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An approach to building a policy for the use of Artificial Intelligence in doctoral research

Aproximación a la construcción de una política para el uso de la Inteligencia Artificial en investigaciones doctorales

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Abstract

Introduction: The implications of Artificial Intelligence have now transcended all spheres of human development, and its potential also comes with significant risks if used uncritically and without legal and ethical regulations. The field of scientific research is no exception.
Objective: To present a characterization of the criteria of students and professors in the Doctoral Program in Organizational Management at the University of Holguín regarding elements that could be included in a policy for the use of Artificial Intelligence in doctoral research.
Methods: This exploratory study was based primarily on quantitative research methods, through the application of a survey to students and professors of the doctoral program. The sample consisted of 82 students and 36 professors, and the main results of the survey were synthesized.
Results: This paper presents a characterization of how both groups in the sample think about establishing a policy for the use of Artificial Intelligence in doctoral research. It clarifies the main points of agreement as well as those points of rejection by the respondents.
Conclusion: Doctoral students and professors acknowledge the need for regulations governing the use of Artificial Intelligence in doctoral research, but demand that these regulations be clear, applicable, and sufficiently robust to guarantee academic integrity without hindering the research process.

Keywords: Artificial Intelligence, Generative Artificial Intelligence, Doctoral Training, Scientific Research, Higher Education.

Resumen

Introducción: Las implicaciones de la Inteligencia Artificial en la actualidad ha trascendido a todas las esferas del desarrollo humano y sus potencialidades vienen aparejadas también con elevados riesgos si se emplean de manera acrítica y sin regulaciones legales y éticas, a lo cual no escapa

el campo de las investigaciones científicas.
Objetivo: Exponer una caracterización de los criterios de estudiantes y profesores del Programa Doctoral de Gestión Organizacional de la Universidad de Holguín en relación con elementos que pudieran ser incluidos en una política para el empleo de la Inteligencia Artificial en investigaciones doctorales.
Métodos: El estudio exploratorio se basó, principalmente, en métodos de la investigación cuantitativa, mediante la aplicación de una encuesta a estudiantes y profesores del programa doctoral de referencia, con una muestra de 82 estudiantes y 36 profesores, a partir de la cual se sintetizaron los principales resultados del instrumento aplicado.
Resultado: Se presenta una caracterización de cómo piensan ambos estratos de la muestra en relación con el establecimiento de una política para el uso de la Inteligencia Artificial en las investigaciones doctorales, se explicitan los principales elementos en que existen coincidencias así como los que tienen cierto grado de rechazo por los encuestados.
Conclusión: Los doctorandos y profesores asumen la necesidad de existencia de normas para el empleo de la Inteligencia Artificial en las investigaciones doctorales, pero demandan que estas sean claras, aplicables y suficientemente robustas para garantizar la integridad académica sin que sean un obstáculo para el proceso de investigación.

Palabras clave: Inteligencia Artificial, Inteligencia Artificial Generativa, Formación doctoral, Investigación científica, Educación Superior.

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Introduction

The emergence of Generative Artificial Intelligence (GenAI) accessible to all of society as of November 2022 brought with it, in addition to hitherto unsuspected benefits, enormous challenges and risks; in particular, the field of scientific research is one of the many human activities in which the benefits of GenAI come hand in hand with the dangers of its indiscriminate use and without guidelines or norms for its regulated use.

Specifically, in relation to the ethics of Artificial Intelligence (AI), due to the transcendental importance of this topic and the high risks involved in the use of this tool, a high number of documents have been reported, from international organizations, countries, and researchers. Thus, UNESCO in 2019 published the so-called *Beijing Consensus on Artificial Intelligence* and education (UNESCO, 2019), in which it reaffirms its commitment to Sustainable Development Goal (SDG) four and states that:

> We are determined to promote appropriate policy responses to achieve the systematic integration of artificial intelligence and education, in order to innovate education, teaching

> and learning, and so that artificial intelligence contributes to accelerating the achievement of open and flexible education systems that enable equitable, relevant and quality lifelong learning opportunities for all, which will contribute to the achievement of the SDGs and the shared future of humanity (p. 29).

