WWW.ECUACIENTIFICA.COM



Ecuacientífica
REVISTA MULTIDISCIPLINARIA

ISSN: 3091 -1796

REVISTA MULTIDISCIPLINARIA
ECUACIENTÍFICA

Volumen 4
Número 9

DOI: https://doi.org/10.56519/0nq50w68

CC BY NC

ISTOG

Frecuencia especial
12 - 05 - 2026

ISSN:
3091-1796
Vol. 4 No. 9 PP. 1-16

DOI:
https://doi.org/10.56519/bsr78078
Mayo 2026

IMPACTO DE LA SOBRECARGA LABORAL EN LA SATISFACCIÓN DE LOS SERVIDORES PÚBLICOS DEL GAD MUNICIPAL DE ALAUSÍ

IMPACT OF WORK OVERLOAD ON JOB SATISFACTION AMONG PUBLIC SERVANTS OF THE MUNICIPAL DECENTRALIZED AUTONOMOUS GOVERNMENT OF ALAUSÍ

Nora Morán[1], Lissette Mendoza[2]
{leidy_moran20@hotmail.com1, liss-mendoza1@hotmail.com2}

Fecha de recepción: 29/03/2026 / Fecha de aceptación: 21/04/2026 / Fecha de publicación: 12/05/2026

RESUMEN: En el sector público, la gestión del talento humano representa un aspecto necesario para asegurar mejores servicios institucionales, puesto que las demandas laborales han aumentado significativamente. El objetivo del presente estudio se basa en analizar la correlación de la sobrecarga de trabajo con la satisfacción de los servidores del Gobierno Autónomo Descentralizado Municipal de Alausí. El estudio adoptó un diseño de investigación cuantitativo utilizando un enfoque no experimental, transversal y correlacional con una serie de instrumentos tipo Likert desarrollados con base en la escala ESCAM y el cuestionario S20/23 para evaluar la sobrecarga y satisfacción laboral respectivamente. La fiabilidad del instrumento se confirmó por medio del coeficiente Alfa de Cronbach (α= 0,813). Los datos fueron analizados utilizado estadísticas descriptivas y el coeficiente de correlación de Spearman. Los resultados indicaron que la sobrecarga de trabajo estaba presente en un rango moderado y alto, pero había una influencia notable de las demandas cognitivas como de la presión de tiempo. Por el contrario, la satisfacción laboral mostró niveles particularmente altos con una mayor valoración en el contenido del trabajo y una menor remuneración. En términos generales, se evidencio que existe una correlación negativa débil y no significativa entre las dos variables (Rho= -0,128). Sin embargo, un análisis más específico por dimensiones demostró que la reducción en la autonomía y el apoyo social-organizacional se encuentran significativamente asociado con niveles más bajos de satisfacción laboral, mientras que las demandas cognitivas presentan relaciones positivas con algunas dimensiones satisfactorias. Se concluye que el impacto de la sobrecarga laboral dependerá del equilibrio que existe entre las demandas y los recursos organizacionales, siendo estos últimos determinantes del bienestar laboral del personal del sector público.

Palabras clave: *Satisfacción laboral, sobrecarga laboral, escala ESCAM, cuestionario S20/23*

ABSTRACT: In the public sector, human talent management represents a key factor in ensuring improved nstitutional service delivery, particularly in contexts where work demands have increased significantly. The objective of this study was to analyze the correlation between work overload and job satisfaction among public servants of the Municipal Decentralized Autonomous Government of Alausí. The research adopted a quantitative approach with a non-experimental, cross-sectional, and correlational

ISSN: 3091-1796
Vol. 4 No. 9 PP. 1-16
DOI: https://doi.org/10.56519/bsr78078
Mayo 2026

design, using Likert-type instruments based on the ESCAM scale and the S20/23 questionnaire to assess work overload and job satisfaction, respectively. The reliability of the instrument was confirmed through Cronbach's Alpha coefficient (α = 0,813). Data were analyzed using descriptive statistics and Spearman's correlation coefficient. The results indicated taht work overload was present at moderate to high levels, with a notable influence of cognitive demands and time pressure. In contrast, job satisfaction showed generally high levels, with greater valuation in the content of work and lower satisfaction regarding remuneration. Overall, a weak and non-significant negative correlation was found between the two variables (Rho = -0.128). However, a more detailed dimensional analysis revealed that reduced autonomy and social-organizational support are significantly associated with lower levels of job satisfaction, while cognitive demands showed positive relationships with certain satisfaction dimensions. It is concluded taht impact f work overload depends on the balance between job demands and organizational resources, with the latter playing a determining role in the occupational well-being of public sector employees.

Keywords: *job satisfaction, work overload, scale ESCAM, questionnaire S20/23*

1 Escuela de Posgrado, Universidad Estatal de Milagro (UNEMI), https://orcid.org/0009-0006-8280-3123.
2 Escuela de Posgrado, Universidad Estatal de Milagro (UNEMI), https://orcid.org/0009-0008-0763-3771.

INTRODUCTION

Human talent management in the public sector represents a principal strategic axis that fosters the quality of the services that the State offers to the citizenry. In this study the importance of the relation between the overload of functions and low job satisfaction is analyzed, since the increment of the demands affects the equilibrium between the responsibilities with the capacity of compliance (1). In the case of the Municipal Decentralized Autonomous Government (GAD) of Alausí, it results important owing to the growing number of labor demands, emergencies, the pressure for the results or the lack of resources assigned to the institution. All the aspects previously mentioned impact on the job satisfaction in aspects such as the supervision, work conditions, clarity of processes, autonomy and the recognition of superiors. Antecedents that delimited the importance of the present thematic and the development of the same.

Under this context, in the public institutions, the quality among the services as the capacity of response is related significantly with the performance and well-being of its servers, which establishes that the work conditions are recognized as strategic factors of management (2). In this context, the work overload can be defined as the perception of the excessive labor demands (in terms of volume, time pressure or complexity) that tension the resources both physical, cognitive and emotional of the workers which affects in a progressive manner their attitude toward the post and the organization (3).

In addition, the overload generates a continuous disequilibrium between the expectations of performance in the work (demands related with the tasks, time pressure and complexity, emotional, physical, interactions with the tasks, social and organizational support or the clarity of functions, tools, work conditions) including the availability of time for the taking of decisions (4). When the demands surpass routinely the resources, a process begins with affectation or the deterioration of the health,

ISSN:
3091-1796
Vol. 4 No. 9 PP. 1-16

DOI:
https://doi.org/10.56519/bsr78078
Mayo 2026

resulting in an increase of the stress, the exhaustion, and minimizing the labor attitudes, such as the satisfaction (5).

On the other hand, the dependent variable delimited by the job satisfaction is defined as a relatively stable evaluative attitude toward the work, based on the daily experience of the server and the comparison between the expectations with the real conditions (supervision, treatment, resources, recognition, autonomy, justice, climate, etc.) (6). In the public sector, the satisfaction is not only related with the individual well-being, but with the results at the organizational level where the commitment, sustained performance, reduction of the absenteeism and quality of the service lent to the public is detached (7).

In the municipal GAD of Alausí, the relation between the work overload and the job satisfaction results particularly important owing to the increase of the institutional demands, the pressure for results, the constant attention to the citizens and the limited resources. These conditions create an environment where the public servers must equilibrate multiple responsibilities, which can affect their perception of the work and their level of satisfaction.

Diverse theories permit the comprehension of the relation between the studied variables. Among which stands out the model of the Job Demands and Resources (Job Demands-Resources, JD-R), which constitutes the principal base of comprehension of the work overload and how it can affect the job satisfaction. From this perspective, the labor demands encompass the physical, cognitive, temporal and emotional aspects that require a continuous effort. While the labor resources include aspects such as the autonomy, the support of the supervisor, the cooperation among companions and the organizational conditions that promote the compliance of the institutional objectives. In addition, it is recognized that the leadership is not only a resource, but an antecedent of the demands, as well as the available support and the level of exigencies (8).

Another base results applicable with the Conservation of Resources Theory (COR), according to which it mentions that the stress occurs when the persons feel a loss of resources, the risk of loss or an inadequate capacity to replenish what the work thus consumes. This theory contributes the JD-R model upon analyzing why the accumulation of several tasks, the multitasking, the duration of the work time and the chronic pressure lead to the exhaustion in the workplace or the diminution of the occupational well-being in its set (9).

In set, the analyzed theories delimit that the link between the overload of and the job satisfaction is not casual nor individual, but that it is the result of a structural relation between demands, resources and perceptions of the organizational environment. In the JD-R model, the greater demands arise from a process of deterioration that exhausts the energy and provokes tension, tiredness and negative attitudes toward the work. While the labor resources activate a motivational process that strengthens the commitment and the job satisfaction (10). Recent publications validate the negative association of the labor demands with the subjective well-being, while the resources are correlated positively, even if it is in an indirect form. In addition, when the time pressure, the emotional load or the cognitive demands prevail without the adequate support, the job satisfaction will be minimal. Therefore, the theory of the study is established from the

ISSN: 3091-1796
Vol. 4 No. 9 PP. 1-16
DOI: https://doi.org/10.56519/bsr78078
Mayo 2026

negative relation between a greater perceived overload and a diminution of the job satisfaction (11) (12).

In Latin America, the international organizations have warned that the labor environment has been affected by the economic, social and work changes from its intensity or the labor pressures that influence both in the well-being of the employee and in the productivity. Therefore, the local governments must consider that the work requires of policies focused on the well-being and organization of the employment, particularly in contexts of pressure and periods of economic recovery (13).

For the exposed, the objective of this study is delimited in investigating the correlation of the overload with respect to the job satisfaction among the public servers of the Municipal GAD of Alausí in the year 2026. In addition it is developed in three fundamental phases: In the first place, the perception of the public servers of the Municipal GAD of Alausí with respect to the overload and job satisfaction will be analyzed. Second the correlation or not of the two variables of study will be established. Finally, recommendations or necessities of improvement in the distribution of work loads, the institutional support and the conditions of performance in the institution will be delimited.

Therefore, the importance of the investigation is based on the generation of empirical evidence that promotes the taking of decisions in the management of the human talent within the public sector. In addition to contributing to the improvement of the labor conditions, optimizing the performance of the institution and strengthening the quality of the service to the citizenry.

MATERIALS AND METHODS

In order to address this investigation a quantitative design was required, owing to that its objective was the evaluating objectively the relation between overload and the job satisfaction among the public servers of the Municipal Decentralized Autonomous Government of Alausí. The reason of this approach was significant since it permitted compiling standardized data, processing them statistically and establishing patterns of relation between both variables, which was part of a transversal analytic observational study.

The design of the study was transversal, correlational and non-experimental. Since, the variables were not manipulated intentionally, they were observed such as they develop in the institutional context. Transversal since the collection of information was effected during a single moment in the year 2026 and correlational owing to that the principal objective consisted in verifying if there exists relation between the overload and the job satisfaction. This methodological justification was coherent with the problem posed and the interest of generating evidence on the management of the human talent in the public sector.

The sources of information were primary as secondary. The primaries were obtained from the surveyed public servers of the Municipal GAD of Alausí. The secondary sources corresponded to scientific articles, methodological literature and recent studies of the overload as of job satisfaction. The population of study was of 346 employees, and a

ISSN:
3091-1796
Vol. 4 No. 9 PP. 1-16

DOI:
https://doi.org/10.56519/bsr78078
Mayo 2026

sample of in 60 participants determined by means of the calculation for finite populations with an error of 5% and a level of confidence of 1.96 (95%).

For the collection of data a survey conformed by two instruments was utilized. The job satisfaction was determined by means of the S20/23 questionnaire, action commonly utilized in investigations related with the labor climate and the well-being. Recently, it has been found that this instrument possesses effective psychometric characteristics, sufficiently reliable and consistent in its dimensions, as well as in its use in Latin American and Ecuadorian environments. In order to measure the work overload, the ESCAM scale was adopted since it is a multidimensional instrument that permitted measuring cognitive demands, complexity of tasks, temporal organization, work rhythm and effects on the health. Recent investigations in adaptation and validation of the instrument back the utility of the ESCAM in the Spanish-speaking population as labor context.

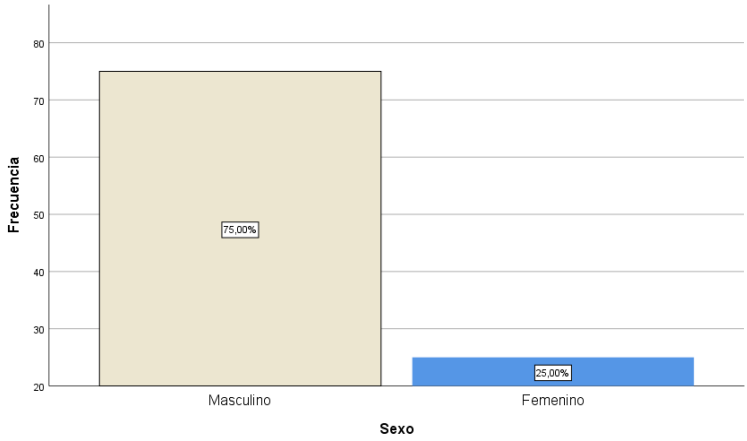
Both questionnaires were developed with a Likert-type scale that favored the measurement of the labor perceptions. This instrument also was validated by means of the reliability coefficient Cronbach's Alpha, maintaining an internal consistency among blocks and obtaining a result of 0.813. Therefore, the posed questionnaire is accepted as very good since it is greater than 0.70. Given that the Likert-type responses lead to ordinal data, descriptive statistics were utilized to summarize frequencies, means and dispersion, as the Spearman's correlation coefficient, a non-parametric test.

RESULTS

The obtained results permit establishing the behavior of the variables of study in the municipal GAD of Alausí, from a descriptive as correlational level.

General data (sociodemographic)

Figure 1. Sociodemographic profile of the public servers



The compiled data have established the profile of the public server that labors in the municipal GAD of Alausí, corresponding in greater proportion to young adult men, who maintain a time of service in the institution of 1 to 3 years of permanence and who are found distributed in distinct areas or departments. Data that establish the importance of the obtained information since it suggests results with perceptions of active, functional personnel and who are found exposed to organizational demands.

ISSN:
3091-1796
Vol. 4 No. 9 PP. 1-16

DOI:
https://doi.org/10.56519/bsr78078
Mayo 2026

Work overload

The results determine that within the municipal GAD of Alausí there exists a work overload within a primarily moderate level and high in lesser cases. The obtained data do not delimit that this variable does not present itself only as an exceptional case but as a relatively extended condition in the institution.

Table 1. Results of the work overload by dimensions

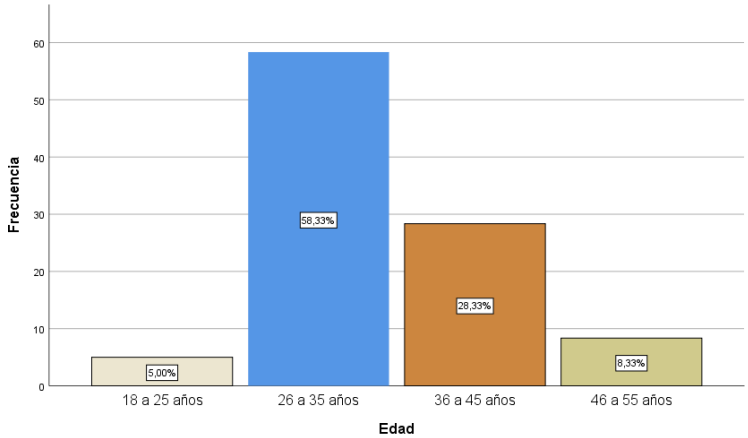
Dimension	Mean	High %	Moderate %	Low %
Cognitive demands	4.33	90.0	6.7	3.3
Time pressure / temporal demands	3.68	45.0	51.7	3.3
Emotional load	3.48	48.3	36.7	15.0
Physical effort	3.28	21.7	61.7	16.7
Autonomy	2.92	5.0	80.0	15.0
Social-organizational support	2.72	11.7	45.0	43.3

The dimension with greater presence is found in the cognitive demands with a 90%. Situation that determines a high exigency within the concentration, the permanent analysis of information and the constant taking of decisions. Subsequently the pressure in the time, that is to say, there exist adjusted or limited deadlines to conclude with the tasks.

The emotional load also was established with considerable values, evidencing that the personnel perceives wear and tension in the development of its functions. The physical effort was moderate. Therefore, the more predominant overload in the GAD was of cognitive, temporal and emotional type.

On its part the dimensions of autonomy, social and organizational support were relatively lesser data, which would suggest that there exist certain protective resources. Despite that in greater measure moderate responses are found, the results could not be considered as favorable.

Figure 2. Results of the work overload by dimensions



In general, the results delimit that the work overload in the municipal GAD of Alausí is established principally at the cognitive and temporal level, with a component of emotional relevance. Despite this it is evidenced that there do not exist extreme values in the sample but yes predominant conditions in the work. Despite that there exist elements of autonomy, social and organizational support these do not compensate completely the demands perceived by the personnel. In this sense, this variable presents

ISSN:
3091-1796
Vol. 4 No. 9 PP. 1-16

DOI:
https://doi.org/10.56519/bsr78078
Mayo 2026

a consistent behavior where the functional demands, the operative complexity and the temporal pressure impact on the experience of the public servers.

Job satisfaction

The results of the job satisfaction showed a high behavior in a great part of the surveyed. These findings show that despite the presence of relevant labor exigencies, the majority of the servers consider that they possess organizational elements that permit perceiving in a positive manner the work.

Table 2. Results of job satisfaction by dimensions

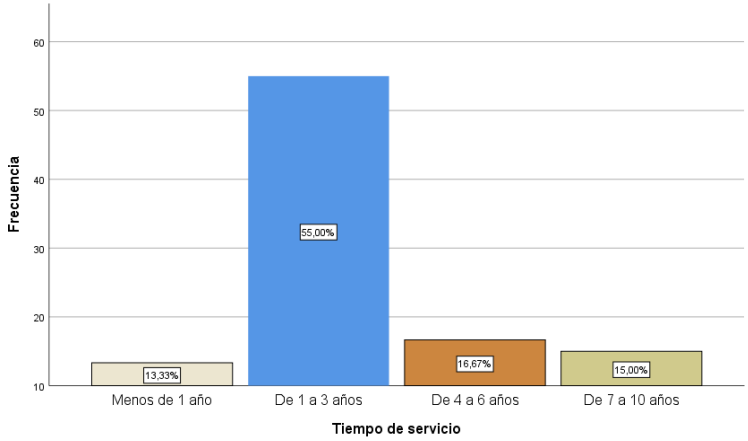
Dimension	Mean	High %	Moderate %	Low %
Satisfaction with the supervision	3.64	58.3	36.7	5.0
Work conditions	3.58	55.0	40.0	5.0
Satisfaction with the participation and autonomy	3.70	51.7	43.3	5.0
Satisfaction with the content of the work	4.24	76.7	23.3	0.0
Satisfaction with the remuneration	3.23	30.0	58.3	11.7

The results demonstrate that the public servers of the municipal GAD of Alausí feel conform with the contents of the work. It is thus how the functionaries find sense, utility and importance to the activities that they realize, strengthening in this manner the identification of the posts.

They also feel satisfaction with the participation, autonomy and the work conditions. Which indicates that in general terms that the personnel values the accompaniment of the superiors as the material and organizational environment. Despite this, the moderate terms delimit that completely consolidated levels are not yet reached.

However, in satisfactory terms the remuneration constitutes the most sensitive aspect within the GAD. Therefore, despite that the job satisfaction is favorable not all its dimensions maintain the same intensity.

Figure 3. Results of job satisfaction by dimensions



For the exposed, the results affirm a high job satisfaction within the municipal GAD of Alausí, although with differences among its dimensions. The principal strength is delimited in the content of work, followed by the supervision, the work conditions and the participation with autonomy. The remuneration on the other hand is configured as the weakest dimension. In this context, the dependent variable is favorable but not

ISSN: 3091-1796
Vol. 4 No. 9 PP. 1-16
DOI: https://doi.org/10.56519/bsr78078
Mayo 2026

exempt from internal tensions, for which it results key to interpret its relation with the work overload.

Correlation of variables

The relation between the overload and job satisfaction was realized by means of global scores and by scores by dimensions. In the general sense, the variables maintain a negative and statistically weak relation. In general terms it should be expressed that to greater overload presented lesser will be the job satisfaction. However, its reduced association does not permit affirming a consistent relation in the analyzed sample.

Table 3. Global correlation of the variables

	SATISFACTION_TOTAL
Spearman's Rho OVERLOAD_TOTAL Coefficient of correlation	-0.128
Sig. (bilateral)	0.330
N	60

At the institutional level, it is evidenced that the levels of work overload in the municipal GAD of Alausí are not necessarily the unique determinants of the job satisfaction, but also depend on more specific parameters in terms of the nature of the work, the resources, the organizational support and the conditions in which the functions are performed. Therefore, the correlation of both variables cannot be analyzed at a generalized level but by each one of the dimensions.

Table 4. Significant correlations between dimensions of both variables

Overload dimension	Satisfaction dimension	Rho	Sig.	Interpretation
Cognitive demands	Supervision	0.349	0.006	Positive, weak to moderate
Cognitive demands	Work conditions	0.294	0.023	Positive, weak
Cognitive demands	Content of the work	0.405	0.001	Positive, moderate
Emotional load	Supervision	-0.275	0.033	Negative, weak
Autonomy (recoded)	Supervision	-0.468	<0.001	Negative, moderate
Autonomy (recoded)	Work conditions	-0.281	0.030	Negative, weak
Autonomy (recoded)	Participation and autonomy	-0.552	<0.001	Negative, moderate
Autonomy (recoded)	Content of the work	-0.405	0.001	Negative, moderate
Autonomy (recoded)	Remuneration	-0.363	0.004	Negative, weak to moderate
Social-organizational support (recoded)	Supervision	-0.513	<0.001	Negative, moderate
Social-organizational support (recoded)	Work conditions	-0.314	0.015	Negative, weak
Social-organizational support (recoded)	Participation and autonomy	-0.640	<0.001	Negative, strong
Social-organizational support (recoded)	Content of the work	-0.587	<0.001	Negative, moderate
Social-organizational support (recoded)	Remuneration	-0.364	0.004	Negative, weak to moderate

The dimensional breakdown confirms that the more sensitive components for the job satisfaction are not all the types of work load equally, but principally those associated with the reduction of the autonomy and the lesser social-organizational support. The most significant relation was found in the negative correlation between the lack of social-organizational support and lesser satisfaction with the participation and autonomy. Data that demonstrate that the minimal support of the team, superiors or of the institution also diminishes its possibility of participating, proposing ideas and working in an autonomous manner.

ISSN: 3091-1796
Vol. 4 No. 9 PP. 1-16
DOI: https://doi.org/10.56519/bsr78078
Mayo 2026

In the same form, with respect to the satisfaction as to the content of the task, the supervision, the work environment and the remuneration, the lack of social-organizational support is correlated negatively. These implications are clear, the organizational support has a transversal impact on the labor experience, since it reduces the sensation of work overload and promotes the improvement of other satisfactory dimensions.

The autonomy presented strong significant negative correlations in almost all the dimensions of satisfaction, principally with the participation and autonomy, supervision and the content of the work. In the practice, this suggests that when the employees feel that they lack the autonomy to determine and organize the work, they tend to report worse qualifications both of their institutional participation and of the meaning and quality of their labor experience.

The emotional load was not linked significantly with the general satisfaction, but yes it showed a negative relation with the satisfaction with the supervision. The result establishes that the emotional exhaustion can increase, in absence of the adequate support.

The cognitive demands, on the other hand, were linked positively with the supervision, the work conditions and the content of the work. This delimits that the duties that demand attention, reflection and judgment are not necessarily perceived as a factor of negative stress, but as complementary, interesting or professionally gratifying functions in some of the positions.

Recommendations

In accordance with the obtained results, several recommendations have been delimited, such as that the municipal GAD of Alausí can realize a revision and redistribution of the work load, especially in those units with greater cognitive pressure as of time. In this sense the work overload was established in a moderate level, a high concentration of mental demands and short temporal deadlines is evidenced, which determines the necessity of realizing an examination of the distribution of functions, the institutional response times and the concentration of activities in some posts. Therefore, the institution could improve the system of processes referring to the internal planning, prioritization of activities, and the adaptation of tasks as of schedules to prevent the unnecessary accumulation of tasks that impacts on the daily work.

In equal manner, it results important the strengthening of the functional autonomy of the public servers, since this dimension had one of the clearer negative associations with the job satisfaction. The results indicate that when the personnel feels limited to decide how to structure its work or to participate freely in the realization of tasks, there exists reduction in its satisfaction. This includes that the management must support environments where more persons can involve themselves in a greater number of taking of operative decisions, with responsible delegation, flexibility in the functionality of the tasks, without affecting the existing institutional normative framework. Therefore, a greater autonomy contributes to diminish the phenomenon of overload, in addition to strengthening the positive value of the work realized.

Another strategic aspect is the social and organizational support, this dimension was correlated with each aspect of the job satisfaction. The support of the superiors, the

ISSN: 3091-1796
Vol. 4 No. 9 PP. 1-16
DOI: https://doi.org/10.56519/bsr78078
Mayo 2026

collaboration with other employees and of the institution are necessary to manage the work load. Therefore, it is suggested to develop an organizational culture of effective communication, internal coordination and effective backing during the moments of high load. In order to foster the practice of this type, it would be possible to realize a more regular monitoring by means of follow-up sessions, more rapid internal means to deal with the operative struggles and assistance for immediate supervisors, especially in units that work under greater pressure.

With respect to the supervision, a close and facilitating style of leadership shall be strengthened. Although the evaluation of this dimension was mostly positive, it was found that the managerial support is a factor of great importance for the satisfaction in the work with respect to the management of the emotional load. In this sense, also it is recommended that the responsible of each unit or area can establish practices of continuous feedback, clarification of priorities of labor tasks and recognition of the effort of the personnel. The supervision must not only serve as a function of control of compliance, but also represent an institutional resource to organize the tasks, eliminate the uncertainty and support the workers in challenging situations.

On the other hand, it is suggested to attend the dimension of emotional load, since there exists a strong proportion of the personnel that experienced exhaustion and emotional tension owing to its labor tasks. Although this dimension did not show a stronger relation than the general satisfaction, yes a negative association with the satisfaction with respect to the supervision was evidenced, which suggests that the emotional fatigue asks to intensify if the labor force does not perceive sufficient hierarchical backing.

With respect to the work conditions, upon evidencing a mostly favorable perception, it is recommended to continue reinforcing the material, computer and organizational resources that permit that the functions evolve without too much difficulty. This implies analyzing the adequacy of the labor environment (equipment, material resources, digital resources, technology and physical environment) particularly in areas where the cognitive and temporal demands are severe. Maintaining these conditions in a favorable manner improves not only the facility of realizing the work, but also contributes the sustained satisfaction at medium plane.

An aspect that must be considered with greater attention is the dimension of the satisfaction with the remuneration, since it was the least valued dimension. Although the institution can have budgetary and regulatory restrictions in salary matter, complementary non-monetary recognitions can be developed to help to cover the deficiency of this negative vision. For this, it is advisable that mechanisms for the improvement of the recognition of the performance, achievements, certification of good practices, training and possibilities of internal development be established. These measures do not substitute the economic aspect but can contribute to improve the perception of equity and valuation of the work realized.

Also it is recommended that the municipal GAD of Alausí implement a permanent system to maintain the labor climate, the work load and the satisfaction of the personnel, so that they have continuous evidence for the taking of decisions throughout the time. The application of diagnostic instruments permits an interpretation of a particular moment, however, the management of the institution improves when this

ISSN:
3091-1796
Vol. 4 No. 9 PP. 1-16

DOI:
https://doi.org/10.56519/bsr78078
Mayo 2026

process converts into regular tools of monitoring. In this sense it is recommendable the development of semestral or annual evaluations, to verify changes in the perceptions of the personnel and identify key aspects of improvement as any real change realized.

The institutional actions must not only center on reducing tasks, but more well on equilibrating the demands with the labor resources. The findings of the study suggest that this does not imply that all the demands have negative effects on the satisfaction, since some aspects of the work, especially the content of the work, are positively associated with the cognitive demands. The satisfaction of the employees can increase with the importance of complying works, the meaning including the organizational backing. Therefore, it is important that the objective of improvement not be simply the minimization of the intensity of the work, but more well that the autonomy, support, adequate leadership, conditions and institutional recognition be maintained.

DISCUSSION

The obtained results generate a critical analysis on the overload and job satisfaction in the context of the Ecuadorian public sector.

In the first instance, a weak to moderate negative correlation between both variables is evidenced, which denotes a non-uniform and neither linear relation. Findings that coincide with several international studies that affirm that the work load of an employee is not constantly linked to a diminution of the job satisfaction, particularly when the organizational resources have mitigated adverse effects (14). In this sense, the labor demands can act of two forms, either as a factor of exhaustion of the employee or as a challenge of commitment. The positive participation in the work and the job satisfaction can be improved when the workers understand the demands as opportunities for the labor development (15).

Given the findings, the cognitive demands were associated positively with dimensions such as the content of the work, indicating that the public servers find the complexity of their roles high and significant. This behavior is associated if environments with adequate assignment of resources are found that despite establishing high cognitive demands, are associated with a greater commitment and job satisfaction, especially in the public sector (16).

Result different from that found by Tremblay, since it affirms that the diminution of the autonomy and the reduced social-organizational support are identified as the most important determinants of the reduction in the job satisfaction, correlating with the conclusion of the present investigation. In addition, they indicated that the labor autonomy constituted one of the most important resources that influence in the sense of well-being of the employees because it helps them to control better their work loads, diminishing the sensation of overload (17).

In similar manner, the social-organizational support was associated significantly in a negative manner with several dimensions of the job satisfaction, underlining even more the role of the organizational support as a resource in the organizational context. Consequently, the empirical evidence has demonstrated that the individual measures related with the work of perceived organizational support affect negatively the labor

ISSN: 3091-1796
Vol. 4 No. 9 PP. 1-16
DOI: https://doi.org/10.56519/bsr78078
Mayo 2026

stress and affect positively the job satisfaction, and this is especially true in contexts of high demand (18).

On the contrary, the positive satisfaction with the content of the work in contexts of overload indicates that the public servers maintain a positive intrinsic valuation of their roles. It is widely known that the motivation and the vocation of service can act as a buffer of the dissatisfaction toward the work load, contributing to the satisfaction, even when the labor performance is not the adequate (19).

Finally, the low level of satisfaction with the salaries is an example of a common systemic restriction in the public sector, a fact where the extrinsic considerations do not always coincide with the expectations of the employee. Recent investigations have demonstrated that the perception of salary inequity harms the job satisfaction, despite the beneficial evaluation of other aspects of the work, confirming that the economic factors are determinants of the labor experience (20).

Upon combining these findings, we can reiterate that the work overload must not be measured only in volume of work, but as a disequilibrium of work load with the resources provided by the organization. The evidence in this sense backs the evidence that we must strengthen components such as the autonomy, the leadership and the institutional support to have a better labor culture on the public side.

CONCLUSIONS

The correlation between the overload and the job satisfaction analyzed in the present investigation applied to the public servers of the municipal GAD of Alausí demonstrated a non-linear nor homogeneous relation at the general level. In general terms a weak and non-significant negative association between both variables was identified, demonstrating that the overload in the work does not act directly on the job satisfaction in the institution.

However, the analysis applied by dimensions permitted identifying several important findings. Within which, stands out the positive relation of the cognitive demands with dimensions of the job satisfaction, establishing that the work based on the analysis, the taking of decisions the processing of information can be considered as significant and motivator for the public servers. Result that denotes that not all the types of work overload can generate negative results and can in some cases act as labor challenges that reinforce the commitment.

On the other hand, the aspects related with the reduction of the autonomy and the social-organizational support revealed significant negative associations with the job satisfaction, converting them into the most important factors of this study. These findings suggest that the lack of organizational resources, more than the existing work load, are the principal components that minimize the job satisfaction among the public servers.

In this sense, the results suggest that the work overload is a multidimensional phenomenon that needs to be analyzed in function of the equilibrium between the demands and the resources. In this manner, the institutional leadership and the

organizational support position themselves as essential strategies to improve the job satisfaction and the well-being of the public sector.

REFERENCES

1. Pérez E, Guillén M, Márquez F, Vera J, Gallegos M, Rico M, et al. Methodological and Statistical Considerations for Cross-Sectional, Case–Control, and Cohort Studies. Journal of Clinical Medicine. 2024 Julio; 13(14): p. 1-14.

2. Martínez A, Díaz P, Mañas M, Salvador C, Llopis J, Hernández B. Influence of role overload on the intellectual stimulation and self-efficacy of public employees according to the hierarchical level. Journal of General Management. 2025.

3. Zhang Y. Disclosing the relationship between public service motivation and job satisfaction in the Chinese public sector: A moderated mediation model. Front. Psychol. 2023; 14(23): p. 01-10.

4. Li Y, Chunji C, Yuan Y. Evolving the job demands-resources framework to JD-R 3.0: The impact of after-hours connectivity and organizational support on employee psychological distress. Acta Psychologica. 2025; 253: p. 104710.

5. Mazzetti G, Robledo E, Vignoli M, Topa G, Guglielmi D, Schaufeli W. Work Engagement: A meta-Analysis Using the job Demands-Resources Model. Psychological Reports. 2023; 126(3): p. 1069-1107.

6. Jaramillo F, Balanzátegui R. La sobrecarga laboral y su incidencia en la satisfacción de los funcionarios públicos en el Ecuador. Revista Científica Multidisciplinaria InvestiGo. 2025; 6(15): p. 411-427.

7. AlMarzooq A, Hanach N, Rashed E, AlKetbi M, AlMarzouqi A, Alameddine M. Factors influencing job satisfaction among public-sector employees in the united arab emirates: a cross-sectional study. Scientific Reports. 2025; 1(22294): p. 1-11.

8. Claes S, Vandepitte S, Clays E, Annemans L. How job demands and job resources contribute to our overall subjective well-being. Frontiers Psychol. 2023; 14(1220263): p. 01-11.

9. Kuijpers E, Kooij D, van Woerkom M. Align your job with yourself: The relationship between a job crafting intervention and work engagement, and the role of workload. Journal of Occupational Health Psychology. 2020; 25(1): p. 1-16.

10. Ye D, Jo Y. The job demands-resource model and performance: the mediating role of employee engagement. Front. Psychol. 2023; 14: p. 01-14.

11. DeHaan C, Bradshaw E, Diaz S, Trautman T, Scott C, Ryan R. Energy in the workplace: job demands, job resources, and employees' inner resources as pathways to organizational outcomes. Front. Psychol. 2024; 15: p. 01-14.

12. McAnally K, Hagger M. Self-Determination Theory and Workplace Outcomes: A Conceptual Review and Future Research Directions. Behav Sci (Basel). 2024; 14(6): p. 428.

13. International Labour Organization. 2021 LABOUR OVERVIEW Latin America and the Caribbean Perú: ILO; 2021.

14. Bakker A, Demerouti E, Sanz A. Job Demands–Resources Theory: Ten Years Later. Annal Reviews. 2022; 10: p. 25-53.

15. Mamani C, Palacios T, Priori M, Tellez A. Compromiso organizacional, satisfacción laboral, y su repercusión en el desempeño del personal. Innova research journal. 2023; 8(1): p. 153-172.

16. Hernández E, Rovira L, Rodríguez B, Suarez , Sánchez F, Arroyo Y. The effects of workaholism on psychological well-being: The mediating role of rumination. CISTEI. 2024; 1(1).

17. Tremblay M. Understanding the dynamic relationship between career plateauing, organizational affective commitment and citizenship behavior. Journal of Vocational Behavior. 2021; 129: p. 103611.

18. Eisenberger R, Rhoades L, Wen X. Perceived Organizational Support: Why Caring About Employees Counts. Annual Review of Organizational Psychology and Organizational Behavior. 2020; 7(1).

19. van der Voet J, Steijn B. Relational Job Characteristics and Prosocial Motivation: A Longitudinal Study of Youth Care Professionals. Review of Public Personnel Administration. 2020; 41(1): p. 0734371X1986285.

20. Judge , Zhang S, Glerum D. Job Satisfaction. Primera ed.: Taylor & Francis; 2020.

ISSN:
3091-1796
Vol. 4 No. 9 PP. 17-34

DOI:
https://doi.org/10.56519/qjhz4n17
Mayo 2026

CALIDAD TÉCNICA Y METODOLÓGICA DE METAPERICIAS EN INFORMES PSICOLÓGICOS FORENSES EN SANTO DOMINGO (ECUADOR)

TECHNICAL AND METHODOLOGICAL QUALITY OF SECOND OPINIONS IN FORENSIC PSYCHOLOGICAL REPORTS IN SANTO DOMINGO (ECUADOR)

Iván Marcelo Bayas Romero[1], Kevin Jhordy Sinchiguano Álvarez[2], Bernardo Peña Herrera[3], Andrés Ricardo Delgado Reyes[4]

{ivanbaro1977@gmail.com1, kevincho1993@hotmail.com2, bpenah@ube.edu.ec3, ardelgador@ube.edu.ec4}

Fecha de recepción: 01/04/2026 / Fecha de aceptación: 21/04/2026 / Fecha de publicación: 12/05/2026

RESUMEN: La psicología forense desempeña un papel importante para el sistema de justicia porque aporta criterios técnicos para sustentar la toma de decisiones judiciales, siendo en este sentido que la calidad metodológica de los informes psicológicos periciales es un aspecto fundamental para certificar su validez científica. Sin embargo, en el ámbito ecuatoriano existe escasa evidencia empírica que habilite la evaluación sistemática de los informes psicológicos para la práctica forense, lo que pone de manifiesto un vacío en la supervisión de la rigurosidad técnica de la práctica en esta área. El presente estudio tiene como finalidad analizar la calidad técnica y metodológica de las metapericias realizadas sobre informes psicológicos forenses en Santo Domingo (Ecuador). Se realizó una investigación cualitativa, descriptiva y de carácter exploratorio, que descansó, entre otras fuentes, en el análisis documental de diez informes psicológicos forenses. Se aplicó el método de evaluación de la calidad del Modelo Metodológico de Meta-análisis de Peritajes Psicológicos de Maffioletti, complementado por la Guía de Buenas Prácticas del Consejo General de la Psicología de España en una matriz de verificación de variables con respuestas dicotómicas (sí/no). Los resultados evidencian que un número importante de variables críticas no se cumplen en los informes analizados, señalándose la falta de explicitación metodológica, control de sesgos, triangulación de datos, formulación de hipótesis alternativas y análisis estructurado de resultados, así como una escasa o nula utilización de instrumentos psicométricos estandarizados. Se concluye que en la muestra estudiada existen debilidades metodológicas que pueden afectar la calidad técnica de los informes psicológicos periciales, lo que pone de manifiesto la importancia de la metapericia como instrumento para su evaluación y mejora continua de la práctica en el ámbito de la psicología forense.

Palabras clave: *metapericia forense, psicología forense, informes psicológicos periciales, valoración judicial de la prueba pericial, calidad metodológica*

ABSTRACT: Forensic psychology plays an important role in the justice system because it provides technical criteria to support judicial decision-making; in this regard, the methodological quality of expert psychological reports is a fundamental aspect in establishing their scientific validity. However, in Ecuador, there is little empirical evidence to enable the systematic evaluation of psychological reports for forensic practice, highlighting a gap in the oversight of the technical rigor of practice in this area.

English translation of the original article published in Ecuacientífica, Vol. 4, No. 9, pp. 17-34.

ISSN: 3091-1796
Vol. 4 No. 9 PP. 17-34
DOI: https://doi.org/10.56519/qjhz4n17
Mayo 2026

The purpose of this study is to analyze the technical and methodological quality of meta-expert evaluations conducted on forensic psychological reports in Santo Domingo (Ecuador). A qualitative, descriptive, and exploratory study was conducted, based, among other sources, on the documentary analysis of ten forensic psychological reports. The quality assessment method of Maffioletti's Methodological Model for Meta-analysis of Psychological Expert Reports was applied, supplemented by the Guide to Good Practices of the General Council of Psychology of Spain, using a variable verification matrix with dichotomous responses (yes/no). The results show that a significant number of critical variables are not met in the reports analyzed, highlighting a lack of methodological transparency, bias control, data triangulation, formulation of alternative hypotheses, and structured analysis of results, as well as little or no use of standardized psychometric instruments. It is concluded that the sample studied exhibits methodological weaknesses that may affect the technical quality of expert psychological reports, highlighting the importance of meta-expertise as a tool for evaluating and continuously improving practice in the field of forensic psychology.

Keywords: *Forensic meta-expertise, forensic psychology, expert psychological reports, judicial assessment of expert evidence, methodological quality*

1 Universidad Estatal de Bolívar (UEB), https://orcid.org/0009-0009-6823-5379.
2 Universidad Estatal de Bolívar (UEB), https://orcid.org/0000-0002-2680-4897.
3 Universidad Estatal de Bolívar (UEB), https://orcid.org/0009-0000-3667-0522.
4 Universidad Estatal de Bolívar (UEB), https://orcid.org/0000-0001-9128-8094.

INTRODUCTION

Forensic psychology has consolidated itself as a fundamental discipline within the system of administration of justice, upon providing scientific knowledge that permits analyzing aspects of human behavior relevant for the judicial processes. In this context, the expert psychological reports constitute a means of proof of great importance, since they contribute technical criteria that can influence in the taking of decisions on the part of the operators of justice. Owing to their relevance, these reports must comply with scientific and methodological standards that guarantee their objectivity, validity and coherence. In the last years, diverse studies have highlighted the necessity of evaluating the quality of the psychological expertises, highlighting the meta-expertise as a specialized mechanism to review and analyze the technical consistency of the expert reports (1), (2).

The meta-expertise or meta-expert appraisal consists in the critical revision of an expert report with the aim of determining if this responds adequately to the judicial question, if it applies correctly the methods of evaluation and if the conclusions are found duly founded. According to what is expressed by (3), this process grants the possibility of detecting methodological weaknesses and/or incoherences in the expert reports valuing in such form the quality of the expert proof in the judicial process. However, of the relevance of the meta-expertise, in the Ecuadorian context there exist scarce studies that analyze in a systematic form the quality of the forensic psychological reports and the meta-expertises, and therefore the state of the art in the matter is practically at zero, a situation that gives account of an evident gap of knowledge in the professional practice and the academic practice.

ISSN: 3091-1796
Vol. 4 No. 9 PP. 17-34
DOI: https://doi.org/10.56519/qjhz4n17
Mayo 2026

In this sense, it becomes necessary to realize investigations that make emphasis on the application of methodologies of evaluation of psychological expert reports, such as the model of meta-analysis proposed by (4), whose norms permit analyzing the structure, coherence and foundation of the different expert reports. Exactly from this necessity the present study has as purpose the evaluation of the technical and methodological quality of the system of meta-expertises applied on forensic psychological reports in the city of Santo Domingo, Ecuador, during the year 2024, seeking thus to present evidence that permits reinforcing the practice of the psychological expert proof, as well as improving the quality of the expert proof in the judicial practice.

Despite the relevance of the meta-expertise as mechanism to utilize in order to be able to carry out a control of quality in the forensic psychological reports, in the Ecuadorian context there exist scarce investigations that analyze in a systematic form the technical and methodological quality of this type of procedures. This absence of evidence permits evidencing the low scientific rigor of the expert reports utilized in the judicial processes.

The objective of this study is to analyze the technical and methodological quality of the meta-expertises realized on forensic psychological reports in Santo Domingo (Ecuador).

The Meta-expertise in the Forensic Psychological Reports in Ecuador

The psychological expert evaluation unlike other areas of application of the psychology acquires a more complex connotation in the juridical context owing to that it requires the selection of a theory that makes possible the explanation of a determined case and the generation of a hypothesis that facilitates the selection of methods and techniques of evaluation appropriate, supporting itself in great measure of the clinical psychology and the psychopathology (5).

Its evaluation implies the administration of a semi-structured interview, the detailed examination of the clinical history, the analysis of the judicial resolutions and criminal antecedents, the study of the vital history: family, school, work, couple and others, supporting itself in external informants and in some test of personality (6).

Forensic psychology is a specialty that is exercised, basically, before the tribunal, to which one advises and counsels in those decisions in which the knowledge in Psychology is necessary. Thus the role of the forensic psychologist is that of expert who emits reports that can be utilized as proof in a judicial process.

It is essential to consider the form in which the processes of psychological evaluation are implemented, in particular the use of psychometric instruments. This analysis encompasses not only their intrinsic psychometric properties, but also the extrinsic factors related with the legal framework, which will be examined in detail later.

As is the case of the forensic juridical environment the user does not present himself in a voluntary form before the professional, but that his acting, in these diligences, is mediated by his role within a judicial process: denounced/denouncer or defendant/plaintiff. At the same time, the direct consequences of the expert dictamen, of the findings found in the expertise and drafted in a report, that must be defended by the expert psychologist, makes that the evaluated increase the probability of manipulation of the information, contributed in order to achieve a benefit or avoid prejudice.

