Companies in the productive sector	EMP_PRODUC	Companies that demand professionals trained at universities
23	Career Directors	DIR_CARRE	They supervise and coordinate the academic and administrative development	31	Non-Governmental Organizations	NGO	Institutions that promote education, inclusion and innovation

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32	Comptroller's Office	AGAINST	An organization that carries out special examinations in the different universities to detect irregularities in management.	37	International Evaluation Bodies	EVAL_INT	Entities that measure, compare, and rank the performance of higher education institutions globally.
33	International higher education bodies	ORGA_INTER	Global entities that monitor educational quality	38	Municipality of the canton of Rumiñahui (Sangolquí)	MUN_RUMI	Decentralized autonomous government responsible for territorial planning, public services, urban planning and local development.
34	Graduados / Alumni	GRAD	They are key to providing feedback on the relevance of programs, employability and the university brand. They do not appear explicit as an organized group.	39	Ministry of Economic and Social Inclusion (MIES)	HARVEST	Institution that designs and implements public policies for poverty reduction, human development and inclusion of vulnerable groups.
35	Parents	FATHER	In undergraduate careers, especially in the ESPE, they have weight in the decision of studies and financing.	40	Banks or Financial Institutions	INSTI_FINAN	Some students use educational credits; These actors influence permanence and enrollment.
36	Global online education platforms	EDU_ONLINE	International virtual education service providers offering courses, certifications, and academic programs				

### 4.2 Rating of actors

For strategic analysis using the MACTOR methodology, the Direct Influences Matrix (MDI) allows you to visualize the direct influence that each objective exerts on the others. This matrix is essential for understanding how different strategic objectives interact within the system. The ratings

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assigned in the MDI reflect the degree of direct impact of one objective on another, and are based on the following rating scale:

0 = No influence: There is no direct relationship or impact between the objectives.

1 = Processes: The influence is low and manifests itself through operational or administrative actions.

2 = Projects: The influence is moderate, evidenced by joint participation or dependence within specific projects.

3 = Mission: The influence is high and directly affects the strategic or missional components of the organization.

4 = Existence: Influence is critical and directly conditions the existence, viability or sustainability of the other objective.

**Table 2**  
Direct Influences Matrix (MDI)

**Table 3**  
*Objectives to consider in the MACTOR methodology*

N <sup>o</sup>	Long title	Short title	Gameplay	Description
1	Level of teacher training	FORM DOCEN		To increase the percentage of teachers with specialized training in a defined period.
2	Number of new and refurbished academic programs	PROG_ACADE		Develop the number of new and updated academic programs according

				to quality standards.
3	Participation of teachers and students in social projects	PROY PARTY		Promote the participation of students and teachers in institutional projects.
4	Level of bureaucracy in administrative processes	BUREAUCRACY		Reduce bureaucracy in administrative processes to improve institutional efficiency.
5	Academic mobility of students and teachers	MOVI_ACADE		To increase the percentage of teachers with specialized training in a defined period.
6	Language proficiency in students	LANGUAGES		Optimize language proficiency in students based on institutional strategic objectives.
7	International Visibility and Accreditation	INTERVISION		Enhance international visibility and

	ion		accreditation based on institutional strategic objectives.
8	Links with society	WINNING MEMBERS	Increase the link with society based on the institutional strategic objectives.
9	Graduate Tracking	FOLLOW GRAD	Adjust the follow-up of graduates according to the institutional strategic objectives.
10	Innovation and adaptation of the academic offer	INNOV OR AC	To strengthen innovation and adaptation of the academic offer according to the institutional strategic objectives.
11	Internal Coordination	DON'T AGREE	Promote internal coordination based on institutional strategic objectives.

1	Public Policies	POLIT PUBL	Restore public policies based on institutional strategic objectives.
1	State Funding	EAST FINANCE	Improve state financing based on institutional strategic objectives.
1	Work Overload of Teachers	ON LABO	To increase the percentage of teachers with specialized training in a defined period.

**4.3 Scoring the Objectives**

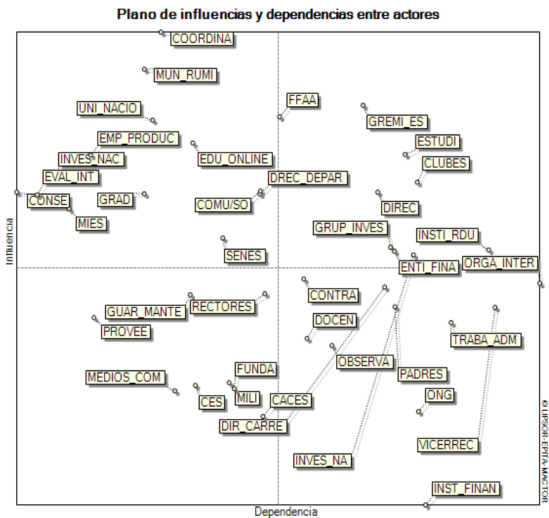
Within the framework of the MACTOR analysis, the Direct Influences Matrix (MDI) not only shows the relationship between the objectives, but also the degree of influence that one can exert on another, thus assessing their strategic weight. For a correct interpretation, a hierarchical scale is used to identify how critical an objective can be in relation to the rest. This rating reflects the level of risk or commitment that an objective represents in relation to the institution's strategic structure. The values are interpreted as follows:

- 0: The objective is inconsequential
- 1: The objective jeopardizes operational processes
- 2: The goal jeopardizes the success of the actor's projects
- 3: The objective jeopardizes the fulfillment of missions
- 4: The objective endangers the very existence of the actor

**Table 4**  
*Objective Qualification*

	Nivel de influencia	Grado de dependencia	Nivel de influencia	Nivel de dependencia	Nivel de influencia	Nivel de dependencia	Nivel de influencia	Nivel de dependencia	Nivel de influencia	Nivel de dependencia	Nivel de influencia	Nivel de dependencia	Nivel de influencia	Nivel de dependencia	Nivel de influencia	Nivel de dependencia	Nivel de influencia	Nivel de dependencia
Nivel de influencia	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Grado de dependencia	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

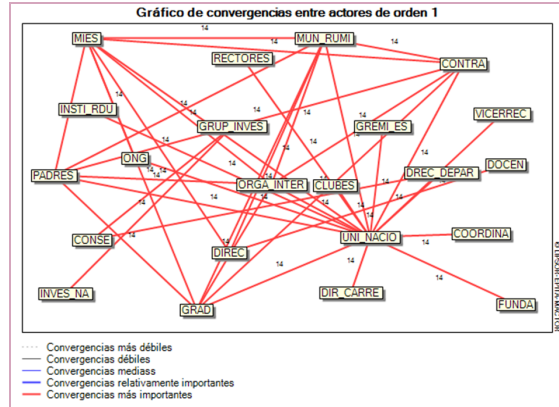
**Figure 2**  
Influences and dependencies between actors



The plane of influences and dependencies between actors in the MACTOR analysis reveals a structure where actors with high influence and low dependence, such as COORDINA, MUN\_RUMI and UNI\_NACIO, stand out, acting as strategic leaders capable of driving key decisions in the system. In contrast, actors such as PADRES, NGOs, TRABA\_ADM and VICERREC have high dependence and low influence, which indicates that they are especially vulnerable to changes driven by others, and, therefore, should be considered in mitigation or inclusion strategies.

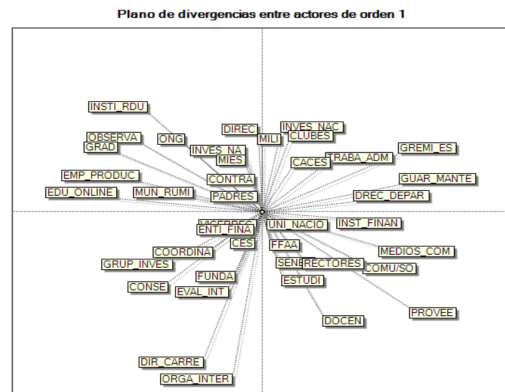
At the center of the system are actors with high influence and also high dependence, such as ENTI\_FINA, ORGA\_INTER and GRUP\_INVES, who represent critical and reactive nodes: their behavior can reinforce or destabilize the system depending on the dynamics with other actors. Finally, some marginal actors, such as MEDIOS\_COM and PROVEE, have low influence and low dependence, so their participation in decision-making may be less of a priority.

**Figure 3**  
Convergences between actors of order 1



The graph shows a network of actors with high levels of agreement in their strategic interests, evidenced by the numerous red lines that represent relatively important or more important convergences, all with maximum intensity. Actors such as GRUP\_INVES, ORGA\_INTER, CLUBES, UNI\_NACIO and MIES stand out for their high connectivity, which indicates that they are key to generating consensus and leading joint actions. This visualization helps to identify strategic alliances and possible leaderships within the analyzed system.