This same organization published in 2021 the *Recommendation on the Ethics of Artificial Intelligence* (UNESCO, 2022), which defines the scope of application, purposes and objectives, values and principles, areas of political action, and monitoring and evaluation of said recommendations, among other aspects, and which declares as its purpose "to provide a basis for putting AI systems at the service of humanity, individuals, societies and the environment and ecosystems, as well as to prevent harm" (p. 14).

In this sense, specifically in the field of doctoral research, considerable and important documents have been reported that attempt to regulate, mainly from an ethical point of view, the use of these tools in scientific research. Among the main elements addressed in relation to the objective of this work, based on the consulted bibliography, we can mention those related to ethical integrity and individual responsibility, transparency and protocols for declaring the use of AI, suggestions for good practices and uses as assistants in doctoral research, bad practices and risks and restrictions, and the role of supervision and evaluation.

Thus, in relation to ethical integrity and individual responsibility, the following elements can be mentioned: authorship responsibility, in which it is agreed that the researcher is solely responsible for the accuracy, scientific integrity, and validity of the data presented (Doctoral Center SGW, 2025; King's College London, 2025; University of Heidelberg, 2025; University College London, 2026); originality and critical thinking, considering that AI should be an assistant and never a substitute for the student's intellectual capacity, critical judgment, or autonomy (Giugliano, 2025; KU Leuven, 2026; University of Heidelberg, 2025); and "Equivalence with human assistance," coinciding that receiving inappropriate help from an AI is equivalent to and should be treated under the same rules of academic misconduct as receiving unauthorized help from another person (University of Cambridge, 2026; University of Georgia, 2024). In summary, the main conclusion among the aforementioned sources is that the final and absolute responsibility for the content lies with the human author, regardless of the use of technological tools.

Regarding transparency and protocols for declaring the use of AI, common elements found included: mandatory declaration, i.e., the use of AI is explicitly regulated, detailing which tools were used, for what purpose, and to what extent (KU Leuven, 2026; University of Cambridge, 2026; University of Heidelberg, 2025); the proposal of control mechanisms, establishing the use of specific forms or sworn declarations to document this support (Doctoral Center SGW, 2025; King's College London, 2025; University College London, 2026); as well as the explicit declaration that AI is not an author, with consensus that AI tools do not meet authorship criteria and should not be cited as sources of scientific facts, but rather declared as assistants (Caulfield, 2025;

Giugliano, 2025; King's College London, 2025; University of Heidelberg, 2025). A common element in the aforementioned sources is that they all agree that transparency is the pillar of academic integrity when using AI.

In relation to suggestions for good practices and uses of AI as assistants in doctoral research, recommended uses include: use for linguistic and stylistic improvement, i.e., to correct grammar, spelling, improve text fluency or to paraphrase, with emphasis on its use by researchers whose native language is not English (King's College London, 2025; KU Leuven, 2026; University of Cambridge, 2026; University College London, 2026); as support in the initial phases of research, such as "overcoming writer's block," generating chapter structures, conducting semantic literature searches, or assisting in code programming (Doctoral Center SGW, 2025; KU Leuven, 2026; University of Heidelberg, 2025; University College London, 2026); and in rigorous verification of results, allowing cross-checking or contrasting information generated by AI with primary sources to counteract the risk of "hallucinations" (Giugliano, 2025; KU Leuven, 2026; University of Heidelberg, 2025).

Among the specific actions considered bad practices, risks, and restrictions are: plagiarism and content generation by copying blocks of text from other sources without referencing and the generation of texts by AI (KU Leuven, 2026; University of Cambridge, 2026; University of Georgia, 2024); violation of privacy, consisting of uploading sensitive data, unpublished research results, or information under confidentiality agreements to public AI tools (Giugliano, 2025; King's College London, 2025; KU Leuven, 2026; University of Heidelberg, 2025); and the use of AI tools in exams or oral defenses (Giugliano, 2025; University College London, 2026).