ISSN: 3091-1796
Vol. 4 No. 9 PP. 17-34
DOI: https://doi.org/10.56519/qjhz4n17
Mayo 2026

Forensic Psychological Meta-expertise

The forensic psychological meta-expertise is understood as the critical, systematic and documentary process that realizes an expert denominated meta-expert, whose fundamental objective is to verify the scientific, technical and methodological suitability of a psychological expert report already elaborated.

In this sense, the meta-expertise contemplates diverse elements and technical considerations that orient its application in the forensic ambit, as is shown next in Table 1.

Table 1. Elements and considerations in the forensic meta-expertise

Elements	Considerations
Objective:	Aids the taking of judicial decisions.
Evaluator – subject relation:	Skeptical, but with establishment of an adequate rapport.
Professional secrecy:	No.
Destination of the evaluation:	Variable (judge, lawyer, insurances...).
Standards and requirements:	Psycho-Legal.
Sources of information:	Interview, test. Observation, medical reports and judicial files.
Attitude of the subject toward the evaluation:	Risk of simulation or dissimulation or deceit (involuntary demand).
Ambit of the evaluation:	Mental state in relation to the expert object.
Type of report:	Very documented, reasoned technically and with conclusions that answer to the judicial demand. Legal document.
Intervention in the hall of justice:	Expectable. In quality of expert.

This process does not imply a new evaluation of the evaluated subject, but an exhaustive revision of the original report in order to guarantee that it complies with the norms of technical rigor, validity and professional ethics established in the Ecuadorian judicial ambit (7).

Meta-expert

The meta-expert is the specialized professional and with advanced formation in forensic psychology, who possesses methodical and ethical experience to elaborate a counter-report or critical dictamen on a previous forensic psychological report, identifying possible errors, biases, or methodological deficiencies.

The labor of the meta-expert consists in evaluating the replicability, validity and objectivity of the report under analysis, contributing clarity and transparency to the judicial process.

Next, in Table 2, the operational definitions of the principal concepts utilized in the study are presented:

Table 2. Differentiated concepts

Term	Operational Definition	Source
Meta-expertise	Critical, systematic and documentary analysis to verify the scientific and methodological validity of forensic psychological reports.	Jarrin Chiriboga (2025), (7)
Meta-expert	Professional with technical and ethical competence who elaborates counter-reports to evaluate errors, biases and validity of the original report.	Garrido et al. (2023), Torres (2022)

MATERIALS AND METHODS

Type of investigation

ISSN: 3091-1796
Vol. 4 No. 9 PP. 17-34
DOI: https://doi.org/10.56519/qjhz4n17
Mayo 2026

The present investigation was developed under a qualitative approach, with a descriptive design of documentary analysis, oriented to examine the technical and methodological quality of forensic psychological reports. Likewise, the study is framed in an exploratory reach with design of multiple case, owing to that a specific sample of reports was analyzed in depth, permitting identifying patterns, recurrences and methodological deficiencies in the expert practice, without intending statistical generalization, but the analytic comprehension of the phenomenon in its real context.

This approach results pertinent considering the limited empirical evidence existing in the Ecuadorian context with respect to the meta-expert evaluation of forensic psychological reports, which justifies the necessity of exploratory studies that permit approaching the phenomenon from a systematic perspective.

Population and sample

The population of study remained constituted by forensic psychological reports generated in the system of administration of justice Ecuadorian. The sample was constituted by ten forensic psychological reports belonging to a provincial jurisdiction of the country and had been elaborated the year 2024 by forensic psychologists accredited in the judicial ambit.

The selection of the reports of the sample was realized from a technique of non-probabilistic sampling, intentional type, where criteria of inclusion were fixed that assured the congruence and quality of the analyzed reports. The criteria of inclusion considered were:

a) forensic psychological reports elaborated belonging to the year 2024,

b) realized by experts accredited by the Council of the Judicature,

c) reports that were object of meta-expertise in the judicial processes, and

d) that counted with full access to their content.

Those reports that were incomplete, that counted with documentation, not verifiable or those that did not have at least the minimal conditions of analysis were not considered. These criteria of inclusion guaranteed reducing the possible biases of selection and counting with a congruence between the sample and the objectives of study.

The reports were provided by professionals in the forensic ambit, more specifically by an expert psychologist who is found functional within the police ambit, who acts as expert peer together with the accredited forensic juridical psychologist. The meta-expertises of the reports were dictated by the general prosecutor's office of the Nation by means of the System of Drawing of Experts, guaranteeing thus the form, legality and traceability of the process.

Environment of study

The investigation was developed in the context of the system of administration of justice of an Ecuadorian province, specifically in the ambit of the forensic psychology applied to judicial processes. This environment is characterized by the interaction between

ISSN: 3091-1796
Vol. 4 No. 9 PP. 17-34
DOI: https://doi.org/10.56519/qjhz4n17
Mayo 2026

professionals of the psychology and juridical operators, in where the expert reports constitute a relevant means of proof for the taking of judicial decisions.

For ethical and legal considerations, the confidentiality of the information was maintained, utilizing generic denominations and avoiding the identification of persons, institutions or specific cases.

Materials and instruments of collection of data

The principal technique of collection of information was the documentary analysis, employing as units of analysis the forensic psychological reports.

As instrument a structured analysis matrix was utilized, based on the Methodological Model of Meta-analysis of Psychological Expertises proposed by (8). This model contemplates a set of 28 variables organized in five fundamental dimensions:

(i) characteristics of the expert,

(ii) format of the report,

(iii) methodology employed,

(iv) presentation and analysis of results,

(v) coherence of the conclusions.

Each one of these variables was evaluated by means of a system of dichotomous coding (Yes/No), in function of the presence or absence explicit of the criterion in the analyzed report. This procedure permitted objectifying the evaluation, reducing the subjectivity of the analysis and facilitating the comparison among the distinct cases.

Procedure of application of the model of Maffioletti

The application of the methodological model was carried out by means of a systematic and sequential process that guaranteed the rigor of the analysis. In the first place, an exhaustive reading of each expert report was realized, with the aim of identifying its structural and methodological components.

Next, the identification of the variables proposed by Maffioletti of the distinct documents was carried out, paying attention to the characteristics such as the explicitation of the methodology, the use of techniques of evaluation, the existence of control of biases, the coherence of the analysis of results and the foundation of the conclusions.

In the third place, the coding of the variables was finished, from a coding of dichotomous values (Yes/No) to determine if they complied or not. This constructive coding permitted us to construct the comparative matrix of the distinct reports.

Finally, the data were systematized in a comparative analysis, visualizing the common practices, the findings of the methodological omissions and the structural weaknesses of the evaluated reports. This permitted visualizing common practices of the analyzed expertise.

The utilization of this methodological model guaranteed the replicability of the study, by means of the elaboration of clear, objective criteria and that can be verified by means of posterior investigations.

ISSN: 3091-1796
Vol. 4 No. 9 PP. 17-34
DOI: https://doi.org/10.56519/qjhz4n17
Mayo 2026

Analysis of data

The analysis of the information was realized by means of techniques of qualitative comparative analysis, complemented with basic descriptive statistics, specifically the calculation of frequencies of compliance of the evaluated variables.

The results were organized in matrices and tables, which permitted visualizing in a structured manner the level of compliance of the methodological criteria in the analyzed reports.

Owing to the qualitative nature of the study, neither inferential statistical tests nor specialized statistical software were employed; however, the systematization of the information permitted identifying relevant patterns and establishing founded analytic inferences.

Ethical considerations

The study was developed respecting fundamental ethical principles, such as the confidentiality, the anonymization of data and the responsible use of the information. Neither personal data nor elements that permit the identification of the evaluated subjects or of the analyzed judicial processes were included.

Likewise, the access to the reports was realized within a framework of legality and institutional authorization, guaranteeing the compliance of the norms in force in the ambit of the forensic psychology and the scientific investigation.

RESULTS

An approach was realized with the lady Forensic Juridical Psychologist M.A.N.B. the same who is accredited on the part of the Council of the Judicature of Ecuador, and with her expert peer the Forensic Psychologist I.M.B.R., in order to be able to identify the results of the 10 analyzed reports, the Methodological Model of Meta-analysis of Psychological Expertises of (8) was applied, complemented with the Guide of Good Practices for the Forensic Psychological Evaluation of the General Council of the Psychology of Spain (9). Both use binary verification lists (Yes/No) to objectify the revision.

Upon reviewing the forensic psychological reports elaborated by accredited experts and applying the methodological model of (8) a scarce level of compliance of the evaluated technical criteria was evidenced. Of the 28 variables presented in the model, 14 do not appear in the consulted reports, which verified lacks and deficiencies in the structural characteristics relative to the quality of the methodology of the expert dictamens.

The global results of the evaluation are presented next in Table 3.

Table 3. Methodological model of Meta-Analysis of psychological expertises (Maffioletti, 2016).

PERITO / EXPERTISE	FORMAT / METHODOLOGY / RESULTS	Code	VARIABLES	VALUE
EXPERT	Formation	Suitability	Specialty (postgraduate in the area)	YES
EXPERTISE	FORMAT	a	Possesses format adequate to expert report	YES
		b	Identifies correctly the evaluated	YES
		c	Explicates adequately the methodology	NO
		ch	Explicates psycho-legal question	YES

ISSN: 3091-1796
Vol. 4 No. 9 PP. 17-34
DOI: https://doi.org/10.56519/qjhz4n17
Mayo 2026

		d	Identifies the requester of expert report	YES
		e	Identifies the No. of cause and tribunal	YES
	METHODOLOGY	f	Methodology adequate to the forensic end	YES
		g	Considers mechanisms of Control of Bias	NO
		h	Considers control of expert peer in expertise	-------
		i	Explicates the documents that it had in view	NO
		j	Describes the fact and its circumstances	YES
		k	The “margin of error” is considered	NO
		l	Indicates bibliography (updated)	NO
	RESULTS	ll	Describes adequately all the results	NO
		m	Gives account of the process of analysis of results	NO
		n	Handles other possibilities hypotheses (alternatives)	NO
		o	Considers other sexual experiences previous or posterior	YES
		p	Establishes causal nexus	YES
		q	The obtained data are triangulated	NO

Regarding the Expertise – Variable – Describes Adequately All the Results

As we have been able to observe in the 10 reports realized on the part of the forensic psychologist experts accredited by the Council of the Judicature, it can be evidenced, in their sections “Integration of Results or Results,” that no type of results of quantitative nor qualitative type is described.

Regarding the Expertise – Variable – Gives Account of the Process of Analysis of Results

In the 10 analyzed reports the same which were realized on the part of the forensic psychologist experts accredited by the Council of the Judicature, There does not exist any process of analysis of results, solely we can find in the sections “INTERPRETATION OF RESULTS” that no response of results nor the logical sequence of the tabulation of said results is given, solely the name of the test and its qualification is presented Example:

Beck Depression Inventory (BDI-2)

Result: Score of 35 points: Severe Depression.

We can observe that there does not exist a reflexive analysis with respect to what it means that the evaluated have Severe Depression, or what type of scale was utilized to mention that upon obtaining 35 points the evaluated would have a Severe Depression.

Regarding the Expertise – Variable – Handles Other Possibilities Alternative Hypothesis

In the 10 psychological reports the handling of other possible hypotheses is not evidenced by the fact that in the reports there did not exist the presentation of a single hypothesis that is to say that this variable never was presented as alternative.

Regarding the Expertise – Variable – Establishes Causal Nexus

The causal nexus is not evidenced in 06 of the 10 forensic psychological reports realized, likewise it could be found in the conclusions of the 04 remaining reports the symptomatology that the presumed victim presented for disorders of depression and disorders of anxiety or at the same time also they presented presumptive diagnoses of mixed disorders of anxiety and depression, but without any type of affirmation that

ISSN: 3091-1796
Vol. 4 No. 9 PP. 17-34
DOI: https://doi.org/10.56519/qjhz4n17
Mayo 2026

these disorders diagnosed in the victim be product of the event related on the part of the victimizer, without existing thus a CAUSAL NEXUS.

Regarding the Expertise – Variable – The Obtained Data Are Triangulated

Within the methodology employed on the part of the 10 psychological reports never could the presence of the utilization of the "Methodology of triangulation of data" on the part of the experts of the Council of the Judicature be appreciated, the methodology of "Triangulation of data," which in itself is the utilization of several sources, methods, theories or investigators to collect and analyze information on a same phenomenon, with the objective of increasing the validity, depth and comprehension of the study, as well as diminishing biases and errors, the same which support that the report have a robust validity and strengthen the conclusions.

Regarding the Expertise – Variable – Social Desirability Is Controlled

There does not exist in none of the 10 analyzed psychological reports that the term of "social desirability" has been referred or utilized, likewise if the social desirability were controlled in the evaluations one should utilize tests to avoid said bias such as, for example:

Marlowe-Crowne Social Desirability Scale (M-C SDS): measures the tendency to respond in a socially acceptable manner, identifying the bias in the responses.

Balanced Inventory of Desirable Responding (BIDR-6): evaluates two dimensions, the self-deception and the management of the impression, providing a more detailed analysis of the bias.

Regarding the Expertise – Variable – Simulation Is Controlled

In the 10 analyzed psychological reports, it is evidenced that there does not exist control to the simulation of the presumed victims, owing that a psychological test oriented to the conscious and deliberate imitation of false or exaggerated physical or mental symptoms with the purpose of obtaining an external benefit, such as avoiding a sanction, receiving an indemnification or eluding legal or labor responsibilities is not applied. In order to be able to control the simulation one must measure with standardized reagents such as are:

Structured Inventory of Malingered Symptomatology (SIMS).

Test of Memory Malingering (TOMM).

Regarding the Conclusions – Variable – The Conclusions Are Derived from the Results

In the 08 forensic psychological reports of the 10 analyzed psychological reports it could be evidenced that there does not exist a relation between the results with the conclusions by the fact, that the results do not figure a qualitative nor quantitative content, but more well in the majority of the psychological reports they manifest that they only present a diagnosis of anxiety and depression, but the type of depression or anxiety is not registered, the score obtained on the part of the presumed victim, as also the type of range established in the scale, and these that are found projected in the section of conclusions.

ISSN:
3091-1796
Vol. 4 No. 9 PP. 17-34

DOI:
https://doi.org/10.56519/qjhz4n17
Mayo 2026

Regarding the Conclusions – Variable – The Conclusions Respond to the Psycho-legal Question

In the 10 psychological reports on the part of the experts the psycho-social question is not responded by the fact that the psycho-legal question is not mentioned within the report, solely a reference of what could be a psycho-legal question is made in the object of the expertise, which is the mission entrusted to the expert on the part of the prosecutor's office in where it is indicated what type of expertise the expert has to realize and who disposes that it be executed, in this case always it is evidenced that it is the Gender Prosecutor's Office Unit 1,2 or 3.

Regarding the Conclusions – Variable – The conclusions at long and short term are identified.

In the 10 forensic psychological reports realized on the part of the Forensic psychologists, within the conclusions the consequences that the presumed victims could have is not found, because there does not exist a real diagnosis to indicate a psychic damage which affects the mental health of the presumed victims in multiple dimensions (cognitive, affective, somatic, behavioral, and social), being able to generate some type of severe and permanent disorders that impact their quality of life and functionality at short or long term.

Regarding the Conclusions – Variable. - The Conclusion Is Objectivized and Founded

In the 10 forensic psychological reports realized on the part of the experts, it is indicated that the conclusions that said professionals realized, are not objective by the fact of not realizing adequately the psychological evaluations to the presumed victims, by means of the utilization of psychometric reagents that seek a true psychic affection in the presumed victim, that is to say that upon not existing the presence of techniques of evaluation such as are the psychological tests of standardized type, said psychological reports do not present essential characteristics of being objective, technical, nor scientific.

DISCUSSION

From the epistemological perspective, the meta-expertise is framed in the principle of certainty, oriented to found the judicial proof in solid and rigorous scientific evidences. In this sense (11), defines it as a practical tool to analyze previous expertises, identifying the epistemological, syntactic and pragmatic coherence of the original report, permitting systematizing scientific criteria in the expert evaluation.

In the same manner (12), understand that the forensic report must characterize itself by a determined level of technical foundation, submit itself to the principle of contradiction and initiate from a position that must be methodologically skeptical before the possible simulation of the evaluated. Such approaches reinforce the relevance of the meta-expertise as a type of control of quality oriented to avoid possible errors such as the confirmation bias or the overreaction of the results.

In this manner (13), argue that the meta-expertise is a systematic instrument to examine if a report adapts or not to the scientific criteria, leaving aside the counter-expertise that is defined by its qualitative guidelines. In the Ecuadorian context (14), stipulates it as a

ISSN: 3091-1796
Vol. 4 No. 9 PP. 17-34
DOI: https://doi.org/10.56519/qjhz4n17
Mayo 2026

"expertise of the expertise," which examines not only the theoretical content, but also the structure, the language and the own coherence of the report, aspects that are basic in its impact within the judicial process.

Nevertheless, the findings obtained in the present investigation evidence that a significant proportion of the analyzed forensic psychological reports presents relevant methodological deficiencies, which coincides with studies developed in other Latin American contexts. In particular, investigations realized in Ecuador by (15), signal that the expert reports present limitations in the scientific foundation, highlighting the absence of structured methodologies, control of biases and rigorous analysis of results, which guards direct relation with the results obtained in the present study.

Equally, in the Spanish ambit (16), identify as habitual problematic the lack of explicitation of the Methodology and the emission of conclusions without sufficient empirical foundation. The results obtained in this study concur with these same results, since in the majority of the analyzed reports there is not an adequate description of the methodological process followed, nor the exposition of the results in a disaggregated form, limiting themselves many of them to the presentation of the diagnoses, but without a sufficient technical support.

Equally, the lack of control of biases, social desirability, and simulations that has been found in the analyzed reports resemble what already (17) point out, when it is signaled that the ambit of the forensic evaluation presents great probabilities of manipulation of the information on the part of the evaluated, which requires the application of determined instruments for its detection. However, in the case of the reports evaluated in the context of Santo Domingo, that was not thus, which puts of manifest a great discrepancy between the local expert practice and the norm that is accepted to the international practice.

In what concerns the application of techniques, the results make clearly the existence of an important conceptual confusion, when the subjects make reference to the use of the emotional containment, which is easily identifiable as a resource/explicit of the expert methodology. In this respect (18), define taking as reference the emotional containment as a resource/strategy of help with the purpose of stabilizing emotionally the person in crisis, which nothing has to do with the purpose to which the forensic evaluation must orient itself, which is no more than the technical, diagnostic and psycho-legal examination of the case. This methodological confusion convenient in the purpose of an expert report, since it makes that the same lose its scientific and of the right reason of being.

In another order of ideas, the results relative to the lack of triangulation of the information, the lack of alternative hypotheses and the weakness in the establishment of the causal nexus coincide with what marks the specialized literature, which sentences the necessity of integrating diverse sources and specific techniques with the purpose of guaranteeing a solid interpretation of the expert analysis. In this sense, the lack of the same in the analyzed reports affects directly the scientific validity of the same and its utility as means of proof.

In the context of Ecuador, the results obtained of this investigation confirm what (19) affirm when they sustain that the expert reports usually prioritize the compliance of

ISSN: 3091-1796
Vol. 4 No. 9 PP. 17-34
DOI: https://doi.org/10.56519/qjhz4n17
Mayo 2026

institutional formats, instead of a greater adjustability to the exigency of scientific rigor. That also can be observed in the analyzed expert reports, which, although they comply in a partial form with the formal aspects, are not found exempt of important deficits in the utilization of scientific methods, in the analysis of the results and in the justification of the conclusions.

It is put of manifest that the exercise of the juridical-forensic psychology is a challenge, given that the evaluated does not have will of his own evaluation, and counts with the permanent risk of the simulation or of the dissimulation, such as (20) make note. In this context, the correct application of techniques such as the semi-structured interview and of valid psychometric tests are a fundamental aspect to assure the quality of the process of evaluation.

In this sense, the literature emphasizes the importance that criteria related with the pragmatism, the scientific quality and the optimization of the time in the application of the instruments and those that permit adapting the evaluation to the characteristics of the subject exposing thus these tools in order to reduce biases, increase the validity of the results and adapt the evaluation to the characteristics of the evaluated person have. However, these criteria are not evidenced in a recurrent form in the analyzed reports, which emphasizes the necessity of pursuing the technical formation of those experts involved in the psychological evaluation.

In last place, given that the expert report has to assume itself as a means of proof within the process, necessarily it has to respect the principle of contradiction, which implies the necessity of making known, in a clear form for the judge, the methodology, the results and the scientific criteria utilized (21) the non evidence of all these elements, as was evidenced in the results, takes away probative value and diminishes its contribution to the act of contributing in the better taking of decisions of the judicial ambit.

In this point, the meta-expertise appears as a fundamental tool for the realization of the control of quality in the practice of the psychological expertise, permits bringing to light the methodological lacks, obtaining a greater scientific exigency but also it is desired to improve the quality of the technical standards in the elaboration of the forensic psychological reports in Ecuador.

CONCLUSIONS

The meta-expert analysis of the ten forensic psychological reports included in the present investigation, corresponding to a specific jurisdiction of the city of Santo Domingo during the year 2024, permitted identifying recurrent methodological deficiencies that affect the technical quality of the evaluated dictamens.

From the application of the Methodological Model of Meta-analysis of Psychological Expertises of Maffioletti, complemented with the Guide of Good Practices of the General Council of the Psychology of Spain, it was evidenced that a significant number of variables is not complied with in the analyzed reports, particularly in aspects related with the methodological explicitation, the control of biases, the triangulation of data, the formulation of alternative hypotheses and the establishment of the causal nexus.

Among the principal lacks that we could identify in the valued sample, clearly can be signaled the lack of a structured analysis by means of obtained results, the scarce utilization of standardized psychometric instruments for the control of simulation and social desirability, in addition to the use of obsolete bibliographic references. In the measure that it treated of reports in which diffuse concepts between the interventions proper of the clinical intervention (emotional containment), and procedures of the expert evaluation were reflected and that, from the optic of its validity for the report in another environment, could have affected the same in the judicial ambit.

These limitations, analyzed specifically on the analyzed reports, could have had an impact on the technical baggage of the expert report and of its utility as means of proof in which the judgment develops. In this sense, the results that we obtained warn that it is necessary to reinforce methodological criteria for the elaboration of forensic psychological reports in the studied context.

Nevertheless, given the exploratory nature of our study and because the size that the sample presented was very reduced, what was obtained cannot be generalized at the same time that it could suppose an analytic approximation to that of the expert practice in the studied jurisdiction.

Finally, the meta-expertise can be considered as an ideal tool for the evaluation of the scientific quality of the forensic psychological reports, it is going to permit us to contemplate weaknesses in the same and in the improvement of the expert practice and, in consequence, contribute to the improvement of the administration of justice.

REFERENCES

1. Salamea, D. (2021). La prueba metapericial en los procesos judiciales. Revista Pares, 8(1), 55-72. https://revistapares.com.ar/wp-content/uploads/2021/12/1.-La-prueba-metapericial-en-los-procesos-judiciales_pagenumber.pdf

2. Echeburúa, E., Muñoz, J. M., & Loinaz, I. (2011). Evaluación psicológica forense: Fiabilidad, validez, prevención de errores y problemas éticos. International Journal of Clinical and Health Psychology, 11 (1), 67-81. https://doi.org/10.1016/S1697-2600(11)71013-5

3. Moroy, L. (2006). Revisión crítica e informes periciales: la metapericia en el debate judicial. Cuadernos de Medicina Forense, 12(45), 23-34.

4. Maffioletti, F. (2016). Modelo metodológico de meta-análisis de peritajes psicológicos. Polo del Conocimiento, 11(3), 45-67. https://polodelconocimiento.com/ojs/index.php/es/article/view/6468

5. Pérez, M. A., & Rodríguez, N. (2022). Análisis metapericial psicológico forense de 12 informes psicológicos periciales de trastornos de personalidad. Revista Perspectivas Psicoforenses Latinoamericanas, 15 (2), 120-135. https://doi.org/10.5890/psicoforense.2022.15.2.120

6. Esbec, E., & Echeburúa, E. (2010). Violencia y trastornos de la personalidad: implicaciones clínicas y forenses. Terapia Psicológica, 28(2), 205-212.

7. Castro,(2024). La metapericia psicológica forense: Rigor científico y principios éticos. Universidad de Cuenca. https://dspace.ucuenca.edu.ec/bitstreams/19018097-23b3-4a0b-b69e-a1624811114f/download

8. Maffioletti, F. (2016). Modelo metodológico de meta-análisis de peritajes psicológicos. Polo del Conocimiento, 11(3), 45-67.

9. Consejo General de la Psicología de España. (2014). Guía de buenas prácticas para la evaluación psicológica forense y la práctica pericial. https://www.infocop.es/pdf/GuiaForense2014.pdf

10. Rodríguez, M. P., & Sánchez, L. F. (2019). Contrainforme psicológico pericial: Conceptualización y caso práctico. Revista de Psicología Jurídica, 15 (2), 89-105. https://dialnet.unirioja.es/descarga/articulo/7887932.pdf

11. Tapias, A. (2022). Metapericia psicológica forense: Guía práctica para el análisis de pericias previas. Ediciones de la Universidad de los Andes. https://doi.org/10.2307/j.ctv2f1b8zq

12. Echeburúa, E., Muñoz, J. M., & Loinaz, I. (2011). La evaluación psicológica forense frente a la evaluación clínica: propuestas y retos de futuro. International Journal of Clinical and Health Psychology, 11(1), 141-159.

13. Pérez, M. A., & Rodríguez, N. (2022). Análisis metapericial psicológico forense de informes psicológicos periciales de trastornos de personalidad. Revista Perspectivas Psicoforenses Latinoamericanas, 15(2), 120-135.

14. Zurita, A., Gómez, R., & Vargas, M. (2021). Debilidades existentes en los dictámenes periciales: lineamientos para una evaluación objetiva. Anuario Ecuatoriano de Ciencias Forenses, 5(1), 34-50.

15. Álvarez-Bello, F. (2013). El control del engaño en la evaluación psicológica forense: Posibilidades y limitaciones. Anuario de Psicología Jurídica, 23(1), 53-60.

16. Guarnera, J., Muratori, P., & Paciello, M. (2017). El juicio profesional estructurado en la evaluación forense: limitando la subjetividad. Revista de Psicología Legal, 9(3), 112-128.

17. Artacho-Mata, E. (2023). Propuesta de estructura para la realización del contrainforme psicológico pericial. Cuadernos de Psicología Forense, 16(1), 177-196. https://ifc.dpz.es/recursos/publicaciones/39/75/07artachomata.pdf

18. Fortúnez del Valle, J. M. (2015). Buenas prácticas en la evaluación psicológica forense. Revista de Psicología Jurídica y Forense, 2 (1), 45-62. https://doi.org/10.14198/RPJForen2015.2.1.03

19. García, A. M., & López, J. M. (2024). Contrainforme psicológico pericial de un caso de abuso sexual infantil: Análisis del Statement Validity Analysis (SVA). Revista Iberoamericana de Psicología y Salud, 73, 1-15. https://www.rips.cop.es/pdf/art732024.pdf

20. Martínez, L. (2023). Desafíos metodológicos en la psicología forense y la integración de hallazgos objetivos. Revista Iberoamericana de Psicología Jurídica, 15(2), 99-115.

21. Neimeyer, R. A., Taylor, J. M., & Weary, G. (2014). The rapid evolution of forensic psychology knowledge. Journal of Forensic Sciences, 59(4), 1012-1018.

22. Vázquez-Mezquita, M. (2005). Proceder y técnicas en psicología forense. Papeles del Psicólogo, 26(2), 87-98. DOI: 10.23923/pap.psicol2005.26.2.5.

ISSN:
3091-1796
Vol. 4 No. 9 PP. 35-46

DOI:
https://doi.org/10.56519/0e0ses03
Mayo 2026

EFECTO DE LA MODERACIÓN DEL CURRÍCULO ACADÉMICO UNIVERSITARIO EN LA INTENCIÓN EMPRENDEDORA DE JÓVENES CON ANTECEDENTE DE FAMILIA EMPRESARIA

EFFECT OF MODERATION OF THE UNIVERSITY ACADEMIC CURRICULUM ON THE ENTREPRENEURIAL INTENTION OF YOUNG PEOPLE WITH A FAMILY BACKGROUND IN BUSINESS

Rivas Vargas Kassandra Lisbeth[1], Zurita Castro Dayana Salomé[2], Santamaría Freire Edwin Javier[3]
{krivas8703@uta.edu.ec1, dzurita6603@uta.edu.ec2, edwinjsantamaria@uta.edu.ec3}

Fecha de recepción: 14/04/2026 / Fecha de aceptación: 09/05/2026 / Fecha de publicación: 12/05/2026

RESUMEN: La intención emprendedora en el ámbito universitario emerge de la interacción entre factores individuales y contextuales; en este marco, el estudio analiza el rol del antecedente de familia empresaria y el efecto moderador del ecosistema universitario. Esto se sustenta en la Teoría del Comportamiento Planificado y en enfoques de socialización emprendedora, con el fin de explicar cómo los factores familiares y académicos inciden en la predisposición a emprender. La investigación adopta un enfoque cuantitativo, de tipo descriptivo correlacional, mediante la aplicación de un cuestionario estructurado a estudiantes de administración de empresas, utilizando escalas validadas para medir las variables de estudio. El análisis de la información se realizó mediante técnicas estadísticas que permitieron identificar la relación entre los constructos y evaluar el efecto moderador planteado. Los resultados evidencian una elevada intención emprendedora, influida significativamente por el entorno familiar y fortalecida por la formación universitaria. En este sentido, se observa que el 45,42% de los estudiantes cuenta con antecedentes de empresas familiares, de los cuales el 25,90% pertenece a la familia extendida y el 19,52% a la familia nuclear, mientras que el 54,58% no presenta este tipo de antecedentes. Asimismo, el 53,58% de los encuestados no ha participado en negocios familiares; sin embargo, entre quienes, si lo han hecho, el 29,48% se involucró en actividades operativas y 16,73% en procesos estratégicos. Estos resultados sugieren que la exposición a modelos empresariales en el núcleo y entorno familiar contribuya al desarrollo de actitudes favorables hacia el emprendimiento. De igual manera, el ecosistema universitario, a través del currículo, actividades co-curriculares y redes de apoyo, potencia las capacidades emprendedoras, fortalece la autoeficacia y reduce la percepción de riesgo. Se concluye que la universidad desempeña un papel determinante en la consolidación de la intención emprendedora, actuando como un agente clave en la formación de futuras iniciativas empresariales.

Palabras clave: *intención emprendedora, empresa familiar, emprendimiento juvenil, ecosistema universitario*

ABSTRACT: Entrepreneurial intention in the university setting emerges from the interaction between individual and contextual factors. Within this framework, the study analyzes the role of a family background in business and the moderating effect of the

ISSN: 3091-1796
Vol. 4 No. 9 PP. 35-46
DOI: https://doi.org/10.56519/0e0ses03
Mayo 2026

university ecosystem. This is based on the Theory of Planned Behavior and approaches to entrepreneurial socialization, in order to explain how family and academic factors influence the predisposition to become entrepreneurs. The research adopts a quantitative, descriptive-correlational approach, using a structured questionnaire administered to business administration students, employing validated scales to measure the study variables. Data analysis was conducted using statistical techniques that allowed for the identification of relationships between constructs and the evaluation of the proposed moderating effect. The results demonstrate a high level of entrepreneurial intention, significantly influenced by the family environment and strengthened by university education. In this regard, it is observed that 45.42% of students have a background in family businesses, of which 25.90% belong to the extended family and 19.52% to the nuclear family, while 54.58% do not have this type of background. Likewise, 53.58% of respondents have not participated in family businesses; however, among those who have, 29.48% were involved in operational activities and 16.73% in strategic processes. These results suggest that exposure to business models within the family and its surrounding environment contributes to the development of favorable attitudes toward entrepreneurship. Similarly, the university ecosystem, through its curriculum, co-curricular activities, and support networks, enhances entrepreneurial skills, strengthens self-efficacy, and reduces the perception of risk. It is concluded that the university plays a decisive role in consolidating entrepreneurial intentions, acting as a key agent in the formation of future business initiatives.

Keywords: *entrepreneurial intention, family business, youth entrepreneurship, university ecosystem*

1 Universidad Técnica de Ambato (UTA), https://orcid.org/0009-0007-7737-3832.
2 Universidad Técnica de Ambato (UTA), https://orcid.org/0009-0005-8060-1790.
3 Universidad Técnica de Ambato (UTA), https://orcid.org/0000-0003-2636-9685.

INTRODUCTION

Entrepreneurship constitutes one of the fundamental motors of contemporary economic development upon favoring innovation, the generation of employment and the productive diversification (1). In this context, the universities, in addition to the traditional formative function, perform a strategic role in the configuration of ecosystems of innovation capable of stimulating the creation of new enterprises and the transfer of knowledge toward the productive sector. In the field of investigation of entrepreneurship, the entrepreneurial intention has consolidated itself as one of the analytic approaches most utilized to explain the emergence of the entrepreneurial behavior. This concept is defined as the conscious predisposition of an individual to initiate a business in the future and has been identified as one of the most consistent predictors of the entrepreneurial action (2) (3) (4).

This study has been sustained in models widely recognized in the literature, such as: the Theory of Planned Behavior proposed by Icek Ajzen (5) and the Entrepreneurial Event Model developed by Albert Shapero and Lawrence Sokol (6), which explain the formation of the entrepreneurial intention from cognitive, attitudinal and contextual factors that influence in the perception of desirability and viability of undertaking, where

ISSN: 3091-1796
Vol. 4 No. 9 PP. 35-46
DOI: https://doi.org/10.56519/0e0ses03
Mayo 2026

it explains the formation of the intention from cognitive constructs, and, permits understanding how they are configured by means of processes of observation and imitation in social contexts such as the family, in which the founders act as role models that transmit values, tacit knowledge and attitudes. In particular, in university contexts it is evidenced that the entrepreneurial education strengthens the attitudes toward the entrepreneurial activity and increase the disposition of the students to consider the creation of enterprises as a viable professional alternative, although this effect usually manifests itself in an indirect manner through changes in the perceptions, skills and valuations associated to the entrepreneurship (7) (3) (8).

Among the factors that influence in the formation of the entrepreneurial intention, the family environment has been identified as one of the most relevant. From there, the students coming from entrepreneurial families tend to present more elevated levels of entrepreneurial intention owing to the processes of early socialization that occur in the family ambit. The direct exposure to entrepreneurial activities facilitates the transmission of knowledge, experiences and values associated to the management of businesses, reducing the uncertainty before the entrepreneurship and strengthening the entrepreneurial self-efficacy (9) (3) (4) (10). In this line, previous investigations developed in the Ecuadorian context, particularly in the province of Tungurahua, have evidenced that the family environment acts as a formative ecosystem that configures the entrepreneurial vocation from early stages, identifying structural differences in the motivation to undertake: while that the individuals coming from entrepreneurial families tend to orient themselves toward the preservation of the lifestyle and the socioeconomic status.

The entrepreneurial curriculum refers to the systematic integration of contents, methodologies and formative experiences oriented to the development of competencies related with the identification of opportunities, the innovation, the management of the risk and the creation of new enterprises. Through specific subjects, methodologies of learning based on projects, activities of entrepreneurial simulation and links with the productive environment, the study plans can contribute to develop entrepreneurial capacities and to strengthen the perception of viability of the entrepreneurship as professional option (11) (8).

From this perspective, the university academic curriculum can act as a moderating variable that alters the relation between the family antecedent and the entrepreneurial intention, manifesting itself both in a potentiating effect, when the academic formation strengthens the inherited vocation. In this line, the literature has evidenced that the entrepreneurial education impacts positively in the entrepreneurial intention by means of the development of competencies, self-efficacy and orientation toward opportunities (12) (13), contributing to strengthen the confidence of the students in the capacity to undertake and to reduce the perception of risk associated to the creation of new enterprises. Thus, the family environment and the entrepreneurial education in a predominantly independent manner, generating a fragmented comprehension of the processes that configure the entrepreneurial intention in university contexts (14) (15) (16), with a limited comprehension of the mechanism by means of which both factors interact, especially in university students belonging to Generation Z.

ISSN: 3091-1796
Vol. 4 No. 9 PP. 35-46
DOI: https://doi.org/10.56519/0e0ses03
Mayo 2026

In this context, the investigation is articulated through the question: What is the effect of the moderation of the university academic curriculum in the relation between the antecedent of entrepreneurial family and the entrepreneurial intention of the university young people? From which the objective of the study is posed: determine the effect of the moderation of the university academic curriculum in the entrepreneurial intention of young people with antecedents of entrepreneurial family.

In order to reach this objective, the investigation adopts a quantitative approach of transversal cut oriented to analyze the relations between the considered variables. The information was compiled by means of structured and validated questionnaire applied to students of the career of Business Administration. Subsequently, the data were analyzed by means of statistical techniques that permit evaluating the moderating effect of the university academic curriculum in the relation between the entrepreneurial family antecedents and the entrepreneurial intention.

The antecedent of entrepreneurial family is understood as the direct or indirect exposure to entrepreneurial activities within the family nucleus, which can influence in the construction of perceptions, attitudes and expectations related with the entrepreneurial activity (9) (17).

MATERIALS AND METHODS

The work was framed in a quantitative approach owing to that it is based on existing theories and it was measured through an instrument that principally is in charge of measuring the dimensions of each variable, subsequently the statistics was utilized to measure the correlation between these and validate the hypothesis previously posed.

This study is of descriptive and correlational type because it seeks, in the first place, to detail and characterize the entrepreneurial intention of the students in the academic context, without manipulating the variables, observing the phenomena such as they occur in the reality. Likewise, it is correlational since it analyzes the existing relation between the university academic curriculum, the entrepreneurial family antecedent and the entrepreneurial intention. In addition, it is intended to identify how these variables are associated among themselves and if the curriculum acts as a moderating factor in said relation permitting understanding the joint influence of these elements in the entrepreneurial behavior of the young people.

A bibliographic investigation was realized with the aim of sustaining theoretically the academic curriculum, the entrepreneurial family antecedent and the entrepreneurial intention, by means of the revision of bibliographic sources. In addition, field investigation was applied with the application of the instrument to the university students.

The population object of study was conformed by the students enrolled in the semester January-July 2026 in the career of Business Administration, who are 556 students that are the group of interest of the study. For the sample, a random sampling based on the registry of the students in the Faculty of Administrative Sciences is employed, where 251 participants are obtained that assure solidity of the statistical results for being the representative sample. The participation in this investigation was voluntary, for which, upon initiating the questionnaire the informed consent was placed to leave the

ISSN:
3091-1796
Vol. 4 No. 9 PP. 35-46

DOI:
https://doi.org/10.56519/0e0ses03
Mayo 2026

participation optional and in this manner biases at the moment of collecting the sample were guaranteed to avoid.

For the collection of data a validated survey based on the structured questionnaire of the family antecedent (18) was utilized; for the university ecosystem (curricular support, co-curricular support and contact networks) one worked with the scale of university support (19); and, for the entrepreneurial intention the scale of entrepreneurial intention (EIQ) (20) was utilized, based on the theory of planned behavior (self-efficacy, expectation of results, goals and environmental factors). In this form the instrument has 36 closed questions that present the option of response in Likert scale from 1 to 5 from the lowest category until the highest.

In order to validate the instrument it was realized starting from the analysis of reliability of the instrument, through Cronbach's alpha = 0.964 which indicates that it possesses internal consistency and is valid to collect information. Likewise, the validity is analyzed by means of factorial analysis from where it is found that KMO = 0.954 and sphericity of Bartlett 5628.96 with p-value < 0.01 which indicates that the collected data are sufficiently appropriate for exploratory factorial analysis, that is to say, the data show significant information in the study and that the variables are correlated among themselves, which indicates the quality of the sample is adequate to represent the studied reality.

The information was processed through a statistical software SPSS 27.0, which permitted us to develop tables and graphs for the descriptive analysis of the variables and subsequently the utilization of a test of normality and validation of hypothesis to determine the correlation of the variables, the same which is represented the results.

RESULTS

A. Family antecedents

The 54.58% of the surveyed students affirms that there do not exist enterprises in the family environment. In contrast, a representative segment of the 45.42% yes counts with entrepreneurial family antecedents. Of this group with antecedents of family enterprises, the 25.90% locates these businesses in the extended family (grandparents, uncles, cousins), while a 19.52% comes from nuclear families (parents, brothers) with enterprises. With respect to the practical immersion, the 53.78% has not participated in labor activities linked to family businesses. Among those who yes have had a level of involvement, the 29.48% signals having collaborated exclusively in operative activities. Solely a minority of the 16.73% has managed to involve itself in strategic processes related with the taking of decisions.

ISSN:
3091-1796
Vol. 4 No. 9 PP. 35-46

DOI:
https://doi.org/10.56519/0e0ses03
Mayo 2026

Figure 1. Distribution according to presence in nuclear or extended family.

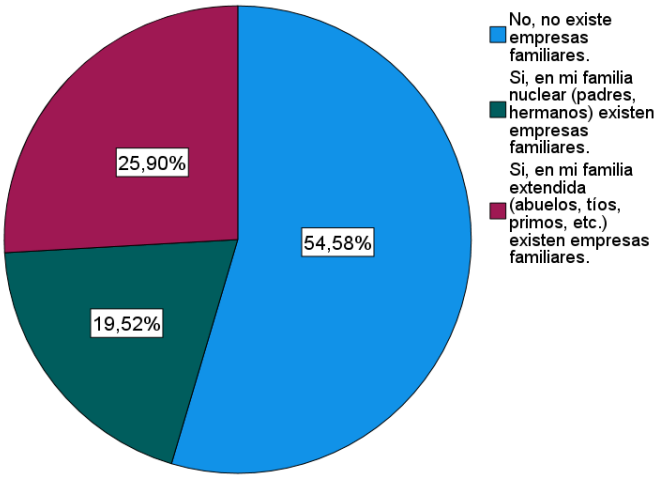
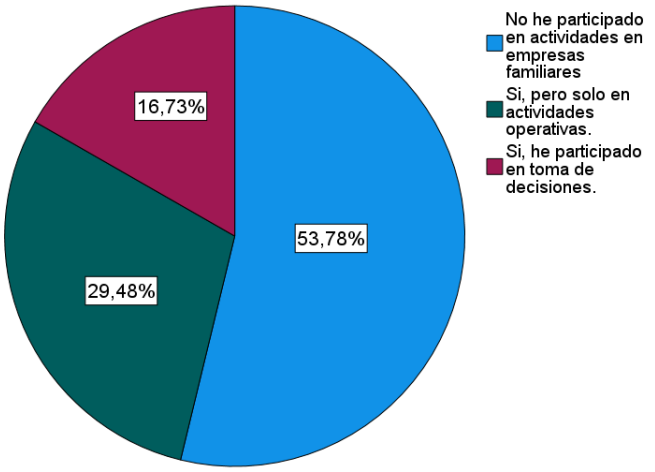


Figure 2. Level of involvement of the surveyed.



The results on the family antecedents show that many students do not have a close entrepreneurial environment, although there is also an important group that yes has had some type of contact with entrepreneurships in their family. It is observed that these family businesses are not only in the close nucleus, but also in the extended family, which indicates that the exposure to the entrepreneurship can be given through distinct links. However, this closeness does not always imply a direct participation since more than the half of the students has not been involved in these activities. Among those who yes have participated, the majority has done it in operative tasks, that is to say, in basic activities, while few have formed part of more strategic processes or of taking of decisions. This suggests that, although within the family experiences and knowledge on businesses are shared, this participation usually is limited and progressive, especially because the students still are in formation. In this sense, the family influences in how the entrepreneurship is perceived and helps to develop certain skills and attitudes, but does not always guarantee a complete experience in the management of a business. Therefore, the family antecedent is an important factor in the entrepreneurial intention despite that its impact depends on the level of participation and of the type of experiences that each student has had.