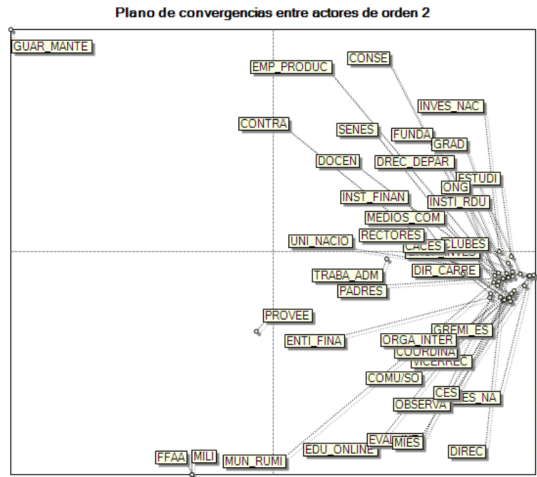
**Figure 4**  
Simple divergences of objectives between actors



The plane of divergences between actors of order 1 shows how different the positions of the actors are in relation to the strategic objectives. Those that are located near the center, such as PADRES, NGOs, MIES or DIREC, have low divergence and can be allies in consensus processes. On the other hand, actors such as ORGA\_INTER, DIR\_CARRE, DOCEN or PROVEE, being further apart, show greater distance or potential conflict with the rest, which suggests that they could represent challenges in collective decision-making. This visualization is useful for predicting resistance, managing differences, and designing articulation strategies.

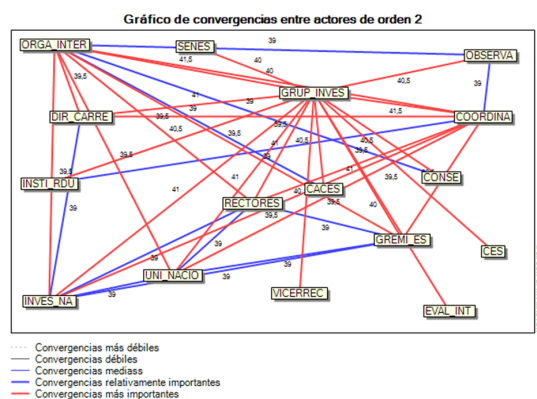
**Figure 5**  
Valued convergences of objectives between actors

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The plane of convergences between order 2 actors generated by MACTOR allows us to identify key strategic groupings within the ecosystem of the University of the Armed Forces ESPE. The concentration of actors such as EMP\_PRODUC, DOCEN, RECTORS, INSTIT\_FINAN, PROVIDE, and CONTRA in the right quadrant suggests an area of high convergence of objectives, which indicates strategic alignments around operational, academic, and financing functions. This agglomeration represents an opportunity to strengthen synergies in areas such as linkage with the productive sector, teacher modernization and budget management. On the other hand, actors such as MILI, the Armed Forces and MUN\_RUMI appear more dispersed, which indicates possible divergences or strategic autonomy in their positions, perhaps linked to specific institutional interests or territorial competences.

**Figure 6**

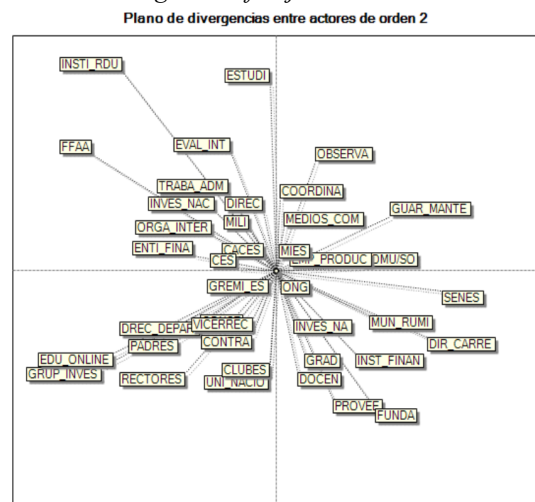


The graph of convergences between actors of order 2 allows us to visualize the degree of strategic alignment between multiple entities linked to the university environment of the ESPE. Highly relevant interactions (orange and red lines) are identified between actors such as RECTORS,

VICERRECT, DIR\_CARRE, UNI\_NACIO and CACES, which reveals a strong articulation around academic governance, quality assurance and institutional policies. These actors make up a strategic core with the potential to coordinate integrated actions, promote structural reforms, and facilitate the implementation of performance indicators. The presence of purple and blue lines towards actors such as GRUP\_INVES, OBSERVA, CONSE and SENES indicates medium convergences that could be strengthened through participatory mechanisms and knowledge co-creation strategies. On the other hand, the relative disconnection of INVE\_NA and GREMI\_ES suggests challenges in involving more technical or union sectors in decision-making.

**Figure 7**

*Assessed divergences of objectives between actors*



The graph of divergences between actors of order 2 reveals the points of tension and strategic disagreement within the environment of the University of the Armed Forces ESPE, pointing out how certain actors may have opposing orientations or interests in the decision-making process. Actors such as the Armed Forces, MILI, GREMI\_ES, NGOs, and MUN\_RUMI are in peripheral positions, which suggests a lower alignment with the central axes of academic governance and institutional planning. Their distance from RECTORS, VICERRECT, DIR\_CARRE or UNI\_NACIO could imply latent conflicts, differentiated sectoral visions or resistance to integration.