Likewise, in relation to the role of supervision and evaluation, the following are considered: prior approval, whereby the doctoral candidate must obtain the consent of their supervisor or advisory committee before integrating AI into their workflow (Giugliano, 2025; King's College London, 2025; University of Georgia, 2024); and the oral examination as a guarantee that ensures the doctoral candidate possesses the knowledge and can defend their work without technological assistance (King's College London, 2025; University College London, 2026).

On the other hand, another group of authors address needs to be addressed, including: Juca-Maldonado *et al*. (2024), who refer to the urgency of developing teacher training policies and inclusion of AI in curricula; Breceda Pérez (2025), pointing out that it is imperative to regulate the use of AI in doctoral research to close the gaps between technological advancement and institutional policies; Díaz Subieta (2024), who insists on the need to train researchers for ethical and responsible use of AI; Acosta-Enríquez *et al*. (2025), who advocate for the need to reevaluate technological acceptance models and incorporate ethical dimensions; Raitskaya & Tikhonova (2024), who point out that since hybrid writing (human-AI) is already a reality, there is an urgent need for the development of clear institutional policies on academic integrity; Padilla-Caballero *et al*. (2023), who refer to the importance of developing research skills from the initial stages in a

balanced manner; Muñoz-del-Carpio Toia *et al*. (2025), who advocate for ethical use and clear regulations for the use of AI, considering the importance of having ethical leadership; and Gentilin *et al*. (2024), who declare that the doctoral researcher must move from being considered a content generator to a responsible content curator.

Based on the above references, and given the absence of a policy for the use of Artificial Intelligence at the University of Holguín, the objective was to develop exploratory research, with a quantitative approach, in order to propose, based on the criteria of professors and students[1]of the Doctoral Program in Organizational Management (DPOM), a normative document that allows the Academic Committee of the doctorate, the faculty, and the doctoral candidates themselves, to have a guide for the use of AI in doctoral research carried out in this program, which is presented in this article.

Methods

The research carried out was based mainly on quantitative research methods. For its development, an online survey was applied through Google Forms, through which it was intended to obtain the main criteria held by the target population (students and professors of the DPOM at the University of Holguín) on the need to establish a policy for the use of AI in doctoral research. This exploratory study used a census design with voluntary participation, as the questionnaire was distributed to the entire population and the responses received (82 students and 36 professors) constituted the basis of the analysis. Due to the voluntary nature of participation, the results should be interpreted as exploratory evidence, potentially influenced by non-response bias.

The applied instrument investigated criteria grouped into six sections: guiding principles; undesirable uses of AI; use of AI in images, graphics, and modeling; citation and referencing of AI; declaration of AI use and control and ethics mechanisms; and finally an assessment of each of the sections of the proposed policy. In each case, these sections were modeled based on indicators, evaluated using an increasing ordinal scale (from 1 to 5), through which the members of the sample could express their criteria of acceptance or agreement with the proposals put to their consideration in the order of: Very low, Low, Average, High, and Very high.

For the statistical analysis of the results presented, a mixed methodology combining descriptive and inferential statistics was used. Using descriptive statistics, means and percentages of grouped responses (High + Very High) for each indicator were calculated and analyzed, and results were segmented by Groups(students, professors, and total). Likewise, using the normality test (Shapiro-Wilk), it was evaluated whether the distributions of responses for each indicator and groups adjusted to a normal distribution, which resulted in most indicators not presenting a

[1] Although the term students is used, in all cases it refers to doctoral candidates, as established in the regulations on doctoral training in Cuba.

normal distribution (Table 1), considering the null hypothesis (H0) of this test that 'the data come from a population with a normal distribution,' with a p-value < 0.05 leading us to reject H0 and conclude that the distribution is not normal, so the Mann-Whitney U test was used[2].