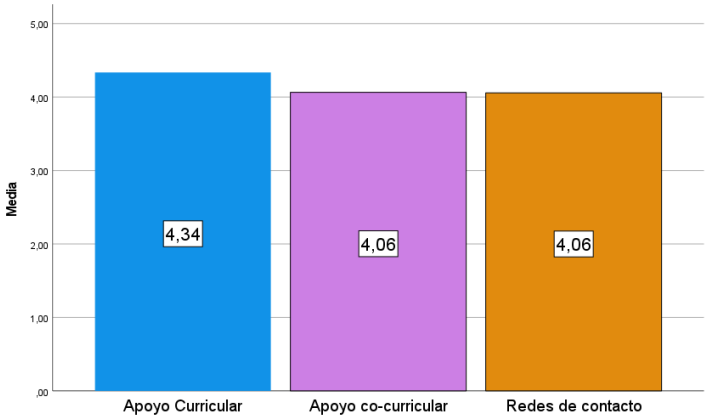
B. University ecosystem

ISSN:
3091-1796
Vol. 4 No. 9 PP. 35-46

DOI:
https://doi.org/10.56519/0e0ses03
Mayo 2026

Upon evaluating the perception of the students on the university ecosystem through the Likert scale from 1 to 5 and obtained the average value of the questions related to each dimension, the results show a high valuation in all the dimensions. The Curricular Support stands out as the dimension better valued, reaching a mean of 4.34. Likewise, the dimensions of Co-curricular Support and Contact Networks present identical valuations, with a mean of 4.06 each one. These values indicate that the university students capture a solid institutional environment and actively involved in the promotion of the entrepreneurship, standing out principally through the formal academic formation.

Figure 3. Valuation of university ecosystem.

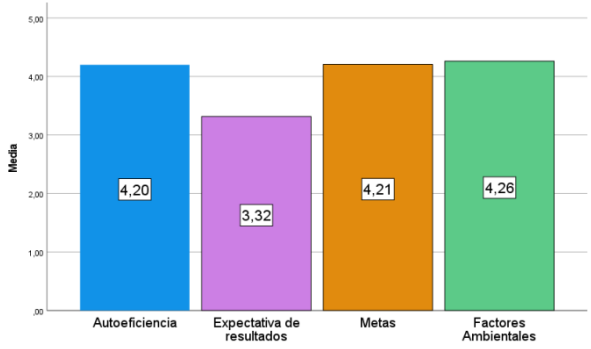


The scores reflect that the university has transcended from the traditional formative function to strengthen itself as an ecosystem of innovation and entrepreneurial foment. The predominance of the curricular support evidences a systematic and effective integration of the entrepreneurial curriculum, suggesting that the methodologies of active learning, the projects and the specific subjects manage to strengthen the entrepreneurial capacities of the students in the classrooms.

C. Entrepreneurial intention

Upon evaluating the dimensions of the entrepreneurial intention, the data show an extended tendency toward high values, revealing a preference in the majority of the factors. The dimension of Environmental Factors stands out with the highest mean of the element, reaching a mean of 4.26. The dimensions of Goals and Self-efficacy present a similar statistical behavior, with means of 4.21 and 4.20, respectively. In change, the expectation of results registers a significant fall in the valuation, situating itself as the lowest mean with a 3.32.

Figure 4. Means of the dimensions of entrepreneurial intention



ISSN: 3091-1796
Vol. 4 No. 9 PP. 35-46
DOI: https://doi.org/10.56519/0e0ses03
Mayo 2026

In parallel, the high levels of self-efficacy (4.20) and clarity in the goals (4.21) demonstrate that the students possess a solid confidence in the skills to plan and execute the creation of an enterprise. From the optic of the Theory of Planned Behavior, this perceived behavioral control is one of the most consistent predictors of the entrepreneurial intention, since it reflects the integration of technical and managerial capacities.

Nevertheless, the expectation of results (3.32) reveals a phenomenon of reserve, since, although the students perceive themselves capable and backed by the social and family environment, they manifest uncertainty with respect to the entrepreneurial returns, the profitability or the sustained success that they could obtain upon undertaking. This gap between the perceived capacity (self-efficacy) and the distrust on the future success (expectation of results) underlines the space where the university academic curriculum must intervene as moderating mechanism. The formative ecosystem has the challenge of moderating this perception of risk by means of effective contact networks and market simulations that transform that high latent intention into a definitive entrepreneurial behavior, interacting with the certainties or doubts that the students already bring from the family antecedent.

D. Relation of the variables

For the analysis of correlation the cases where the students of the career of business administration possess an enterprise are considered, that is to say, the 45% of the participants of the study is considered; this set of data is found with the factor of influence of antecedents of entrepreneurial family.

This set of data is evaluated the behavior of normality of the dimensions through the Kolmogorov-Smirnov test where it is found that the dimensions possess normality (p-value = 0.000), for which one works through the Spearman's correlation, being that this test does not require the assumptions of normality for the application.

Table 1. Coefficients of correlation and statistical significance.

	Self-efficacy	Expectation of results	Goals	Environmental Factors
Curricular Support Correlation coefficient	0.622**	0.611**	0.604**	0.522**
Sig. (bilateral)	0.000	0.000	0.000	0.000
Co-curricular Support Correlation coefficient	0.861**	0.614**	0.697**	0.624**
Sig. (bilateral)	0.000	0.000	0.000	0.000
Contact Networks Correlation coefficient	0.689**	0.568**	0.651**	0.602**
Sig. (bilateral)	0.000	0.000	0.000	0.000

**. The correlation is significant at the level 0.01 (bilateral).

The results of the matrix evidence that all the correlations between the dimensions of the university ecosystem and the entrepreneurial intention are positive and statistically significant at the level of 0.01 (bilateral). This permits indicating that there is statistically significant evidence to reject the null hypothesis and accept the alternative hypothesis that indicates that: there exists a direct and significant relation between the university ecosystem, the entrepreneurial intention and the antecedent of entrepreneurial family.

Of this, the strongest finding is the correlation between the Co-curricular Support and the dimension of Self-efficacy (r = 0.861), being the highest value of the entire model.

ISSN:
3091-1796
Vol. 4 No. 9 PP. 35-46

DOI:
https://doi.org/10.56519/0e0ses03
Mayo 2026

Likewise, the Co-curricular Support maintains strong relations with the Goals (r = 0.697) and the Environmental Factors (r = 0.624). On the other hand, the Curricular Support and the Contact Networks present consistent correlations of moderate to strong (between r = 0.522 and r = 0.689) with all the dimensions of the dependent variable.

The correlation of the Co-curricular Support with the Self-efficacy (0.861) stands out; this indicates that, for the students of family enterprises, it is not enough solely with the theory in the classroom. They are the methodologies of active learning outside the traditional space such as: the business simulations, the learning based on problems and the extracurricular projects, those that transform the knowledge inherited from the family into a solid personal confidence to undertake. The statistical findings provide robust empirical evidence to accept the hypothesis of the study.

DISCUSSION

From a theoretical perspective, these results confirm that the university academic curriculum exercises a moderating effect of potentiating type in the entrepreneurial intention. For the young people who already bring with them processes of early socialization and transmission of tacit knowledge from their family businesses, the university is not a neutral actor. On the contrary, the university ecosystem interacts with this entrepreneurial family knowledge multiplying the predisposition toward the creation of enterprises.

From the perspective of the entrepreneurial family, the family environment acts as a space where vital resources and knowledge for the formation of entrepreneurial aspirations are transmitted. Likewise, within the group that possesses family enterprises within the environment, the immersion is partial, this owing to that they still do not conclude the stage of professionalization, but the transmission of tacit knowledge such as the management of organizational resources and the taking of decisions in scenarios of uncertainty is within the family environment. This observational learning, according to the literature, is fundamental to strengthen the self-efficacy and the perception of viability of the entrepreneurship.

In the university context, a positive valuation of the academic ecosystem is evidenced, which results key within the model of investigation. The existence of a solid curriculum and of structured support networks permits the university to interact with the family experiences of the student. In this sense, the formative environment can assume a moderating role, either potentiating the entrepreneurial vocation in those who come from entrepreneurial families or compensating the lack of this social capital in those who do not count with said antecedents. These results guard relation with previous studies developed in Tungurahua, where also it has been identified that the articulation between the university environment and the family environments impacts in a positive manner in the development of entrepreneurial attitudes and competencies.

The student profile of those who possess antecedents of entrepreneurial families is characterized by the cognitive predisposition toward the entrepreneurship, strongly anchored in the perception of the own capacities and in the influence of the environment. Of this, the environmental factors (4.26) indicates that the young people perceive a favorable social and institutional context to undertake. This confirms the

ISSN: 3091-1796
Vol. 4 No. 9 PP. 35-46
DOI: https://doi.org/10.56519/0e0ses03
Mayo 2026

postulates of the Entrepreneurial Event Model, which sustains that the perception of desirability and the social context act as catalyzing forces to impulse the individuals to consider the entrepreneurship as a professional alternative.

Of the correlation, the influence of the contact networks and the curricular support on the expectations of results and the goals demonstrates that the entrepreneurial education provides the institutional resources necessary to reduce the perception of risk. In synthesis, the university ecosystem acts as a structural mechanism that validates, structures and projects the entrepreneurial dispositions acquired in the family environment.

From the exposed findings, it results that in the future studies of longitudinal character be developed to evaluate if this high entrepreneurial intention moderated by the university materializes effectively in the creation of start-ups after the graduation. Likewise, it is necessary to amplify the theoretical model to contrast empirically the potential compensatory effect of the university ecosystem, determining if a robust curriculum possesses the capacity to substitute the absolute absence of primary social capital in those students who lack completely of entrepreneurial family antecedents.

CONCLUSIONS

It is concluded that the university ecosystem exercises a moderating role of potentiating character on the entrepreneurial intention of the young people with antecedents of entrepreneurial family. Far from being a neutral institutional actor before the knowledge of the student, the university acts as a structural facilitator that takes the tacit knowledge, inherited from the family socialization, to validate it, structure it and project it with professionalization toward the creation of new enterprises.

A critical finding with respect to this mechanism of moderation resides in the insufficiency of the traditional academic formation in an isolated manner. It is concluded that they are the methodologies of active learning and the co-curricular support that are the determinants that transform the family immersion, often partial or operative, into a solid entrepreneurial self-efficacy. The curriculum must transcend the classroom to endow the student of the strategic confidence necessary to undertake.

Despite possessing a high attitudinal predisposition, the students manifest a marked caution and uncertainty before the returns and the sustained success of the future entrepreneurial initiatives, also it is an aversion inherited from the influence of the entrepreneurial family. Therefore, it is concluded that the contact networks and the curricular support provided by the higher education are vital resources to shorten the existing gap between the high capacity perceived by the student and the distrust toward the results of the market, operating as an institutional shield that reduces the perception of risk.

REFERENCES

1. Acevedo R, Lorca-Susino M. Entrepreneurship: The Driving Force for Economic Growth in the Twenty-First Century in the European Union. Journal of Economic Analysis. 2025; 4(2):1–17. doi:10.58567/jea04020001

2. Jurgelevičius A, Raišienė AG. University Entrepreneurial Ecosystems: Start-Up Founders' Perspectives on Critical Factors for Student Start-Up Success. Economics and Sociology. 2025; 18(2):221–245. doi:10.14254/2071-789X.2025/18-2/12

3. Nguyen TD, Cherif R, Mahieux PY, Lux J, Aït-Mokhtar A, Aït-Mokhtar E. Artificial intelligence algorithms for prediction and sensitivity analysis of mechanical properties of recycled aggregate concrete: a review. Journal of Building Engineering. 2023; 66. doi:10.1016/j.jobe.2023.105929

4. Szabó K, Aranyossy M. The influence of family business background on the entrepreneurial intention of individuals: a quantitative study of Hungarian university students. Society and Economy. 2024; 46(4): 441–461. doi:10.1556/204.2024.00009

5. Ajzen I. The theory of planned behavior. Organizational Behavior and Human Decision Processes. 1991; 53(1): 51–58. doi:10.1016/0749-5978(91)90020-T

6. Shapero A, Sokol L. The social dimensions of entrepreneurship. In: Kent CA, Sexton DL, Vesper KH, editors. The Encyclopedia of Entrepreneurship.: Prentice-Hall; 1982. p. 72–90.

7. Akcil U, Suhanberdyyeva D. Research on university profiles about entrepreneurship and innovation orientation: Case of a developing country. Frontiers in Psychology. 2022; 13. doi:10.3389/fpsyg.2022.968996

8. Tong X, Cai X, Wang K. Entrepreneurial family background as a moderator of entrepreneurship education portfolio and entrepreneurial intentions of students. SAGE Open. 2025; 15(4):1-13. doi:10.1177/21582440251392702

9. Carr JC, Sequeira JM. Prior family business exposure as intergenerational influence and entrepreneurial intent: A theory of planned behavior approach. Journal of Business Research. 2007; 60(10): 1090–1098. doi:10.1016/j.jbusres.2006.12.016

10. Zellweger T, Siege P, Halter F. Should I stay or should I go? career choice intentions of students with family business background. Journal of Business Venturing. 2011; 26(5): 521–536. doi:10.1016/j.jbusvent.2010.04.001

11. Gonzalez-Tamayo LA, Olarewaju AD, Bonomo-Odizzio A, Krauss-Delorme C. University student entrepreneurial intentions: the effects of perceived institutional support, parental role models, and entrepreneurial self-efficacy. Journal of Small Business and Enterprise Development. 2024; 31(8): 205–227. doi:10.1108/JSBED-09-2022-0408

12. Fayolle A, Gailly B. From craft to science: teaching models and learning processes in entrepreneurship education. Journal of European Industrial Training. 2008; 32(7): 569–593. doi:10.1108/03090590810899838

13. Nabi G, Liñán F, Fayolle A, Krueger N, Walmsley A. The impact of entrepreneurship education in higher education: a systematic review and research agenda. Academy of Management Learning and Education. 2017; 16(2): 277–299. doi:10.5465/amle.2015.0026

14. Csákné Filep J, Timár G, Szennay Á. Analysing the impact of entrepreneurship education on early-stage entrepreneurship—focusing on the transitional countries of Central and Eastern Europe. Administrative Sciences. 2025; 15(2): 1–13. doi:10.3390/admsci15020036

15. Lv Y, Chen Y, Sha Y, Wang J, An L, Chen T, et al. How entrepreneurship education at universities influences entrepreneurial intention: mediating effect based on

entrepreneurial competence. Frontiers in Psychology. 2021; 12. doi:10.3389/fpsyg.2021.655868

16. Xanthopoulou P, Sahinidis A. Exploring the impact of entrepreneurship education on social entrepreneurial intentions: a diary study of tourism students. Administrative Sciences. 2025; 15(3). doi:10.3390/admsci15030111

17. Lindquist MJ, Sol J, Van Praag M. Why do entrepreneurial parents have entrepreneurial children? Journal of Labor Economics. 2015; 33(2): 269–296. doi:10.1086/678493

18. Saeed S, Yousafzai SY, Yani-De-Soriano M, Muffatto M. The role of perceived university support in the formation of students' entrepreneurial intention. Journal of Small Business Management. 2013; 53(4): 1127–1145. doi:10.1111/jsbm.12090

19. Morris MH. Student entrepreneurship and the university ecosystem: a multi-country empirical exploration. European Journal of International Management. 2017; 11(1): 65–85. doi:10.1504/EJIM.2017.081251

20. Liñán F, Chen YW. Development and cross-cultural application of a specific instrument to measure entrepreneurial intentions. Entrepreneurship Theory and Practice. 2009; 33(3): 593–617. doi:10.1111/j.1540-6520.2009.00318.x

ISSN:
3091-1796
Vol. 4 No. 9 PP. 47-64

DOI:
https://doi.org/10.56519/rdbet688
Mayo 2026

PLATAFORMAS DIGITALES PARA LA DIFUSIÓN CULTURAL Y SOCIOECONÓMICA: UN ENFOQUE CONTEXTUALIZADO PARA EL APRENDIZAJE DEL INGLÉS COMO LENGUA EXTRANJERA EN CONTEXTOS RURALES ANDINOS

DIGITAL PLATFORMS FOR THE CULTURAL AND SOCIOECONOMIC DISSEMINATION: A CONTEXTUALIZED APPROACH TO EFL LEARNING IN RURAL ANDEAN CONTEXTS

César Augusto Narváez Vilema[1], Pérez Cárdenas Mireya Karina[2], Flores Vásconez Kerlly Doménica[3], Morales Guevara Cielo Anahí[4]
{cesar.narvaez@unach.edu.ec1, mireya.perez@unach.edu.ec2, kerlly.flores@unach.edu.ec3, cielo.morales@unach.edu.ec4}
Fecha de recepción: 27/03/2026 / Fecha de aceptación: 09/05/2026 / Fecha de publicación: 12/05/2026

RESUMEN: El presente estudio tuvo como objetivo diseñar una plataforma web interactiva para la difusión cultural, turística y socioeconómica de nueve parroquias rurales del cantón Guano, concebida como un recurso micro curricular para la enseñanza del inglés en contextos rurales. La investigación adoptó un enfoque mixto, donde el enfoque cualitativo predomina, complementado por componentes cuantitativos descriptivos. Entre los principales hallazgos, se identificó la base cultural común que comparten las nueve parroquias, entre ellas las prácticas agrícolas, el páramo diverso, celebraciones, gastronomía, y socio dinámicas, que constituyen particularidad e identidad propia de cada parroquia. La organización meticulosa de cada elemento en la plataforma digital, presenta coherencia respecto a la identidad cultural y posibilita el aprendizaje contextualizado del idioma inglés. Se concluye que la plataforma constituye un recurso accesible y replicable, capaz de articular tecnología, identidad y aprendizaje significativo, y de aportar al fortalecimiento de la visibilidad territorial y la pertinencia educativa en contextos rurales.

Palabras clave: *construcción de la identidad, diseminación digital, parroquias rurales, plataformas interactivas, aprendizaje del inglés*

ABSTRACT: The study aimed to design an interactive web platform for the cultural, touristic, and socioeconomic dissemination of nine rural parishes in the canton of Guano, conceived as a micro-curricular resource for teaching English in rural contexts. The study opted for a mixed-methods approach, where the qualitative approach prevails, supported by quantitative descriptive indicators. Among the main findings, it was identified the common cultural basis shared by the nine parishes, which include agricultural practices, the páramo diversity, ceremonies, gastronomy, and community practices, that constitute the particularity and cultural heritage present in each parish. The meticulous organization of each element in the digital platform suggests coherence towards cultural identity, and provides a contextualized learning of the English language. It is concluded that the platform represents an accessible and replicable resource that

English translation of the original article published in Ecuacientífica, Vol. 4, No. 9, pp. 47-64.

ISSN:
3091-1796
Vol. 4 No. 9 PP. 47-64

DOI:
https://doi.org/10.56519/rdbet688
Mayo 2026

connects technology, identity, and meaningful learning, while contributing to the territorial visibility and educational relevance in rural settings

Keywords: *Identity construction, digital dissemination, rural parishes, interactive platforms, english learning*

1 Universidad Nacional de Chimborazo (UNACH), https://orcid.org/0000-0003-4498-8316.
2 Universidad Nacional de Chimborazo (UNACH), https://orcid.org/0009-0004-4434-0362.
3 Universidad Nacional de Chimborazo (UNACH), https://orcid.org/0009-0003-4948-3306.
4 Universidad Nacional de Chimborazo (UNACH), https://orcid.org/0009-0002-3637-6504.

INTRODUCTION

Digital technologies have profoundly transformed the ways in which information, culture, and knowledge are produced, organized, and disseminated in contemporary society. In this evolving landscape, digital visibility has become a crucial factor not only for communication but also for the social, cultural, and economic positioning of communities.

The capacity to represent and project identity through digital environments gradually shapes how territories interact with broader networks of recognition and development. However, this transformation has not taken place evenly. Persistent inequalities in access, infrastructure, and digital literacy continue to widen the gap between urban and rural contexts, leaving many local realities with limited presence in digital ecosystems.

In rural areas, cultural expression tends to circulate through oral traditions, communal practices, and localized forms of interaction. These expressions carry strong meaning and depth. Yet, they rarely enter structured digital systems. Because of this, they are not often documented in a systematic or organized way online. Their visibility is reduced, and opportunities for preservation, intergenerational transmission, and external projection become restricted. What emerges instead are fragmented or partial representations that do not fully reflect their social, economic, and symbolic complexity.

This can be clearly observed in the canton of Guano. Its nine rural parishes sustain a diverse cultural heritage with deep roots. Their identities are closely linked to Andean traditions, agricultural practices, forms of communal organization, and symbolic systems that guide everyday life. Cultural expression appears in festivities, artisanal production, oral histories, and collective labor. All of these elements contribute to a living and evolving sense of belonging.

Even so, the way this cultural richness is shared remains mostly informal. In many cases, it depends on isolated efforts, personal social media accounts, or scattered records. The available information, therefore, is often dispersed and incomplete. It lacks coherence, which makes it difficult to understand these parishes as part of an interconnected socio-cultural system.

A similar limitation can be seen in education. In rural contexts, English as a Foreign Language (EFL) is frequently taught through standardized materials that have little connection to students' daily lives. When learners cannot relate to the content, their engagement tends to remain surface-level. Under these conditions, language learning

ISSN:
3091-1796
Vol. 4 No. 9 PP. 47-64

DOI:
https://doi.org/10.56519/rdbet688
Mayo 2026

often becomes mechanical, centered more on memorization than on meaningful communication.

When content reflects students' own sociocultural context, the situation changes. Learning starts to feel more relevant and purposeful. As Gay (2018) points out, culturally responsive pedagogy emphasizes connecting new knowledge with learners' cultural frameworks to promote deeper understanding.

From this point of view, interactive web platforms present a practical opportunity. They offer structured spaces where cultural content can be organized and presented in a more coherent way. Unlike fragmented digital efforts, these platforms allow different types of information to come together within a single system, which can support both understanding and user engagement.

Multimedia elements such as images, videos, and interactive tools can make this representation more dynamic. They add depth and make exploration more engaging. However, their use requires balance. As Paas and Sweller (2014) (1) note, too much information or stimulation can overwhelm users, so clarity should not be sacrificed.

At this intersection of technology, culture, and language education, new possibilities emerge. Integrating digital platforms into EFL teaching allows for more contextualized learning. Language stops being treated as an abstract system and becomes a tool for expressing culturally grounded knowledge (Narváez et al., 2023) (2). When local content is included, students can engage with English in ways that connect with their own experiences. This often leads to higher motivation and stronger communicative competence.

Although research on digital education, cultural identity, and language learning has grown, there is still limited work that brings these elements together, especially in rural Andean contexts. Many studies address them separately, leaving aside the potential of more integrated approaches. This gap underscores the need for research that not only documents cultural realities but also proposes practical strategies for their integration into educational and digital environments.

To diminish the consequences of this phenomenon, the present study aimed to design an interactive web platform for the cultural, touristic, and socioeconomic dissemination of the nine rural parishes of the canton of Guano, articulating it as a contextualized micro-curricular resource for English language learning (Aguagallo and Narváez, 2025) (3). The proposal sought to contribute to both cultural visibility and educational relevance by creating a digital space where local knowledge can be organized, represented, and accessed in a structured and meaningful way. Furthermore, it positions English not merely as a subject of study but as a communicative medium through which cultural identity can be expressed and shared.

To meet this objective, the article is organized in several sections. It begins with the theoretical foundations that support the integration of digital platforms, cultural identity, and EFL learning. Then, it presents the methodological approach used in the design of the platform. After that, the results are described and discussed in relation to the study's aims and existing literature. Finally, the article concludes by outlining its

ISSN:
3091-1796
Vol. 4 No. 9 PP. 47-64

DOI:
https://doi.org/10.56519/rdbet688
Mayo 2026

main contributions, recognizing its limitations, and suggesting directions for future research.

Digital platforms and territorial dissemination

Digital platforms are often defined as technological tools designed to store, organize, and disseminate information. However, such a functional definition proves insufficient when applied to rural contexts, where digital environments do not merely transmit information but actively shape the ways in which cultural meaning is constructed, represented, and interpreted. From this perspective, digital platforms can be understood as spaces that mediate how cultural narratives are presented. They do not only transmit information; they shape it through processes of selection, organization, and, at times, simplification. As Ríos et al. (2021) (4) claim, web platforms settled in rural settings should not be considered third-party channels, but rather scenarios where cultural narratives happen, evolve, and transform society (p. 125).

In this sense, it is highlighted the need to address digital transmission particularly in specific territories or contexts. If Latin American Andean rural scenarios are analyzed, often digital narratives overemphasize exposure instead of symbolism. Numbers in online presence may enhance visual range, but do not guarantee the authenticity or integrity of such narratives. As Paredes and Cuesta (2018) (5) highlight, several community-based tourism practices fail since the strategies behind digital promotion show external narratives that local people do not consider as part of their identity (p. 52).

This limitation reveals that dissemination, when detached from local epistemologies, can lead to forms of symbolic displacement. In consequence, the way in which content is organized, the cultural symbols are selected, and the narrative is structured become decisive factors in shaping how territories are perceived both internally and externally.

Under these notions, territorial dissemination should not be reduced to simply uploading content online. Rather, it needs to be understood as a deliberate and organized process that brings together culturally meaningful narratives capable of reflecting the complexity of local identities (Narváez et al., 2026) (6). In this line, the Ministry of Tourism of Ecuador (2020) states that sustainable tourism strategies are in charge of employing technological aids that respect both cultural identity and local involvement (p. 34). In concordance with this principle, the present study proposes a platform design that recognizes and preserves the unique identity of each parish, instead of relying on homogenizing or standardized representations. This approach seeks to maintain the internal coherence of cultural systems while making it more accessible and visible within digital environments.

Cultural identity and symbolic construction in digital contexts

Cultural identity is widely understood as a dynamic and socially constructed process, shaped through interaction, shared meanings, and collective practices. From the standpoint of symbolic interactionism, meaning is not something inherent to objects or practices; rather, it emerges through social interaction. As Blumer (1969) (7) explains, “human beings act toward things on the basis of the meanings that the things have for

ISSN:
3091-1796
Vol. 4 No. 9 PP. 47-64

DOI:
https://doi.org/10.56519/rdbet688
Mayo 2026

them" (p. 2). These meanings are formed within particular situations and can change over time. Although this perspective was developed before the rise of digital environments, it still helps to explain how cultural identity is expressed in online spaces.

When cultural elements such as rituals, agricultural practices, or festivities appear on digital platforms, they tend to be reinterpreted. This process is not always consistent. In some cases, it helps maintain their original meaning, while in others it can lead to simplification or distortion. Paredes and Cuesta (2018) (5) note that "the digital exposure of cultural practices without contextual explanation risks reducing them to visual consumption" (p. 49). This highlights a key concern: visibility alone does not guarantee that meaning and context are preserved.

In this study, cultural identity is not treated as a fixed trait, but rather as a way to guide how content is organized. Cultural elements are not presented as isolated or purely aesthetic units. Instead, the platform brings them together as interconnected practices within broader social and symbolic systems. Agriculture, gastronomy, rituals, and festivities are therefore approached as relational components that collectively construct meaning. This perspective is consistent with Blumer's (1969) (7) assertion that meaning cannot be detached from the contexts in which it is produced and interpreted. By preserving these relationships, the platform seeks to maintain the integrity of cultural representation while adapting it to digital formats.

English as a foreign language and contextualized learning

In many rural educational contexts, English as a Foreign Language (EFL) has traditionally been introduced as an external academic requirement, often disconnected from learners' sociocultural realities. This approach tends to limit the communicative potential of the language, positioning it as an abstract system rather than a meaningful tool for interaction. As a result, learning processes frequently become mechanical, centered on memorization rather than comprehension and application.

Culturally responsive pedagogy offers an alternative framework by emphasizing the integration of students' cultural backgrounds into the learning process. Gay (2018) (8) argues that "when academic content is disconnected from students' cultural experiences, learning becomes mechanical and disengaging" (p. 32). Conversely, when learners are able to relate language to their own contexts, learning becomes more meaningful and effective. In this regard, Gay (2018) (8) further explains that "students learn best when they are able to use language to describe, interpret, and value their own cultural realities" (p. 36).

This perspective is particularly relevant in rural contexts, where local knowledge, traditions, and practices offer rich opportunities for contextualized language use. Empirical evidence from Ecuador supports this view. Ríos et al. (2021) (9) report that "students show higher motivation and vocabulary retention when English is used to narrate local cultural practices rather than decontextualized topics" (p. 131). These findings reinforce the importance of aligning language instruction with learners' lived experiences.

ISSN:
3091-1796
Vol. 4 No. 9 PP. 47-64

DOI:
https://doi.org/10.56519/rdbet688
Mayo 2026

Under this approach, concepts surrounding the English language suggest that it functions as a vital tool, given that it is a universal language helpful to disseminate cultural elements, by means of local content and meaningful learning activities that facilitate engagement with the language as well as the global scope of culture. This shift redefines the role of English from an external requirement to an instrument for expressing and sharing cultural identity.

Social constructivism and interactive learning environments

Social constructivism offers a solid framework for understanding learning as a process shaped by social interaction and cultural context. Vygotsky (1978) (10) highlights this idea by noting that "learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment" (p. 90). Although this perspective was originally developed in face-to-face settings, its principles can be extended to digital environments, where interaction takes place through multimedia resources, symbolic representations, and user engagement.

However, simply incorporating interactive elements does not necessarily lead to meaningful learning. What truly matters is how information is organized and presented. Paas and Sweller (2014) (1) point out that "instructional designs that overload learners with multimedia elements can hinder rather than support learning" (p. 28). This reinforces the need to carefully manage cognitive load when designing digital platforms.

With this in mind, the platform proposed in this study follows a clear and structured organization of content. Interactive features, such as maps, image galleries, and audio descriptions, are included in a selective way, ensuring that they support understanding rather than distract from it. This approach reflects a deliberate pedagogical choice that prioritizes clarity, coherence, and usability, where interaction serves as a means to enhance learning rather than an end in itself.

Gamification and digital engagement: A critical perspective

Gamification has been widely promoted as a strategy to increase user engagement in digital and educational environments. While it can enhance motivation, its effectiveness depends on how it is implemented. This study approaches gamification from a critical perspective, acknowledging that not every form of engagement necessarily leads to meaningful learning. As Paas and Sweller (2014) (1) state, "engagement should not be confused with learning effectiveness" (p. 31). It is essential to understand the consequences of abusing reward or competition-based dynamics, as this leads to superficiality and diminishes the value of the content. In cultural contexts, this is especially problematic, as it can lead to the simplification of practices with deeper meaning.

Considering this aspect, the platform does not allow competition or rewards to be the central focus; instead it includes interactive elements, such as exploration tools that encourage users to engage with cultural content in a culturally meaningful way. This approach seeks to balance engagement with depth, ensuring that interaction supports both learning and cultural understanding.

ISSN:
3091-1796
Vol. 4 No. 9 PP. 47-64

DOI:
https://doi.org/10.56519/rdbet688
Mayo 2026

MATERIALS AND METHODS

Research design

This study adopts a mixed-methods approach with a predominantly qualitative orientation, complemented by quantitative elements to support the systematic organization and structuring of digital content. Mixed-methods research is defined as an approach that integrates qualitative and quantitative data to provide a clearer understanding of a research problem (Creswell, 2009) (11). This study integrated both approaches in order to support the examination of cultural implications; simultaneously, this data guided the design of the digital platform created to disseminate the heritage of Guano's parishes.

The research combines descriptive and propositional design. In a first approach, the descriptive component focuses on characterizing the cultural, touristic and socioeconomic features of the nine rural parishes of Guano, comprising traditions, festivities, symbolic elements and productive practices such as agriculture and livestock farming. This stage does not seek to manipulate variables but rather to systematize and interpret existing information in order to understand the current state of cultural dissemination in these territories.

At the same time, the study is propositional in nature, as it advances a concrete solution to the identified problem: the limited and fragmented digital dissemination of rural cultural heritage. In this sense, the design and development of an interactive web platform is conceived as a practical and context-sensitive response, grounded in prior analysis and supported by theoretical frameworks related to digital environments, cultural identity, and educational technology (Hernández-Sampieri et al., 2014) (12).

Context of the study

This study was carried out in the canton of Guano, in the province of Chimborazo, Ecuador and focused on the nine rural parishes: San Andrés, La Providencia, Ilapo, Santa Fé de Galán, San José de Chazo, Guanando, San Gerardo, San Isidro, and Valparaíso.

These parishes share a strong cultural identity shaped by Andean traditions, agricultural practices, communal organization, and local knowledge systems. Despite this richness, their presence in digital environments is still limited, fragmented, or informal, which restricts and reduces opportunities for cultural and touristic dissemination.

The study was conducted within the framework of the formative research project "English Teaching for Cultural Identity Project (ECIC)", developed during the 2025-2S academic period at Universidad Nacional de Chimborazo (UNACH). This project provided an academic and contextual foundation for gathering and organizing the information used in the study.

Data collection techniques and instruments

Data collection was primarily conducted through documentary analysis and structured observation.

Documentary analysis included the review of:

ISSN:
3091-1796
Vol. 4 No. 9 PP. 47-64

DOI:
https://doi.org/10.56519/rdbet688
Mayo 2026

Academic literature related to cultural identity, digital dissemination, and EFL learning

Institutional documents and governmental reports

Official websites and digital platforms associated with the rural parishes

This technique allowed for the identification and systematization of relevant cultural, touristic, and socioeconomic information.

In addition, structured observation was applied to identify and categorize key cultural elements, including traditions, festivities, productive activities, and symbolic practices. This process made it possible to organize the content into thematic categories that reflect the identity of each parish.

As part of the methodological process, a digital design instrument was incorporated through the development of a prototype web platform using Odoo. This tool enabled the structured organization of information, the creation of interactive sections, and the integration of multimedia and navigational elements. The platform itself functioned as both an instrument and an outcome of the research.

Data analysis

The study employed both qualitative and quantitative strategies for data analysis. Qualitative data were analyzed using an inductive thematic approach, allowing for the identification of recurring patterns and categories related to cultural identity, heritage, and territorial representation. This process involved the classification and interpretation of information gathered from documentary sources and observations.

Quantitative elements were incorporated through descriptive analysis, focusing on the structural organization of the platform. This included criteria such as:

Logical hierarchy of information

Usability and navigation structure

Distribution of content across sections

Integration of multimedia elements

Rather than statistical inference, the quantitative component supported the evaluation of the platform's design in terms of clarity, accessibility, and coherence.

Procedure

The methodological process was carried out in four interconnected stages: the study began by identifying a central issue, the limited and fragmented dissemination of cultural and touristic information across the rural parishes of Guano. This initial step helped define the focus and direction of the research.

Next, relevant information was gathered from both documentary and digital sources. This material was then carefully organized and classified into thematic areas such as: culture, tourism, production, and territorial identity, allowing for a clear understanding of each parish.

ISSN:
3091-1796
Vol. 4 No. 9 PP. 47-64

DOI:
https://doi.org/10.56519/rdbet688
Mayo 2026

The third stage consisted of the development of the interactive web platform using Odoo as a digital tool. The platform was divided into sections and an easy-to-use interface to navigate throughout the website. The key characteristic of each section included image galleries, maps of each parish, links to official parish social media and official websites. Additionally, the website presents an interactive section made by elements of gamification to combine both exploration and engagement.

Finally, the content was reviewed to ensure coherence, accuracy, and consistency throughout the platform. This stage aimed to guarantee that the cultural identity of each parish was represented in a respectful, organized, and meaningful manner.

Validity and reliability

The validity of the study was ensured through data triangulation, combining multiple documentary sources, institutional materials, and digital records. This approach strengthened the credibility of the information and minimized bias derived from single-source data.

Reliability was addressed through a process that included systematic review, data collection, and analysis. Furthermore, categorization criteria and a structured organization of the website content were implemented. Finally, the use of an organized digital platform contributed to ensuring consistency in the presentation of information. Throughout the study, academic thoroughness was maintained to clearly define research procedures in order to ensure transparency at every stage of the process.

Rather than aiming for statistical generalization, the study seeks to offer a context-sensitive and replicable model that can support cultural dissemination and contextualized EFL learning in rural settings.

RESULTS

The findings of this study indicate that the design and implementation of an interactive web platform constitute a contextually grounded and pedagogically meaningful strategy for the cultural, touristic, and socioeconomic dissemination of the rural parishes of the canton of Guano. Results compilation was carried out through qualitative examination, focused mainly on quantitative parameters that strengthen the categorization and analysis of data.

Throughout the data-driven analysis, it was revealed that there is a strong cultural consistency surrounding the Guano rural parishes, which is heavily manifested across several emblematic practices. Following this line of thinking, cultural identification could not be seen merely as a combination of individual elements, but rather as a solid structure involving vital items such as agricultural practices, cultural ceremonies, collaborative traditions, and gastronomy, that best reflect their interrelation.

This interpretation is consistent with the principles of symbolic interactionism, which understand meaning as something constructed through social interaction and shaped by specific contexts (Blumer, 1969).

ISSN:
3091-1796
Vol. 4 No. 9 PP. 47-64

DOI:
https://doi.org/10.56519/rdbet688
Mayo 2026

The thematic analysis led to the identification of key cultural categories, which are summarized in Table 1.

Table 1. Thematic categories identified across parishes

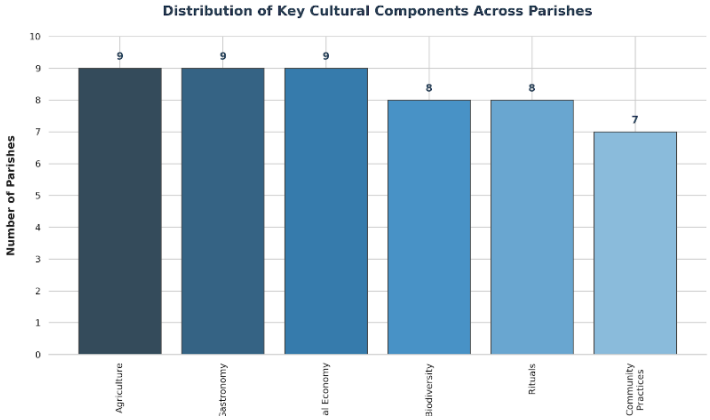
Thematic Category	Description	Presence Across Parishes
Ancestral Agriculture	Traditional practices, especially corn cultivation	9/9 (100%)
Biodiversity (Páramo)	Flora and fauna linked to highland ecosystems	8/9 (88.9%)
Rituals and Festivities	Religious and cultural celebrations	8/9 (88.9%)
Traditional Gastronomy	Local food practices and products	9/9 (100%)
Community Practices (Mingas)	Collective work and social organization	7/9 (77.8%)
Local Economy	Agriculture, trade, and small-scale production	9/9 (100%)

Source: Elaborated by the authors.

As shown in Table 1, agriculture and gastronomy are present in all parishes, confirming their central role in both cultural identity and local economies. Meanwhile, biodiversity and ritual practices, although slightly less widespread, remain highly representative. These findings reinforce the existence of a shared cultural structure with localized expressions, rather than fragmented or isolated identities.

To counterpart this explanation, Figure 1 illustrates the distribution of the main cultural elements across the parishes.

Figure 1. Distribution of key cultural components across parishes



Source: Elaborated by the authors.

Figure 1 shows how the main cultural components are distributed across the nine rural parishes. Elements such as agriculture, gastronomy, and local economy appear constantly in all cases, while aspects like biodiversity and communal practices present slight variations. The idea of each parish presenting individual biodiversity within the canton is strengthened by the previous mentioned concept: cultural consistency.

These conceptions highly contributed to the structurization of the webpage. Starting by how the information was categorized into structured sections, considering essential cultural aspects, then followed by easy-to-follow and contextualized content. The web platform presents content in an innovative way, blending cultural elements and providing an integrated perspective of territorial belonging.

Figure 2. Screenshot of the platform

ISSN:
3091-1796
Vol. 4 No. 9 PP. 47-64

DOI:
https://doi.org/10.56519/rdbet688
Mayo 2026



Source: Elaborated by the authors.

Link of the platform: https://guanoparishes.odoo.com/

From a functional perspective, the platform incorporates a structured and hierarchical organization, facilitating navigation and user comprehension. The main components and their pedagogical functions are presented in Table 2.

Table 2. Digital platform functional structure

Component	Description	Pedagogical Function
Interactive Maps	Geographic visualization of parishes	Spatial understanding
Image Galleries	Visual representation of culture	Cultural recognition
Audio Descriptions	Narratives in English and Spanish	Listening comprehension
Thematic Sections	Organized cultural categories	Structured learning
External Links	Connection to official parish sources	Information expansion

Source: Elaborated by the authors.

As Table 2 states, the meticulous selection of each digitized item provides a particular didactic aim which interconnects language learning and cultural diffusion. The particular structure of the website highlights the conceptions of Cognitive Load Theory, emphasizing the challenge to display information in an understandable and objective manner (Paas & Sweller, 2014). The page was specifically designed under the Germane Cognitive Load type since it focuses on how the web's content is transferred from temporary information to long-lasting knowledge that will prevail and take importance for each user.

Quantitatively speaking, the whole website incorporates 80% of audiovisual materials, which reinforces the concept of a structured platform.

A significant qualitative outcome of the study is the role of the platform as a mediating tool for contextualized English language learning. English is embedded within culturally relevant content, allowing users to interact with vocabulary and expressions linked to their own realities. This approach aligns with culturally responsive pedagogy, which highlights the importance of connecting learning to students' cultural contexts (Gay, 2018).

Furthermore, the website highlights the viability in terms of technology since it allows access from any technological device such as cellphones, tablets, or computers. This aspect diversifies its capability of reaching both urban and rural scenarios. With its easy-to-use interface, the designed platform promotes exploration as well as low cognitive load, which enhances the user-platform interaction.

ISSN:
3091-1796
Vol. 4 No. 9 PP. 47-64

DOI:
https://doi.org/10.56519/rdbet688
Mayo 2026

Qualitative aspects surrounding this insight were validated by local communities, which included parish representatives that considered the website a constructive and significant instrument to spotlight culture and identity. Participants emphasized its role in promoting intergenerational knowledge transmission, transforming local practices into structured digital content while preserving their symbolic meaning.

Table 3 presents a synthesis of the cultural and socioeconomic approaches identified for each parish.

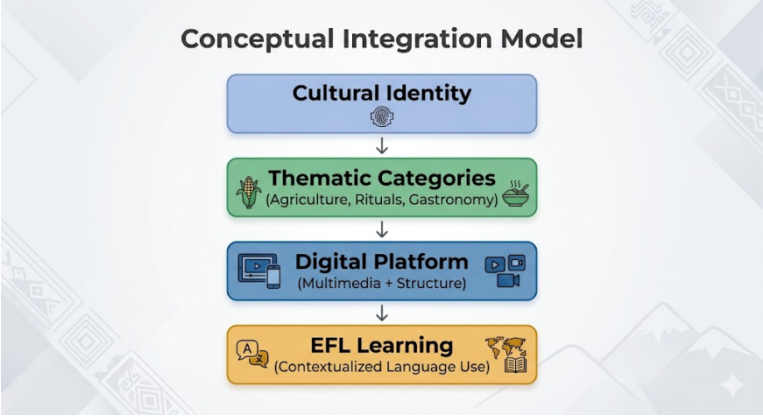
Table 3. Cultural and socioeconomic approach by parish

Parish	Main Cultural-Socioeconomic Focus
San Andrés	Hiking, Andean forests, potato and barley agriculture
San Isidro	Corn-based traditions, beverages (chicha, morocho), festivities
Ilapo	Ecotourism, medicinal plants, quinoa production
San Gerardo	Communal work (mingas), agriculture, local narratives
Guanando	Harvest traditions, corn festivals, agricultural trade
San José de Chazo	Symbolic importance of corn, community tourism
Santa Fé de Galán	Syncretic festivals, gastronomy, diverse agriculture
La Providencia	Rural tourism routes, gastronomy, livestock
Valparaíso	Páramo landscapes, agriculture, wine and strawberry production

Source: Elaborated by the authors.

Finally, Figure 3 presents a conceptual model that synthesizes the integration of cultural identity, digital platform design, and contextualized EFL learning.

Figure 3. Conceptual integration model



Source: Elaborated by the authors.

Figure 3 illustrates the relationship between cultural identity (expressed through thematic categories such as agriculture, rituals, and gastronomy), the digital platform (structured through multimedia and interactive design), and English language learning (as a contextualized communicative tool). This model highlights the integrative nature of the proposal.

Overall, the results demonstrate that the platform does not function merely as a repository of information but as a structured, pedagogically oriented environment that connects cultural representation with language learning and digital accessibility.

DISCUSSION

ISSN:
3091-1796
Vol. 4 No. 9 PP. 47-64

DOI:
https://doi.org/10.56519/rdbet688
Mayo 2026

The findings of this study suggest that the design of an interactive web platform constitutes a contextually relevant response to the need for structured cultural dissemination in rural territories, while simultaneously supporting meaningful and contextualized English language learning. Consistent with the results, the platform does not operate merely as a repository of information but as an integrative environment where cultural identity, digital representation, and language use converge.

This convergence highlights how cultural coherence co-exists among the rural parishes of Guano with specific items, which include ceremonies, community practices, cultural variety, and agricultural practices that form a whole system with several variations. Descriptively speaking, agricultural practices are present in each rural parish without exception, being the corn plantation and the shared communal activities the basis for the complementation of quantitative insights.

These findings are consistent with the idea that cultural identity is not made up of isolated elements, but rather emerges from the relationship between interconnected practices (Blumer, 1969) (13). In this sense, organizing the platform around thematic categories helps preserve these connections, avoiding the fragmentation often seen in digital representations of rural contexts.