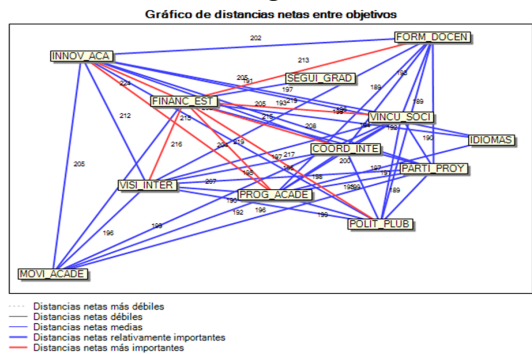
The histogram of the ambivalence between actors, within the MACTOR analysis, represents the level of ambivalence or contradiction in the positions of the actors in relation to the objectives. In simple terms, ambivalence indicates how much an actor is

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in favor of certain objectives, but simultaneously against other related ones, or even with inconsistent positions within the same strategic axis.

**Figure 8**

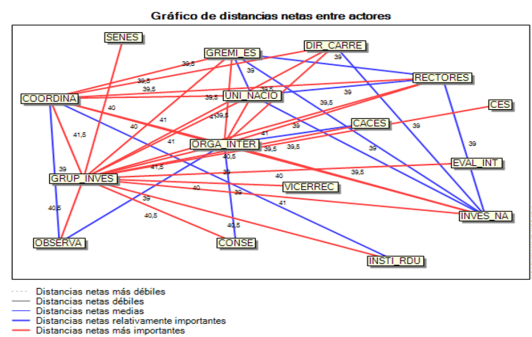
*Net distances between targets*



The graph of net distances between objectives, generated by the MACTOR software, allows us to identify the level of coherence, conflict or affinity between the different strategic objectives analyzed. The blue lines represent weak or medium net distances, indicating that there is less interaction or dependence between these targets. Instead, red lines, especially the most intense ones, reveal relatively significant or even critical net distances, meaning that those goals are highly interrelated or could conflict if not properly managed. For example, "FINANC\_ESTI" and "PROG\_ACADÉ" show a significant net distance (strong red line), suggesting a strong strategic connection or tension between financial stability and academic programming. This analysis is key to prioritizing decisions, detecting alignments or contradictions and defining integrated actions that ensure coherence in strategic planning.

**Figure 9**

*Net distances between actors*



The MACTOR software's net distances between actors graph shows how close or far apart actors are based on their strategic positions against common goals. Red lines indicate greater alignment and shared interests, while blue lines reflect distances or differences. Actors such as UNI NACIO, ORGA INTER and DIR CARRE stand out for their high

connection with other key actors, which positions them as strategic nuclei within the system. On the other hand, actors such as OBSERVA, SENES or INSTI ROU have weaker links, which shows a more peripheral or isolated position. This information is key to identifying with whom consensus can be built and who should be better integrated into decision-making processes.

## 4.4 Derived strategic actions

Based on the results obtained, the following strategic actions are proposed to improve institutional planning:

- Strengthening Inter-Institutional Coordination (COORDINA): Establish formal links and create joint academic committees to co-design improvement plans, ensuring institutional alignment on key decisions.
- Local Community Outreach (MUN\_RUMI): Strengthen cooperation in outreach and territorial development projects, through pre-professional practices and citizen laboratories that address local problems.
- Alliances with the Productive Sector (EMP\_PRODUC): Establish cooperation agreements with productive companies, promoting internships, joint R+D projects and dual training that respond to the needs of the labor market.
- Review and Improvement of Graduate Follow-up (SEGUI\_GRAD): Involve graduates in the design of curricular policies and use their experiences to adjust and improve the academic offer.
- Alignment with International Agendas (EDU\_ONLINE, SENESCYT): Integrate educational innovation agendas and digital policies, ensuring that the university is aligned with international higher education standards.

## 5. Conclusions

The use of prospective tools such as MACTOR and MIC-MAC has proven to be a valuable contribution to the strategic planning of the University of the Armed Forces ESPE. These tools not only facilitated the identification of key actors and their influences, but also made it possible to visualize the interactions and dependencies within the system. The analysis evidenced the existence of actors with diverse interests, which requires an inclusive governance approach that promotes participation

and collaboration around common strategic objectives.

The application of MACTOR and MIC-MAC provides a clear view of the relationships between actors, which is essential for designing strategies that align all actors around common goals. This, in turn, will strengthen decision-making processes, academic quality, and the university's link with society.

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