Similarly, this design aligns with culturally responsive teaching. As Gay (2018) (8) suggests, learning becomes more meaningful when it connects with students' cultural experiences. In this case, English is embedded within culturally relevant content, allowing users to engage with language through familiar contexts. This shifts the focus from abstract language learning to a more contextualized use of English as a tool of communication and cultural expression.

These results also resonate with recent studies in EFL contexts. As Samiei and Ebadi (2021) (14) suggest, learners are demonstrated to have higher comprehension levels and the willingness to learn when they are exposed to technology-supported learning environments and contextualized pedagogical activities. Following the same line of research, the study conducted by Ali et al. (2022) (15) claims that there is a positive outcome between the combination of authentic content and didactic structures as they provide a motivational environment and meaningful learning. This research supports heavily the present study as there is a relationship between rural Andean scenarios and contextualized learning of cultural identity.

From the constructivist approach, the website offers a holistic perspective about active and co-constructed learning. Vygotsky (1978) (10) claims that there is a strong need of situating the learner in content-rich environments that facilitate their learning. Nevertheless, Gruenewald (2003) (16) states the importance of integrating authentic academic scenarios with social context. In this sense, the web platform emphasizes the need to explore context-rich content related to Andean areas in terms of agriculture, cultural diversity, and community practices, through the English language in order to expand the scope of learning and transform it to meaningful learning.

With this consideration, it is essential to highlight how the pre-analysis in the creation of the platform influenced its outcomes. The platform is an interconnected and structured network of cultural elements, which employs more than 80% of multimedia

ISSN:
3091-1796
Vol. 4 No. 9 PP. 47-64

DOI:
https://doi.org/10.56519/rdbet688
Mayo 2026

resources to maintain a balance between Cognitive Load Theory and the diffusion of content, suggesting low cognitive load and better information retention (Paas & Sweller, 2014) (1). The ultimate purpose of the website is to show clear and concise organization, technological interaction, and coherence between sections.

The study involves not merely the cultural aspects of the rural parishes, but the social impact of it. With the feedback obtained from parish representatives, it can be suggested that the website holds a strong potential as it represents genuinely their cultural identity, their preservation of information, and the transmission to future generations. With this finding in mind, digital diffusion of cultural heritage happens not only through community unity, but under principles of sustainability and legitimacy, as Hidayah et al. (2025) (17) exposed. For that reason, the website clearly transmits the information by promoting preservation and recontextualization of local knowledge.

However, it is important to manifest that these findings should be understood within the scope of the study. While the results point to a strong potential in both educational and cultural terms, the research remains primarily descriptive and propositional. For this reason, any implications related to language learning outcomes are better seen as theoretically grounded projections rather than direct measured effects. In this sense, future lines of research can be developed under this study by implementing quasi-experimental or experimental designs in order to probe the impact that the website holds in areas such as effective communication, literacy proficiency, and vocabulary development.

Ultimately, the research study derives future discussions on how to merge three main aspects: language learning, culture, and technology, in rural scenarios. Exemplifying, the model applied in the creation of the platform can be adapted to similar contexts by contextualizing the learning and preserving the cultural identity. In this sense, technology is not treated as an end in itself, but as a mediating tool that, when grounded in local realities, can enhance both educational relevance and cultural visibility.

CONCLUSIONS

The main aim of this study was to design an interactive web platform for the dissemination of the cultural, touristic, and socioeconomic heritage of the rural parishes of the canton of Guano, while simultaneously articulating it as a micro-curricular resource for English as a Foreign Language (EFL) learning within a rural Andean context.

Based on the findings, the proposed platform can be understood as a contextually grounded digital resource with academic, social, and touristic value. With the structuration, the complete free access, and employment of audiovisual materials, the knowledge is presented in an organized, coherent, and accessible way.

Similarly, it involves the English language as a functional tool that engages users into cultural-rich content and foreign language learning. With that consideration in mind, English is not seen as a solely language system, but as a diffusional instrument of culture that is responded by pedagogical-rich approaches.

ISSN:
3091-1796
Vol. 4 No. 9 PP. 47-64

DOI:
https://doi.org/10.56519/rdbet688
Mayo 2026

Obtained results show biocultural fundamentals present in the rural parishes of Guano and its connection with Andean elements, including biodiversity, agricultural practices, specifically those based on corn plantation, community practices, and local festivities. Through the qualitative analysis and descriptive indicators, it can be suggested that there is indeed a consistent territorial identity which safeguards local variations.

Furthermore, each one of the parishes holds distinctive touristic and cultural elements which reinforces the idea of a territorial diversity. For instance, the well-known mountain-based activities such as hiking or ecological routes are characteristic in San Andrés and Ilapo, agrotourism present in Guanando and San Isidro, sustainable tourism seen in San Gerardo, San José del Chazo, La Providencia, and Santa Fé de Galán, and finally, production systems obtained from páramo-based landscapes in Valparaíso. Each parish profile is represented in the platform as a way of strengthening cultural presence to expand culture in broader scenarios and promote tourism.

The most significant insight present in the study involves the recontextualization of the English language, that most of the time is considered merely as a subject in the academic field instead of a diffusional aid. The website presents a new concept of how language should be taught assisted by the implementation of micro-curricular resources and integrated simultaneously with context-rich scenarios, so that learners associate and reflect their own sociocultural environment. The model adopted in the platform can be adapted to similar rural settings who are concerned with educating through identity value and language learning.

In the pedagogical area, the website acts as a support tool for teaching in EFL classrooms, specifically in rural environments where most of the time the information is presented under a traditional approach, lacking of cultural relevance. The areas of improvement present in the platform include vocabulary development under real-word scenarios, strengthening of sense of belonging to a specific territory, and user engagement.

The future scope of research may focus its studies in the particularity of integrating technology in low-connectivity settings by creating modalities of education that include hybrid or offline versions of the platform, and alternative techniques of assessment to promote deeper understanding of both the user's educational and personal experience. In sum, the present study represents the initial step toward the integration of technology, language education in rural settings, and sense of belonging, emphasizing the necessity to strengthen cultural diffusion and learning dynamics.

Ethical consideration

The research was carried out following protocols previously established in the academic research. Since the study is a digital-based and documentary research, the compiled information was obtained through trustworthy sources that ensure the information complies with legal and ethical requirements. There was not a compilation of sensitive or personal data towards the study. The content present in the website was reviewed beforehand by parish representatives in order to get validation and accuracy in terms of cultural appropriateness.

The researchers declare that there are no conflicts of interest since the study has not received external funding and has been developed in accordance with the activities proposed during the 2025-2S academic period at the Universidad Nacional de Chimborazo (UNACH).

The use of Artificial Intelligence tools was measured and done merely when needed to support the academic writing quality and generation of certain features present in the platform such as images. Every result given by the artificial intelligence tools was carefully analyzed and validated by each of the authors.

REFERENCES

1. Paas, F., & Sweller, J. (2014). Implications of cognitive load theory for multimedia learning. In R. E. Mayer (Ed.), The Cambridge handbook of multimedia learning (2nd ed., pp. 27–42). Cambridge University Press. https://doi.org/10.1017/CBO9781139547369.004

2. Narváez Vilema, C. A., Cadena Figueroa, M. N., Lara Velarde, A. C., & Fierro López, D. V. (2023). PRÁCTICAS PREPROFESIONALES EN LA FORMACIÓN DOCENTE EN LENGUAS EXTRANJERAS: UN ABORDAJE CRÍTICO DESDE LOS TESTIMONIOS DE LOS DOCENTES EN FORMACIÓN. Chakiñan, Revista De Ciencias Sociales Y Humanidades, 22, 100-112. https://doi.org/10.37135/chk.002.22.06

3. Aguagallo Cali, G., & Narváez Vilema, C. (2025). FOSTERING CULTURAL IDENTITY IN ENGLISH LANGUAGE LEARNING THROUGH TARGETED MICRO-CURRICULAR RESOURCES. Chakiñan, Revista De Ciencias Sociales Y Humanidades, 28, 163-182. https://doi.org/10.37135/chk.002.28.08

4. Ríos, J., Erazo, J., & Guamán, V. (2021). Plataformas digitales para la difusión cultural y turística en comunidades rurales del Ecuador. Dominio de las Ciencias, 7(3), 120–138. https://doi.org/10.23857/dc.v7i3.1964

5. Paredes, M., & Cuesta, F. (2018). Turismo comunitario en los Andes ecuatorianos: desafíos y oportunidades. Revista de Estudios Andinos, 12(2), 45–63.

6. Narváez-Vilema, C., Castro-Baños, J., Basantes-Arias, E., & Herrera-Vallejo, J. (2026). Repensando la enseñanza del inglés: Una propuesta desde la complejidad y la pedagogía crítica. EDUCA. Revista Internacional Para La Calidad Educativa, 6(1), 1-19. https://doi.org/10.55040/90yqfa68

7. Blumer, H. (1969). Symbolic interactionism: Perspective and method. University of California Press. https://doi.org/10.1525/9780520339193

8. Gay, G. (2018). Culturally responsive teaching: Theory, research, and practice (3rd ed.). Teachers College Press.

9. Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. Harvard University Press.

10. Creswell, J. W. (2009). Research design: Qualitative, quantitative, and mixed methods approaches (3rd ed.). SAGE Publications.

11. Hernández-Sampieri, R., Fernández-Collado, C., & Baptista-Lucio, P. (2014). Metodología de la investigación (6th ed.). McGraw-Hill Education.

ISSN:
3091-1796
Vol. 4 No. 9 PP. 47-64

DOI:
https://doi.org/10.56519/rdbet688
Mayo 2026

12. Gruenewald, D. A. (2003). The best of both worlds: A critical pedagogy of place. Educational Researcher, 32(4), 3–12. https://doi.org/10.3102/0013189X032004003

13. Clark, Chad & Kimmons, Royce. (2023). Cognitive Load Theory. EdTechnica. https://doi.org/10.59668/371.12980

14. Ministerio de Turismo del Ecuador. (2020). Plan estratégico de turismo sostenible 2020–2030. https://www.turismo.gob.ec

ISSN:
3091-1796
Vol. 4 No. 9 PP. 65-74

DOI:
https://doi.org/10.56519/5wxahf27
Mayo 2026

TRANSFORMACIÓN DEL APRENDIZAJE ANATÓMICO MEDIANTE LA IMPLEMENTACIÓN DE LA TECNOLOGÍA ANATOMAGE

REDEFINING ANATOMY EDUCATION THROUGH THE INTEGRATION OF ANATOMAGE TECHNOLOGY

Andrea Stefania Pinzón Perez[1], Johana Estefania Orna Quintanilla[2], Cristina Anahí Mantilla Pazmiño[3], Carlos Javier Miño Acurio[4], Estalin José Romero Morales[5]
{apinzon@pucesa.edu.ec1, jorna@pucesa.edu.ec2, cmantilla@pucesa.edu.ec3, cmino@pucesa.edu.ec4, estalinromero@uti.edu.ec5}
Fecha de recepción: 12/02/2026 / Fecha de aceptación: 21/04/2026 / Fecha de publicación: 12/05/2026

RESUMEN: La enseñanza de la anatomía en medicina requiere estrategias que faciliten la comprensión estructural y la aplicación clínica del conocimiento. En este contexto, el presente estudio tuvo como objetivo analizar los efectos académicos de integrar la tecnología Anatomage en el proceso formativo de estudiantes de Medicina. Se desarrolló un diseño cuantitativo con evaluación antes y después de la intervención, incorporando análisis estadístico de desempeño y medición de percepción estudiantil. La intervención se implementó durante cuatro semanas mediante actividades de exploración anatómica tridimensional y trabajo colaborativo orientado a la correlación morfofuncional. Los resultados evidenciaron mejoras en el rendimiento académico y en la precisión para identificar relaciones espaciales complejas. En la discusión se interpreta que el uso sistemático de visualización digital favorece la construcción activa del conocimiento. Se recomienda integrar tecnologías anatómicas interactivas como complemento estructural en los programas de ciencias de la salud.

Palabras clave: *Simulación anatómica digital, competencias espaciales, aprendizaje aplicado*

ABSTRACT: Anatomy education in medical training requires instructional approaches that enhance structural comprehension and support the clinical application of knowledge. Within this framework, the present study aimed to examine the academic effects of integrating Anatomage technology into the educational process of medical students. A quantitative design was employed, incorporating pre- and post-intervention assessments, statistical performance analysis, and evaluation of student perceptions. The four-week intervention involved three-dimensional anatomical exploration and collaborative activities focused on morphofunctional correlation. The findings demonstrated improvements in academic performance and increased accuracy in identifying complex spatial relationships. The discussion suggests that systematic use of digital visualization promotes active knowledge construction and deeper conceptual understanding. It is recommended that interactive anatomical technologies be incorporated as a structural complement within health sciences curricula to strengthen competency-based medical education.

Keywords: *digital anatomical simulation, spatial competencies, applied learning*

1 Pontificia Universidad Católica del Ecuador-Sede Ambato, Ecuador, https://orcid.org/0009-0004-2541-4610.
2 Pontificia Universidad Católica del Ecuador-Sede Ambato, Ecuador, https://orcid.org/0000-0003-1910-8049.
3 Pontificia Universidad Católica del Ecuador-Sede Ambato, Ecuador, http://orcid.org/0000-0001-7443-3683.
4 Pontificia Universidad Católica del Ecuador-Sede Ambato, Ecuador, https://orcid.org/0000-0001-8877-4059.

English translation of the original article published in Ecuacientífica, Vol. 4, No. 9, pp. 65-74.

ISSN:
3091-1796
Vol. 4 No. 9 PP. 65-74

DOI:
https://doi.org/10.56519/5wxahf27
Mayo 2026

5 Universidad Tecnológica Indoamérica, Ambato, Tungurahua, Ecuador, https://orcid.org/0009-0000-0334-9863.

INTRODUCTION

In recent years, technological transformations have profoundly impacted multiple fields, and education has not been the exception (1). Educational institutions, particularly those centered on the health sciences, face growing challenges to remain aligned with technological advances and satisfy the educational demands of future professionals (2).

Historically, the teaching of anatomy has been based on the dissection of cadavers, physical models and textbooks. During centuries, dissection was considered the gold standard. However, access to cadavers has been restricted for ethical and legal reasons (4,13, 17). In addition, traditional resources usually offer two-dimensional representations that limit spatial comprehension. According to (18), traditional teaching tends to be passive, which reduces student participation and can lead to superficial learning. This has driven the search for more dynamic methods that promote active participation, spatial visualization and practical application of knowledge (19).

The field of the health sciences benefits especially from these innovations owing to the complexity of the content that must be imparted (3). One of the most representative examples is the teaching of anatomy, which is a crucial discipline in the formation of future physicians, since it provides the fundamental knowledge necessary to understand the spatial relations among the organs, tissues and systems of the human body.

Developing the capacity to visualize these structures in three dimensions is essential to develop posterior clinical skills in the medical career. However, achieving this through static means, such as two-dimensional images or limited physical models, can be a challenge (5).

This situation has driven educational institutions to explore alternative methods that can replicate the experience of dissection in virtual or digital formats (6). Another important challenge is the motivation of the students, which often diminishes when they face very abstract content and with high density of information. Anatomy, as a discipline that demands both memorization and comprehension, requires pedagogical strategies that actively involve the students and stimulate their participation during the entire learning process (7).

The integration of interactive technologies in the teaching of anatomy has become an essential tool to overcome the limitations of traditional methods (8). These technologies respond to the growing demand for dynamic and attractive learning environments, and align with the changing needs of medical education upon preparing the students for real clinical practice (9).

Among the most innovative and effective tools are found augmented reality (AR), virtual reality (VR), anatomical simulators and interactive tables. Virtual reality permits the students to enter completely digital environments and explore complex structures from the interior. On its part, augmented reality superimposes digital content on the real environment, permitting visualizing anatomical models through mobile devices or specialized glasses (10).

ISSN: 3091-1796
Vol. 4 No. 9 PP. 65-74
DOI: https://doi.org/10.56519/5wxahf27
Mayo 2026

Anatomical simulators offer practical experiences that imitate real situations. For example, the simulators of virtual cadavers permit practicing dissections on digital models that reproduce human anatomical variability (11).

Among the most sophisticated tools stands out the interactive Anatomage table. This technology presents three-dimensional anatomical models of high resolution obtained by means of computed tomography (CT) and magnetic resonance (MR). It permits realizing virtual dissections, rotating structures, amplifying specific details and exploring integrated clinical cases (12).

Likewise, the Anatomage table integrates interactive modules that link anatomy with clinical pathology. For example, the students can analyze how a tumor affects surrounding tissues or how a fracture alters muscular insertions, fostering critical thinking and the resolution of problems (14).

The teaching of anatomy is an essential component in the formation of students of health sciences, since it constitutes the base to understand physiology, pathology and clinical practice. From this formative vision augmented reality (AR) represents a highlighted advance in the educational ambit. For example, the applications of AR can project 3D models of organs or complete systems within the classroom, which permits the students to interact with them from distinct angles and in clinically relevant contexts (15).

This technology facilitates a better comprehension of the complex relations among the anatomical structures and their location within the human body, where the interactive Anatomage table has emerged as a highlighted resource that offers an immersive, detailed and adaptable experience to the needs of the student (16).

In change, virtual reality (VR) offers a completely immersive environment that permits interacting with detailed 3D models of anatomical structures. This technology permits that the students practice medical procedures in a safe form and repeat them as many times as necessary until reaching mastery (18).

Diverse studies have evaluated its implementation in different geographic contexts. In the United States they analyzed the incorporation of Anatomage as complement to traditional dissection and found that the students reported greater clarity in three-dimensional comprehension, although they emphasized that the tool results more effective when it is integrated within a structured pedagogical strategy and not as an isolated resource (20).

In this context, the objective of the present study is to analyze the academic effects of integrating Anatomage technology in the formative process of medical students.

MATERIALS AND METHODS

This investigation employed a quantitative and descriptive approach, by means of a pre-experimental design with measurements before and after the intervention. The purpose was to evaluate the impact of the interactive Anatomage table on the learning of anatomy through the implementation of an innovative educational strategy.

ISSN: 3091-1796
Vol. 4 No. 9 PP. 65-74
DOI: https://doi.org/10.56519/5wxahf27
Mayo 2026

The sample was conformed by 30 students of health sciences enrolled in the subject Morphofunction 1, selected by means of non-probabilistic sampling by convenience. All were taking the subject for the first time and belonged to the same academic cohort, which guaranteed homogeneous learning conditions. An innovative pedagogical strategy was designed integrating the Anatomage table as didactic resource. This tool permitted exploring the human body by means of 3D models, facilitating the comprehension of complex anatomical structures.

Several instruments were utilized to evaluate the impact of the educational strategy. In the first place, knowledge tests (pretest and posttest) composed of 20 multiple-choice questions with unique correct response were applied, oriented to evaluate anatomical identification, spatial relations and morphofunctional correlation.

The instrument was designed by the teaching team of the subject Morphofunction 1, considering the learning outcomes and the programmatic contents established. Subsequently, it was submitted to an internal academic revision by teachers with experience in anatomical teaching, who evaluated the clarity, pertinence and coherence of the items. The observations realized permitted optimizing the drafting and adjusting the level of complexity of some questions, assuring their alignment with the formative objectives of the course.

In order to evaluate the internal reliability of the instrument the Cronbach's Alpha coefficient was calculated from a pilot application realized with students of a previous course, obtaining a value of $\alpha = 0.82$, which indicates an adequate internal consistency for academic ends.

In addition, a satisfaction survey was applied at the end of the intervention, composed of five-point Likert-type items, oriented to evaluate perception of utility, visual clarity, motivation and support to learning. This instrument also was revised by the same experts to guarantee its content validity.

Finally, a structured checklist was employed to register levels of participation, interaction with the tool and performance during the practical sessions.

The results of the pretest and posttest were analyzed by means of t tests for related samples, with the aim of determining if there existed significant differences before and after the intervention. The responses of the satisfaction survey were analyzed in a descriptive form, contributing relevant information on the acceptance and the perception of the technological resource.

The intervention was carried out in three phases. In the first, the pretest was applied to evaluate the initial knowledge. In the second, during four weeks the educational strategy with the Anatomage table was implemented. In the third, the posttest was applied to evaluate the learning outcomes and the satisfaction surveys were collected.

The statistical analysis was realized utilizing the software SPSS. In order to compare the results obtained before and after the intervention the Student's t test for related samples was applied, given that the measurements corresponded to the same group of students evaluated in two distinct moments. This test was selected for treating of continuous quantitative data and for the intra-group character of the design. A level of statistical significance of $p < 0.05$ was established.

ISSN:
3091-1796
Vol. 4 No. 9 PP. 65-74

DOI:
https://doi.org/10.56519/5wxahf27
Mayo 2026

RESULTS

The analysis of results shows a positive impact of the educational strategy based on the use of the interactive Anatomage table on the learning and the levels of student satisfaction.

A t test for related samples was realized to compare the grades before and after the intervention. The mean of the pretest was of 6.5/10, which indicates a moderate comprehension of basic anatomical concepts. In this initial measurement, 7 of the 30 students reached or surpassed the threshold of approval established in 7/10.

In contrast, the mean of the posttest increased to 8.9/10, showing an important improvement of the performance. After the intervention, 27 students surpassed the threshold of approval, which reflects a considerable increment in the proportion of satisfactory performance within the group. The statistical analysis reported a value of $p < 0.05$, which confirms that the difference between pretest and posttest was significant.

Table 2. Results of the Pretest and Posttest

Students	Pretest Score	Posttest Score	Difference
1	7.0	8.9	1.9
2	6.4	10.0	3.6
3	7.1	9.5	2.4
4	8.0	9.6	1.6
5	6.3	9.4	3.1
6	6.3	7.7	1.4
7	8.1	10.0	1.9
8	7.3	8.1	0.8
9	6.0	7.3	1.3
10	7.0	9.6	2.6
11	6.0	9.0	3.0
12	6.0	8.5	2.5
13	6.7	9.0	2.3
14	4.6	6.8	2.2
15	4.8	6.0	1.2
16	5.9	7.7	1.8
17	5.5	7.5	2.0
18	6.8	10.0	3.2
19	5.6	8.3	2.7
20	5.1	6.1	1.0
21	8.0	10.0	2.0
22	6.3	8.4	2.1
23	6.6	8.5	1.9
24	5.1	8.0	2.9
25	6.0	9.2	3.2
26	6.6	9.7	3.1
27	5.3	7.0	1.7
28	6.9	9.1	2.2
29	5.9	8.6	2.7
30	6.2	9.4	3.2

Table 2 evidences a significant improvement in the student performance after the implementation of the new method. The increment of scores oscillated between 0.8 and 3.6 points, which demonstrates variability in the benefits obtained among the participants. These findings suggest that the educational intervention with the interactive Anatomage table was effective to improve the academic performance in the subject Morphofunction 1.

ISSN:
3091-1796
Vol. 4 No. 9 PP. 65-74

DOI:
https://doi.org/10.56519/5wxahf27
Mayo 2026

Results of the satisfaction survey

The results of the satisfaction survey show a high level of acceptance of the new teaching methodology.

Table 3. Summary of results of the satisfaction survey

Evaluated aspect	Percentage of acceptance
Percentage of acceptance	95%
Improvement in the comprehension of anatomical structures	90%
Development of skills of resolution of problems and team work	87%
Connection between theoretical concepts and practical applications	Highlighted by the students

Table 3 indicates in a complementary manner, the students highlighted that the proposal facilitated the articulation between the theoretical contents and their application in practical situations.

The checklist confirmed high levels of participation and commitment during the practical sessions. The students interacted actively with the 3D models, formulated questions and collaborated in an effective manner in group discussions. In addition, the use of clinical cases stimulated critical thinking and facilitated the application of the anatomical knowledge in real scenarios.

DISCUSSION

The findings of this study highlight the significant impact of the use of the interactive Anatomage table as educational strategy in anatomy. The results evidenced a clear improvement in the academic performance, reflected in the substantial increase of the evaluations from the pretest to the posttest (6.5/10 to 8.9/10). This improvement not only shows the effectiveness of the interactive table to facilitate the comprehension of complex anatomical structures, but also coincides with the existing literature, which backs the integration of technology in education to promote active learning.

These results are consistent with the literature that describes the interactive technologies as facilitators of active learning and the retention of knowledge (8,10). Diverse authors have signaled that three-dimensional digital visualization improves spatial comprehension and promotes a more significant construction of knowledge when it is integrated within a structured pedagogical strategy (9,12). In this sense, the Anatomage table not only acts as visual resource, but as didactic mediator that permits repeating virtual dissections, exploring structures from multiple planes and linking anatomical contents with clinical cases (12,14,20), which can explain the increment observed in the academic performance.

The results of satisfaction reinforce the good reception of this innovative methodology. With a 95% of students indicating that the Anatomage table made the learning more attractive and interactive, it is observed that the approach managed to capture the interest of the student body (13). In addition, the 90% reported that the 3D visualizations improved their comprehension, which suggests that the visual supports are especially relevant in subjects that require spatial comprehension.

In addition, the 90% reported that the 3D visualizations improved their comprehension, which suggests that the visual supports are especially relevant in subjects that require spatial comprehension (2).

ISSN:
3091-1796
Vol. 4 No. 9 PP. 65-74

DOI:
https://doi.org/10.56519/5wxahf27
Mayo 2026

CONCLUSIONS

The implementation of the interactive Anatomage table demonstrated to be an effective pedagogical strategy to strengthen anatomical learning in students of health sciences. The obtained results evidenced a significant increment in the academic performance, reflected in the increase of the mean of the posttest with respect to the pretest, as well as in the greater number of students who reached satisfactory levels of performance. These findings confirm that three-dimensional visualization and the digital exploration of the human body favor the comprehension of complex spatial relations and contribute to the development of anatomical competencies essential for medical formation.

Likewise, the integration of interactive technology promoted a more dynamic, participative and student-centered educational experience. The high levels of satisfaction reported evidence that the use of digital anatomical models increased the motivation, the interaction during the practical sessions and the capacity to relate theoretical contents with real clinical applications. The possibility of manipulating anatomical structures, realizing virtual dissections and analyzing clinical cases permitted strengthening active learning and critical thinking within the formative process.

Finally, it is concluded that the incorporation of tools such as Anatomage represents an innovative and complementary alternative to the traditional methods of teaching of anatomy. Its implementation does not intend to replace completely the conventional strategies, but to enrich them by means of technological resources that potentiate the morphofunctional comprehension and the significant construction of knowledge. In this sense, it is recommended that the institutions of higher education integrate progressively digital anatomical technologies within their academic programs, promoting educational models oriented to the development of clinical, spatial and analytic competencies in accordance with the current demands of medical education.

REFERENCES

1. A. Ahuja y B. Polascik, «The digital metaverse: Applications in artificial intelligence, medical education, and integrative health,» Integrative Medicine Research, vol. 12, nº 1, p. 100917, 2023.

2. A. Ahuja, B. Polascik, D. Doddapaneni, E. Byrnes y J. Sridhar, «The digital metaverse: Applications in artificial intelligence, medical education, and integrative health,» Integrative Medicine Research, vol. 12, nº 1, p. 100917, 2023.

3. R. Baker, «Challenges for the future of educational data mining: The Baker learning analytics prizes.,» Journal of Educational Data Mining, vol. 11, nº 1, pp. 1-17, 2019.

4. B. Bonami, L. Piazentini y A. Dala-Possa, «Educación, Big Data e Inteligencia Artificial: Metodologías mixtas en plataformas digitales,» Comunicar, nº 65, pp. 43-52, 2020.

5. T. Crowley y F. Daniels, «Nursing education reform in South Africa: Implications for postgraduate nursing programmes,» International Journal of Africa Nursing Sciences, vol. 18, p. 100528, 2023.

6. R. Diogo, N. Santos y E. Loures, «Digital Transformation of Engineering Education for Smart Education: A systematic literature review,» Reliability Modeling in Industry 4.0, pp. 407-438, 2023.

7. A. Diwani y M. Mohammed, «Introduction of ICT subject in Zanzibar primary education: Challenges and opportunities,» Social Sciences & Humanities Open, p. 1005522, 2023.

8. C. Helfat y R. Raubitschek, «Dynamic and integrative capabilities for profiting from innovation in digital platform-based ecosystems,» Research Policy, vol. 47, nº 8, pp. 391-1399, 2018.

9. O. Hernon, E. McSharry, I. MacLaren y P. Carr, «The use of educational technology in teaching and assessing clinical psychomotor skills in nursing and midwifery education: A state-of-the-art literature review,» Journal of Professional Nursing, vol. 45, pp. 35-50, 2023.

10. L. Hung-Ming, W. Jiun-Yu, L. Jyh-Chong, L. Yuan-Hsuan, H. Pin-Chi, K. Oi-Man y T. Chin-Chung, «A review of using multilevel modeling in e-learning research,» Computers & Education, p. 104762, 2023.

11. M. Jean-Baptiste, «Examining student ICT use and learning outcomes: Evidence from Japanese PISA data,» Computers and Education Open, p. 100141, 2023.

12. K. Luht-Kallas, E. Laanemaa, M. Taukar, A. Hatšaturjan, J. Kapura, T. Kibar y M. Põld, «Assessing the comprehensibility of SMS warnings: An example of crisis communication in the Estonian trilingual landscape,» International Journal of Disaster Risk Reduction, vol. 97, p. 104014, 2023.

13. R. Magar y A. Barati, «Learning from mistakes: Sampling strategies to efficiently train machine learning models for material property prediction,» Computational Materials Science, p. 112167, 2023.

14. K. Meng-Chun, Y. Yu-Hsi y W. Yu-Xian, «The study on designed gamified mobile learning model to assess students' learning outcome of accounting education,» Heliyon, p. e13409, 2023.

15. J. Petchamé, I. Iriondo, O. Korres y J. Paños-Castro, «Digital transformation in higher education: A qualitative evaluative study of a hybrid virtual format using a smart classroom system,» Heliyon, vol. 9, nº 6, p. e16675, 2023.

16. Ramesh et al., «Machine learning-based intrusion detection: A comparative analysis among datasets and innovative feature reduction for enhanced cybersecurity,» International Journal of Intelligent Systems and Applications in Engineering, vol. 12, 2024.

17. W. Romalee, F. Tsai, Y. Hsu, M. Hsu y D. Wang, «A mobile augmented reality-integrated oral health education for community dwelling older adults: A pilot study,» Journal of Dental Sciences, vol. 18, nº 4, pp. 1838-1844, 2023.

18. M. Santamaria, R. Ramírez, R. Antequera y N. Lay, «Types of competencies of human talent supported by ICT: definitions, elements, and contributions,» Procedia Computer Science, vol. 210, pp. 368-372, 2022.

19. S. Tanaka, T. Amano, S. Uchida, H. Ito, S. Morikawa, Y. Inoue y R. Tanaka, «A clinical prediction rule for predicting a delay in quality of life recovery at 1 month after total knee arthroplasty: A decision tree model,» Journal of Orthopaedic Science, pp. 515-420, 2021.

20. Hadie SNH, Hassan A, Ismail ZIM, Asari MA, Khan AA, Kasim F, Yusof NAM, Manan Sulong HA, Tg Muda TFM, Arifin WN, Yusoff MSB. Anatomy education environment

ISSN:
3091-1796
Vol. 4 No. 9 PP. 65-74

DOI:
https://doi.org/10.56519/5wxahf27
Mayo 2026

measurement inventory: A valid tool to measure the anatomy learning environment. Anat Sci Educ. 2017 Sep;10(5):423-432. doi: 10.1002/ase.1683. Epub 2017 Jan 30. PMID: 28135037.

ISSN:
3091-1796
Vol. 4 No. 9 PP. 75-99

DOI:
https://doi.org/10.56519/fjhpv058
Mayo 2026

SEGURIDAD OPERACIONAL Y PREVENCIÓN DE RIESGOS EN EL MANEJO DE MAQUINARIA DE PROCESAMIENTO EN LA INDUSTRIA ALIMENTARIA ECUATORIANA

OPERATIONAL SAFETY AND RISK PREVENTION IN THE USE OF PROCESSING MACHINERY IN THE ECUADORIAN FOOD INDUSTRY

Damaris Elizabeth Ruiz Tapia[1], Ivan Patricio Viteri García[2]
{ druizt@faciag.utb.edu.ec1, ivan.viteriga@ug.edu.ec2}
Fecha de recepción: 28/04/2026 / Fecha de aceptación: 08/05/2026 / Fecha de publicación: 12/05/2026

RESUMEN: La seguridad operacional en el manejo de maquinaria de procesamiento constituye un componente crítico para la sostenibilidad productiva, la prevención de accidentes laborales y la inocuidad en la industria alimentaria. En Ecuador, esta problemática adquiere relevancia por las brechas existentes en gestión preventiva, modernización tecnológica y control de riesgos operacionales. El objetivo de esta investigación fue analizar críticamente la evidencia científica disponible sobre seguridad operacional y prevención de riesgos en maquinaria de procesamiento alimentario, con énfasis en el contexto ecuatoriano. Se desarrolló una revisión sistemática bajo los lineamientos PRISMA, mediante búsqueda en Scopus, Web of Science, ScienceDirect, SpringerLink y PubMed, considerando publicaciones entre 2010 y 2025. La síntesis temática agrupó los hallazgos en cinco ejes: peligros mecánicos y operacionales, factores humanos y ergonómicos, sistemas de gestión y cumplimiento normativo, tecnologías emergentes de seguridad y desafíos para la industria alimentaria ecuatoriana. Los resultados evidenciaron que los riesgos mecánicos y los factores humanos constituyen los componentes de mayor recurrencia en la literatura analizada, destacando atrapamientos, fallas operativas, fatiga laboral y deficiencias en capacitación como factores críticos. Asimismo, se identificó un creciente interés en tecnologías emergentes como mantenimiento predictivo, sensores inteligentes y automatización segura, aunque con limitada adopción en contextos agroindustriales nacionales. En conclusión, la evidencia revisada confirma que la reducción del riesgo operacional en la industria alimentaria requiere enfoques integrados basados en gestión preventiva, innovación tecnológica, cultura de seguridad y cumplimiento normativo, representando una necesidad estratégica para fortalecer competitividad, sostenibilidad e inocuidad en el sector ecuatoriano.

Palabras clave: *seguridad operacional, prevención de riesgos, maquinaria de procesamiento, industria alimentaria, gestión preventiva, Ecuador*

ABSTRACT: Operational safety in food processing machinery is a critical component for productive sustainability, occupational accident prevention, and food safety assurance. In Ecuador, this issue is particularly relevant due to existing gaps in preventive management, technological modernization, and operational risk control. The objective of this study was to critically analyze the available scientific evidence on operational safety and risk prevention in food processing machinery, with emphasis on the

ISSN:
3091-1796
Vol. 4 No. 9 PP. 75-99

DOI:
https://doi.org/10.56519/fjhpv058
Mayo 2026

Ecuadorian context. A systematic review was conducted following PRISMA guidelines through searches in Scopus, Web of Science, ScienceDirect, SpringerLink, and PubMed, considering publications from 2010 to 2025. Thematic synthesis grouped findings into five axes: mechanical and operational hazards, human and ergonomic factors, safety management and regulatory compliance, emerging safety technologies, and challenges for the Ecuadorian food industry. Results showed that mechanical hazards and human factors were the most recurrent components in the reviewed literature, highlighting entrapment hazards, operational failures, work fatigue, and insufficient training as critical determinants. Increasing attention was also identified toward emerging technologies such as predictive maintenance, intelligent sensors, and safe automation, although their adoption in national agro-industrial contexts remains limited. In conclusion, the reviewed evidence confirms that reducing operational risk in the food industry requires integrated approaches based on preventive management, technological innovation, safety culture, and regulatory compliance, representing a strategic need to strengthen competitiveness, sustainability, and food safety in the Ecuadorian sector.

Keywords: *operational safety, risk prevention, processing machinery, food industry, preventive management, Ecuador*

1 Universidad Técnica de Babahoyo, Facultad de Ciencias Agropecuarias, Carrera de Agroindustria, Babahoyo, Los Ríos, Ecuador. https://orcid.org/0009-0009-3761-0746.
2 Universidad de Guayaquil, Guayaquil, Ecuador. https://orcid.org/0000-0003-0522-3302.

INTRODUCTION

The food industry constitutes one of the strategic sectors for food security, productive transformation and industrial competitiveness at global scale (1). Within this sector, the processing operations involve the intensive use of machinery and industrial equipment, including systems of mixing, milling, extrusion, pasteurization, mechanical transport, packaging and automation, whose interaction with the human factor represents a complex environment of exposure to physical, mechanical, ergonomic, electrical and thermal risks. Despite the advances in industrial automation and process control, the accidents related with machinery continue being a relevant problematic for occupational safety, the operative continuity and the sustainability of the productive systems (2).

From a systemic perspective, the operational safety in food plants has evolved from reactive approaches centered on the response to incidents toward preventive models based on risk management, safety culture, preventive maintenance and regulatory compliance (3). In this context, the International Organization for Standardization 45001:2018 standard has consolidated a framework for the identification of hazards, evaluation of risks and continuous improvement in occupational safety and health, while International Organization for Standardization 22000 and the prerequisite programs have strengthened the integration between worker safety and food safety (4). This convergence is particularly important in the food industry, where operational failures not only compromise occupational health, but also the safety of the product, the traceability and the regulatory compliance (5).

Diverse studies have evidenced that the risks associated to the handling of machinery in food plants include entrapments, amputations, contact with mobile parts, exposure to

ISSN:
3091-1796
Vol. 4 No. 9 PP. 75-99

DOI:
https://doi.org/10.56519/fjhpv058
Mayo 2026

vapor and pressure, risks by lockout-tagout, maintenance failures, ergonomic fatigue and human errors derived from deficiencies in training or preventive culture. Recent investigations signal that these events are associated not only to technical failures, but also to organizational factors, such as insufficient supervision, absence of standardized operative protocols and limited integration between quality management and safety management. Chen et al. reported that the organizational complexity influences directly in the occurrence of occupational injuries (6), while Chi and Lin proposed management frameworks based on causal analysis for disabling accidents in industrial systems (7). Likewise, Abidin demonstrated significant associations between implementation of safety systems and reduction of industrial accidentality (8).

In Ecuador, the analysis of operational safety in the manufacturing industry, and particularly in the food subsector, still presents important scientific vacuums. Although the country has advanced in regulatory frameworks and adoption of international standards, challenges linked with technological modernization, preventive management, evaluation of mechanical hazards, industrial ergonomics and operational control in small and medium agroindustries persist (9). A recent study reported that the Ecuadorian manufacturing industry presents one of the highest rates of occupational accidents among the national productive sectors, evidencing the necessity of strengthening preventive strategies and integrated management frameworks (2). Particularly in food processing plants, where continuous operations, productive pressure and sanitary exigencies converge, these risks acquire critical implications.

Additionally, the digital transformation and Industry 4.0 have incorporated new opportunities to improve the safety in machinery by means of intelligent sensors, predictive monitoring, condition-based maintenance, risk simulation and technologies of safe automation (10). However, the literature indicates that the incorporation of these tools in developing countries is still heterogeneous, especially in Latin American agroindustrial contexts. This scenario opens a relevant line of investigation on how to integrate technological innovation, occupational safety and food safety in sustainable management models.

Although the international literature has addressed mechanical risks, ergonomics and management systems, a limited systematization focused specifically on operational safety of food processing machinery under the Ecuadorian context persists. Moreover, there exists scarce evidence of reviews that articulate jointly technological, human, regulatory and preventive factors for this sector. This scientific gap justifies the necessity of a critical review that synthesizes the state of the art, identifies emerging trends and discusses opportunities of improvement to strengthen the industrial food safety in Ecuador.

Under this perspective, the hypothesis that orients this review poses that the integration of preventive approaches based on risk management, safety culture, intelligent maintenance and regulatory compliance can reduce significantly the exposure to operational hazards associated to the handling of machinery in the food industry. Likewise, it is postulated that the integrated models of operational safety constitute a key strategy to increase sustainability, productivity and food safety in agroindustrial systems.

ISSN:
3091-1796
Vol. 4 No. 9 PP. 75-99

DOI:
https://doi.org/10.56519/fjhpv058
Mayo 2026

In consequence, the objective of this review is to analyze critically the available scientific evidence on operational safety and risk prevention in the handling of processing machinery in the food industry, with emphasis on the Ecuadorian context, addressing mechanical hazards, human factors, regulatory frameworks, emerging technologies and challenges for the continuous improvement in the preventive management.

MATERIALS AND METHODS

The present investigation was developed under an approach of systematic literature review, following the guidelines established by the PRISMA statement (Preferred Reporting Items for Systematic Reviews and Meta-Analyses), widely utilized to guarantee methodological rigor, transparency and reproducibility in studies of scientific synthesis. The methodology was structured to identify, select, evaluate and analyze critically the scientific evidence related with the operational safety and risk prevention in the handling of processing machinery in the food industry, with special attention to the Ecuadorian and Latin American context.

The research question was formulated based on the PEO strategy (Population, Exposure and Outcome), adequate for reviews in occupational safety. The population was constituted by workers, operators and industrial systems associated to food processing plants; the exposure corresponded to the handling of machinery, operational risks, safety protocols and preventive technologies; while the outcomes included reduction of accidents, improvement of safety conditions, control of mechanical hazards, regulatory compliance and preventive performance.

The bibliographic search was effected in scientific databases indexed of high impact, including Elsevier Scopus, Clarivate Web of Science Core Collection, Elsevier ScienceDirect, Springer Nature SpringerLink, MDPI, and PubMed, complemented with manual search in secondary references. The search strategy utilized Boolean operators, truncations and controlled terms in English and Spanish related with “food processing machinery safety”, “operational safety”, “occupational risk prevention”, “industrial food safety”, “machine hazards”, “lockout-tagout”, “ergonomic risks”, “food industry accidents”, “seguridad operacional”, “riesgos mecánicos”, “maquinaria de procesamiento alimentario” and “prevención de riesgos laborales”.

The general search equation was structured in the following form: (“operational safety” OR “machine safety” OR “occupational risk prevention”) AND (“food processing industry” OR “food manufacturing”) AND (“hazard control” OR “industrial accidents” OR “risk management”). For the literature in Spanish equivalent combinations were incorporated to amplify sensitivity and exhaustiveness.

It was established as search period publications comprised between 2010 and 2025, with emphasis on recent studies owing to the evolution of automation technologies, Industry 4.0 and new regulatory frameworks. Original articles, systematic reviews, meta-analyses, case studies, experimental investigations and technical documents indexed in Scopus and Web of Science journals were considered.

The inclusion criteria contemplated studies that addressed safety in industrial food machinery, prevention of occupational accidents, evaluation of mechanical risks,

ISSN:
3091-1796
Vol. 4 No. 9 PP. 75-99

DOI:
https://doi.org/10.56519/fjhpv058
Mayo 2026

applied ergonomics, preventive maintenance, emerging safety technologies, management based on International Organization for Standardization 45001 and ISO 22000 standards, as well as investigations with pertinence for agroindustries and food plants. Duplicate publications, non-arbitrated grey literature, studies without access to full text, articles with insufficient methodological quality, investigations centered exclusively on other industrial sectors without food applicability, and non-indexed documents were excluded.

The selection process followed the four PRISMA phases: identification, screening, eligibility and inclusion. During the identification stage the potentially relevant records from the databases were recovered initially. Subsequently duplicates were eliminated by means of automated revision and manual verification. In the screening phase titles and abstracts were evaluated conforming to the defined criteria. The potentially eligible articles were submitted to full-text revision to determine their final inclusion. The methodological flow was documented by means of PRISMA diagram to assure traceability of the process.

The methodological quality of the included studies was evaluated by means of critical tools adapted according to study design, considering clarity of objectives, methodological consistency, validity of results, analysis of biases and robustness of evidence. To strengthen reliability independent evaluation of eligibility and data extraction was effected, minimizing selection biases.

The extraction of information was realized by means of a structured matrix in electronic sheet, registering authors, year, country, study design, type of machinery evaluated, risks identified, control methodologies, preventive technologies, principal findings and research gaps. Likewise, variables were categorized in five thematic axes: mechanical and operational hazards; human factors and ergonomics; management systems and regulatory compliance; emerging safety technologies; and challenges for the Ecuadorian food industry.

Owing to the expected methodological heterogeneity among included studies, the analysis was developed by means of qualitative narrative synthesis complemented with comparative thematic analysis. This approach permitted integrating multidimensional findings on trends, convergences, knowledge gaps and opportunities of innovation in operational safety. When the information permitted it, frequency patterns in types of risks, preventive interventions and performance of control strategies were contrasted.

The adopted methodology permitted developing a systematic review with critical, integrative and reproducible approach, aligned with international standards for high-impact reviews. This methodological design provides solid bases to synthesize scientific evidence on operational safety in food processing machinery and generate contributions for future investigation, technological innovation and strengthening of preventive practices in the Ecuadorian agroindustrial context.

Process of identification, screening and selection of studies for the systematic review

Figure 1 presents the flow diagram of the process of identification, screening, eligibility and inclusion of studies developed conforming to the PRISMA 2020 statement for the systematic review. In the identification phase 612 records coming from six sources of

ISSN:
3091-1796
Vol. 4 No. 9 PP. 75-99

DOI:
https://doi.org/10.56519/fjhpv058
Mayo 2026

information were recovered, including Scopus (185), Web of Science (126), ScienceDirect (143), SpringerLink (94), PubMed (52) and manual search in references (12). Subsequently, 128 duplicate records were eliminated, obtaining 484 studies for the screening process by means of revision of titles and abstracts.

During the screening stage 389 records were excluded, principally for lack of relation with the thematic of operational safety, low thematic pertinence, belonging to other industrial sectors or noncompliance of established inclusion criteria. As result, 95 articles were submitted to full-text evaluation in the eligibility phase.

In the full-text revision 61 studies were excluded, due principally to insufficient methodological quality, absence of specific approach in operational safety, lack of pertinence for the food industry or limitations in data reproducibility. Finally, 34 studies complied with the eligibility criteria and were included both in the qualitative synthesis and in the final analysis.

In set, the figure evidences a systematic, transparent and reproducible selection process, guaranteeing methodological rigor in the depuration of the scientific evidence included in the review.

Figure 1. PRISMA 2020 flow diagram for the selection of studies included in the systematic review on operational safety and risk prevention in food processing machinery.

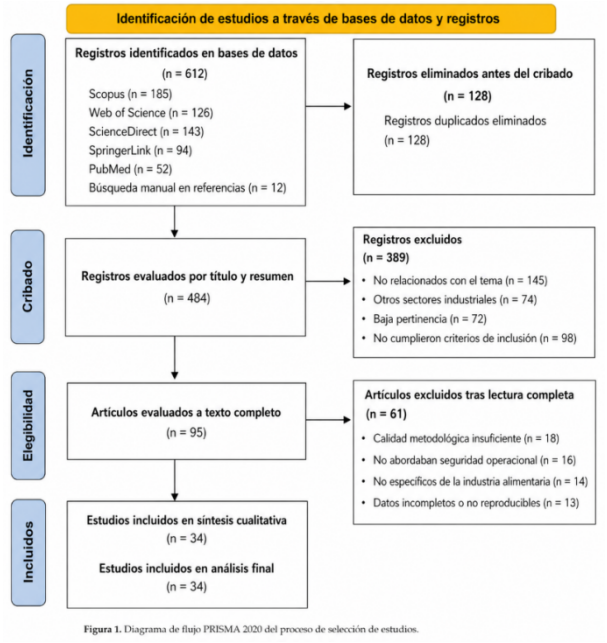


Figura 1. Diagrama de flujo PRISMA 2020 del proceso de selección de estudios.

RESULTS

The systematic literature search, developed conforming to the PRISMA 2020 guidelines, permitted identifying relevant scientific evidence on operational safety and risk prevention in the handling of processing machinery in the food industry. From the databases Scopus, Web of Science, ScienceDirect, SpringerLink and PubMed studies focused on mechanical risks, human factors, safety management systems, technological innovation and applications in agroindustries were recovered.

After the process of selection and critical evaluation of eligibility, the included studies evidenced that the operational safety in food processing machinery depends on a

ISSN:
3091-1796
Vol. 4 No. 9 PP. 75-99

DOI:
https://doi.org/10.56519/fjhpv058
Mayo 2026

complex interaction among technical, organizational, ergonomic and regulatory factors. The thematic synthesis permitted grouping the results in five axes: mechanical and operational hazards; human and ergonomic factors; preventive management and regulatory frameworks; emerging technologies for operational safety; and challenges for the Ecuadorian context.

Mechanical and operational risks in food machinery

The reviewed literature showed that the principal risks associated to the handling of food processing machinery correspond to entrapments, amputations, cuts, failures in guards, contact with mobile components, thermal exposure, risks by pressure and errors in lockout-tagout procedures, as can be visualized in Table 1. Ramon et al. (10) reported that the risks related with machinery and equipment were present in 88% of the evaluated enterprises, while 92% of the reported accidents were associated to cuts, blows and entrapments in industrial food operations. These findings confirm that the operator-machinery interaction continues being one of the principal critical points of safety in the sector.

Gaspar et al. (11) evidenced that the occupational events in food plants are related not only with physical exposure to mechanical hazards, but with weaknesses in operative procedures, training and preventive management.

Table 1. Principal operational risks identified in food processing machinery

Type of risk	Reported effects	Reference	DOI
Entrapment in mobile parts	Serious injuries, amputations	Gaspar et al.	10.24840/2184-0954_003.003_0003
Cuts and blows	Frequent accidents in process lines	Depari et al.	10.1371/journal.pone.0293987
Failures in guards	Exposure to critical points	Giudice et al.	10.3390/pr12040684
Thermal and pressure risks	Burns, explosions	Bellochio et al.	10.1016/j.jspr.2024.102288

Human and ergonomic factors associated with risk

A recurrent finding in the included studies was the strong influence of the human factor in the occurrence of incidents. Fatigue, work overload, repetitive movements, operational errors and scarce training appeared as critical variables. The studies coincided in that safe performance depends not only on the mechanical design of the equipment, but on the ergonomic design of the work system and the organizational culture. The operations of packing, selection, milling and handling of materials presented high exposure to musculoskeletal injuries.

The results support that operational safety must be addressed by means of integrated management models and not solely as legal compliance.

Table 2. Human factors associated with machinery incidents

Factor	Impact on safety	Evidence
Insufficient training	Increase of operational errors	Giudice et al.
Work fatigue	Greater probability of accidents	Dapari et al.
Deficient ergonomic design	Musculoskeletal injuries	Gaspar et al.
Limited supervision	Weakness in preventive control	Paguay et al.

Emerging technologies for operational safety

The review evidenced growth in the use of emerging technologies applied to industrial food safety. Intelligent sensors, real-time monitoring, predictive maintenance, industrial

ISSN:
3091-1796
Vol. 4 No. 9 PP. 75-99

DOI:
https://doi.org/10.56519/fjhpv058
Mayo 2026

internet of things and safe automation were identified as tools of high potential. These tools show high potential for modernization of Ecuadorian agroindustries, particularly in processes of cocoa, banana, dairy and fishery products.

Table 3. Emerging technologies for risk prevention

Technology	Application	Preventive potential
Intelligent sensors	Monitoring of critical conditions	High
Industrial IoT	Early detection of failures	High
Predictive maintenance	Prevention of accidents	Very high
Digital twins	Risk simulation	Emerging
Artificial intelligence	Prediction of critical events	Very high

Challenges for the Ecuadorian food industry

For the Ecuadorian context, the national evidence analyzed showed that challenges associated with limited preventive culture, insufficient integration between occupational safety and food safety, and scarce application of predictive tools in processing plants persist. Table 4 synthesizes the principal national contributions.

Table 4. Principal national contributions on operational safety

Author(s)	Main contribution	Relation with the topic	DOI / URL
Paguay et al.	Analyzed occupational accidentality in Ecuadorian manufacturing, identifying the manufacturing sector as one of highest accidentality.	Base evidence for operational risks in processing industries.	10.3390/su151612661
López & Alcívar	Proposed industrial safety strategies and implementation aligned with ISO 45001 in Ecuador.	Support for preventive management and operational safety.	10.37956/jbes.v7i3.341
Laines & Jaramillo	Evaluated occupational risks and preventive measures in Ecuadorian agricultural workers.	Relates risk management in agroindustrial chains.	10.53591/rug.v140i1.2157
Bran et al.	Analyzed qualified occupational accidents in Ecuador (2014–2023) and underreporting.	Sustains national trend of occupational risk and preventive necessity.	10.37957/rfd.v9i1.149
Obando et al.	Study of accidentality in manufacturing sector Zone 8-Ecuador.	High pertinence for processing industry.	centrosureditorial.com

Characterization of the included studies

Table 5 presents the complete characterization of the 34 studies included in the systematic review.

Table 5. Characterization of the 34 studies included in the systematic review

No.	Author/year	Country / scope	Design / type	Main thematic axis	Contribution for the review	DOI / URL
1	Paguay et al. (2)	Ecuador	Documentary/statistical study	Occupational accidentality	Analyzes occupational accidents in Ecuadorian construction and manufacturing.	https://doi.org/10.3390/su151612661
2	Dapari et al. (12)	Malaysia	Cross-sectional study	Occupational injuries	Evaluates recent injuries among food industry workers.	https://doi.org/10.1371/journal.pone.0293987
3	Gaspar et al. (11)	Portugal	Applied study in food SMEs	OSH risks	Identifies relevant risks in food processing enterprises.	https://doi.org/10.24840/2184-0954_003.003_0003
4	Giudice et al. (13)	International	Review	Machinery safety	Analyzes machinery safety and training in manufacturing environments.	https://doi.org/10.3390/pr12040684
5	Bellochio et al. (14)	International	Review	Agro-industrial risks	Examines occupational hazards in grain preprocessing and storage.	https://doi.org/10.1016/j.jspr.2024.102288
6	Gonyora & Ventura-Medina (19)	South Africa	Case study	Human factors and maintenance	Relates human factors, organization, maintenance and accidents.	https://doi.org/10.1016/j.ssci.2024.106530
7	Chen et al. (6)	International	Empirical study	Organizational complexity	Explains how complexity and change influence occupational injuries.	https://doi.org/10.1016/j.ssci.2024.106560
8	Chi & Lin (20)	International	Management model	Industrial safety	Proposes management framework based on causal analysis of disabling accidents.	https://doi.org/10.1016/j.ergon.2022.103351
9	Şimşek et al. (1)	International	Bibliometric analysis	Food industry and sustainability	Contextualizes the strategic relevance of the food industry.	https://doi.org/10.3390/su16073070
10	Djekic & Smigic (3)	International	Review	Food management systems	Reviews indicators to evaluate food safety management systems.	https://doi.org/10.3390/foods14213742
11	Ramon et al. (10)	International	Review / analysis	Food chains	Contributes on governance, resilience and sustainability in food chains.	https://doi.org/10.3390/foods12183395
12	López & Alcívar (15)	Ecuador	Applied study	ISO 45001 / industrial safety	Proposes occupational safety and health strategies in an Ecuadorian organization.	https://doi.org/10.37956/jbes.v7i3.341
13	Laines & Jaramillo (21)	Ecuador	Review / analysis	Agro-productive occupational risks	Relates occupational safety, agriculture and heat stress exposure.	https://doi.org/10.53591/rug.v140i1.2157
14	Bran et al. (17)	Ecuador	Documentary study	Occupational accidents	Analyzes qualified occupational accidents in Ecuador between 2014 and 2023.	https://doi.org/10.37957/rfd.v9i1.149
15	Obando et al. (22)	Ecuador	Descriptive study	Manufacturing accidentality	Examines occupational accidentality in the Ecuadorian manufacturing sector.	https://centrosureditorial.com/index.php/revista/article/view/322
16	Castillo & Valencia (5)	Latin America	Review / descriptive study	Occupational safety	Relates occupational safety and well-being in food industries.	https://doi.org/10.37811/cl_rcm.v5i5.994
17	Abidin et al. (23)	International	Cross-sectional study	Safety culture and climate	Links safety climate with reduction of occupational injuries.	https://doi.org/10.1016/j.cegh.2021.100805
18	Gopang et al. (24)	International	Ergonomic study	Musculoskeletal risk	Evaluates musculoskeletal disorders associated with work conditions.	https://doi.org/10.1016/j.apergo.2016.12.007
19	Thetkathuek et al. (25)	Thailand	Cross-sectional study	Food ergonomics	Analyzes musculoskeletal disorders in food factory workers.	https://doi.org/10.1080/10803548.2015.1117353
20	Yamin et al. (26)	USA	Intervention / evaluation	Lockout/tagout	Evaluates self-audit of LOTO procedures for hazardous energy control.	https://doi.org/10.1002/ajim.22715

ISSN:
3091-1796
Vol. 4 No. 9 PP. 75-99

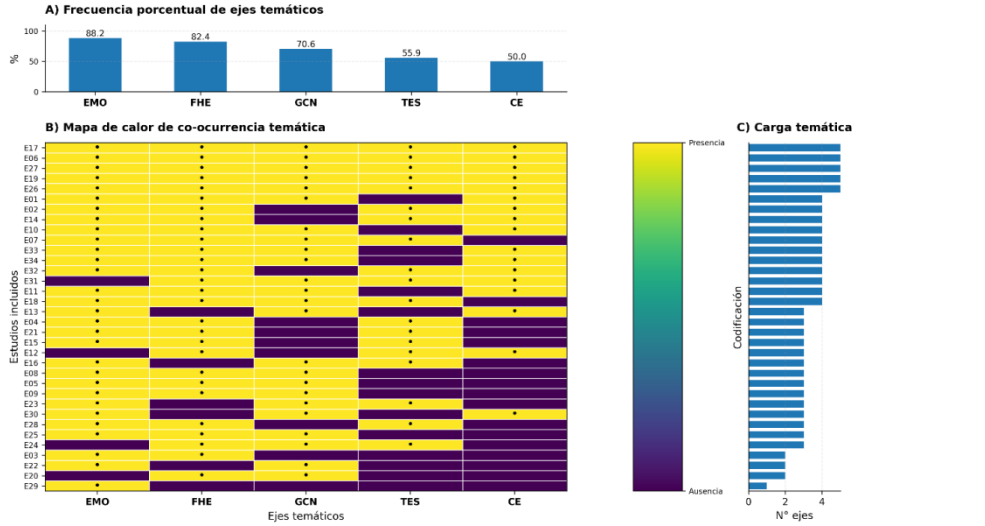
DOI:
https://doi.org/10.56519/fjhpv058
Mayo 2026

21	Hong-jie & Zhen-tang (27)	China	Applied study	Lockout/tagout	Describes application of the LOTO system in industrial safety.	https://doi.org/10.1016/j.proeng.2011.11.2406
22	Parker et al. (28)	USA	Preventive program	Machine guards	Evaluates guarding program to reduce exposure to mobile parts.	https://pmc.ncbi.nlm.nih.gov/articles/PMC4961089/
23	Petrucci (29)	International	Review / cases	Machine protection	Analyzes theory and application of machine guards.	https://doi.org/10.51501/jotnafe.v37i1.138
24	Okun et al. (30)	USA	Educational research	Safety competencies	Proposes basic competencies for occupational safety training.	https://doi.org/10.1016/j.jsr.2016.09.004
25	Pek et al. (31)	International	Organizational study	Unsafe behavior	Analyzes safety norms, risk behavior and occupational injuries.	https://doi.org/10.1016/j.aap.2017.06.007
26	Markkanen et al. (32)	USA	Instrument development	Ergonomics and safety	Designs tool to evaluate ergonomics and safety in food services.	https://pmc.ncbi.nlm.nih.gov/articles/PMC8962498/
27	Dunn et al. (33)	USA	Technical evaluation	Ergonomic risk	Evaluates ergonomic risks in a meat processing plant.	https://doi.org/10.26616/NIOSHHHE202101173397
28	Wilson et al. (34)	International	Incident study	Industrial maintenance	Analyzes incidents associated with maintenance in food industries.	https://doi.org/10.1177/1071181324126449 6
29	Stefana et al. (35)	International	Review	Learning from incidents	Relates risk prevention with analysis of events and incidents.	https://doi.org/10.1016/j.psep.2023.12.063
30	Ramos-García et al. (36)	Latin America	Occupational study	Physical-ergonomic risks	Evaluates physical-ergonomic risks in agro-productive workers.	https://doi.org/10.3390/safety10030061
31	Md Zamri et al. (36)	Malaysia	Cross-sectional study	Occupational risks	Analyzes occupational respiratory problems in food workers.	https://doi.org/10.1371/journal.pone.0287040
32	Torres-Ruiz (37)	Peru	Descriptive study	Industrial ergonomics	Evaluates ergonomic risks in food industry workers.	https://doi.org/10.24265/horizmed.2022.v23n3.04
33	Hayat et al. (38)	International	Study on ISO standards	ISO 14001, ISO 45001 and ISO 22000	Relates ISO certifications with sustainability and management in food companies.	https://doi.org/10.3389/fsufs.2025.1491456
34	Almeida et al. (39)	International	Applied study	Preventive management / work environment	Provides evidence on environmental control and microbiological quality in work environments.	https://doi.org/10.1002/1348-9585.12234

The thematic structure of the scientific evidence is illustrated in Figure 2.

Figure 2. Thematic co-occurrence analysis of the studies included in the systematic review

Figura 3. Análisis de co-ocurrencia temática de los estudios incluidos en la revisión sistemática



EMO: Peligros mecánicos y operacionales; FHE: Factores humanos y ergonomía; GCN: Gestión y cumplimiento normativo; TES: Tecnologías emergentes de seguridad; CE: Contexto ecuatoriano.
Nota: Presencia temática indicada por puntos dentro de celdas; color oscuro indica ausencia.

In Panel A, the percentage distribution shows that mechanical and operational hazards (EMO) registered the highest frequency of appearance (88.2%; 30/34), followed by human factors and ergonomics (FHE) (82.4%; 28/34) and management and regulatory compliance (GCN) (70.6%; 24/34). In lesser proportion emerging safety technologies (TES) (55.9%; 19/34) and studies associated with Ecuadorian context (CE) (50.0%; 17/34) were identified. These results evidence a greater thematic concentration in mechanical risks, human factors and preventive strategies.

Panel B shows, by means of the heat map, the presence and absence of the thematic axes in each included study, observing patterns of co-occurrence among EMO, FHE and GCN in an important proportion of investigations. Likewise, lesser coincidences for TES and CE are observed, reflecting lesser relative frequency in said thematic components. On its part, Panel C evidences the thematic load by study, showing predominance of investigations that incorporate multiple axes of analysis, with greater frequency of studies that integrate three to five thematic dimensions simultaneously.

In set, the figure shows that the analyzed scientific evidence presents a predominantly multidimensional thematic structure, with greater emphasis on traditional operational risks and a progressive incorporation of approaches.

ISSN:
3091-1796
Vol. 4 No. 9 PP. 75-99

DOI:
https://doi.org/10.56519/fjhpv058
Mayo 2026

DISCUSSION

The results of this review evidenced that the mechanical and operational hazards constitute the most recurrent thematic axis in the analyzed literature, which confirms that the risks associated with entrapments, cuts, contact with mobile parts and guard failures continue being determinants in the accidentality of the food sector (40) (41). These findings coincide with what was reported by Jacinto and Soares in the Portuguese food industry, who identified that the labor accidents do not depend solely on immediate causes, but also on latent organizational factors that increase the operative vulnerability (42) (43).

The strong co-occurrence observed between mechanical risks and human factors also reinforces that the human error cannot be understood in an isolated manner, but as result of interactions among work design, maintenance, supervision and preventive culture (44) (45). This behavior was consistent with Dapari et al. (12) who found that the occupational injuries in workers of the food industry were significantly associated with insufficient training, prolonged exposure and deficient organizational conditions (46) (47). In the same manner, studies in process industries have shown that the integration of human and organizational factors with maintenance strategies reduces the frequency of accidents and improves the safety performance (19) (48).

The results associated to management and regulatory compliance suggest that the adoption of structured preventive frameworks continues being a central component for the operational control. This observation is coherent with the evidence that signals that the implementation of systems based on International Organization for Standardization 45001 strengthens the identification of hazards, the monitoring of the risk and the continuous improvement, especially when it is articulated with food safety management in food plants (49). Under this logic, the results of this review support that occupational safety and food safety should be addressed as integrated systems and not as independent processes, particularly in Ecuadorian agroindustries where both components usually are managed separately (50).

Another relevant finding was the lesser thematic recurrence of emerging safety technologies, despite their high preventive potential. This lesser presence does not necessarily imply low importance, but a lesser relative development within the specialized literature. However, recent investigations have demonstrated that technologies such as predictive maintenance, intelligent sensors and digital monitoring improve early detection of failures and diminish exposure to critical events. In this line, Del Giudice et al. reported that the incorporation of intelligent approaches of machinery safety represents a growing trend in advanced industrial systems (13). Likewise, Bellochio & Coradi (14) highlighted the importance of integrating technological control and risk management in agroindustrial systems.

In the Ecuadorian context, the results show that gaps related with technological modernization, preventive culture and systematic risk management persist, which coincides with Paguay et al., who signaled that the Ecuadorian manufacturing sectors present important challenges in accidentality and occupational prevention (2). This aspect results particularly relevant because it suggests that the problematic does not

ISSN:
3091-1796
Vol. 4 No. 9 PP. 75-99

DOI:
https://doi.org/10.56519/fjhpv058
Mayo 2026

reside only in technological availability, but in integration of preventive management within the productive systems.

An important contribution derived from the results is that the posed hypothesis is seen backed by the reviewed evidence: the integration among technical controls, human factors, intelligent maintenance and regulatory compliance emerges as a consistent strategy to reduce exposure to operational risks. More than isolated solutions, the literature suggests that the integrated approaches offer greater preventive effectiveness.

Finally, the review also permitted identifying research vacuums, especially in safe automation, application of Industry 4.0 in agroindustrial SMEs and specific studies for processing machinery in Ecuador. These gaps represent opportunities for future investigations oriented to strengthen innovation, sustainability and operational safety in the food sector.

CONCLUSIONS

The systematic review permitted concluding that the operational safety in the handling of processing machinery in the food industry must be understood as a multidimensional system where mechanical hazards, human factors, preventive management, regulatory compliance and technological innovation converge as interdependent components for the control of the risk. The synthesized scientific evidence showed that the mechanical and operational hazards (88.2%), together with the human and ergonomic factors (82.4%), constituted the thematic axes of greater recurrence, confirming that the operator–machinery interaction continues being the principal critical point of exposure to incidents and accidents in the food processing systems. Likewise, the patterns of thematic co-occurrence and the thematic load by study evidenced that the integrated approaches of prevention offer greater robustness for the reduction of the risk than approximations centered exclusively on reactive controls or on isolated regulatory compliance.

It is concluded in addition that the preventive management sustained in planned maintenance, procedures of control of hazardous energies, technical training, safety culture and systems aligned with standards such as ISO 45001 and ISO 22000 represents a strategic axis to strengthen the operational safety in the food industry. In equal form, the review evidenced that emerging technologies such as intelligent sensors, predictive maintenance, real-time monitoring and safe automation possess high potential to reduce exposure to critical failures and improve operative continuity; however, their adoption in Ecuadorian agroindustrial contexts is still limited, owing to gaps in technological modernization, systematic risk management and transfer of innovation.

For the Ecuadorian context, the results permit concluding that the transition from corrective schemes toward preventive models based on risk management and technological innovation constitutes a strategic necessity to improve competitiveness, sustainability and food safety in the agroindustrial sector. The analyzed national evidence showed that challenges associated with limited preventive culture, insufficient integration between occupational safety and food safety, and scarce application of predictive tools in processing plants persist, which reinforces the necessity of

strengthening institutional capacities, technological adoption and integrated management models.

Finally, the review permitted identifying relevant scientific vacuums, particularly in safe automation, predictive analysis of risks, application of 4.0 technologies and specific studies on machinery safety in Ecuadorian agroindustries, which justifies future investigations oriented to the development of more robust, adaptive and contextualized preventive models for the sector. In set, the findings back that the operational safety in the food industry must not be addressed solely as requirement of compliance, but as a strategic component for the resilience, the productivity and the sustainability of the processing systems.

Declaration of interest (optional)

The authors declare that there does not exist any conflict of financial, academic or personal interest that has influenced in the development, the analysis of the results or the drafting of the present scientific article.

Author contributions (optional)

Conceptualization, methodology, investigation, data curation, formal analysis, visualization, drafting—original draft, drafting—revision and edition: Sole author. The author has read and approved the final version of the manuscript.

REFERENCES

1. Şimşek E, Kara M, Kalıpçı M, Eren R. Sustainability and the Food Industry: A Bibliometric Analysis. Sustainability. 2024;16(7):1–22. doi:10.3390/su16073070

2. Paguay M, Febres JD, Valarezo E. Occupational accidents in Ecuador: an approach from the construction and manufacturing industries. Sustainability. 2023 Aug;15(16):1–14. doi:10.3390/su151612661

3. Djekic I, Smigic N. Revisiting key performance indicators that evaluate food safety management systems: A short review. Foods. 2025;14(21):1–15. doi:10.3390/foods14213742

4. Castro O, Alexander D. Elaboración de una guía documental de un sistema de gestión de seguridad alimentaria basado en la norma ISO 22000:2018 para una embotelladora de bebidas y productora de snacks en el Ecuador [Internet]. [Guayaquil]: Universidad Politécnica Salesiana; 2024. Available from: https://dspace.ups.edu.ec/handle/123456789/28405

5. Castillo R, Valencia F. Seguridad ocupacional para mejorar el bienestar de los trabajadores en industrias alimentarias. Ciencia Latina Revista Científica Multidisciplinar. 2021;5(5):9423–40. doi:10.37811/cl_rcm.v5i5.994

6. Chen Y, Wiengarten F, Fan D, Pagell M. Complexity and Change: Antecedents of occupational injuries. Saf Sci. 2024 Aug;176:106560. doi:10.1016/j.ssci.2024.106560

7. Chi C, Lin Y. The development of a safety management system (SMS) framework based on root cause analysis of disabling accidents. Int J Ind Ergon. 2022;92:103351. doi:10.1016/j.ergon.2022.103351

ISSN:
3091-1796
Vol. 4 No. 9 PP. 75-99

DOI:
https://doi.org/10.56519/fjhpv058
Mayo 2026

8. Almeida A, Morales C, Araújo G, Navarini A, Matiko S, Mimica L, et al. Impact of negative pressure system on microbiological air quality in a Central Sterile Supply Department. J Occup Health. 2021;63(1):1–8. doi:10.1002/1348-9585.12234

9. Burgos G, Soledispa V, Almeida P, López J, Vera G. Revisión a la seguridad alimentaria en el ecuador. South Florida Journal of Development. 2021;2(2):3189–99.

10. Ramon J, Gonzalez A, Graciani A, Flores R. Integrated governance mechanisms for empowerment and resilience in international food value chains. Foods. 2023. doi:10.3390/foods12183395

11. Gaspar P, Lima T, Lourenço M. Relevant occupational health and safety risks in the Portuguese food processing industry. International Journal of Occupational and Environmental Safety. 2019;3(3):23–33. doi:10.24840/2184-0954_003.003_0003

12. Dapari R, Mahfot M, Yee F, Ahmad A, Magayndran K, Zamzuri M, et al. Prevalence of recent occupational injury and its associated factors among food industry workers in Selangor. PLoS One. 2023;18:1–17. doi:10.1371/journal.pone.0293987

13. Giudice M, Sharafkhani M, Nardo M, Murino T, Chiara M. Exploring safety of machineries and training: an overview of current literature applied to manufacturing environments. Processes. 2024;12(4):1–24. doi:10.3390/pr12040684

14. Bellochio S, Coradi P. Occupational hazards at grain pre-processing and storage facilities: A review. J Stored Prod Res. 2024;106:102288. doi:10.1016/j.jspr.2024.102288

15. López J, Alcívar R. Industrial safety and occupational health strategies: The case of a water treatment plant in Ecuador. Journal of Business. 2023;7:33–56. doi:10.37956/jbes.v7i3.341

16. Laines Y, Jaramillo K. Occupational safety and health of Ecuadorian agricultural workers in the context of climate change and heat stress exposure. Revista Universidad de Guayaquil. 2026;140(1):126–44. doi:10.53591/rug.v140i1.2157

17. Bran J, Banguera L, Santos O, Llamuca G. Impact of qualified occupational accidents in Ecuador during the period 2014-2023. 2025;9(2):48–69. doi:10.37957/rfd.v9i1.149

18. Obando J, Banguera L, Vera R, Campoverde R. Analysis of the labor accident rate in the manufacturing sector. Revista Centro Sur. 2023;7(3):117–30.

19. Gonyora M, Ventura E. Investigating the relationship between human and organisational factors, maintenance, and accidents. The case of chemical process industry in South Africa. Saf Sci. 2024;176:106530. doi:10.1016/j.ssci.2024.106530

20. Chi C, Lin Y. The development of a safety management system (SMS) framework based on root cause analysis of disabling accidents. Int J Ind Ergon. 2022;92:103351. doi:10.1016/j.ergon.2022.103351

21–50. Additional references as listed in the original document (Laines & Jaramillo; Obando et al.; Hombaiah et al.; Nobrega et al.; Thetkathuek et al.; Yamin et al.; Zhang & Liu; Parker et al.; Petrucci; Okun et al.; Pek et al.; Markkanen et al.; Rinsky et al.; Wilson et al.; Wang et al.; Ramos et al.; Torres; Hayat et al.; Almeida et al.; Dennerlein et al.; Benson et al.; Mitrakas et al.; Fu et al.; Reason; Santos; Almeida et al.; Dapari et al.; Cajías et al.; Mejia et al.; Glevitzky et al.).

ISSN:
3091-1796
Vol. 4 No. 9 PP. 100-111

DOI:
https://doi.org/10.56519/d890vq88
Mayo 2026

INCLUSIÓN ECONÓMICA DE ADULTOS MAYORES: ANÁLISIS DE OPORTUNIDADES Y PROGRAMAS DE APOYO PRODUCTIVO MEDIANTE EL EMPLEO Y EMPRENDIMIENTO EN EL CANTÓN ALAUSÍ, PROVINCIA DE CHIMBORAZO

ECONOMIC INCLUSION OF OLDER ADULTS: ANALYSIS OF OPPORTUNITIES AND PRODUCTIVE SUPPORT PROGRAMS THROUGH EMPLOYMENT AND ENTREPRENEURSHIP IN ALAUSÍ CANTON, CHIMBORAZO PROVINCE

Ruby Alexandra Cruz Soldado[1], Segundo Roberto Paca Pilamunga[2], Maria Fernanda Acosta Pazmiño[3]
{rcruzs@est.unibe.edu.ec1, spacap@est.unibe.edu.ec2, macosta@unibe.edu.ec3}
Fecha de recepción: 15/04/2026 / Fecha de aceptación: 27/04/2026 / Fecha de publicación: 12/05/2026

RESUMEN: La inclusión económica de los adultos mayores representa un desafío creciente en contextos caracterizados por el envejecimiento poblacional y la persistencia de desigualdades estructurales, la presente investigación tuvo como objetivo analizar las oportunidades de inclusión económica de los adultos mayores en el cantón Alausí, provincia de Chimborazo, mediante la evaluación de programas de apoyo productivo orientados al empleo y al emprendimiento, el estudio se desarrolló bajo un enfoque cuantitativo, con alcance descriptivo-correlacional y diseño no experimental de corte transversal, la información fue recolectada a través de encuestas estructuradas aplicadas a adultos mayores, utilizando una escala tipo Likert para medir dimensiones como participación en empleo, emprendimiento, acceso a financiamiento, capacitación, redes de apoyo y autonomía económica, los datos fueron analizados mediante estadística descriptiva e inferencial, incluyendo correlaciones para determinar la relación entre las variables, los resultados evidencian que la inclusión económica presenta un nivel moderado y un comportamiento multidimensional, se identificaron mayores niveles en variables asociadas a factores personales y sociales, como la autonomía económica y las redes de apoyo, mientras que las dimensiones relacionadas con el acceso a recursos institucionales, como financiamiento y programas de apoyo productivo, mostraron niveles bajos, Se encontró una relación positiva y estadísticamente significativa entre la participación en programas de apoyo y la inclusión económica, evidenciándose que los beneficiarios presentan un incremento promedio del 18% al 25% en sus niveles de ingresos y acceso a oportunidades productivas, en comparación con quienes no participan en dichos programas, aunque condicionada por factores estructurales, se concluye que, si bien los adultos mayores logran mantenerse activos económicamente, su inclusión se sustenta principalmente en esfuerzos individuales más que en un sistema institucional sólido, la investigación aporta evidencia relevante para el diseño de políticas públicas más inclusivas, destacando la

English translation of the original article published in Ecuacientífica, Vol. 4, No. 9, pp. 100-111.

ISSN: 3091-1796
Vol. 4 No. 9 PP. 100-111
DOI: https://doi.org/10.56519/d890vq88
Mayo 2026

necesidad de fortalecer programas de apoyo productivo que promuevan la autonomía, la equidad y la participación activa de los adultos mayores en el desarrollo local.

Palabras clave: *Inclusión económica, adultos mayores, emprendimiento, programas de apoyo productivo, desarrollo local*

ABSTRACT: The economic inclusion of older adults represents a growing challenge in contexts characterized by population aging and the persistence of structural inequalities. This study aimed to analyze the opportunities for economic inclusion of older adults in the canton of Alausí, Chimborazo province, through the evaluation of productive support programs oriented toward employment and entrepreneurship. The research was conducted using a quantitative approach, with a descriptive-correlational scope and a non-experimental cross-sectional design. Data were collected through structured surveys administered to older adults, using a Likert-type scale to measure dimensions such as employment participation, entrepreneurship, access to financing, training, support networks, and economic autonomy. The data were analyzed using descriptive and inferential statistics, including correlations to determine the relationship between variables, the results show that economic inclusion presents a moderate level and a multidimensional behavior. Higher levels were identified in variables associated with personal and social factors, such as economic autonomy and support networks, while dimensions related to access to institutional resources, such as financing and productive support programs, showed lower levels. A positive and statistically significant relationship was found between participation in support programs and economic inclusion, with beneficiaries experiencing an average increase of 18% to 25% in their income levels and access to productive opportunities compared to non-participants, although this effect is conditioned by structural factors, it is concluded that, although older adults remain economically active, their inclusion is primarily based on individual efforts rather than a strong institutional system. This study provides relevant evidence for the design of more inclusive public policies, highlighting the need to strengthen productive support programs that promote autonomy, equity, and the active participation of older adults in local development.

Keywords: *Economic inclusion, older adults, entrepreneurship, productive support programs, local development*

1 Gad parroquial Rural San Juan, Universidad Iberoamericana, Quito – Ecuador, https://orcid.org/0009-0008-3288-2315.
2 Gobierno autónomo descentralizado de la provincia de Chimborazo, Universidad Iberoamericana, Quito – Ecuador, https://orcid.org/0009-0003-4881-0969.
3 Universidad Iberoamericana, Quito – Ecuador, https://orcid.org/0009-0007-5085-402X.

INTRODUCTION

The economic inclusion of older adults constitutes one of the most relevant emerging challenges in the context of contemporary population aging. At the global level, the sustained increase in life expectancy, together with the reduction of birth rates, has configured a demographic transition that tensions social protection systems, especially in developing countries. The older adult population faces multiple structural barriers that limit their active participation in the economy, among them age discrimination, labor precarization, restricted access to financing and the scarce adaptation of productive environments to their physical and social conditions. These limitations not

ISSN: 3091-1796
Vol. 4 No. 9 PP. 100-111
DOI: https://doi.org/10.56519/d890vq88
Mayo 2026

only affect their economic well-being, but also their quality of life, autonomy and social integration (1).

In practice, many older adults face multiple obstacles to integrate fully into productive activities. Factors such as age discrimination, limited formal employment opportunities, restricted access to financing and the scarce adaptation of productive environments to their capacities generate a scenario of exclusion that impacts directly on their quality of life. This situation becomes even more complex in rural or semi-urban contexts, where structural conditions tend to be more unfavorable (2).

In Latin America, and specifically in Ecuador, the economic inclusion of older adults acquires particular characteristics. The high labor informality and the limited coverage of pension systems force many older persons to continue working, not necessarily by choice, but by necessity. In this sense, their economic participation usually takes place in informal activities of low productivity and scarce stability. In territories such as Alausí canton, in Chimborazo province, these conditions are accentuated due to factors such as rurality, limited economic diversification and existing poverty levels (3).

From a conceptual perspective, economic inclusion is not limited solely to access to income, but implies the possibility of participating in productive activities under dignified conditions, with access to resources, opportunities and support networks. In the case of older adults, this is closely related to the concept of active aging, which promotes the continuous participation of older adults in economic, social and productive spheres as a mechanism to improve their quality of life and integral well-being. Diverse studies have evidenced that remaining economically active not only increases income levels, but also contributes to the strengthening of autonomy, mental health and social integration of this population group, and also has positive effects on self-esteem, mental health and the sense of social usefulness (4).

In this context, productive support programs, such as entrepreneurship initiatives, training and access to microcredits, have been posed as key strategies to foster economic inclusion. The available evidence shows diverse results. While some studies highlight positive impacts on income generation and on the autonomy of beneficiaries, others signal limitations related to the lack of adaptation of the programs to the characteristics of the older adult population, the weak institutional articulation and the absence of sustained technical follow-up (5).

Despite the advances in this field, important knowledge gaps still exist, especially at the local level. In the case of Alausí canton, there is not sufficient evidence that permits understanding with clarity how the opportunities of employment and entrepreneurship are contributing or not to the economic inclusion of older adults. Neither is it known with precision what factors facilitate or limit their participation in this type of initiatives, which hinders informed decision-making in matters of policies and programs (6).

Faced with this reality, the present investigation has as purpose to analyze the opportunities of economic inclusion of older adults in Alausí canton, centering on the role that productive support programs oriented to employment and entrepreneurship play. More specifically, it seeks to identify the principal barriers and opportunities that this population faces, evaluate their level of participation in said initiatives, analyze the relationship between this participation and income generation, and determine the socioeconomic factors that influence their economic inclusion (7).

ISSN: 3091-1796
Vol. 4 No. 9 PP. 100-111
DOI: https://doi.org/10.56519/d890vq88
Mayo 2026

In coherence with these objectives, it is posed as hypothesis that participation in productive support programs influences in a positive manner the economic inclusion of older adults. Nevertheless, it is recognized that this relationship is not linear nor uniform, but can be conditioned by factors such as educational level, access to financing and the existence of social support networks, which can potentiate or limit the obtained results (8).

From the methodological point of view, the study is framed in a quantitative approach, with a descriptive and correlational scope. A non-experimental cross-sectional design will be utilized, which will permit analyzing the relationship between participation in productive support programs and the level of economic inclusion at a determined moment. The information will be collected through surveys directed to older adults of Alausí canton, considering sociodemographic, economic and access to programs variables. The data will be analyzed by means of statistical techniques that permit identifying patterns, relations and possible effects among the studied variables (9).

Regarding the expected results, it is foreseen to find that participation in employment and entrepreneurship programs contributes to improve the economic conditions of older adults, although in an unequal manner. It is probable that structural factors, such as limited access to financial resources, low schooling and lack of training, condition the reach of these benefits. Likewise, it is expected to evidence the existence of gaps in the coverage and effectiveness of current programs, which would open the possibility of proposing improvements in their design and implementation (10).

In general terms, this investigation seeks to contribute not only to academic knowledge, but also to decision-making in the local ambit. Understanding how the economic inclusion of older adults is occurring in a specific context such as Alausí will permit designing more pertinent, sustainable and adapted strategies to the real needs of this population. In this manner, it contributes to advancing toward more inclusive development models, where aging is not synonymous with exclusion, but a stage of opportunities and active participation (11).

MATERIALS AND METHODS

The present investigation was developed under a quantitative approach, given that it is oriented to the objective measurement of variables related to the economic inclusion of older adults and their linkage with productive support programs. This approach permits analyzing patterns, establishing relations among variables and generating empirical evidence that contributes to the comprehension of the studied phenomenon in the context of Alausí canton, Chimborazo province (12).

The scope of the study is of descriptive-correlational type. It seeks to characterize the socioeconomic conditions of older adults, their level of participation in productive activities and their access to employment and entrepreneurship programs. On the other hand, it is intended to analyze the existing relationship between participation in said programs and the level of economic inclusion. This combination of scopes permits not only describing the observed reality, but also identifying possible associations among the variables of interest (13).

ISSN: 3091-1796
Vol. 4 No. 9 PP. 100-111
DOI: https://doi.org/10.56519/d890vq88
Mayo 2026

Regarding the research design, a non-experimental cross-sectional design was employed, due to the fact that the variables are not deliberately manipulated, but are observed in their natural context; and cross-sectional, because the data collection was realized at a unique moment in time. This design results pertinent for social studies in real contexts, where the manipulation of variables may not be viable nor ethical (14).

The selection of this type of sampling is justified in the necessity of identifying participants that possess specific characteristics directly related to the object of study. Older adults who have participated or are participating in employment, entrepreneurship or productive support program activities were included, since these subjects count with relevant experiences that permit analyzing in a more precise manner the factors that influence economic inclusion. Likewise, exclusion criteria were considered, such as non-participation in economic activities or the impossibility of providing reliable information, with the aim of guaranteeing the quality and pertinence of the collected data (15).

The sample was conformed by 57 older adults resident in Alausí canton, selected by means of a non-probabilistic intentional sampling. The selection was realized from the identification of potential participants in community spaces, older adult associations and local registries linked to productive support programs, prioritizing those who complied with the criteria established for the study, that is, persons of 65 years or more who have participated or are participating in employment, entrepreneurship or productive initiative activities (16).

For the collection of information the survey was utilized as principal technique, applied in a direct manner to the participants. The instrument employed was a structured questionnaire, designed specifically for this investigation, which was composed of several sections. The first section collected sociodemographic information, including age, sex, educational level, marital status and living situation. The second section addressed aspects related to economic activity, such as type of occupation, income level, job stability and sources of financing. The third section centered on participation in productive support programs, considering variables such as access to training, technical assistance, financing and type of program (employment or entrepreneurship). Finally, the fourth section evaluated the level of perceived economic inclusion, through indicators such as access to opportunities, economic autonomy and participation in productive activities.

The questionnaire included closed questions of dichotomous and multiple-choice type, as well as items measured by means of a five-point Likert-type scale, which permitted capturing the perception of the participants regarding their level of economic inclusion. Prior to its application, the instrument was submitted to a process of content validation by means of expert judgment in areas of economy, social development and research methodology. A pilot test was realized with a reduced group of participants, with the aim of evaluating the clarity, pertinence and comprehension of the questions, realizing the necessary adjustments before its definitive application (18).

In relation to the study variables, the independent variable corresponds to participation in productive support programs, operationalized through indicators such as access to training, financing and technical assistance. On its part, the dependent variable is economic inclusion, measured by means of indicators such as income level, economic

ISSN: 3091-1796
Vol. 4 No. 9 PP. 100-111
DOI: https://doi.org/10.56519/d890vq88
Mayo 2026

stability, access to productive opportunities and perception of economic autonomy. Control variables were considered, such as educational level, age and access to support networks, with the aim of analyzing their possible influence on the relationship between the principal variables (19).

The processing and analysis of the data was carried out utilizing statistical tools. In a first stage, a descriptive analysis of the variables was realized, employing frequencies, percentages, means and standard deviations, which permitted characterizing the study population and describing their principal socioeconomic conditions. An inferential analysis was effected with the objective of identifying the relationship between participation in productive support programs and economic inclusion (20).

For this, correlation tests were utilized, such as the Pearson or Spearman coefficient, depending on the distribution of the data. These tests permitted determining the strength and direction of the relationship between the variables. Linear regression models were applied, with the aim of analyzing the degree of influence of the independent variable on the dependent variable, controlling the effect of other relevant variables. This approach permitted identifying not only the existence of relations, but also their magnitude and statistical significance.

From the ethical point of view, the investigation was developed respecting the fundamental principles of research with human beings. All the participants were informed about the objectives of the study and their participation was completely voluntary. The confidentiality of the collected information and its exclusive use for academic ends was guaranteed. Any type of physical, psychological or social risk for the participants was avoided (21).

Finally, it is important to signal that, although the adopted methodological design permits obtaining relevant information and establishing relations among variables, it presents certain limitations. Among them is found the use of a non-probabilistic sampling, which restricts the generalization of the results, as well as the cross-sectional nature of the study, which does not permit establishing definitive causal relations. Nevertheless, the obtained findings provide a solid base for future investigations and for the design of policies and programs oriented to improve the economic inclusion of older adults in similar contexts (22).

RESULTS

The principal dimensions of the economic inclusion of older adults in Alausí canton, evaluated by means of a Likert-type scale, as well as their relationship with participation in productive support programs, through indicators such as employment participation, income level, access to financing and economic autonomy, are presented with the aim of offering an integral vision of the degree of economic insertion of this population group.

Table 1. Dimensions of the economic inclusion of older adults and their relationship with productive support programs

Evaluated dimension	Item (Likert scale 1–5)	Mean ($\bar{x}$)	Std. Dev. (σ)	Inclusion level	Correlation (r)
Employment participation	"I participate in work activities that generate income"	3.42	0.88	Moderate	0.61
Job stability	"My economic activity provides me stability over time"	3.10	0.93	Moderate-low	0.58

ISSN: 3091-1796
Vol. 4 No. 9 PP. 100-111
DOI: https://doi.org/10.56519/d890vq88
Mayo 2026

Entrepreneurship development	"I have developed my own business initiatives"	3.15	0.95	Moderate-low	0.57
Income level	"My current income covers my basic needs"	3.28	0.90	Moderate	0.63
Access to financing	"I have had access to productive credits or financing"	2.75	1.05	Low	0.59
Training and education	"I have received training to improve my productive activity"	2.89	1.02	Low	0.64
Access to support programs	"I have participated in institutional productive support programs"	2.95	1.01	Low	0.66
Social support networks	"I have family or community support for my economic activity"	3.80	0.78	Moderate-high	0.69
Economic autonomy	"I am economically independent thanks to my activity"	3.67	0.81	Moderate-high	0.72
Satisfaction with economic activity	"I feel satisfied with my participation in productive activities"	3.55	0.85	Moderate-high	0.70

Analysis: The results evidence that the economic inclusion of older adults in Alausí canton is a complex and clearly multidimensional phenomenon, in which both individual and structural factors converge. Far from responding to a homogeneous logic, the data show an unequal evolution among the distinct analyzed dimensions, which permits understanding that economic inclusion does not depend exclusively on participation in productive activities, but on a set of conditions that facilitate or limit said participation.

In the first place, it stands out that the dimensions associated with personal and social factors present the highest levels. The variable "social support networks" reaches the highest mean ($\bar{x}$ = 3.80), which suggests that the family and community environment plays a fundamental role in the sustainability of the economic activities of older adults. This finding results coherent with rural contexts such as Alausí, where community dynamics and social links usually compensate, to a certain measure, the institutional limitations. In this same line, "economic autonomy" ($\bar{x}$ = 3.67) and "satisfaction with the economic activity" ($\bar{x}$ = 3.55) also present relatively high values, which indicates that, despite the existing restrictions, older adults manage to maintain an acceptable level of independence and subjective well-being.

In contrast, the dimensions related to access to institutional resources present the lowest levels. "Access to financing" ($\bar{x}$ = 2.75), "training and education" ($\bar{x}$ = 2.89) and "access to productive support programs" ($\bar{x}$ = 2.95) reflect a clear weakness in institutional intervention. These results suggest that, although there exist programs oriented to foster employment and entrepreneurship, their reach is limited or does not manage to respond adequately to the needs of the older adult population. The high standard deviation observed in these variables also indicates an unequal distribution of access, which implies that some individuals manage to benefit, while others remain excluded.

On the other hand, the dimensions linked directly with economic activity, such as "employment participation" ($\bar{x}$ = 3.42), "income level" ($\bar{x}$ = 3.28), "job stability" ($\bar{x}$ = 3.10) and "entrepreneurship development" ($\bar{x}$ = 3.15), are located at an intermediate level. This evidences that older adults do participate in productive activities, but face limitations in terms of stability, formalization and economic growth. The low score in job stability suggests that many of these activities do not guarantee continuity nor economic security, which can generate long-term vulnerability.

ISSN: 3091-1796
Vol. 4 No. 9 PP. 100-111
DOI: https://doi.org/10.56519/d890vq88
Mayo 2026

From the inferential point of view, the positive correlations observed among all the dimensions and economic inclusion permit confirming that it is an interdependent phenomenon. “Economic autonomy” presents the highest correlation (r = 0.72), followed by “satisfaction with the economic activity” (r = 0.70) and “social support networks” (r = 0.69). This reinforces the idea that economic inclusion cannot be understood solely from objective indicators, such as income, but also incorporates subjective and relational elements that influence the perception of well-being and the capacity to sustain productive activities.

Likewise, variables such as “access to support programs” (r = 0.66) and “training” (r = 0.64) show relevant correlations, which indicates that, although currently they present low levels, they have a high potential to improve economic inclusion if they are strengthened adequately. This finding is particularly important from a public policy perspective, since it suggests that institutional intervention could generate significant impacts if the coverage is managed to be expanded and the quality of the programs improved.

The results permit identifying a clear tendency: the economic inclusion of older adults in Alausí is sustained principally on individual efforts and informal networks, more than on a structured support system. Although this demonstrates the capacity of resilience of this population, it also puts in evidence the necessity of strengthening the institutional mechanisms that permit transforming these subsistence strategies into real opportunities of economic development.

In this sense, the observed evolution can be qualified as partial. There exist advances in terms of participation and autonomy, but important gaps persist in the access to key resources such as financing, training and support programs. Overcoming these gaps will require not only expanding the coverage of existing policies, but also adapting their design to the specific characteristics of older adults, considering factors such as their experience, capacities and sociocultural context.

DISCUSSION

The findings of the present investigation permit deepening in the comprehension of the economic inclusion of older adults from an integral perspective, evidencing that it is a complex phenomenon that transcends the simple generation of income. In coherence with the literature on active aging and inclusive development, the results confirm that the economic participation of older persons not only responds to material needs, but also to social, emotional and cultural factors that influence their general well-being.

One of the principal contributions of the study resides in having addressed economic inclusion as a multidimensional construct, which permitted identifying significant differences between individual and structural factors. It was observed that variables such as economic autonomy, satisfaction with the productive activity and social support networks present relatively high levels, which suggests that older adults develop their own strategies to remain active within the economy. This result coincides with previous investigations that highlight the role of social capital and resilience as key elements in contexts of vulnerability, particularly in rural zones.

ISSN: 3091-1796
Vol. 4 No. 9 PP. 100-111
DOI: https://doi.org/10.56519/d890vq88
Mayo 2026

A critical aspect that emerges from the analysis is that, in the case of Alausí, economic inclusion depends in great measure on individual efforts and informal networks, more than on a solid institutional system. This situation can be explained by the limited coverage and accessibility of public programs, as well as by geographic, administrative and cultural barriers that hinder the effective insertion of older adults in productive support policies. The findings are consistent with what was posed by Rowles (1986) in his studies on the geography of aging, who highlights that in rural contexts older adults tend to construct their well-being from community and territorial links more than from formal structures. In a similar manner, Sánchez (2007) signals that in Latin America the inclusion of this population group is usually mediated by informal dynamics, where the family and the community fulfill a central role before the insufficiency of institutional systems.

The study also evidences important limitations in the access to institutional resources, such as financing, training and productive support programs. This gap reflects a disconnection between the existing public policies and the real needs of the older adult population. The results contribute relevant empirical evidence to the debate on the effectiveness of economic inclusion strategies, signaling that it is not enough with the existence of programs, but that it is necessary to guarantee their accessibility, territorial pertinence and sustainability over time.

From a comparative perspective, the results are consistent with studies developed in Latin America, where the economic inclusion of older adults is usually mediated by labor informality and the limited access to social protection systems. This investigation contributes an added value upon centering on a specific local context such as Alausí canton, which permits making visible territorial realities that many times remain diluted in analyses of national or regional character. In this manner, it contributes to closing a gap in the literature, generating situated knowledge that can orient more contextualized interventions.

In terms of contribution to society, the investigation offers valuable inputs for the design and strengthening of public policies oriented to the economic inclusion of older adults. The necessity of transitioning from assistentialist approaches toward strategies that promote autonomy, the development of capacities and active participation is put in evidence. The importance of strengthening productive support programs by means of components such as adapted training, access to microfinancing and continuous technical accompaniment is highlighted.

In equal form, the results invite to rethink the role of older adults within the economic and social system. Far from being considered solely as dependent subjects, the findings show that they constitute active actors with productive potential, accumulated experience and capacity to contribute to local development. Recognizing and potentiating this role not only has economic implications, but also social, upon favoring their inclusion, reducing exclusion and promoting a more equitable and intergenerational society.

CONCLUSIONS

These findings suggest that the economic inclusion of older persons in Alausí canton is a complex and multidimensional process that implies the convergence of individual,

social and institutional factors. Although the results indicate that this population conserves moderate levels of economic participation, in great measure favored by support networks and by their own mechanisms, key structural barriers that impede their sustainable productive evolution are also identified.

The deficiencies in the access to financing, training and productive support programs indicate an important gap regarding public policies for this age group. In rural contexts, these initiatives destined to promote economic inclusion do not collect the real needs of older persons.

Measuring this will be essential to strengthen the intervention mechanisms from a dual perspective: 1) integral strategies, where the objective is not solely that older persons generate income, but also that they count with greater capacities and autonomy, as well as with active participation. Recognizing their condition as social and productive agents constitutes, by itself, an important advance toward a more integral, equitable and sustainable development model, in which aging signifies opportunity and not incapacity.

REFERENCES

1. Rowles GD. The geography of ageing and the aged: Toward an integrated perspective. Prog Hum Geogr. 1986;10(4):511–39. doi:10.1177/030913258601000403

2. Horgas AL, Wilms HU, Baltes MM. Daily life in very old age: Everyday activities as expression of successful living. Gerontologist. 1998;38(5):556–68. doi:10.1093/GERONT/38.5.556

3. Sánchez D. Envejecimiento demográfico urbano y sus repercusiones socioespaciales en México: Retos de la planeación gerontológica. Revista de geografía Norte Grande. 2007 Dec;(38). doi:10.4067/S0718-34022007000200003

4. Lo AYH, Jim CY. Citizen attitude and expectation towards greenspace provision in compact urban milieu. Land use policy. 2012 Jul;29(3):577–86. doi:10.1016/J.LANDUSEPOL.2011.09.011

5. John Clarkson P, Coleman R. History of inclusive design in the UK. Appl Ergon. 2015 Jan 1;46(PB):235–47. doi:10.1016/J.APERGO.2013.03.002

6. Borst HC, de Vries SI, Graham JMA, van Dongen JEF, Bakker I, Miedema HME. Influence of environmental street characteristics on walking route choice of elderly people. J Environ Psychol. 2009 Dec;29(4):477–84. doi:10.1016/J.JENVP.2009.08.002

7. Petretto DR, Pili R, Gaviano L, Matos López C, Zuddas C. Envejecimiento activo y de éxito o saludable: una breve historia de modelos conceptuales. Rev Esp Geriatr Gerontol. 2016 Jul 1;51(4):229–41. doi:10.1016/J.REGG.2015.10.003

8. Kaplan S. The restorative benefits of nature: Toward an integrative framework. J Environ Psychol. 1995;15(3):169–82. doi:10.1016/0272-4944(95)90001-2

9. Plouffe L, Kalache A. Towards global Age-Friendly cities: Determining urban features that promote active aging. Journal of Urban Health. 2010 Sep;87(5):733–9. doi:10.1007/S11524-010-9466-0

10. Föbker S, Grotz R. Everyday mobility of elderly people in different urban settings: The example of the city of Bonn, Germany. Urban Studies. 2006 Jan;43(1):99–118. doi:10.1080/00420980500409292

11. Cortés-Topete MB, Tavares-Martínez RA. Oportunidades de inclusión y bienestar de las personas mayores en sus vecindarios. Estud Demogr Urbanos Col Mex. 2022 May 1;37(2):719–46. doi:10.24201/EDU.V37I2.2031

12. San Román XA, Toffoletto MC, Oyanedel Sepúlveda JC, Salfate SV, Reynaldos Grandón KL. Factors associated to subjective wellbeing in older adults. Texto e Contexto Enfermagem. 2017;26(2). doi:10.1590/0104-07072017005460015

13. Plouffe L, Kalache A. Towards global Age-Friendly cities: Determining urban features that promote active aging. Journal of Urban Health. 2010 Sep;87(5):733–9. doi:10.1007/S11524-010-9466-0

14. James JB, Matz-Costa C, Smyer MA. Retirement security: It's not just about the money. American Psychologist. 2016 May 1;71(4):334–44. doi:10.1037/A0040220

15. Silva MB. Percepção da população assistida sobre a inserção de estudantes de medicina na Unidade Básica de Saúde. Trabalho de conclusão de curso. 2016;1(9):1–10.

16. Pavot W, Diener E. The Satisfaction With Life Scale and the emerging construct of life satisfaction. Journal of Positive Psychology. 2008 Apr;3(2):137–52. doi:10.1080/17439760701756946

17. Munk K. The Elderly are Coming! Nord Psychol. 2007 Jan 1;59(1):1–6. doi:10.1027/1901-2276.59.1.1

18. Denegri Coria M, García Jara C, González Rivera N, Orellana Calderón L, Sepúlveda Maldonado J, Schnettler Morales B. Bienestar Subjetivo y Satisfacción con la Alimentación en estudiantes universitarios: Un estudio cualitativo. Summa Psicológica. 2014 Mar 31;11(1):51–63. doi:10.18774/448X.2014.11.144

19. Fonseca R, Kapteyn A, Lee J, Zamarro G, Feeney K. A Longitudinal Study of Well-Being of Older Europeans: Does Retirement Matter? J Popul Ageing. 2014 Mar;7(1):21–41. doi:10.1007/S12062-014-9094-7

20. Gerstenecker A, Eakin A, Triebel K, Martin R, Swenson-Dravis D, Petersen RC, et al. Age and education corrected older adult normative data for a short form version of the financial capacity instrument. Psychol Assess. 2016 Jun 1;28(6):737–49. doi:10.1037/PAS0000159

21. Edwards MK, Loprinzi PD. Experimentally increasing sedentary behavior results in decreased life satisfaction. Health Promot Perspect. 2017 Mar 5;7(2):88–94. doi:10.15171/HPP.2017.16

22. Diener E, Emmons RA, Larsem RJ, Griffin S. The Satisfaction With Life Scale. J Pers Assess. 1985 Feb 1;49(1):71–5. doi:10.1207/S15327752JPA4901_13

ISSN:
3091-1796
Vol. 4 No. 9 PP. 112-133

DOI:
https://doi.org/10.56519/j08z9j33
Mayo 2026

GESTIÓN ESTRATÉGICA Y RIESGOS FINANCIEROS: CASO BIOALIMENTAR

STRATEGIC MANAGEMENT AND FINANCIAL RISKS: THE BIOALIMENTAR CASE

Axel Mauricio Guerrero Velastegui[1], Laidy Anahi Zambrano Castro, Jorge Francisco Abril Flores[3]
{aguerrero5782@uta.edu.ec1, lzambrano3486@uta.edu.ec2, jf.abril@uta.edu.ec3}
Fecha de recepción: 06/04/2026 / Fecha de aceptación: 11/05/2026 / Fecha de publicación: 12/05/2026

RESUMEN: Este estudio analiza cómo se relaciona la gestión estratégica con los riesgos financieros en Biolimentar y resalta su importancia en la toma de decisiones y la estabilidad organizacional. Gran parte del desafío actual surge de la incertidumbre que enfrentan las empresas actualmente, donde los factores económicos, políticos y sociales pueden afectar directamente sus operaciones. El objetivo principal es comprender cómo la gestión estratégica ayuda a reducir los riesgos financieros asociados al sector agroindustrial del Ecuador. Para ello se utilizó un enfoque cualitativo descriptivo mediante entrevistas a directivos, observación directa mediante diario de campo y valoración por parte de un experto en campo. La información recopilada se analizó mediante procesos de codificación respaldados por el software Atlas. Tú. Los resultados concluyen que la dirección estratégica es la dirección prioritaria con un 23.2%, destacando que la dirección y la planificación son los aspectos más importantes del análisis; Sin embargo, cuando se combinan las diferentes categorías de riesgo, representan un total del 38,6% del total, mostrando un entorno caracterizado por la vulnerabilidad financiera y operativa. Sin embargo, también fueron evidentes algunos efectos negativos en el clima laboral debido a cambios en la estructura organizacional. En conclusión, la integración de la gestión estratégica con la gestión del riesgo financiero fortalece la estabilidad de la empresa, aunque es necesario asegurar un equilibrio entre el desempeño organizacional y el bienestar de los empleados.

Palabras clave: *Gestión estratégica, riesgo financiero, toma de decisiones, sostenibilidad, adaptación*

ABSTRACT: This study analyzes the relationship between strategic management and financial risks at Biolimentar and highlights its importance in decision-making and organizational stability. Much of the current challenge stems from the uncertainty companies face today, where economic, political, and social factors can directly impact their operations. The main objective is to understand how strategic management helps reduce the financial risks associated with Ecuador's agribusiness sector. A descriptive qualitative approach was used, employing interviews with managers, direct observation through field notes, and assessment by a field expert. The collected data was analyzed using coding processes supported by Atlas.tu software. The results conclude that strategic management is the priority area, at 23.2%, highlighting that management and planning are the most important aspects of the analysis. However, when the different risk categories are combined, they represent a total of 38.6%, revealing an environment characterized by financial and operational vulnerability. Furthermore, some negative effects on the work environment due to changes in the organizational structure were also evident. In conclusion, integrating strategic management with financial risk

English translation of the original article published in Ecuacientífica, Vol. 4, No. 9, pp. 112-133.

ISSN: 3091-1796
Vol. 4 No. 9 PP. 112-133
DOI: https://doi.org/10.56519/j08z9j33
Mayo 2026

management strengthens the stability of the company, although it is necessary to ensure a balance between organizational performance and employee well-being.

Keywords: *Strategic management, financial risk, decision making, sustainability, adaptability*

[1]Universidad Técnica de Ambato (UTA), https://orcid.org/0009-0008-2551-5269
[2]Universidad Técnica de Ambato (UTA), https://orcid.org/0009-0003-3825-0638
[3]Universidad Técnica de Ambato (UTA), Facultad de Ciencias Administrativas, https://orcid.org/0000-0002-9491-5169

INTRODUCTION

Financial risk management in Ecuadorian and Latin American service companies was analyzed taking into account the impact of Covid-19. The study demonstrated that debt and the fall of GDP were the determining factors of the increase in business financial risk (1). It was also concluded that the organizations that implemented control strategies and scenario analysis managed to mitigate partially the negative consequences of the crisis. These antecedents highlight the importance of integrating risk management into strategic planning, particularly under conditions of high economic uncertainty. The impact of technological innovation on regional manufacturing analyzes how the adoption of digital technologies in the Southern Cone shows that their adoption reduces operational costs and optimizes resources, being considered a key motor of the specific economic growth of the industry in the current decade (2). The study on environmental sustainability and circular economy strategies in Latin America examines the transition of agroindustrial companies to understand the valorization of organic residues, the transformation of crop by-products into biofuels or natural fertilizers, making agriculture sustainable (3).

Strategic management is defined as a set of decisions and actions that determine the long-term performance of an organization and that have as objective to create a sustainable competitive advantage. In the current context, the discipline has evolved toward a dynamic, adaptive and integral approach that responds to an environment characterized by volatility, uncertainty, complexity and ambiguity (VUCA).

Financial risk management has evolved toward a strategic approach that integrates technological tools and quantitative methods to predict future scenarios. The strategies most utilized in risk management include diversification, hedging and scenario analysis supported by technological tools such as predictive analysis software (4). These tools permit us to reduce uncertainty and improve decision-making.

In equal form, risk management is an essential process that permits identifying, analyzing and mitigating the risks associated with financial investments and assuring their profitability and sustainability (5). Likewise, risk management implies a structured sequence that involves identifying, evaluating and treating the risks to minimize adverse effects. In this context, financial risk management becomes a central part of the organization's strategy, since it permits anticipating threats and taking advantage of opportunities. In the current context, the two disciplines are closely related.

Strategic decisions cannot be taken without taking into account the associated financial risks, since they affect directly the sustainability and performance of the organization. Financial risk management is an essential process to guarantee safe and sustainable

ISSN: 3091-1796
Vol. 4 No. 9 PP. 112-133
DOI: https://doi.org/10.56519/j08z9j33
Mayo 2026

investments as part of a business strategy (6). The link between strategic management and financial risks is direct, since each strategic decision is associated with a level of risk. In this sense, organizations must integrate risk management into their strategic planning. There exists a significant relationship between financial risk management and the profitability of the company, which suggests that an adequate management of risk contributes to financial performance (7).

In addition, recent investigations show that strategic decisions must be based on risk analyses to guarantee their viability and sustainability. This means that strategic management cannot be separated from financial analysis. For this reason, the integration of strategies is constructed with risk, as shown in Table 1. In the current business context characterized by uncertainty, the integration of both approaches permits organizations to improve their capacity of response to environmental changes. On the other hand, the implementation of control systems such as compliance strengthens risk management, assures legal compliance and organizational transparency (6).

Table 1. Levels of integration between strategies and risk

Level of integration	Percentage
High	35%
Medium	40%
Low	25%

Note: The organizations that integrate effectively both areas achieve better financial results and greater long-term stability.

Source: Adapted from (7).

The relationship between strategic management and financial risks is based on the necessity of aligning the objectives of the organization with the capacity to assume and manage risks. The incorporation of risk analysis into strategic planning improves the capacity of organizations to reach their objectives and adapt to a changing economic environment. Likewise, financial management becomes an important support for strategic decision-making, since it provides essential information on the financial viability of the proposed strategies (5).

The analysis of food risks includes three basic components: risk assessment, risk management and risk communication according to the Codex Alimentarius. This approach permits determining preventive measures based on scientific evidence. In this sense, food safety is a key element since it guarantees that foods do not harm the consumer if they are prepared and consumed adequately. In addition, recent investigations show that risk management in the food industry is dynamic, since hazards are not static and can vary depending on factors such as processing, the environment and the training of personnel.

The food industry has specific characteristics that increase its exposure to financial risks. These factors include the volatility of prices, the dependence on agricultural inputs and changes in demand. In the Ecuadorian context, financial risk management has gained relevance due to events such as the pandemic, which showed the necessity of implementing mitigation strategies in companies (5).

Likewise, portfolio management and the diversification of investments is fundamental to assure the sustainability of this industry, since it permits optimizing financial resources and reducing risk (8).

ISSN: 3091-1796
Vol. 4 No. 9 PP. 112-133
DOI: https://doi.org/10.56519/j08z9j33
Mayo 2026

In this sense, food companies must adopt strategies that integrate financial management and strategic planning to confront an uncertain and highly competitive environment. Food safety is a very pressing worldwide problem, especially with the increase of foodborne diseases and the complexity of supply chains. The new risks for food safety are a constant threat for public health and require more solid and updated control systems (9). Globalization has also increased the interconnection of food chains, which means that risks can extend rapidly at the international level.

The risks in the food sector are classified principally as shown in Table 2:

Table 2. Classification of risks in the food sector

Types of risks	Concepts
Biological risks	Include bacteria, viruses, parasites and other microorganisms that can cause diseases. They are the most frequent in the food chain.
Chemical risks	Originate from the presence of pesticides, excess additives, heavy metals or industrial contaminants.
Physical risks	Include foreign bodies such as glass, metal or plastic in foods.
Emerging risks	According to recent studies, these risks are associated with technological, climatic and social changes, which demands constant monitoring and updating of control systems.

Note: In Ecuador it is highlighted that the lack of implementation of GMP significantly increases sanitary risks in the food sector.

Source: Adapted from (8).

In the case of Bioalimentar these conditions are clearly visible. As an organization associated with the agroindustrial sector, it faces challenges related to the volatility of prices, the dependence on imported inputs and changes in the economic environment. In addition, its operation is affected by geopolitical factors, which can affect both costs and the availability of resources. Faced with this panorama, strategic management becomes the principal tool to predict risks and take decisions that guarantee the stability of the company. From this reality arises the necessity of analyzing how strategic management and financial risks are related in the company Bioalimentar.

Understanding these relations permits not only identifying the strengths and weaknesses of the organization, but also proposing improvements that contribute to its sustainability. In this sense, this study centers on how strategic planning affects the identification, evaluation and control of financial risks. The general purpose of this work is to analyze the relationship between strategic management and financial risks in the company Bioalimentar with the objective of understanding its impact on the stability of the organization. For this, it is assumed that an adequate strategic management permits reducing economic vulnerability and improving the capacity of adaptation to environmental changes. This approach is based on the idea that organizational decisions must be based on an integral analysis that takes into account both strategic and financial aspects.

Finally, this study intends to provide a clearer image of the importance of integrating strategic management with the analysis of financial risks, especially in situations where uncertainty is constant. Beyond the financial results, it is intended to highlight the necessity of adopting more integral approaches that permit organizations not only to survive, but also to grow in a sustainable manner. In this way, the study contributes to the strengthening of knowledge in the business ambit and offers elements that can be of utility for decision-making in similar organizations.

MATERIALS AND METHODS

ISSN: 3091-1796
Vol. 4 No. 9 PP. 112-133
DOI: https://doi.org/10.56519/j08z9j33
Mayo 2026

This study is designed according to a qualitative paradigm, utilizing an interpretative approach and a descriptive level to understand the depth of organizational processes. The research modality is of field and of inductive nature, which permits extracting data directly from the institutional reality to generate theoretical abstractions on strategic management and its mitigation against financial threats. Being a qualitative study, the richness of the data and the depth of the discourse of the principal actors is prioritized, avoiding the use of correlational statistical models and centering on the semantic connection of the analyzed categories. The study population is composed of the manager of integrated systems and the financial manager of Bioalimentar, as well as the payroll officer, located in the city of Ambato, Ecuador. The sample was selected according to the criterion of non-probability by convenience, selecting informants who have technical and strategic knowledge of organizational planning and financial flows. The study environment is located specifically in the agroindustrial sector, taking into account the socioeconomic and geopolitical context that affects the international extraction of raw materials.

In a first stage the theoretical, conceptual and methodological bases were established, in addition to outlining the field work and data collection.

In the second phase of data collection, a field diary was utilized as a tool of participant observation, registering internal dynamics, personnel behavior and reactions to changes in the organizational structure of the company. An open interview directed to department heads was utilized, which permitted an open exploration of the perceptions on the institutional methodology and the identification of risks. In addition, the dimensions were validated by five experts with wide experience in strategic management and corporate finance to analyze them from a technical and external perspective.

In the third stage the semantic analysis was realized by means of technical interventions and processing of the information, which was realized by means of a process of systematic coding. Once the interviews and field notes were transcribed, a phase of open coding was realized to identify new concepts related to adaptability, fluency and organizational culture. Then axial coding was utilized to determine the causality and the correlation between key categories such as strategic management and the different types of financial risk (operational, market, legal, credit and liquidity).

Finally, step 4 implies the triangulation with qualitative analysis supported by the use of specialized technology, specifically the software ATLAS.ti version 7. The tool facilitated the organization of data and the generation of semantic networks to visualize graphically how strategic management mitigates risks through specific policies.

The units of analysis were text segments or “references” that demonstrate the implementation of the institutional methodology and its impact on financial stability. The procedure guarantees the reproducibility of the analysis under the same conditions of interpretation specified according to the methodological rigor required for the obtaining of scientific evidence in the field of administrative sciences.

RESULTS

ISSN: 3091-1796
Vol. 4 No. 9 PP. 112-133
DOI: https://doi.org/10.56519/j08z9j33
Mayo 2026

Carrillo addresses the relationship between financial management and risk management and emphasizes that variables such as financing, investment and operational risks must be considered in strategic decisions (10). The author signals that an adequate financial management permits predicting risks and improving the sustainability of the company. This study deepens in the topic establishing that strategic management must include mechanisms of financial control to guarantee organizational stability.

In terms of the impact of risk management on decision-making, financial risk management influences commercial decisions.

The results show that the lack of integrated information systems and the incapacity to identify the risk profile limit the capacity of response of the organization (11). These antecedents suggest that strategic management must be backed by effective information systems to optimize the evaluation of financial risks. Espinoza realizes a systematic review of the strategies and tools utilized in financial risk management.

The investigations have found that the key strategies include diversification, hedging and scenario analysis, while the use of technologies such as predictive analysis improves decision-making (4). This contribution is significant because it shows the evolution of strategic management toward more technological and integrated models. Strategic management has ceased to be a linear process to become a flexible system based on organizational adaptability in relation to digital transformation and globalization (1).

Strategic management is an integral process that permits organizations to formulate, implement and evaluate decisions aimed at achieving long-term objectives, taking into account a dynamic and competitive environment. Today, the discipline has evolved toward a more flexible and adaptive approach where decision-making is based on analytical and prospective information, whose importance is shown in Table 3.

Factor	Percentage
Improves competitiveness	85%
Adaptation to change	80%
Innovation	78%
Decision-making	75%

Table 3. Importance of strategic management in companies

Note: The contemporary approach also incorporates social responsibility and sustainability as strategic elements, promoting responsible business practices aligned with sustainable development.

Source: Adapted from (1).

The Play to Win method integrates financial risks into its strategic framework to transform threats into sustainable competitive advantages. Market risk is eliminated by choosing “where to play” accepting volatility only if they confirm the premise of winning the segment. On the other hand, the credit exposure of how to win is utilized as a value lever to capture underserved niches through financing that generates loyalty.

Liquidity is managed as a “central capacity” that guarantees the cash flow necessary for rapid maneuvers and timely expansion. Finally, operational risks are mitigated through solid systems of “governance” that protect the tactical execution from technical or human errors. In this form, the organization not only avoids losses, but aligns each type of risk with the fulfillment of its value promise. Thus, operational control becomes the maximum guarantee that the strategy continues winning and without exceptions. This

ISSN: 3091-1796
Vol. 4 No. 9 PP. 112-133
DOI: https://doi.org/10.56519/j08z9j33
Mayo 2026

integral vision permits that financial risks act as pillars that sustain the competitiveness of the company. Financial risk includes the possibility of uncertain future events that can cause financial losses that affect the profitability and sustainability of the company (12).

Application to the Bioalimentar case

In the case of Bioalimentar, strategic management and financial risk management are fundamental to assure its sustainability and growth. Companies of the food industry such as Bioalimentar face challenges related to the variability of costs, competition and regulatory changes. In this context, risk management permits us to anticipate potential losses and create mitigation strategies. Implementing tools such as scenario analysis, diversification and financial control improves decision-making and reduces uncertainty.

In addition, integrating risk management into the business strategy helps to strengthen organizational resilience so that the company can adapt to changes in the environment. Strategic management and financial risk management are the most important pillars of organizational success in the current context. The most recent literature shows that the integration of both approaches permits improving decision-making, optimizing resources and guaranteeing the sustainability of the company.

In the case of Bioalimentar, this relationship is particularly important due to the specific circumstances of the food industry, which generates a high degree of uncertainty. Therefore, implementing strategies based on risk analysis is fundamental for its competitiveness. The results obtained in the process of collection and analysis of information permit understanding more deeply how strategic management in Bioalimentar is related to financial risk management.

Through interviews, documentary analysis and observations registered in a field diary, it was possible to identify patterns, practices and organizational dynamics that demonstrate the importance of these relations in the current business context. In the first place, it is confirmed that strategic management constitutes the central axis on which the great decisions of the organization are structured.

The company does not act improvisationally, but bases its operations on predefined methods that guide the planning and execution of its operations. Among these methods stands out the use of structured approaches, which permit analyzing the environment, defining clear objectives and creating strategies adapted to the reality of the market. This form of working reflects an organizational culture oriented to planning, where decisions are not only aligned with immediate needs, but also with a broader vision of growth and sustainability. An important aspect that arises from the analysis is how much importance the company gives to the use of information in decision-making. The interviewed managers indicated that they utilize tools such as economic forecasts, scenario analysis and economic indicators to anticipate possible changes in the environment.

This practice reduces uncertainty and facilitates the identification of potential risks before they materialize. In this sense, strategic management is not limited to defining goals, but also includes analytical mechanisms that foster a proactive posture.

Coding system and semantic analysis

ISSN: 3091-1796
Vol. 4 No. 9 PP. 112-133
DOI: https://doi.org/10.56519/j08z9j33
Mayo 2026

The systematic coding process permitted identifying the principal categories of analysis. Table 4 presents the codes utilized and their analytical definitions.

Table 4. Analytical codes and definitions

Acronym	Code name	Analytical definition
GE	Strategic Management	Planning processes, Play to Win methodology and vision.
AD	Adaptability	Use of statistics and projections to adjust to the environment.
CO	Organizational Culture	Values, leadership and dynamics of young personnel.
RO	Organizational Restructuring	Hierarchical changes (from directors to coordinators).
MCL	Work Climate Discomfort	Tensions detected due to structural movements.
PL	Liquidity Policies	Tactical control actions (vacations, cash audits).
RF	Financial Risk	General category of economic threats.
ROp	Operational Risk	Failures in processes, production or internal errors.
RLeg	Legal Risk	Impact of laws, taxes (ISD) and regulations.
RLiq	Liquidity Risk	Problems of solvency or short-term cash flow.
RM	Market Risk	Prices of raw materials, freights and tariffs.
RC	Credit Risk	Financing costs and interest rates.

Table 5 presents representative text segments and the codes assigned during the analysis.

Table 5. Representative text segments and assigned codes

Source	Text segment (quote)	Assigned codes
Interview	"assume a risk upon accessing a credit… interest rates."	RC
Interview	"utilize a PESTEL matrix… financial indicators."	GE, RM
Interview	"gap… if operations management is not concomitant with financial."	ROp
Interview	"utilize tools… statistics, projections."	AD, GE
Mgr. Doc.	"'Play to Win' methodology (5 questions)… 3-year history."	GE
Mgr. Doc.	"financial simulations… cost and expense scenario."	GE, RLiq
Mgr. Doc.	"structure… is being restructured… cascade lines."	RO
Mgr. Doc.	"60% is international, freights and tariffs… raw materials."	RM
Mgr. Doc.	"political changes such as the ISD (Foreign Exchange Exit Tax)."	RLeg
Mgr. Doc.	"monitor costs, review inventories, cash audits."	ROp, PL
Mgr. Doc.	"very strict internal policies that protect liquidity."	PL, RLiq
Field diary	"hirings and personnel are very young… under 35."	CO
Field diary	"oblige collaborators to take vacations… minimize severance."	PL, RLiq
Field diary	"general discomfort… suppressed areas, directors to coordinators."	MCL, RO
Field diary	"incredible strategic management… capacity of adaptability."	GE, AD

Table 6 groups the codes into thematic families that structure the semantic network.

Table 6. Code families and justification in the network

Family	Included codes	Justification in the network
1. CORPORATE STRATEGY	GE, AD	It is the motor block that defines the course of Bioalimentar.
2. RISK AND FINANCE MANAGEMENT	RF, RC, RM, ROp, RLiq, RLeg, PL	Groups both the types of risk and the policies to control them.
3. ORGANIZATIONAL DYNAMICS	CO, RO, MCL	Collects the human impact of strategic decisions.

Note: The organization by families constitutes the phase of axial coding, permitting structuring the findings in strategic, financial and organizational dimensions.

Source: Own elaboration, ATLAS.ti 7 data.

ISSN:
3091-1796
Vol. 4 No. 9 PP. 112-133

DOI:
https://doi.org/10.56519/j08z9j33
Mayo 2026

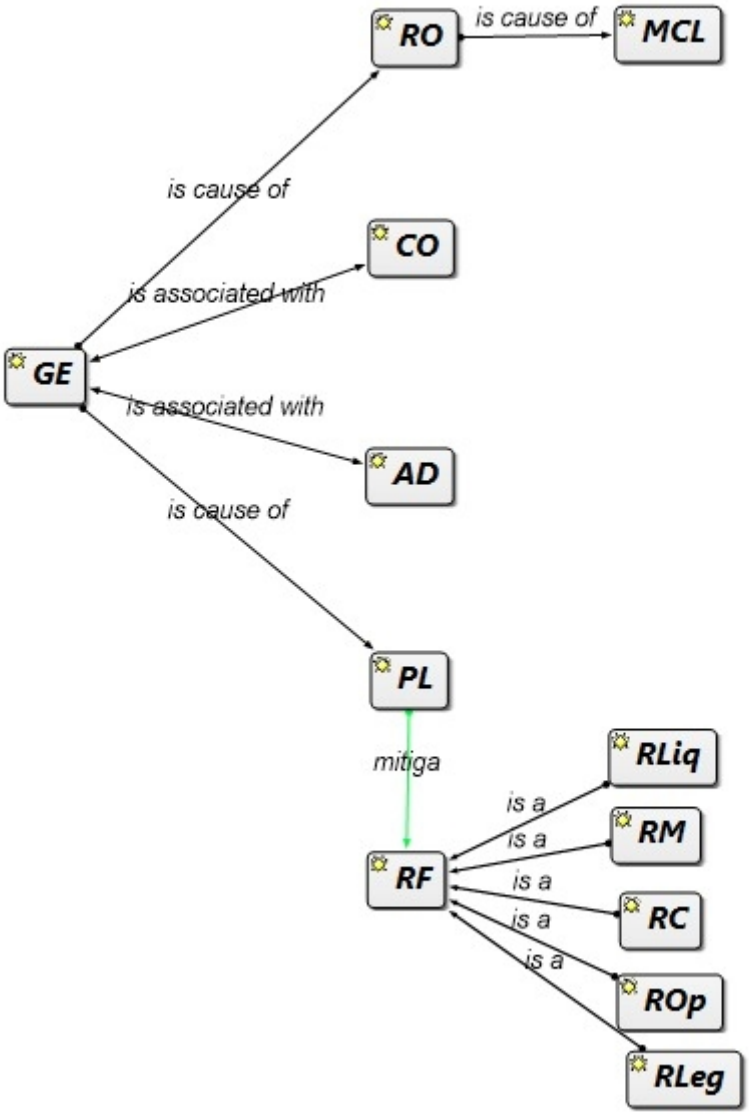


Figure 1. Semantic network that represents the logical and relational model of the company Bioalimentar

Source: Own elaboration, ATLAS.ti 7 data.

As can be observed in Figure 1: the semantic network developed in ATLAS.ti 7 represents the logical and relational model of the company Bioalimentar, locating strategic management (SM) as the central node and motor of the organizational dynamics. The graph shows the structure of two effects: one centers on financial efficiency and the other on the internal structural transformation.

From the financial point of view, there exists a clear chain of control. Strategic management is the origin of the liquidity policy (PL), which has the special function of limiting financial risks (RF). This risk is represented as a multidimensional category that combines five critical subcategories: liquidity risk (RLiq), market risk (RM), credit risk (RC), operational risk (ROp) and legal risk (RLeg). The “is a” relationship between these nodes and RF shows that the organization does not consider risk as a general entity, but as a specific set of threats that strategic planning tries to neutralize with the help of tactical control.

ISSN: 3091-1796
Vol. 4 No. 9 PP. 112-133
DOI: https://doi.org/10.56519/j08z9j33
Mayo 2026

On the other hand, the network reveals the human and structural dimensions of the model. GE is related bidirectionally with organizational culture (OC) and adaptability (AD), which suggests that the capacity of adaptation of a company derives from its values and vision. However, the graph also signals a critical line of causality: the strategy drives the organizational restructuring (OR), which is identified as direct cause of the dissatisfaction in the work environment (MCL).

Table 7. Frequency and representativeness of the analyzed categories

Code	Category	Citations	Percentage (%)
GE	Strategic Management	10	23.2%
RF	Financial Risk	6	14.0%
AD	Adaptability	5	11.6%
RO	Organizational Restructuring	4	9.3%
PL	Liquidity Policies	3	7.0%
RLiq	Liquidity Risk	3	7.0%
RM	Market Risk	3	7.0%
ROp	Operational Risk	3	7.0%
CO	Organizational Culture	2	4.6%
MCL	Work Climate Discomfort	2	4.6%
RC	Credit Risk	1	2.3%
RLeg	Legal Risk	1	2.3%
TOTAL		**43**	**100%**

Note: The data reflect the frequency of appearance of each category in the documentary corpus processed in ATLAS.ti 7.

Source: Own elaboration, ATLAS.ti 7 data.

As observed in Table 7, the category with greatest weight in the qualitative analysis is Strategic Management (GE), which represents 23.2% of the total of findings. This demonstrates that the institutional discourse of Bioalimentar focuses principally on tactical planning. Likewise, financial risk (RF) and its derivatives (liquidity, market, operational, credit and legal) constitute, in set, a critical area of attention for management, which validates the necessity of the mitigation policies described in the semantic network (Figure 1).

The analysis of the semantic network shows that Strategic Management (GE) in Bioalimentar is not an immutable concept, but is carried out by means of the Play to Win methodology. The discoveries show that this model functions as a preventive filter for the detected risks. The Balanced Scorecard (BSC) is in charge of articulating the strategy and the operation, and its principal purpose is to convert high-level objectives into tactical traffic-light indicators (red, yellow, green).

The impact of this methodology on the examined codes is described below:

Reduction of operational and financial risks (RF, RLiq, ROp): The traffic-lighting of the BSC supervises the “necessary capacities” to win, according to what the Play to Win methodology establishes. An indicator in red or yellow on the finance or production panel activates an instantaneous reaction, which permits that the adaptability (AD) of the company counteracts the risk before it has a negative impact on solvency or liquidity. Thus, the traffic-lighting acts as an early warning mechanism that protects the cash flow.

Management of policies and external risks (RM, PL, RLeg): According to the results, the Liquidity Policies (PL), such as the regulation of prices of raw materials and inventories, agree with the vision of the strategic model “Where to Play.” The organization can adapt proactively to the fluctuations of the Ecuadorian market thanks to the continuous follow-up of MP prices (RM) and the observance of the law (RLeg) by means of the BSC.

ISSN: 3091-1796
Vol. 4 No. 9 PP. 112-133
DOI: https://doi.org/10.56519/j08z9j33
Mayo 2026

Control of liabilities and organizational dynamics (CO, RO, MCL): The Play to Win model demands efficiency, which entails the fusion of areas and the organizational restructuring (RO). The strategic management system serves itself of these transformations to improve the cost structure, despite the fact that this transition has provoked a discontent with the work climate (MCL) in former managers. The vacation policy is a specific sample of how, upon being supervised strategically, the risk of high labor liabilities is reduced and it is guaranteed that the organizational culture (CO) remains in line with the financial stability of the company.

The results conclude that Strategic Management is the priority axis with 23.2%, highlighting that management and planning are the most relevant aspects of the analysis; however, upon consolidating the distinct risk categories, these represent in set 38.6% of the total, which evidences an environment marked by financial and operational vulnerability. Likewise, the presence of adaptability and restructuring as secondary factors suggests that the organization seeks to mitigate said risks by means of structural changes, leaving in a less critical plane the aspects of culture and work climate, which present a minimal incidence in the study.

DISCUSSION

The results obtained in this study permit understanding that the relationship between strategic management and financial risk management within Bioalimentar goes beyond simple administrative practices. The company exhibits a management model that seeks to respond constantly to a volatile environment driven by economic, regulatory and operational variables that affect directly the agroindustrial sector. In this context, strategic management ceases to be only a planning mechanism and passes to be a tool of organizational survival (13). In this sense, the results coincide with what is signaled by diverse authors, who sustain that strategic management has ceased to be a rigid process to become a much more dynamic and adaptive process (14).

However, upon comparing the results of Bioalimentar with the experience documented in other agricultural and industrial companies of Andean countries such as Peru, Colombia and Bolivia, it is observed that this adaptability is not necessarily an exclusive characteristic of the organization, but rather a regional response to highly variable markets and economies vulnerable to external factors. Studies of, for example, Peruvian agroexport companies have found that the volatility of international prices and the dependence on imported raw materials has led the organizations to incorporate systems of financial forecast, scenario simulations and permanent control mechanisms to reduce uncertainty. Similar situations have been reported in agroindustrial companies in Colombia, where monetary fluctuations, tax reforms and logistic problems have led to strategic models based on operational flexibility and constant risk monitoring. In Bolivia, the studies of food companies also show organizational structures oriented to a rapid adaptation due to inflationary pressures and political instability.

From this comparison it can be interpreted that the adaptive capacity observed by Bioalimentar responds in part to the shared regional logic by the Andean companies that operate in a volatile economic context. However, in the case of Bioalimentar there is a significant difference: the adaptability does not appear only as a spontaneous response to the crises, but as an institutionalized practice that utilizes specific methods, control

ISSN: 3091-1796
Vol. 4 No. 9 PP. 112-133
DOI: https://doi.org/10.56519/j08z9j33
Mayo 2026

indicators and strategic follow-up tools. This suggests a level of formalization superior to that observed in several regional studies, where the responses of the companies tend to be more reactive than proactive. In the studied case it can be observed that the company is not limited to the creation of long-term plans in a static form, but includes tools such as scenario analysis and financial forecasts to anticipate possible changes.

This suggests a more current strategic vision in which flexibility and the capacity of response are essential (15). Thanks to this, the organization not only reacts to the problems when they arise, but also manages to prevent them, which is the principal upon confronting financial risks. However, although the results reflect a stable strategic structure, it is also necessary to analyze critically certain internal contradictions. The study shows that part of the financial stability of the company is maintained through strong policies of organizational control, especially related to the management of labor commitments, licenses and processes of internal restructuring.

From a financial perspective, these decisions can be interpreted as effective measures of protection of liquidity; but from the human and organizational level, they create tensions that in the last instance affect the work environment.

This finding is significant because it puts in relief a situation that is repeated in many Latin American organizations: financial stability is prioritized over organizational well-being. Similar processes have been documented in agroindustrial companies of Colombia and Peru, where the pressure to maintain international competitiveness has led to constant restructurings, greater workloads and perceptions of instability of the employees.

Although Bioalimentar has strengths in strategic matters, it also reflects regional dynamics where economic efficiency is many times at odds with the emotional and labor stability of the associates. On the other hand, the investigations confirm that there exists a direct correlation between a good strategic management and the capacity to reduce risks. In Bioalimentar, actions such as an adequate management of liquidity, cost control and follow-up of financial flows demonstrate that the strategy does not remain only on paper, but is carried to practice (16).

This aspect is especially important because many companies do not execute their plans exactly. In this case a sufficient correlation between what is planned and what is really done is seen, which helps to reduce the exposure to adverse situations. However, the results also show that risk management still centers principally on financial and operational variables, while the risks of the human factor seem to receive less attention. The low representativeness of the work climate and the organizational culture in the analyzed categories shows that these elements still occupy a secondary place facing the dominant economic logic.

This can become a limitation in the long term, since diverse studies in Latin American organizations have demonstrated that the processes of sustainable adaptation require not only economic efficiency, but also internal stability and a sense of belonging among the workers. Another element that stands out in the analysis is the use of information for decision-making. The results show that the company supports itself on data, metrics and technological tools to evaluate its current situation and develop future scenarios.

ISSN: 3091-1796
Vol. 4 No. 9 PP. 112-133
DOI: https://doi.org/10.56519/j08z9j33
Mayo 2026

This approach aligns with the current management trends that prioritize evidence-based decision-making (17). In addition, the use of tools such as Atlas.ti during this study highlights the importance of organizing and analyzing systematically the information to understand better the organizational realities. In this way, it can be established that an adequate management of information strengthens strategic management and helps to control better the financial risks (18). Likewise, the adaptability observed in Bioalimentar is shown as one of the most important aspects of the study. In an environment of constant change, the capacity to adapt rapidly becomes an important competitive advantage (19).

The company has demonstrated its capacity to anticipate external factors such as price fluctuations, changes in regulation or the conditions of the international market. This behavior is consistent with the current approaches that highlight organizational resilience as a key factor under uncertain conditions (20). But a more critical reading also emerges upon analyzing this adaptability in relation to the Andean context. Many companies of the region have been obliged to develop capacities of rapid response due to the lack of structural stability of their economies.

In other words, business adaptability in the Andean countries does not always arise from processes of planned innovation, but from the constant necessity to survive political crises, monetary fluctuations, dependence on imports and frequent regulatory changes. From this perspective, the adaptability of Bioalimentar can be interpreted as an organizational strength and a consequence of operating in a historically unstable environment.

However, it is important to clarify that adaptation does not mean improvisation. The results show that the decisions of the company are based on prior analysis and the use of tools that permit evaluating different options. This reinforces the idea that strategic management must remain structured but sufficiently flexible to adapt to new situations without losing the established course. Regarding financial risks, the investigations show that they cannot be addressed in an isolated form.

Each strategic decision is associated with a determined level of risk, for which it is necessary to analyze them carefully (21). The identification of risks such as those of market, credit, liquidity, operational and legal demonstrates that the company has a broad vision of the possible threats. However, areas of improvement have also been identified, particularly in terms of internal coordination. In fact, one of the most sensitive aspects observed during the investigation are the differences between determined operational and financial areas.

Although the organization counts with mechanisms of control and planning, the study shows that difficulties still exist to achieve a total integration among the different levels of the organization. This situation coincides with the results reported in other agroindustrial companies of the Andean region, where the processes of accelerated growth tend to generate problems of communication, duplication of functions and resistance to change. Finally, it is important to understand that the company does not function as a set of independent areas, but as a system in which all its components are connected.

Strategic management, financial risks, organizational culture and human talent are part of a same process that must be managed in an integrated manner (22). Neglecting any

ISSN: 3091-1796
Vol. 4 No. 9 PP. 112-133
DOI: https://doi.org/10.56519/j08z9j33
Mayo 2026

of these elements can create an imbalance that affects the general performance of the organization. In conclusion, the results of this study not only confirm the importance of strategic management in the mitigation of financial risks, but also permit understanding that the adaptability observed in Bioalimentar is part of the broader dynamics of many Andean companies that operate under the conditions.

CONCLUSIONS

1. The impact of strategic management on the reduction of financial risks

From the analysis it can be concluded that there exists a close relationship between the level of development of strategic management and the capacity to reduce the financial vulnerability of Bioalimentar. The collected information shows that the use of the Play to Win method permits that the decisions are not taken in an improvisational manner, but respond to a deliberate analysis of key aspects, such as the relationship between costs and operational expenses. This type of planning is reflected in a quite careful liquidity policy, which acts as specific control instruments. One of the most significant findings is related to the management of the commitments of the work force. The company organizes the utilization of the vacations of the employees in a planned form, which avoids the accumulation of important economic obligations for settlements. This helps to protect the financial stability in the short term. In this sense, strategic management ceases to be only a theoretical idea and passes to be a practical element that contributes directly to the maintenance of the equilibrium of the cash flow and the fulfillment of the financial obligations.

2. Proactive adaptation to the fluctuations of the macroeconomic environment

Another important aspect that is seen clearly in the study is the capacity of the company to adapt to the changes of the environment. In the case of Bioalimentar, this characteristic is particularly important, since a great part of its operations depends on international trade. Faced with this context, the organization has developed a form of working based on the constant analysis and the use of forecasts, which permits predicting possible differences in factors such as transport costs, tariffs or the prices of raw materials. This adaptability does not arise in a spontaneous manner, but is the result of a strategic planning that results in specific actions. Thanks to this, the company has been able to confront external changes, such as changes in the foreign exchange exit tax (ISD) or increase in the price of fuels, without affecting significantly its operations. In this sense, the adaptability can be understood as an organized and deliberate response to the uncertainty of the economic environment.

3. Duality between culture of innovation and tension of restructuring

Finally, the study also reveals an interesting situation in the internal dynamics of the company. On the one hand, it can be observed that strategic management has contributed to the development of a culture of innovation, supported by a new work team that contributes dynamism, new ideas and commitment to reach the institutional goals. However, this positive aspect coexists with some difficulties derived from the recent organizational restructuring. The passage to a more hierarchical model, as well as the elimination of determined areas and the transformation of managerial posts into coordination roles, has generated discontent among some employees. Some employees

ISSN: 3091-1796
Vol. 4 No. 9 PP. 112-133
DOI: https://doi.org/10.56519/j08z9j33
Mayo 2026

perceive these changes as a devaluation of their work, which has affected the work climate. Faced with this situation, it can be concluded that, to assure the sustainability of the strategic model, the high management must pay more attention to the human component. It is not enough to seek administrative efficiency; it is also necessary to strengthen the internal communication and recognize the contribution of the employees. In this form the team can be maintained aligned with the objectives of the organization without neglecting their well-being.

ACKNOWLEDGMENTS

First, we express our deep gratitude to God for being our spiritual guide who has given us the fortitude, health and wisdom necessary to overcome the challenges encountered during the development of this study. To our parents and close relatives whose unconditional support, sacrifice and words of encouragement were the base of this academic effort. Their confidence in our capacities and their constant company in each stage of our professional formation has been the pillar on which this achievement has been constructed. We also express our gratitude to the company Bioalimentar and its managers, who generously opened their doors to the organization and shared their valuable time and experience so that this qualitative analysis had a real and pragmatic base. We also thank the teachers and experts who, with their technical and methodological orientation, provided constructive criticisms that enriched the scientific quality of this article. Finally, we want to thank all the persons who directly or indirectly have cooperated in the process of collection and processing of information and provided us the necessary tools for the successful culmination of this research project.

REFERENCES

1. Montalvá J, Salazar G, Mendoza , Mina I. Montalván-Espinoza, J. A., Salazar-Garcés, G. K., Mendoza-Lino, K. M., & Min Estrategias de gestión de riesgos en inversiones financieras.. MQRInvestigar, 9(2),. 2025;: p. 17-35.

2. Viola J, Giraldo LQA. Innovación tecnológica y productividad en el sector agroindustrial latinoamericano: una revisión sistemática. Rev Gerenc Polit Salud. 2021; 20(41)(1-18).

3. Rivas M, Gonzales E, Perez A. Economía circular en la agroindustria de América Latina: desafíos y oportunidades para un desarrollo sostenible en America Latina. J Clean Prod Lat Am. 2022; 3(2)(115-132).

4. Sevillano J. Gestión de riesgos financieros como estrategia empresarial.. Universidad Nacional de Educación. 2022;: p. 42-51.

5. Espinoza J. La gestión del riesgo en la administración financiera: estrategias y herramientas.. Business Innova Sciences,. 2023;: p. 4(3), 25-44.

6. Moran L, Pincay NAORL. Gestión de riesgos financieros en empresas de servicios ante la amenaza del COVID-19 en Ecuador. Ecuador: Acta Universitaria,; 2021.

7. Rivas C. Compliance como herramienta de control financiero.. Honoris Causa. 2024;: p. 16-37.

8. Candela M. Candela NGestión de riesgos financieros y la rentabilidad en las empresas del sector de servicios generales Lima: Universidad Privada Norbert Wiener.; 2024.

ISSN:
3091-1796
Vol. 4 No. 9 PP. 112-133

DOI:
https://doi.org/10.56519/j08z9j33
Mayo 2026

9. Ortiz Merchán JG,ea. Finanzas corporativas en gestión de cartera.. RECIMUNDO,. 2025;: p. 9(1), 545-559.

10. Lopèz G. Gestión financiera estratégica: desafíos y oportunidades. . Contribuciones a la Economía. 2024;: p. 22(2), 23-32.

11. Carrillo X. Gestión financiera y administración de riesgos.. Estudios de la Gestión. 2021;: p. (9), 7-9.

12. Valencia B, Narváez C. La gestión de riesgos financieros y su incidencia en la toma de decisiones. Cienciamatria. 2021;: p. 7(2).

13. Hill CWL, Jones GR, SM. Strategic Management: Theory and Cases. 13th ed. Boston: Cengage Learning; 2020.

14. David F. Strategic Management: A Competitive Advantage Approach. 17th ed. España: Pearson; 2022.

15. TL W, JD H, AN H, CE. B. Estrategias de marketing y políticas de negocios. 15th ed. España: Pearson; 2024.

16. KC L, JP L. Sistemas de información de Gestión. 9th ed. México: Mc Graw Hill; 2025.

17. Brigham E, Mc E. Gestión Financiera: Teoría y Práctica. 6th ed. Canadá: Cengage Learning; 2021.

18. Linares P, Ávila G. Elementos esenciales de la Investigación Empresarial. Routledge. 2022; 2(4)(17-39).

19. Flores T. Capacidades dinámicas y gestión estratégica. Strategic Management. 2021; 39(4)(1350-1360).

20. Carranza H. Instituciones financieras y de Gestión. Business Research. 2020; 13(1)(215-146).

21. Bastidas E. Conceptualización basada en la capacidad de resiliencia organizacional. Wiley. 2023; 34(2)(1245-1260).

22. Norton D. The Balanced Scorecard: Measures That Drive Performance. 6th ed. Harvard Business Press; 1996.

ISSN: 3091-1796
Vol. 4 No. 9 PP. 134-155
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

DERECHO A UN AMBIENTE SANO FRENTE AL CONSUMO SOSTENIBLE DE PLÁSTICOS DE UN SOLO USO: CASO ECUADOR

THE RIGHT TO A HEALTHY ENVIRONMENT VERSUS SUSTAINABLE CONSUMPTION OF SINGLE-USE PLASTICS: THE CASE OF ECUADOR

Mayra Cristina Mena Mena[1], Mishell Estefanía Villacís Alvarez[2], Verónica Lissette Mantilla Pazmiño[3], Eduardo Antonio Paredes Paredes[4]
{cmena@pucesa.edu.ec1, estefita23_99@hotmail.com2, vmantilla@pucesa.edu.ec 3, eparedes@pucesa.edu.ec 4}
Fecha de recepción: 29/04/2026 / Fecha de aceptación: 11/05/2026 / Fecha de publicación: 12/05/2026

RESUMEN: El consumo acelerado de plástico a nivel mundial conlleva una gestión insostenible, lo que representa un peligro para los ecosistemas de manera latente e irreparable. Por lo Revisar de acuerdo a metodología cual, la importancia de esta investigación, recae en la problemática legal y técnica medioambiental actual, causada por factores de contaminación hacia el suelo, agua, aire y en general los servicios ecosistémicos, provocada por el ser humano al utilizar de forma desproporcionada plásticos de un solo uso, por cuanto resulta esencial el estudio de las leyes promulgadas por el estado Ecuatoriano; otro punto estratégico del estudio es analizar la normativa ecuatoriana respecto al ambiente sano y ecológicamente equilibrado precepto de orden constitucional en relación al consumo sostenible de plástico de un solo uso. Se aplica un enfoque cualitativo con un alcance descriptivo, mediante el método teórico dogmático, es decir, se usa la literatura de varios autores y legislación relacionada a materia ambiental. Con los resultados obtenidos es previsible verificar la falta de cumplimiento y escaza normativa que aun dispuesta no es aplicada para su cumplimiento, además de evidenciar que los textos legales en dicha materia de sostenibilidad no tienen un alcance legal adecuado para dar paso a la sostenibilidad. Por tal motivo, el problema de la investigación a resolver parte en identificar la existencia o no de normativas ambientales y si es eficiente la aplicación y control de las mismas respecto al plástico de un solo uso para garantizar el derecho a un ambiente sano, ecológicamente equilibrado enfocado al Consumo Sostenible.

Palabras clave: *Ambiente sano, regulación ambiental, sostenibilidad, plásticos de un solo uso, Ecuador, consumo sostenible*

ABSTRACT: The accelerated global consumption of plastics has led to unsustainable management practices, posing a latent and potentially irreversible threat to ecosystems. Therefore, the significance of this research lies in addressing the current legal and technical environmental challenges arising from the pollution of soil, water, air, and ecosystem services, largely driven by the disproportionate use of single-use plastics. In this context, the analysis of legislation enacted by the Ecuadorian State becomes essential. Another key objective of this study is to examine Ecuadorian regulatory frameworks concerning the right to a healthy and ecologically balanced environment a constitutional principle in relation to the sustainable consumption of single-use plastics. A qualitative approach with a descriptive scope is adopted, employing the theoretical-dogmatic method; that is, it draws upon scholarly literature and environmental

ISSN: 3091-1796
Vol. 4 No. 9 PP. 134-155
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

legislation.The findings suggest both a lack of compliance and regulatory gaps, as well as weak enforcement of existing norms. Furthermore, the results indicate that current legal frameworks on sustainability lack the necessary scope and effectiveness to adequately promote sustainable practices.Consequently, the research problem focuses on identifying the existence and scope of environmental regulations, as well as assessing their effectiveness in the regulation, implementation, and monitoring of single-use plastics, in order to guarantee the right to a healthy and ecologically balanced environment within a framework of sustainable consumption.

Keywords: *Healthy environment, environmental regulation, sustainability, single-use plastics, Ecuador, sustainable consumption*

[1]Escuela de Ciencias Sociales y Humanidades, Pontificia Universidad Católica del Ecuador, Ecuador, https://orcid.org/0000-0001-6933-0946; +5930980440948
[2]Investigador Independiente, Ecuador, https://orcid.org/0009-0008-7581-0442; +593098700664
[3]Escuela de Ciencias Sociales y Humanidades, Pontificia Universidad Católica del Ecuador, Ecuador, https://orcid.org/0000-0001-6933-0946; +5930983544952
[4]Escuela de Ciencias Sociales y Humanidades, Pontificia Universidad Católica del Ecuador, Ecuador, https://orcid.org/0000-0003-2227-7388; +5930987289260

INTRODUCTION

Environmental pollution is a topic that has gained strength for several decades, and which at present at the worldwide level is of great concern. For which, it has been necessary the implementation of environmental rights that permit the well-being of the human being and nature. The Stockholm Declaration on the Human Environment establishes as a fundamental right that the human being enjoy adequate living conditions in an environment of quality, for which it is his obligation the protection and care of the place where he dwells for the future and present generations. Which gave way to the right to a healthy and ecologically balanced environment.

Regarding what is indicated above, in Ecuador (1) considers that this right added to dignity guarantees to the persons their development in an adequate and healthy environment that permits the satisfaction of the basic needs, such as: life, health, feeding, housing, among others.

In equal form, in Latin America, (2) mentions on the recognition and guarantees of the right to a healthy and ecologically balanced environment. Which entails finding that the application of the effective judicial protection in Latin America exhibits great achievements, in which novel institutions and many other projects in procedural matter are premiered that orient toward the protection of this right from the citizen access and the protection of the environment as responsibility of each citizen.

In this sense, the necessity of raising awareness on the importance of this right and exercising actions that guarantee it is visualized, to assure to the future generations a sustainable environment, in which they develop in an adequate manner through the care and protection of Mother Earth.

Thus (3) allude regarding an area of sustainable development, which corresponds to sustainable consumption, which pretends to obtain changes in the consumption patterns, lifestyle and the functioning of economies to achieve an integral human development. For which it is necessary to put into practice and guarantee sustainability,

ISSN: 3091-1796
Vol. 4 No. 9 PP. 134-155
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

as a form of change in the conscience and actions for society, that entails complying with what is mentioned above.

At present, plastic has become a serious problem for the environment, principally for the soil and water component. Thus for (4), he exposes that the consumption of plastic in Ecuador is a topic that the State treats by means of public policies that permit minimizing the consumption and generation. Nevertheless, the awareness of the citizenship and the application of norms to reduce the negative impact on the environment is required.

It is evident the existence of a complex situation that resides in the scarce application, control and regulation regarding the handling of single-use plastic. Which generates a notable affectation to the environment and to a correct fulfillment of sustainable development as also to the rights that are established in the Constitution of the Republic of Ecuador (5), regarding the environment, in which it is guaranteed:

The right of the population to live in a healthy and ecologically balanced environment, that guarantees the sustainability and the good living, sumak kawsay. The preservation of the environment, the conservation of the ecosystems, the biodiversity and the integrity of the genetic heritage of the country, the prevention of environmental damage and the recovery of the degraded natural spaces is declared of public interest (Art. 14).

In equal form, the same norm establishes “The right to live in a healthy environment, ecologically balanced, free of contamination and in harmony with nature” (Art. 66. Numeral 27).

In the last years, it is evidenced that single-use plastics have caused problems of contamination to rivers, seas, oceans, in addition to influencing negatively on the soil and the ecosystems. It is important to emphasize that this situation would be aggravated by the quantity of generation, external agents, time of degradation; that without a control and effective actions will entail the extinction of ecosystems and risk on human life.

Ecuador in the year 2015 adopted the Sustainable Development Goals (SDGs), which seek among other things, to protect the environment and balance the environmental sustainability until the year 2030, for this there exist 17 SDGs. The 2030 Agenda, upon speaking of objective number 12 “Sustainable Production and Consumption”, establishes regarding consumption that one of the goals is “By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse”. However, with what has already been manifested, the Ecuadorian state tries to put into practice the agreement of which it is part, but in the majority of localities the application is very weak, given that, sufficient actions that permit reaching said goal are not evidenced.

For such reason, the research problem to resolve starts in identifying the existence or not of environmental regulations and if there exists the application and control of the same regarding single-use plastic to guarantee the right to a healthy, ecologically balanced environment focused on Sustainable Consumption.

The present investigation seeks to analyze the Ecuadorian regulation regarding the healthy and ecologically balanced environment in relation to the sustainable consumption of single-use plastic. The hypothesis that is posed is: the Ecuadorian

ISSN: 3091-1796
Vol. 4 No. 9 PP. 134-155
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

regulation guarantees a healthy and ecologically balanced environment product of the consumption of single-use plastics. As means to find the response to the present hypothesis, the following objectives are posed: examine Ecuadorian environmental regulation and literature on the right to a healthy and ecologically balanced environment and single-use plastics; determine the scope and effectiveness of the regulations previously established by the Ecuadorian state in relation to the consumption of single-use plastic and establish parameters of sustainability for the fulfillment of environmental laws, regarding the consumption of single-use plastic for a healthy and ecologically balanced environment.

The study is directed to a qualitative approach with a descriptive scope, by means of the utilization of the theoretical dogmatic method, that is, the literature of several authors and legislation related to environmental matter is used, in addition to the application of interviews to jurists and professionals in environmental matter.

MATERIALS AND METHODS

The investigation focuses on a critical propositive paradigm, with a type of descriptive investigation and a qualitative scope, the same which are supported by the theoretical deductive, practical and dogmatic legal methods. In addition, a documentary approach is utilized, which permits selecting in an adequate manner the information and collecting legal and technical aspects, through interviews, directed to persons with knowledge in the environmental area, with the aim of finding the adequate path for the elaboration of the investigation.

Upon speaking specifically of the critical propositive paradigm it permits identifying and criticizing the potential of change, which entails addressing the research problem and the possible solutions in function of the type of methodology that is used. Now, it corresponds to establish that the type of investigation that is utilized is descriptive. Therefore, the finality of this method is to discover dimensions in the events, contexts or situations.

With what is stated above, the present work fits in the descriptive investigation, inasmuch as several categories are described and analyzed, with the finality of verifying if the Ecuadorian regulation guarantees a healthy and ecologically balanced environment product of the consumption of single-use plastics. Therefore, the qualitative process consists of stages for the elaboration of the investigation.

The principal tool for the collection of data that was used were the interviews to persons specialists in the legal and technical environmental area. Together with this, the collection of information was realized through the review of doctrinal texts, books, legal orderings, scientific articles, informative notes, treaties and international agreements.

Techniques and instruments of information collection

This work utilizes two methods that serve to give emphasis to the type of investigation realized. The first method makes reference to the theoretical, this is the deductive, because it permits realizing a study from the general toward the specific. That is, the persons have the intention of using their reasoning to deduce and go from global aspects until arriving at the exclusive practice.

ISSN: 3091-1796
Vol. 4 No. 9 PP. 134-155
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

The deductive method entails a benefit upon expressing that the studied realities become an advanced and different knowledge to that which was visualized previously, in addition to being flexible upon permitting illustrating the analytical and comparative aspects. With which a result of emphasis for any investigation is achieved and a step forward is given in the already existing studies.

Thus, in the present study, said method is utilized since it begins with a visualization, review and theoretical analysis to understand the scope of the right to a healthy and ecologically balanced environment. In this manner, the general aspect is arrived at to afterwards be able to abstract the particular context upon specifying the sustainable consumption of single-use plastic.

Regarding the practical method, upon being involved in the area of law, the dogmatic legal is employed. Consequently, the handling of the legal technique and the logic that permit verifying legal consequences that lead to a behavior associated with the legal ordering is necessary.

In this work, the Ecuadorian environmental regulation is analyzed, interpreted and applied, specifically that related to the sustainable consumption of single-use plastic so that the right to a healthy environment is guaranteed. Therefore, it is sought to evidence if there exists a problematic in said ordering according to the current situation in this country.

The research modality that is applied is bibliographic documentary, which permits making use of primary sources such as the scientific articles, existing legislation in Ecuador, international treaties, postgraduate theses and doctrinal.

By means of what is stated above, the bibliographic technique is verified, given that doctrinal type information is collected and analyzed to subsequently be able to give an analytical criticism and verify if in effect the Ecuadorian regulation is the adequate and fulfillment is given to the same, in relation to single-use plastic. In such manner, it is intended to visualize if the right to a healthy and ecologically balanced environment is guaranteed, upon complying with Sustainable Development Goal SDG 12 as is sustainable production and consumption.

In such circumstance, a questionnaire is elaborated that contains questions that will be permanent and will have a sequential order, for which the questions have to be answered rapidly. After what is mentioned by the author, the type of interview that in the present research work is utilized is structured.

The elaboration of the questionnaires upon being a structured interview permits obtaining relevant information in a summarized manner, by means of questions that have relation with the area of environmental law, specifically with the topic and the variables under study. For example, it is intended to obtain information regarding the knowledge and application of Ecuadorian environmental regulation, projects related to circular economy in relation to single-use plastic, guaranteeing of the right to a healthy and ecologically balanced environment. In addition, the interviews are realized to lawyers and environmental technicians who have wide trajectory and interest for the area of the investigation or academy.

Population and sample

ISSN: 3091-1796
Vol. 4 No. 9 PP. 134-155
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

With the aim of obtaining information, interviews are realized which are carried out in a telematic form, through Zoom and by electronic mail, for reasons of distance. The same are directed to lawyers and engineers with knowledge in the environmental area.

As is manifested, the type of interview that is utilized is structured. Given that the persons to whom it is interviewed have to respond the questions according to a questionnaire that is realized previously. In addition, the application is for a sole occasion, but the interviewed person is made known on the topic that is going to be treated previously.

After realizing the interviews, information of great importance is obtained, which permits complying with the objective posed in this section. The interviewed professionals made known their technical criteria in a clear form and amplified the topic on certain occasions.

RESULTS

Doctrinal and legal base of the right to a healthy and ecologically balanced environment

The environmental rights are a fundamental base in society, since they entail a set of faculties, prerogatives and principles that permit that humanity can develop in an adequate manner in the social, economic and cultural ambit. For such reason, one of the rights of great importance at present is the right to a healthy environment, inasmuch as it encompasses individual as collective aspects. Thus, (1) considers that this right is intrinsic to the right to dignity, since together they permit guaranteeing to the human being his optimal development, upon satisfying his basic needs (life, feeding, health, the good living, housing, education, among others) in a healthy and adequate environment.

In a conceptual manner, the healthy environment is a right that must be considered fundamental and progressive, where the sole titular is the human being. Seen in this form, the State is key protagonist to guarantee its fulfillment, through public policies related to avoiding contamination and damage, to thus assure the development of the life project of the human being with dignity.

Thus also emphasis is made in Latin America, in reference to the right to a healthy and ecologically balanced environment, upon establishing that the application of said right has great advances both in institutions and in projects in procedural matter related to the protection of the same, upon involving it and relating it with the responsibility of the citizenship and its access to the mentioned right.

At the same time (6) estimates that a healthy environment is that which permits the individual and in society development of the human being, since it is that healthy and full environment that permits maintaining an equilibrium between nature and individual. That is, without a healthy environment and without complying with the duty of care, there does not exist life for the human being; in question, all our surroundings permit that the individuals develop in dignified conditions, there lies the importance of the equilibrium that must exist between the two.

In such virtue, it is necessary to take measures that permit practicing what the right to a healthy environment entails, through conscious actions both of the citizenship and of the state, that guarantee not only to the present but also to the future generations, a

ISSN: 3091-1796
Vol. 4 No. 9 PP. 134-155
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

sustainable space, for an adequate development upon caring and protecting pacha mama.

In the last years, some countries have granted to nature and to the environment the quality of subjects of rights, upon including them in their Magna Cartas. This, due to the fact that it is considered that, without any of these, there does not exist life in optimal conditions for the human being.

In the same line, the authors (7) consider that to protect the planet and those of us who develop on it, the right to the environment has to be incorporated in the legal framework of all the states, since an adequate environment entails the human being to continue in constant evolution for his well-being; however, it is the same who most affect the ecosystem, in the relation environment and individual through extraction of minerals, manufacture of residues, industrial innovation, among other aspects. For such situation, it is evidenced that the environment must be considered as fundamental right, since there does not exist life in optimal conditions without an adequate environment.

In relation to what is said above, the author (1) justifies through two theories the importance of the legal protection of the environment. In the first place, he speaks of the anthropocentric theory, upon exposing that the environment belongs to humanity, but if this suffers any damage, the consequences will be direct for the human being. While the theory of ecocentrism gives autonomy to the environment upon making it deserving of protection for the simple fact of its existence and, therefore, all that is part of it deserves tutelage and society has the duty to protect it. Said in this form, there exists a coincidence in said theories, upon establishing that the environment deserves protection both if it is seen as subject of rights in an autonomous manner or as a right granted to the persons, for which it is precise that the right to a healthy environment and the right to life are independent, but also are united intimately.

Legal foundations of the right to a healthy environment

The right to a healthy environment was a topic treated for the first time by the United Nations Organization, specifically in the Stockholm Declaration on the Human Environment 1972 (8), in which it was emphasized on the right that the man has to enjoy appropriate living conditions in an environment of quality so that both the present and the future generations enjoy well-being and dignified life, for which he is obliged to protect it. In this form, said right is conceived in the States around the world, who put greater emphasis on the environment and implemented said right in their supreme norm.

Based on the Stockholm Declaration, two decades later, in the city of Rio de Janeiro (9), the United Nations Conference on Environment and Development was celebrated, and it treated on new topics such as sustainable development, the care of the environment, the cooperation of the States and the creation of norms. Subsequently, the Johannesburg Declaration on Sustainable Development (10) and the Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights – Protocol of San Salvador (11) reinforced the recognition of the right to a healthy environment.

In Ecuador, the Constitution of the Republic of Ecuador (2008) recognizes the right of the population to live in a healthy and ecologically balanced environment that guarantees sustainability and good living (sumak kawsay). It declares of public interest

ISSN: 3091-1796
Vol. 4 No. 9 PP. 134-155
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

the preservation of the environment, the conservation of ecosystems, biodiversity and the integrity of the genetic heritage of the country, the prevention of environmental damage and the recovery of degraded natural spaces (Art. 14). Likewise, Article 66 numeral 27 establishes the right to live in a healthy environment, ecologically balanced, free of contamination and in harmony with nature.

An interesting aspect in said country, regarding the right to a healthy environment, is that the term ecologically balanced is added, for which the Constitutional Court of Ecuador by means of Judgment No. 1149-19-JP (15) explains that adding the term ecologically balanced environment to said right entails that no living being will put in danger any element necessary for life nor will it be put in danger. Likewise, Ecuador counts with a wide catalog of rights of nature, many of which involve the citizens and the state, who are responsible for the duty of care and permit them to participate in an active manner through public policies, denouncements and actions in benefit of mother earth.

In the same sense, the Organic Code of the Environment, in Article 5, makes known that sustainability, participation and adoption of public policies are part of the right to a healthy environment. While Article 6 mentions on the maintenance, regeneration, existence and restoration of the vital cycles in relation to the rights of nature (16).

Sustainable consumption of single-use plastic

The term sustainable development was heard for the first time in the Brundtland Report of the World Commission on Environment and Development (1987) (17), upon mentioning it as that which satisfies those needs that the present generations have without compromising the future ones. But with time, this concept passed to be ambiguous and imprecise, inasmuch as sustainable development encompassed much more than what was mentioned before.

In the same sense, (3) consider that sustainable development is linked directly with sustainable consumption, due to the fact that it is sought to change the patterns of lifestyle, economies and consumption, which would result in integral human development. Likewise, development is considered sustainable upon existing an improvement in the quality of life and adequate conservation of natural resources (18). Said in this form, the planet has to adapt and apply sustainability, since there does not exist another option.

A current concept proposed by the authors (19) poses sustainable development as that which transcends the economic ambit and must include the environmental and social dimension. Thus, the human being must adapt to the limits that the economic, social and environmental impose, which for the United Nations Organization as for several authors is considered a trilogy of requirements for the guarantee of sustainable development.

In this context (20) refers to said trilogy as a form of maintaining the equilibrium, in the economic, at the same time that the ecosystems are preserved for the future generations; in the social, which attends an equalitarian distribution of the resources together with justice and equity; and the environmental, which seeks the optimal consumption of the present natural resources so that there exists an economic growth without causing greater destruction to the planet.

ISSN: 3091-1796
Vol. 4 No. 9 PP. 134-155
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

However, this three-legged chair for some authors cannot be sustained by itself, for which (21) proposes good governance as a fourth aspect, upon alluding that the government of each country has the duty to seek the prosperity and well-being of society, for which it must guarantee it by means of basic functions such as public policies. Nevertheless, the governments are not the only ones that have said duty, but also the entrepreneurial sector must reflect and take measures regarding the environmental impact of its activities.

In concordance (22) names a set of principles of sustainable development that must be taken into account, among them intergenerational equity, intragenerational equity, the precautionary principle, the polluter-pays principle and the principle of common but differentiated responsibilities.

The United Nations created 17 objectives, with the aim of putting into practice said aspects and principles. In concordance (23) considers that the SDGs are guides so that the countries can implement policies in relation to sustainable development. Thus also (24) allude that they are means to action in favor of the access to justice and world peace, all this in benefit of the planet, the persons and their prosperity.

Within the present investigation, it is precise to realize a focus on objective number 12, which seeks to guarantee modalities of "sustainable production and consumption", in which it is established as goal "By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse" United Nations Organization (25). In this sense, the creation of patterns of sustainable consumption and production is necessary, for which the persons have to be informed to apply this modality and introduce it to the medium as a lifestyle.

With what is seen above, it is necessary to analyze sustainable consumption as one of the areas to be treated with urgency for the application of sustainable development. As first aspect, it is necessary to explain that the term to consume in a general form is to make use of something that afterwards will disappear or is going to be extinguished. Said in this form (26) establishes sustainable consumption as a form of consuming, which satisfies both the needs of the present generations as those of the next ones. Consequently, it is necessary to prioritize the consumption of products manufactured with technology and raw material of low environmental impact, in addition to optimizing the consumption of goods with the aim of mitigating the wastes and excesses and, therefore, preventing the environmental impairment of the possible residues generated.

At present, in a globalized world, not only is consumed but the human being is consumerist upon normalizing the surpassing or exaggerating the limits of what is necessary. It is important to take actions to leave to the future generations a place in which they can develop in an optimal manner, through changes of patterns such as, for example, choosing products friendly with the environment that use economic systems aligned to its care.

In search of the application of three areas: economic, social and environmental, sustainable consumption is visualized from several perspectives. Below some given by the Confederation of Consumers and Users of Madrid (27) are made known: Obtain information on the social and environmental conditions in which the products that we are going to obtain or the services that we are going to utilize have been elaborated.

ISSN: 3091-1796
Vol. 4 No. 9 PP. 134-155
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

Value the environmental and social repercussions that the use of a product or service can have not only in the local ambit, but also in its global dimension. Prefer products and services that are durable, reparable, reusable and recyclable. Reduce the generation of residues and the consumption of energy and water. Choose products of local and seasonal production. Participate in collective and solidary consumption initiatives.

The United Nations Organization (28) signals that sustainable consumption and production is about doing more and better with less. It is also about decoupling economic growth from environmental degradation, increasing resource efficiency and promoting sustainable lifestyles. Sustainable consumption and production can contribute substantially to the alleviation of poverty and the transition toward low-carbon and green economies.

Consequently, for the European Commission (29), the circular economy seeks to maintain the value of products, materials and resources for the longest time possible, minimizing the generation of residues. This model is opposed to the traditional linear economy of "extract, produce, use and throw away". The circular economy is based on three principles: design out waste and pollution, keep products and materials in use, and regenerate natural systems (30).

In this context, corporate social responsibility and the conservation of the environment become key strategies for sustainable development (31). The production and sustainable consumption and the reduction of food waste as one of its goals (32) reinforce the necessity of changing production and consumption patterns. Corporate environmental protection behavior and the moderating role of green investors and green executive cognition (33) show the importance of the private sector in the transition toward sustainability.

The ecological footprint is another relevant concept. (34) signals some aspects of the ecological footprint as a measure of the impact of human activities on the environment. The United Nations (35) indicates that each person consumes more than 50,000 particles of plastic per year. Recent studies show that current levels of microplastic pollution impact wild seabird gut microbiomes (36). Greenpeace (37) provides data on plastic production that evidence the magnitude of the problem.

In Ecuador, the National Institute of Statistics and Censuses (INEC) through its Environmental Information Module in Households (38, 39) provides data on the generation and management of residues at the household level, which permit visualizing the magnitude of the problem of single-use plastics in the national context.

Ecuadorian regulation for the sustainable consumption of single-use plastics

It is fundamental to make reference to the environmental principles that are related to the sustainable consumption of single-use plastics and that are consecrated in the Ecuadorian legal ordering. Among them stand out the precautionary principle, the preventive principle, the polluter-pays principle, the principle of sustainable development and the principle of intergenerational equity.

The Organic Law for the Rationalization, Reuse and Reduction of Single-Use Plastics (2020) (40) constitutes the principal specific regulation on the matter. This law establishes progressive prohibitions, percentages of post-consumer recycled material

ISSN: 3091-1796
Vol. 4 No. 9 PP. 134-155
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

that must be complied with, transition periods, exceptions and a regime of infractions and sanctions.

Regarding the terms for the prohibition of single-use plastics, the law mentions:

- In 12 months from the entry into force of the law, prohibit the commercialization and use of bags and single-use plastic containers for foods of human consumption in all the areas of the National System of Protected Areas; the use of single-use bag or wrappers for the delivery of printed advertising; newspapers, magazines and other formats of written press, receipts of collection of public or private services, account statements and all information directed to consumers, users or citizens in general and the manufacture of plastic straws for internal consumption, distribution, commercialization.

- In 24 months from the entry into force of the law, the importation, manufacture for internal consumption of distribution and commercialization of carry bags of plastic that do not contain recycled material; bags or articles of single-use plastic that entail the production of microplastics and containers, packages or glasses that come from polystyrene and do not contain the minimum percentage of post-consumer recycled material is prohibited.

- In 36 months from the entry into force of the law, the importation, manufacture for internal consumption of distribution and commercialization of bags, wrappers of single-use plastic that do not contain the minimum percentage of post-consumer recycled material, plates, glasses and other utensils for foods and beverages of human and animal consumption is prohibited.

- During the transition period, the free delivery of bags, containers, tableware, utensils and other single-use objects is prohibited; in the case that the consumer desires to acquire them, they will have an additional cost that will be charged by the establishments or commerce.

- There exist exceptions, in which the prohibition does not apply, regarding the bags or packages of plastic that constitute the primary packaging of bulk foods, of animal origin or in the cases that hygiene, cleanliness, health is procured and the polymeric base straws adhered to packages or products that are commercialized and recycled with the package.

- Also, the term of 6 months is established, in products with plastic components such as wet towels, hygienic, tampons, balloons so that they are labeled and the consumers are informed of the negative impact. In addition, a national registry of importers and producers of single-use plastics will be implemented.

Table 1. Percentage of post-consumer recycled material to be complied with

	18 months	36 months	48 months
Plastic carry bags	50%	55%	60%
Expanded polystyrene containers	8%	12%	18%
Glasses-Tubs	10%	25%	30%
Cutlery	10%	25%	30%
PET bottles	5%	15%	30%

Source: Organic Law for the rationalization, reuse and reduction of single-use plastic, 2020.

Finally, the infractions and the sanctions that the present law makes known are catalogued as slight, serious and very serious. Equally, in the case of sanctions of economic character, it is evaluated in function of the economic capacity.

ISSN: 3091-1796
Vol. 4 No. 9 PP. 134-155
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

With what is exposed, the implementation of policies in the Decentralized Autonomous Governments and Metropolitan Districts at the level of Ecuador is ordered. In this context, some ordinances are visualized at the national level:

Table 2. Ordinances implemented on single-use plastic

City	Ordinance number	Name	Summary
Quito	Metropolitan Ordinance No. 022 - 2021	For the progressive reduction of single-use plastics and the promotion of the development of reusable, biodegradable and compostable substitutes in the Metropolitan District of Quito	Establishes the terms, uses, prohibitions and sanctions of single-use plastics, the handling of progressive residues and the municipal strategies in fulfillment of sustainable consumption and the SDGs, among other aspects.
Guayaquil	Ordinance ARCP-DE-2018-38	Ordinance to regulate the manufacture, the commerce of any type, distribution and delivery of single-use plastic products and specifically of plastic straws, packages, tubs, cutlery, glasses, plastic cups and t-shirt type plastic bags, inclusive oxo-biodegradable, in the canton of Guayaquil	Establishes the terms, prohibitions, sanctions, exceptions, the education and promotion, among other aspects of the single-use plastics.
Galápagos	Resolution number 003-CGREG-XXXI-I-2018	Reformatory ordinance to ordinance number 005-CGREG-11-II-2015, which promotes responsible consumption by means of the commercialization and distribution of disposable plastic products and disposable packages of expanded polystyrene (foam, styrofoam), in the Galápagos Islands	Seeks to promote responsible consumption, through the awareness of the permanent and visiting population. Also, it establishes strategies for the consumption of biodegradable and environmentally friendly products to prevent environmental damages to the Galápagos ecosystem.

Source: Own elaboration based on the Official Registry, 2018-2021.

In concordance with the preceding regulations, there are found laws that go hand in hand with the same, such as the Regulation to the analyzed law, the National Program for the Integral Management of Solid Residues – PNGIDS, which establishes all related to the handling of solid residues, together with this is found the Ministerial Agreement number 061 that treats on the integral management of non-hazardous residues. Also, the existence of the Organic Law of Inclusive Circular Economy is evidenced, which establishes mechanisms for the implementation of eco-design, production, sustainable consumption, reduction of residue generation, decrease of non-renewable resources and sustainable development, this without mentioning the Organic Code of the Environment which is the indispensable law upon speaking of environmental matter.

DISCUSSION

The consumption of single-use plastic causes a strong affectation to the human being. At present, despite existing a law regarding the consumption of this material, actions by the authorities or control entities that make effective its application are not visualized. For this, it is considered that there exists lack of interest of the state in this type of topics, since other priorities such as the political and economic aspects abound. In addition, the lack of dissemination of the laws, policies and actions that are reflected at this moment contributes to this situation. Added to this, there is a lack of entities, authorities and officials specialists in environmental topics or at least that are capacitated, to confront a due control of the current environmental regulation.

In such virtue, it is clear that even when Ecuador is a Constitutional State of Rights and Justice and its duty is to guarantee what is established in the Constitution, the right to a healthy and ecologically balanced environment has been failed. Inasmuch as it is determined that, although it is true, it has complied with certain measures established in the Organic Law for the Rationalization, Reuse and Reduction of Single-Use Plastics, it

ISSN: 3091-1796
Vol. 4 No. 9 PP. 134-155
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

has widely omitted the majority of aspects. Since, solely a small percentage of the companies, sectors and persons comply with the aforementioned law, while the majority, as well as small businesses continue with the excessive and innocent use of this type of plastics, that is, it contributes to that the ecological footprint increases.

However, there still exists the possibility of guaranteeing the mentioned right, for which it is indispensable to educate the society in topics regarding those of the problematic, disseminate the laws, audit the institutions in charge of said topic. In short, any type of policies that are instituted to reduce the consumerist conduct that the persons have is worthy of praise.

CONCLUSIONS

Once the doctrine of several authors and the current environmental regulation was examined, it was obtained that the healthy and ecologically balanced environment is a fundamental and progressive right, that is recognized individually, although it has collective notion; therefore, in case of being violated it affects in a direct manner the human being and the rights that the Constitution guarantees, such as life, health, among others. In addition, the lack of regulation that permits encompassing in a direct manner Sustainable Development Goal (SDG) number 12 in what is related to sustainable consumption was determined.

With the reading of the environmental regulation on single-use plastic, it was determined that there exists little legislation related to the topic under study, which corresponds to the Organic Law for the rationalization, reuse and reduction of single-use plastic, the same which encompasses in a general manner the responsible consumption of plastic. However, a primordial part such as the consumer is left aside, that is, an integral approach that commits all the involved parties is not taken into consideration.

In this sense, it is important to emphasize that the Ecuadorian State in its commitment of giving fulfillment to the SDGs, as also to the protection and care of the environment has generated a Law that emphasizes single-use plastic, upon applying the 3Rs. Nevertheless, after the investigation it is concluded that unfortunately from the control entities Ministry of the Environment, Water and Ecological Transition, Decentralized Autonomous Governments of the country, such as municipalities, assertive strategies of dissemination of the norm have not been established which is reflected in the interviews realized, as also the existing ignorance in a great part of the population, consequently, the lack of application.

Thus also, it is important to mention that the lack of effectiveness of the norm has also been influenced due to the fact that qualified professionals that have a vast knowledge on the matter are not counted with. Consequently, the result that is evidenced at present in the lack of knowledge and application.

In equal manner, it is visualized that at the worldwide level single-use plastic is one of the principal causers of the increase of the ecological footprint, even when topics related to sustainable development are regulated in legal instruments.

The State has to contribute with public policies that permit the applicability of the norm under parameters of fulfillment and that go beyond particular interests. Within the parameters of sustainability a key point to strengthen is the education from the

institutional, educational level, to the society in general by means of multiple strategies that go hand in hand with the technological revolution such as publicity campaigns in distinct means of dissemination (television, radio, internet, billboards, others), interactive, informative documents, included in bills of basic services or documents of governmental services which, in the medium term permits that all know on the law, begin to apply it and directly the environment is the greatest beneficiary.

Another important aspect obtained from the present study corresponds in establishing environmental strategies of reduction of single-use plastic. For example, the processes of recycling that in this last time has gained ground, as also the cash back or money back for the reuse of plastic material, eco-load, among others.

It is concluded that the rational use of single-use plastics in this contemporary society is inevitable, the technical and legal regulation fall short and the insufficient application of the optimal parameters for the equilibrium of production and sustainable consumption, given the needs of the market is a fact, it is for this that it is important to highlight the spaces of scientific investigation such as undergraduate theses (41).

REFERENCES

1. García L. El medio ambiente sano: La consolidación de un derecho. Iuris Tantum Revista Boliviana de Derecho. 2018;(25):550-569.

2. Castillo E. Reconocimiento y garantías del derecho a un ambiente sano y ecológicamente equilibrado. Lex, Revista de la Facultad de Derecho y Ciencias Políticas. 2012;10(9):193-226.

3. Pujadas C, Avelín M, Figueroa M, Hernández J, Martín S. El Consumo Sostenible: concepto y relevancia para los países de América Latina. Universidad Austral; 2009.

4. Proaño G. Análisis de la normativa pública para la reducción del uso de envases plásticos en Ecuador (Tesis de maestría). Quito: Universidad Israel; 2020.

5. Constitución de la República del Ecuador (C.R.E.). Art. 14. Registro Oficial; 2008.

6. Zapata-Cruz DM. La protección jurídica del derecho a vivir en un ambiente sano y ecológicamente equilibrado en la República del Ecuador. Revista Metropolitana de Ciencias Aplicadas. 2023;6(S1):77-90.

7. García-Otero R, Hossain L, Vásquez I. Ambiente sano: aproximaciones a la garantía de derechos en Colombia. Justicia. 2024;29(46):1-13. doi:10.17081/just.29.46.7564

8. Organización de las Naciones Unidas (ONU). Declaración de Estocolmo sobre el Medio Ambiente Humano. ONU; 1972.

9. Organización de las Naciones Unidas (ONU). Declaración de Río sobre el Medio Ambiente y el Desarrollo. ONU; 1992.

10. Organización de las Naciones Unidas (ONU). Declaración de Johannesburgo sobre el Desarrollo Sostenible. ONU; 2002.

11. Organización de los Estados Americanos (OEA). Protocolo Adicional a la Convención Americana sobre Derechos Humanos en materia de Derechos Económicos, Sociales y Culturales – Protocolo de San Salvador. OEA; 1988. Art. 11.

12. Mejía C, Gil B. Características del derecho a un ambiente sano en la Constitución Ecuatoriana. Sathiri: Sembrador. 2021;16(1):89-98. doi:10.32645/13906925.1042

13. Organización de las Naciones Unidas (ONU), Consejo de Derechos Humanos. Resolución sobre el derecho a un medio ambiente limpio, saludable y sostenible. ONU; 2021.

14. Organización de las Naciones Unidas (ONU). El acceso a un medio ambiente limpio y saludable es un derecho humano universal. ONU Noticias; 2022.

15. Corte Constitucional del Ecuador. Sentencia No. 1149-19-JP. (M.P: Grijalva A.). Corte Constitucional del Ecuador; 2021.

16. Código Orgánico del Ambiente (C.O.A.). Arts. 5-6. Registo Oficial Suplemento 983; 2017.

17. Organización de las Naciones Unidas (ONU). Informe de la Comisión Mundial sobre el Medio Ambiente y el Desarrollo (Informe Brundtland). ONU; 1987.

18. Angulo N. Pobreza, medio ambiente y desarrollo sostenible. Nómadas, Revista Crítica de Ciencias Sociales y Jurídicas. 2010;26(2).

19. Licandro O, Ortigueira-Sánchez L, Barrueta Pinto MC. Compromiso con los objetivos de desarrollo sostenible y desempeño económico y de los recursos humanos. Revista Venezolana de Gerencia. 2024;29(108):1483-1503. doi:10.52080/rvgluz.29.108.1

20. López I, Arriaga A, Pardo M. La dimensión social del concepto de desarrollo sostenible: ¿La eterna olvidada? Revista Española de Sociología. 2018;27(1):25-41. doi:10.22325/fes/res.2018.2

21. Sachs J. La era del desarrollo sostenible. Planeta de Libros; 2015.

22. Cardona Almeida C, Suárez A. Integrated Water Resources Management in Colombia: A Historical Perspective. Ambiente & Sociedade. 2024;27. doi:10.1590/1809-4422asoc0118r7vu27L1OA

23. López-Leyva S. La educación de América Latina percibida desde el objetivo 4 de los objetivos del desarrollo sostenible (ODS). Información Tecnológica. 2024;35(2):23-36. doi:10.4067/S0718-07642024000200023

24. López-Carrión AE, Martí-Sánchez M. Análisis de la cobertura y del discurso de los Objetivos de Desarrollo Sostenible y la Agenda 2030 en la prensa digital española (2015-2022). Revista Latina de Comunicación Social. 2023;(82):1-21. doi:10.4185/rlcs-2024-2057

25. Organización de las Naciones Unidas (ONU). La Agenda 2030 y los Objetivos de Desarrollo Sostenible: una oportunidad para América Latina y el Caribe. CEPAL; 2019.

26. Teixeira AV, Pilau Sobrinho LL, Reato TT. Sostenibilidad y ESG: El Consumo Sostenible en el Escenario Neoliberal. Veredas do Direito. 2024;21(e212633):1-19. doi:10.18623/rvd.v21.2633-esp

27. Confederación de Consumidores y Usuarios de Madrid. Manual de Consumo Sostenible en nuestra vida cotidiana. CECU Madrid; 2006.

28. Organización de las Naciones Unidas (ONU). Consumo y producción sostenibles. ONU; 2021.

29. Comisión Europea. Cerrar el círculo: un plan de acción de la UE para la economía circular. Comisión Europea; 2015.

30. Raudales-García EV, Acosta-Tzin JV, Aguilar-Hernández PA. Economía circular: una revisión bibliométrica y sistemática. Región Científica. 2024;3(1):1-11. doi:10.58763/rc2024192

31. Lázaro Soto BE, Tegada Arana AA, Contreras Rivera RJ. Responsabilidad social empresarial y conservación del medio ambiente: estrategias y desafíos para un desarrollo sostenible. Revista InveCom. 2025;5(3).

32. Hernández San Juan I. La producción y consumo sostenible y la reducción del desperdicio alimentario como una de sus metas. P.A. Persona e Amministrazione. 2018;(1):125-147. doi:10.14276/2610-9050.1512

33. Zhou J, Jin S. Corporate Environmental Protection Behavior and Sustainable Development: The Moderating Role of Green Investors and Green Executive Cognition. International Journal of Environmental Research and Public Health. 2023;20(5):1-18. doi:10.3390/ijerph20054179

34. Martínez Castillo R. Algunos aspectos de la huella ecológica. Inter Sedes. 2007;8(14):11-25.

35. Organización de las Naciones Unidas (ONU). Cada persona consume más de 50.000 partículas de plástico al año. ONU Noticias; 2025.

36. Fackelmann G, Pham CK, Rodríguez Y, Mallory ML, Provencher JF, Baak JE, et al. Current levels of microplastic pollution impact wild seabird gut microbiomes. Nature Ecology & Evolution. 2023;7(5):698-706. doi:10.1038/s41559-023-02013-z

37. Greenpeace. Datos sobre la producción de plástico. Greenpeace España; 2026.

38. Instituto Nacional de Estadísticas y Censos (INEC). Boletín Técnico N.o 02-2020-ESPND. Módulo de Información Ambiental en Hogares - ESPND, 2019. INEC; 2020.

39. Instituto Nacional de Estadísticas y Censos (INEC). Documento Técnico. Módulo de Información Ambiental en Hogares - ENEMDU noviembre 2025. INEC; 2025.

40. Asamblea Nacional del Ecuador. Ley Orgánica para la Racionalización, Reutilización y Reducción de Plásticos de Un Solo Uso. (Ley 354 de 2020). Registro Oficial; 2020 Dic 21.

41. Villacís Álvarez ME. Ambiente sano y ecológicamente equilibrado en relación al consumo sostenible de plástico de un solo uso (Tesis de grado). Ambato: Pontificia Universidad Católica del Ecuador; 2022.

ISSN: 3091-1796
Vol. 4 No. 9 PP. 156-170
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

ANÁLISIS DE LA SENTENCIA 2006-18-EP/24 COMO PRECEDENTE ERRÓNEO EN CONFLICTOS LABORALES PÚBLICOS EN EL ECUADOR

ANALYSIS OF JUDGMENT 2006-18-EP/24 AS AN ERRONEOUS PRECEDENT IN PUBLIC LABOR DISPUTES IN ECUADOR

Welinton Céscar Villalva Castillo[1], Linda de las Mercedes Amancha Chiluisa[2]
{welinton.c.villalva.c@pucesa.edu.ec1, lamancha@pucesa.edu.ec2}

Fecha de recepción: 17/04/2026 / Fecha de aceptación: 11/05/2026 / Fecha de publicación: 12/05/2025

RESUMEN: La sentencia 2006-18-EP/24 de la Corte Constitucional del Ecuador ha incidido directamente en la forma de encauzar los conflictos laborales entre el Estado y sus servidoras y servidores públicos, especialmente cuando se impugnan actos administrativos vinculados con terminación de contratos de servicios ocasionales, finalización de nombramientos provisionales, homologación salarial, supresión de partidas y procesos de liquidación. La relevancia del tema se justifica por el riesgo de retroceso en la tutela de derechos laborales que puede derivarse de la regla general fijada en el párrafo 42, al privilegiar la jurisdicción contencioso-administrativa y reducir el uso de la acción de protección como vía expedita y garantista. El objetivo del estudio fue analizar críticamente la argumentación interpretativa empleada en dicho párrafo, contrastándola con el principio de progresividad y con precedentes constitucionales sobre tutela judicial efectiva. La investigación adoptó un enfoque cualitativo, de tipo teórico-jurisprudencial, con revisión normativa y documental (Constitución, LOSEP, LOEP, COFJ), análisis de la sentencia y consulta de literatura especializada sobre argumentación jurídica, utilizando métodos analítico-sintético e inductivo-deductivo. Entre los principales resultados se identificó una motivación insuficiente para restringir la acción de protección, la confusión de regímenes laborales al pretender un "trato igualitario" con el personal de empresas públicas y la falta de una atribución expresa en la normativa para que lo contencioso-administrativo conozca conflictos laborales con enfoque de derechos. Se concluye que la decisión constituye un precedente erróneo y potencialmente regresivo, que debilita la seguridad jurídica, la estabilidad laboral y el acceso a una tutela judicial efectiva para el servidor público.

Palabras clave: *Conflictos laborales, servicio público, acción de protección, jurisdicción contencioso-administrativa, tutela judicial efectiva*

ABSTRACT: The Constitutional Court of Ecuador's Judgment 2006-18-EP/24 has reshaped how labor disputes between the State and public servants are channeled, particularly when administrative acts are challenged in cases involving the termination of temporary service contracts, the end of provisional appointments, salary standardization, the elimination of budget positions, and liquidation processes. The relevance of this topic lies in the risk of a setback in the protection of labor rights stemming from the general rule set out in paragraph 42, which prioritizes contentious-administrative jurisdiction and limits the use of the writ of protection as an expedited, rights-based remedy. This study aims to critically examine the interpretive reasoning adopted in that paragraph, in light of the principle of progressivity and constitutional precedents on effective judicial protection. A qualitative, theoretical-jurisprudential design was used, combining a regulatory and documentary review (Constitution, LOSEP, LOEP, COFJ), an analysis of the judgment, and specialized literature on legal argumentation, through analytical-synthetic and inductive-deductive methods. The main findings show insufficient justification for restricting the writ of protection, a conflation of labor regimes under the rationale of "equal treatment" with employees of public enterprises, and the absence of an explicit legal basis empowering administrative

English translation of the original article published in Ecuacientífica, Vol. 4, No. 9, pp. 156-170.

ISSN: 3091-1796
Vol. 4 No. 9 PP. 156-170
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

courts to adjudicate labor disputes under a rights-based approach. The study concludes that the judgment constitutes an erroneous and potentially regressive precedent, weakening legal certainty, job stability, and access to effective judicial protection for public servants.

Keywords: *Labor disputes, public service, writ of protection, contentious-administrative jurisdiction, effective judicial protection*

1 Centro de Posgrados, Pontificia Universidad Católica del Ecuador Sede Ambato PUCESA – Ecuador, https://orcid.org/0009-0008-3967-5220.
2 Centro de Posgrados, Pontificia Universidad Católica del Ecuador Sede Ambato PUCESA – Ecuador, https://orcid.org/0000-0001-5958-6905.

INTRODUCTION

Article 229 of the Constitution of the Republic of Ecuador determines, in its first paragraph, that public servants shall be the persons who act by virtue of a state power and who shall exercise solely the competencies and faculties attributed in the Constitution and the law; regarding the workers of the public sector, these shall be subject to the Labor Code (1).

On its part, Article 228 of the Constitution of the Republic of Ecuador disposes that the entry into the public service, the promotion and the advancement in the administrative career shall be realized by means of a contest of merits and opposition, in the form that the law determines (1).

Since the issuance of the Organic Law of the Public Service (LOSEP) in 2009, whose finality is to regulate the administration of human talent in the public sector, the public entities have established labor relations with the public servants by means of permanent appointments, provisional appointments, contracts of occasional services, contracts of provision of professional services, among others, with the purpose of attending institutional requirements and, in certain cases, covering definitive vacancies (2).

During the labor relation between the public entities and the public servants multiple conflicts have been generated, among them the unilateral termination of contracts of occasional services, the finalization of provisional appointments, the salary homogenization, the suppression of positions and the processes of liquidation. These controversies have led many public servants to resort to the constitutional jurisdiction as mechanism to tutelage their rights facing administrative decisions that, in numerous cases, result arbitrary.

Judgment 2006-18-EP/24, issued by the Constitutional Court of Ecuador, has generated diverse opinions and analyses, in particular for what is signaled in paragraph 42: when administrative acts linked with labor conflicts between the State and its public servants are challenged —termination of contracts of occasional services, finalization of provisional appointments, salary homogenization, suppression of positions, liquidation, among others—, the knowledge of the controversy, by general rule, shall be submitted to the contentious-administrative jurisdiction (3).

In the criterion of the authors, the decision of equating these conflicts with those that arise in the public enterprises whose labor controversies, by their nature, are known by labor judges ignores the substantial differences between the regime applicable to the public servants protected by the LOSEP and that which governs for the personnel of the

ISSN: 3091-1796
Vol. 4 No. 9 PP. 156-170
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

public enterprises. This equation compromises the adequate tutelage of the labor rights of those who are found under the regime of the public service (4,5).

The present article has as finality to analyze the interpretive argumentation adopted by the Constitutional Court of Ecuador upon sustaining that, by general rule, the contentious-administrative jurisdiction would be the adequate path to resolve labor conflicts between the State and its public servants. This posture results questionable if the existence of precedents is considered in which constitutional judges have recognized and protected labor rights by means of actions of protection, particularly in cases of unilateral termination of contracts of occasional services, finalization of provisional appointments, salary homogenization, suppression of budgetary positions and processes of liquidation, which evidences tensions with the previous jurisprudential line (3).

This work adopts a qualitative approach and is oriented to the analysis of the interpretive argumentation contained in paragraph 42 of Judgment 2006-18-EP/24, in light of the principle of progressivity of the labor rights and of the right to the effective judicial tutelage in the ambit of the public service. Without seeking statistical generalizations, the study centers on understanding the interpretive method employed by the Constitutional Court, considering the context of decisions issued by constitutional judges who have tutelaged these rights. In the criterion of the authors, the general rule fixed in said judgment generates tensions with precedents oriented to guarantee an effective protection facing violations in the public employment (3).

MATERIALS AND METHODS

In this investigation a methodology of qualitative approach was adopted, characteristic of the social sciences such as Law, with the finality of analyzing the interpretive argumentation employed in paragraph 42 of Judgment 2006-18-EP/24 facing the principle of progressivity of rights, the protection of the labor rights of the public servants in the conflicts with the State and the implications of deriving these controversies to the contentious-administrative jurisdiction under a supposed equal treatment (13).

This investigation was developed from a study of theoretical and jurisprudential character of the law, addressed from the perspective of the investigators and sustained through a qualitative approach, oriented to understand and interpret the legal norms in their context.

A theoretical review was realized on authors and types of argumentation utilized in judicial decisions, with the finality of examining the interpretive argumentation employed by the Constitutional Court in Judgment 2006-18-EP/24 (10,11,12,14,15,16).

The investigation considered a theoretical sample of 10 authors, proper of this type of qualitative studies. Regarding the methods, the analytical-synthetic and inductive-deductive methods were employed, with the aim of identifying and describing the types of argumentation present in judicial decisions.

This investigation was initiated with a doctrinaire review and of the normative framework of the Ecuadorian State, from the analysis of information available in the portal of the Constitutional Court and in the Official Registry. This review permitted

ISSN: 3091-1796
Vol. 4 No. 9 PP. 156-170
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

identifying the legal dispositions directly related with the labor conflicts between the State and its public servants, especially those linked with the termination of contracts of occasional services, the finalization of provisional appointments, the salary homogenization, the suppression of budgetary positions and the processes of liquidation, as well as the jurisdictional criteria applied for the resolution of this type of controversies (3).

As part of the phase of specialized documentary review, a systematic search of academic literature composed of scientific articles, books and legal essays related with Judgment 2006-18-EP/24 and with the derivation of the labor conflicts between the Ecuadorian State and the public servants toward the contentious-administrative jurisdiction was effected. This review permitted identifying previous doctrinaire contributions, contrasting interpretive approaches and situating the research problem within the contemporary legal debate. In a complementary manner, publications elaborated both by academics and by professionals of Law in free exercise were incorporated, to the extent that they offered critical analyses useful for a multidimensional and updated comprehension of the object of study (19).

The qualitative investigation was structured in successive phases. In a first phase, the delimitation of the legal problem and of the categories of analysis was realized, centered on the interpretive argumentation of Judgment 2006-18-EP/24, the principle of progressivity of the labor rights, the effective judicial tutelage and the jurisdictional competence in labor conflicts of the public service. In a second phase, the search and compilation of normative and jurisprudential sources in the portal of the Constitutional Court of Ecuador and in the Official Registry was developed. For this, keywords and thematic combinations such as “2006-18-EP/24”, “acción de protección”, “conflictos laborales”, “servidores públicos”, “jurisdicción contencioso-administrativa”, “LOSEP”, “LOEP”, “nombramientos provisionales”, “contratos de servicios ocasionales”, “supresión de partidas” and “homologación salarial” were employed as search criteria.

As inclusion criteria sentences, regulation and doctrinaire documents directly linked with the investigated problem and with the legal regime of the public employment were considered; documents without direct thematic relation, duplicates or lacking of argumentative relevance for the analysis were excluded.

In a third phase, the analytical reading, classification and contrast of the compiled material was proceeded to, with emphasis on the identification of the legal foundations utilized by the Constitutional Court and on the critical evaluation of the consistency of its argumentation. Finally, in a fourth phase, the doctrinaire, normative and jurisprudential findings were integrated by means of a legal-interpretive analysis, which permitted valuing in an integral manner the derivation of these controversies to the contentious-administrative jurisdiction and examining the argumentative solidity employed to justify said transfer. This methodological procedure seeks to assure the traceability of the investigative process and strengthen the replicability of the jurisprudential analysis (3,13).

RESULTS

Judgment 2006-18-EP/24 permitted identifying that the Constitutional Court adopted a restrictive posture regarding the use of the action of protection in labor conflicts

ISSN: 3091-1796
Vol. 4 No. 9 PP. 156-170
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

between the State and its public servants. Pursuant to paragraph 42, a general rule was fixed according to which this type of controversies must be known by the contentious-administrative jurisdiction, which supposes a relevant limitation to the access to an effective judicial tutelage, to the extent that it reduces the practical reach of the action of protection (3).

One of the most controversial aspects of the judgment is the idea of generating an "equal treatment" between the public servants governed by the Organic Law of the Public Service (LOSEP) and those linked to public enterprises, governed by the Labor Code and the Organic Law of Public Enterprises (LOEP). Nevertheless, this "equal treatment" ignores structural differences between both regimes. While the labor relations in the framework of the LOEP have an eminently entrepreneurial and flexible nature, the relations under the LOSEP are sustained on principles such as the administrative career, the labor stability, the development of the human talent and the permanent improvement of the efficiency, efficacy, quality and productivity of the State and of its institutions (2,4,5).

Likewise, it was evidenced that the Court did not develop a solid argumentation that justifies the restriction of the use of the action of protection in these cases, omitting an analysis of the principle of progressivity of the labor rights. This principle, of constitutional rank, demands that the State guarantee the advance in the protection of rights, impeding unjustified setbacks. The decision adopted in this judgment, upon restricting the access to the constitutional justice as mechanism for the effective protection of rights, can be understood as a setback in the level of tutelage that had been consolidated in the labor relation between the State and the public servants (1,3).

As a relevant aspect the reach of the attributions of the tribunals of the contentious-administrative can be highlighted. Thus, from the analysis of Article 217 of the Organic Code of the Judicial Function it is derived that said organs possess competence to know impugnations of administrative acts; however, an express habilitation to resolve conflicts of labor nature between the State and its servants is not noticed. This normative absence permits inferring that this jurisdiction was not conceived to address such controversies from a logic centrally oriented to the reparation of rights, which weakens the consistency of the argumentative line sustained in the examined judgment (6).

The judicial practice evidences that the actions of protection have constituted the principal instrument utilized by the public servants to confront arbitrary disconnections, suppressions of positions, contractual terminations and other administrative decisions that impact directly on their labor stability, registering in numerous cases favorable decisions to the tutelage of their rights, ordering the reintegration of the servants to their functions and the payment of the remunerations left to perceive, consolidating a standard of protection that now runs the risk of being weakened by the application of the precedent of paragraph 42 of Judgment 2006-18-EP/24, whose impact could be translated into a reduction of the effective judicial tutelage and into an additional obstacle for the full exercise of the labor rights in the public sector (7).

The State and the labor relation with the public servants

ISSN: 3091-1796
Vol. 4 No. 9 PP. 156-170
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

The Ecuadorian State recognizes the right to work in all its forms as a social and economic duty, as well as a source of personal realization and base of the economy. Regarding the labor relation in the public sector, the Constitution of 2008 established a specific regime and, subsequently, the LOSEP and its General Regulation were issued as legal instruments that regulate the linking of personnel in the different public institutions (1,2).

The LOSEP and its General Regulation regulate the linking of the persons with the public sector through permanent appointments, provisional appointments, contracts of occasional services and contracts of professional services. These modalities have been utilized, throughout the years, both to cover institutional needs in an adequate manner and, in certain cases, in an abusive form, generating precariousness during the labor relation (2).

Labor conflicts between the State and its public servants

The LOSEP, in its Article 47, contemplates the causes by which the public servants shall cease definitively in their functions; among them are found the suppression of positions and the purchase of resignation with indemnification (2).

Further ahead in Article 58 of the Organic Law of the Public Service the contract of occasional services is regulated as a modality of occasional contracting for the execution of non-permanent activities, establishing the time of up to one year for its use and signaling that this type of contracts does not generate stability (2).

On the other hand, the General Regulation to the LOSEP establishes, in its Article 17, the classes of appointments. In that framework, it defines the provisional appointments as those granted to occupy temporarily the posts determined in literal b) of Article 17 of the LOSEP, and it precises that they do not generate right to stability for the servant. In turn, Article 18, literal c), of the same legal body disposes, in an exceptional form, the cases in which a provisional appointment may be issued, among them, to occupy a post whose position were vacant until obtaining the winner of the contest of merits and opposition.

The majority of labor conflicts between the State and its public servants has its origin in disconnections executed under the cited figures. These decisions, illegal and attentatory against labor rights, have obliged to interpose actions of protection against the State. In determined cases the reintegration to the post of work and the payment of remunerations left to perceive for the time of disconnection has been achieved; in others, the former public servants have not recovered their charges.

It is precise to emphasize that, throughout the last years, the labor conflicts between the State and its public servants have been resolved by means of actions of protection, which have demonstrated to be an efficacious mechanism to guarantee the tutelage of rights facing arbitrary, illegal and lacking of motivation administrative acts. These actions not only have permitted the reestablishment of violated rights —such as the reincorporation to the post of work or the payment of remunerations left to perceive—, but in addition have generated precedents that have been utilized as reference to resolve similar cases in distinct jurisdictions of the country (3).

The action of protection has strengthened the framework of protection of the labor rights of the public servants in the public institutions, precisely for the transgressions

ISSN: 3091-1796
Vol. 4 No. 9 PP. 156-170
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

committed by state authorities in processes of disconnection, suppression of positions or termination of contracts. In that sense, it has functioned as a true "constitutional mechanism of protection of rights", permitting the public servants to access an agile, effective judicial path oriented to the immediate restitution of their rights (3).

Deriving the labor conflicts between the State and its public servants to the contentious-administrative jurisdiction, pursuant to the general rule established in paragraph 42 of Judgment 2006-18-EP/24, represents a serious affectation to the principle of progressivity of the rights, upon weakening the advances achieved by the constitutional justice in the construction of an institutional culture based on the respect, the stability and the protection of the work in the public sector (1,3,7).

Equal treatment toward the public servants regarding the labor conflicts generated by the employees subject to the Labor Code and to the Organic Law of Public Enterprises

The Organic Law of Public Enterprises was issued as a regulation that permits the public enterprises created by the State to count with competitive possibilities similar to those of a private enterprise, with the aim of adapting to the commercial dynamics and to the versatility of the market, and adopting necessary decisions to fulfill entrepreneurial and business objectives (4,17).

With the validity of the Organic Law of Public Enterprises a "new type" of servant is incorporated in the Ecuadorian public service, alien to the dispositions of the LOSEP and submitted to the Labor Code, as Article 32 of the LOEP disposes: "Art. 32.- Solution of controversies.- The controversies that originate from the labor relations between the public enterprises and their career servants or workers, shall be resolved by the labor authority or the competent labor judges, who for the effect shall observe the special dispositions provided in this Title". This disposition confirms that the labor relation with the personnel of the public enterprises is governed by a logic of entrepreneurial management, with greater flexibility than the regime of career of the public service (4,5).

Precisely the Organic Law of Public Enterprises enables that the public enterprises can terminate unilaterally the labor relation by part of the employer, with the obligation to indemnify in the private sector, legal figure accepted in our legislation, with exceptions to groups considered of special attention. It is for this that in Article 30 numeral 4 of the LOEP, it enables the employer to "separate its servants" always and when the payment of an indemnification is guaranteed, but not the restitution of the post of work, as happens with the private enterprise. The ILO, on the figure of dismissal has accepted it, always that the payment of an indemnification is guaranteed in a prior form (4,5).

Now, the labor relation between the State and the public servant who provides services in a public enterprise, under the regime of the Labor Code, cannot be equated to the relation that the State maintains with the public servants of the institutions subject to the regime of the Organic Law of the Public Service (LOSEP). The public enterprises, by their own nature, are oriented to function under criteria of competitiveness similar to those of the private sector, which implies that the employer must conserve the faculty to reorganize its personnel to guarantee the sustainability and efficiency of the entrepreneurial activity (4,5,17,18).

ISSN: 3091-1796
Vol. 4 No. 9 PP. 156-170
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

In change, the public institutions have as finality the provision of services to the citizenship, and the LOSEP establishes a regime oriented to the consolidation of an administrative career that promotes the professional, technical and ethical development of the public servant. This model seeks to assure the continuous improvement in the quality, efficiency and efficacy of the public institution, by means of the conformation and strengthening of the human talent, sustained on principles such as the equality of rights, the equity in the access to opportunities and the non-discrimination (2).

With the aim of evidencing in a more precise manner the substantial differences between both legal regimes, a comparative table is presented below that contrasts the rights and guarantees proper of the regime of the LOSEP facing the flexibility characteristic of the LOEP. This comparison permits noticing that the equation realized by the Constitutional Court in Judgment 2006-18-EP/24 omits relevant normative distinctions to determine the adequate jurisdictional path in the labor conflicts of the public sector (2,4,5).

Table 1. Substantial differences between the LOSEP regime and the LOEP regime

Compared criterion	LOSEP regime	LOEP regime	Relevance for the interpretive error
Nature of the labor relation	It is sustained on the administrative career, on the organization of the human talent and on principles of stability, professionalization and service to the citizenship. (2)	It responds to an entrepreneurial and competitive logic, linked to criteria of flexible management proper of the public enterprises. (4,17)	The Court does not distinguish between a statutory relation of public service and a labor relation with entrepreneurial orientation, despite the fact that this difference conditions the applicable legal protection.
Finality of the regime	It seeks to guarantee institutional continuity, administrative efficiency, professional development and strengthening of the public service. (2)	It seeks to endow the public enterprises with competitive tools similar to those of the private sector to fulfill business ends and sustainability. (4,17)	The equation between both regimes ignores that their normative objectives are distinct, for which a same jurisdictional response cannot be assumed as general rule.
Stability and disconnection	Although modalities without full stability exist, the regime is inserted in a structure of guarantees of the public employment and reinforced control over administrative decisions that affect rights. (2,3)	Article 30 of the LOEP permits separating career servants or workers with payment of indemnification, reflecting a greater flexibility in the termination of the labor relation. (4,5)	The Court omits that the greater flexibility of disconnection provided in the LOEP is not transferable without more to the LOSEP regime, where the affectation of rights may require immediate constitutional tutelage.
Competent organ for labor controversies	The conflicts usually involve administrative acts and, when there exists violation of rights, have been known by means of action of protection as suitable path of tutelage. (3,7)	Article 32 of the LOEP disposes expressly that the labor controversies of the public enterprises shall be resolved by the labor authority or by competent labor judges. (4,5)	The existence of an express rule in the LOEP evidences that the legislator differentiated both regimes; therefore, extrapolating that logic to the LOSEP constitutes an interpretive inference insufficiently justified.
Type of predominant protection	A reinforced protection of the link with the public service predominates, especially when rights such as stability, due process, equality and effective judicial tutelage are compromised. (1,2,3,7)	A logic of reparation and indemnification compatible with the entrepreneurial dynamics and with the solution of controversies in the ordinary labor jurisdiction predominates. (4,5)	The decision of the Court reduces unduly the protective specificity of the LOSEP regime upon assimilating it to a more flexible model designed for public enterprises.

Source: Own elaboration based on the LOSEP, the LOEP, the Labor Code, Judgment No. 2006-18-EP/24 and specialized doctrine. (2,3,4,5,17,18)

The preceding comparison shows that the LOSEP and the LOEP not only regulate distinct labor relations, but in addition respond to divergent normative finalities and mechanisms of protection. In particular, Articles 30 and 32 of the LOEP confirm that the legislator provided for the public enterprises a scheme of greater flexibility in the disconnection and a solution of controversies before the ordinary labor jurisdiction,

ISSN: 3091-1796
Vol. 4 No. 9 PP. 156-170
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

elements that cannot be transferred automatically to the statutory regime of the public service. For this, the interpretation of the Constitutional Court incurs in an error upon constructing an "equal treatment" that disattends substantial differences and weakens the reinforced tutelage that corresponds to the servants subject to the LOSEP (2,3,4,5).

In definitive, the Constitutional Court incurs in an interpretive error upon pretending to establish an equal treatment between the labor conflicts that involve public servants subject to the regime of the Organic Law of the Public Service (LOSEP) and those that correspond to workers of public enterprises regulated by the Organic Law of Public Enterprises (LOEP). Deriving both types of controversies to the same contentious-administrative jurisdiction —without attending to the differences between the legal regimes that govern them— denaturalizes the labor link of career and guaranteist character provided in the LOSEP, facing the contractual, flexible and oriented to the entrepreneurial performance logic proper of the public enterprises; in addition, it tensions the principle of progressivity of rights and limits the use of the actions of protection (2,4,5).

Legal foundations of Judgment 2006-18-EP/24 and its application in labor conflicts between the State and its public servants

Article 217 of the Organic Code of the Judicial Function establishes in an express manner the attributions and duties of the tribunals of the administrative contentious. Among these competencies is found that of knowing and resolving the controversies that arise between the public administration and the particulars, when there exists a possible violation of legal norms or of individual rights; as well as knowing and resolving the impugnations interposed against regulations, resolutions and other normative acts of rank inferior to the law, in non-tributary matter. In equal manner, the tribunals have competence to resolve demands presented against acts, contracts or non-tributary administrative facts, emanated from the institutions of the State, always that said acts affect interests or subjective rights of natural or legal persons (6,20).

These attributions and duties demonstrate that the principal function of the tribunals of the contentious-administrative is to exercise control of legality over the administrative acts of the public institutions; however, in no case is it established in an express form that they are competent to know labor conflicts between the State and its public servants. This lack of precision evidences that the conflicts of labor character, especially those related with the stability and the protection of fundamental rights, require an effective judicial tutelage that transcends the formal control of legality that characterizes this jurisdiction (6).

One of the principal legal foundations that is noticed in paragraph 42 of Judgment 2006-18-EP/24 is the application of the principle of specialty, pursuant to which the administrative acts dictated by public authorities must be challenged before the contentious-administrative jurisdiction. In this point, the Court considers that, upon treating of acts emanated from entities of the public sector, it corresponds to the judges of the contentious-administrative to resolve them, without that, in the criterion of the Court, there exists a direct violation of constitutional rights that justifies the use of the action of protection (3,6).

ISSN: 3091-1796
Vol. 4 No. 9 PP. 156-170
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

Nevertheless, this legal interpretation omits an integral valuation of the principle of progressivity of the labor rights, consecrated in Article 11 of the Constitution, as well as the principle of effective judicial tutelage provided in Article 75 of the same constitutional text and Judgment No. 307-10-EP/19 issued by the same Constitutional Court upon signaling that: (1,7)

"this Court considers that the legal nature of the act does not determine the competence of the judges upon knowing an action of protection, but that the foundation of the demand is the existence of a violation of constitutional rights (...)" (7).

Paragraph 42 of Judgment 2006-18-EP/24 does not develop with sufficient depth the distinction between the labor regime applicable to the public servants subject to the LOSEP and that corresponding to the workers of public enterprises under the LOEP, whose labor relations are regulated by the Labor Code and, in consequence, submitted to the ordinary justice.

In synthesis, although paragraph 42 of Judgment 2006-18-EP/24 finds its legal foundations in the Organic Law of the Public Service, the Organic Law of Public Enterprises and the principle of specialty, this general rule can represent a restrictive interpretation and limit the guarantee of rights by part of the judges who know actions of protection in case of labor conflicts (2,3,4).

Interpretive argumentation employed in paragraph 42 of Judgment 2006-18-EP/24 facing the principle of progressivity of rights

The legal argumentation consists in exposing founded reasons with the purpose of persuading regarding a determined legal question. It is a technique that requires both theoretical formation and specialized practical abilities (10,11,12,14,15,19).

The interpretive argumentation, according to Carlos Alberto Etala in his Legal Dictionary of Interpretation and Argumentation, seeks to determine in the most rational form possible the solution of controversial questions in which different interpretive results are possible among which it is necessary to choose (2016, 26) (8).

The exercise of the jurisdictional function demands of the judge the fulfillment of three essential activities:

a) The procedural activity, consisting in that the procedure to settle the litigation is substantiated pursuant to the procedural legal norms. Only thus the resolutory decision of the litigation will be procedurally pursuant to the law.

b) The decisory activity, which consists in dictating a decision that resolves the litigation. To fulfill the obligation of judging, that decision can be any decision, however absurd it may be. But, to fulfill the jurisdictional obligation, said decision has to be a decision that says the law. Only in this case the decision will be materially pursuant to the law.

c) The justificatory activity, which is the action of motivating the dictated decision.

According to Rafael Hernández, in his book Reasoning in the Judicial Sentence, he signals that of these three obligations, that of motivating is the one that has received more attention by part of the theoreticians and it is for this cause that the opinions about the motivation of the judicial decisions are so numerous and disparate (2013: 100) (9).

ISSN:
3091-1796
Vol. 4 No. 9 PP. 156-170

DOI:
https://doi.org/10.56519/yavapg07
Mayo 2026

From this perspective, the analysis of Judgment 2006-18-EP/24, in particular of paragraph 42, evidences that the Constitutional Court opted for an interpretive argumentation of restrictive cut. Instead of examining the bottom of the labor conflicts between the State and its public servants in light of the constitutional principles —especially the principle of progressivity of the rights and the right to the effective judicial tutelage—, the Court established a general rule that limits the access to the constitutional justice in this type of cases. This decision, upon deriving in an automatic form the labor conflicts to the ambit of the contentious-administrative jurisdiction, not only reduces the standard of protection previously reached, but also ignores the guaranteist function of the action of protection (3,16).

What is worrying of this argumentative line is that it starts from a formal conception of the law, in which the nature of the administrative act prevails over the possible violation of fundamental rights. This posture results incompatible with other precedents of the own Constitutional Court, in which it has been sustained that the activation of the constitutional competence does not depend on the formal nature of the challenged act, but on the effective existence of a violation to rights recognized in the Constitution. The motivation developed in the judgment object of analysis evidences a restrictive interpretation that departs from an evolutionary and guaranteist reading of the constitutional law, generating regressive effects in the protection of the labor rights of the public servants and affecting the standard of tutelage previously consolidated (7).

From a critical perspective, the limitation imposed to the action of protection results problematic, since it tensions the principle of progressivity of the constitutional rights upon not offering a solid justification that explains why the transfer of the labor conflicts to the contentious-administrative jurisdiction would guarantee a more adequate tutelage. Far from strengthening the protection of the rights, this restriction ignores that, in the practice, the action of protection has been an efficacious mechanism to confront arbitrary administrative decisions in the public employment, permitting the reestablishment of violated rights. In that sense, reducing its reach weakens the means of defense of the public servants and compromises the coherence and efficacy of the system of constitutional justice.

DISCUSSION

Judgment 2006-18-EP/24 marks a relevant moment in the interpretation of the labor conflicts between the State and its public servants. However, the critical examination of its content permits noticing substantial questionings regarding the reach and the consistency of the argumentation developed by the Constitutional Court, in particular in relation with the principle of progressivity of the rights and with the coherence of this decision facing its own previous jurisprudential line (3).

One of the principal aspects observed in the analysis is that the Court founds its reasoning on the idea of establishing a supposed “equal treatment” in matter of jurisdictional competence between the distinct labor regimes. Nevertheless, said equation results legally problematic if the structural differences that characterize each one of these regimes are considered. In the case of the public enterprises, the Organic Law of Public Enterprises establishes in an express manner that the labor conflicts must be known by labor judges, in attention to that these relations are governed by the Labor

ISSN: 3091-1796
Vol. 4 No. 9 PP. 156-170
DOI: https://doi.org/10.56519/yavapg07
Mayo 2026

Code and respond to an entrepreneurial, flexible logic oriented to criteria of competitiveness (4,5).

The labor relations regulated by the Organic Law of the Public Service present a distinct nature, sustained on principles such as the administrative career, the stability, the professionalization of the human talent, and the fulfillment of institutional objectives linked with the efficiency, the quality and the continuous improvement of the state management. (2) These differences reflect that it does not result adequate to transfer automatically jurisdictional criteria from one regime to another without a substantive analysis of its impact on the protection of rights.

It results especially worrying that the Court has opted for restricting the procedence of the action of protection in this type of controversies, transferring the competence to the contentious-administrative jurisdiction without a deep examination of the consequences that this general decision on the rights of the public servants. Although it is true that the contentious-administrative tribunals fulfill a central function of control of legality, also it is that their procedural design does not offer the same guarantees of celerity nor is oriented, in a priority manner, to the integral reparation of rights, as occurs in the ambit of the constitutional justice (6,7).

The discussion must be situated, then, in the relation between the precedent fixed by the Court and the procedural reality that the public servants face at the moment of seeking the tutelage of their rights. The action of protection has demonstrated to be an efficacious tool facing the administrative acts that, despite their appearance of legality, conceal arbitrariness, deficiencies of motivation or disproportionate decisions. The remission of these cases to the contentious-administrative jurisdiction not only prolongs the processes, but reduces the possibilities of an effective restitution, especially when the judges lack specialized formation in labor rights of the public sector.

To this is added the contradiction with criteria previously sustained by the same Constitutional Court, as the exposed in Judgment No. 307-10-EP/19, in which it was affirmed with clarity that what is determinant to fix the competence is not the formal nature of the administrative act, but the real existence of a violation of constitutional rights. This lack of internal consistency weakens the legal security and generates a scenario of uncertainty for those who seek an adequate and expedite path for the defense of their rights facing the State (7).

The argumentation adopted in Judgment No. 2006-18-EP/2024 reflects an interpretation that, far from strengthening the framework of protection of the rights of the public servants, introduces restrictions based on formal criteria that can obstruct the access to a timely and effective justice. The developed analysis does not pursue to delegitimize the role of the Constitutional Court, but to highlight the necessity of reviewing critically this precedent with the aim of reinforcing a coherent, guaranteist constitutional interpretation and in accordance with the principles that sustain the constitutional State of rights and justice (3,16).

CONCLUSIONS

The study evidences that the general rule established in paragraph 42 of Judgment 2006-18-EP/24 configures a precedent that, under a formalist approach, transfers the labor conflicts between the State and its public servants to the contentious-administrative

jurisdiction. This decision is sustained on a supposed "equal treatment" with the personnel of public enterprises; however, said equation ignores the structural differences between the regime of the LOSEP oriented to the administrative career, the stability and the strengthening of the human talent and the regime of the LOEP/Labor Code, of entrepreneurial logic and greater flexibility. In consequence, the jurisdictional solution proposed by the Court results conceptually imprecise and normatively insufficient to respond to the specificity of the public employment and to the conflicts derived from disconnections, suppression of positions, finalization of provisional appointments or other administrative decisions.

It is concluded that the argumentation utilized to restrict, by general rule, the action of protection lacks a reinforced motivation facing constitutional standards such as the effective judicial tutelage (art. 75) and the principle of progressivity (art. 11.8). The analysis shows that the Court privileges the nature of the administrative act over the verification of a possible violation of rights, in tension with the jurisprudential line that recognizes that the constitutional competence is activated by the affectation to rights and not by the label of the act. In the praxis, the actions of protection have operated as a suitable mechanism to repair violations linked with stability, due process, equality and legal security, especially in scenarios of arbitrariness or lack of motivation. In that sense, paragraph 42 breaks with that jurisprudential line and elevates barriers of access to an expedite path, which can be translated into an unjustified setback of the level of protection reached for the public servant (7).

Finally, it is determined that the contentious-administrative jurisdiction, pursuant to the attributions provided in the COFJ, is oriented principally to the control of legality of the administrative act and was not designed to provide, in a priority manner, a constitutional and reparatory response facing labor conflicts of the public service. The absence of an express habilitation to know this type of controversies with approach of rights, added to the lesser procedural celerity, can weaken the efficacy of the tutelage and affect in a direct form the labor stability, the timely reestablishment of rights and the legal security. In that framework, the article sustains that the precedent must be interpreted with caution and in a form compatible with the Constitution: the action of protection must be maintained available when there exist violations of constitutional rights in the public labor ambit, avoiding that the general rule operates as an automatic exclusion that denaturalizes the guaranteist character of the constitutional State of rights and justice (3).

REFERENCES

1. Ecuador. Constitución de la República del Ecuador. 13 jul 2011.
2. Ecuador. Ley Orgánica del Servicio Público (LOSEP). 6 oct 2010.
3. Ecuador. Corte Constitucional del Ecuador. Sentencia No. 2006-18-EP/24. 13 mar 2024.
4. Ecuador. Ley Orgánica de Empresas Públicas (LOEP). 16 oct 2009.
5. Ecuador. Código del Trabajo. 16 dic 2005.
6. Ecuador. Código Orgánico de la Función Judicial (COFJ). 9 mar 2009.
7. Ecuador. Corte Constitucional del Ecuador. Sentencia No. 307-10-EP/19. 9 jul 2019.

ISSN:
3091-1796
Vol. 4 No. 9 PP. 156-170

DOI:
https://doi.org/10.56519/yavapg07
Mayo 2026

8. Etala CA. Diccionario jurídico de interpretación y argumentación. Madrid: Marcial Pons; 2016.

9. Hernández R. Razonamiento de la sentencia judicial. Madrid: Marcial Pons; 2013.

10. Atienza M. Curso de argumentación jurídica. Madrid: Trotta; 2013.

11. García JA. Razonamiento jurídico y argumentación. Puno: ZELA Grupo Editorial; 2019.

12. Lifante I. Argumentación e interpretación jurídica. Valencia: Tirant lo Blanch; 2018.

13. Martínez D. Metodología jurídica y argumentación. Madrid: Marcial Pons; 2010.

14. Otero M. Argumentos de la argumentación jurídica. México DF: Porrua Perú; 2015.

15. Perelman C. Tratado de la argumentación. Barcelona: Gredos; 2015.

16. Chiassoni P. Introducción a la argumentación constitucional. Lima: Palestra Editores; 2024.

17. Gonzalez F. Las empresas públicas en el Ecuador. Quito: Universidad de Cuenca; 2017.

18. Younes D. Derecho administrativo laboral. Bogotá: Temis; 2018.

19. Navarro F. Oratoria forense y argumentación jurídica. Buenos Aires: Ediciones D&D; 2021.

20. Ecuador. Código Orgánico Administrativo (COA). 7 jul 2017.