Table 1.
Sample of the analysis performed with a selection of key results from each question of the instrument to confirm the methodological justification

Question	Indicador	Groups	W-Statistic	p-value	¿Normal Distribution?
1	Authorship.	Stud.	0.682	<0.001	No
		Prof.	0.539	<0.001	No
2	Substitute for reasoning.	Stud.	0.839	<0.001	No
		Prof.	0.794	<0.001	No
3	Use of illustrative images created with AI.	Stud.	0.802	<0.001	No
		Prof.	0.808	<0.001	No
4	Cite and reference results from using AI.	Stud.	0.893	<0.001	No
		Prof.	0.639	<0.001	No
5	Inclusion of an AI declaration.	Stud.	0.886	<0.001	No
		Prof.	0.864	<0.001	No
6	Committee establishes mechanisms.	Stud.	0.787	<0.001	No
		Prof.	0.593	<0.001	No
7	Guiding principles.	Stud.	0.752	<0.001	No
		Prof.	0.838	<0.001	No

Source: Own elaboration

Results and discussion

Below are the results obtained from the statistical processing of the instrument for each of the sections in which the structure of the proposed policy for the use of AI in doctoral research was modeled, along with the pertinent assessments. In each of the sections of the proposal made, for each of thr strato in the sample (students and professors) and for the total sample, the mean of each indicator, the percentage of the sample that evaluates between High and Very high (4 + 5) the importance they give to each indicator, and the result of the application of the non-parametric Mann-Whitney U test (p-value (M-W)) can be observed.

Assessment of the results obtained from the indicators in Section 1

Section 1 collects the criteria of DPOM students and professors on the level of importance given to each of the proposed guiding principles and is composed of seven indicators, as shown in Table 2.

[2] In the preparation of this article, Generative Artificial Intelligence tools were used, specifically *Connected Papers*, for searching updated scientific information on the use of AI in doctoral research and for searching networks of authors working on similar topics; *Perplexity*, for locating scientific information related to AI use policies in higher education institutions; and *NotebookLM*, to summarize, triangulate, and analyze information from selected sources. However, the results presented, including the writing of the article, are the absolute responsibility of its authors, as the results obtained through the use of these tools were used as support and analyzed under a critical prism and contrasted with the original sources.

Table 2.
Results of the indicators in the guiding principles section (question 1)

Indicador	Groups	Mean	% (4+5)	p-value (M-W)
Authorship: The doctoral candidate is the full author and responsible for the design, development, results, and conclusions of the research.	Stud.	4.60	95.12%	0.233
	Prof.	4.72	97.22%	
	Total	4.64	95.76%	
Transparency: Any relevant use of AI tools must be explicitly declared in the AI Use Declaration section.	Stud.	4.39	84.15%	0.028
	Prof.	4.72	91.89%	
	Total	4.49	86.44%	
Scientific rigor: AI cannot replace fundamental processes of analysis, validation, interpretation, and scientific argumentation, nor compromise the depth of critical analysis or intellectual autonomy.	Stud.	4.57	87.80%	0.104
	Prof.	4.72	91.89%	
	Total	4.62	89.83%	
Ethical responsibility: The use of AI to produce, falsify, or manipulate data, evidence, or results is prohibited.	Stud.	4.60	90.24%	0.025
	Prof.	4.83	91.89%	
	Total	4.67	90.68%	
Traceability: Critical decisions in the research process must be reconstructable and justifiable regardless of the use of AI.	Stud.	4.51	86.59%	0.086
	Prof.	4.72	89.19%	
	Total	4.58	87.29%	
Privacy and confidentiality: Confidential, personal, or non-public information from the research, the researcher, or third parties must not be entered into AI.	Stud	4.44	87.80%	0.279
	Prof.	4.61	86.49%	
	Total	4.49	87.29%	
Regulatory compliance: Intellectual property must be respected, plagiarism avoided, and all sources, including those generated by AI, must be correctly cited.	Stud	4.73	95.12%	0.579
	Prof.	4.81	89.19%	
	Total	4.76	93.22%	

Source: Own elaboration

From the results obtained, the following elements can be concluded:

- All principles are valued as "High" or "Very high" by both groups, with means ≥ 4.39.
- *Regulatory compliance, ethical responsibility*, *authorship* and *scientific rigor* are the guiding principles with the greatest consensus.
- Statistically significant differences are observed in *transparency* and *ethical responsibility*, where professors grant significantly higher importance than students, suggesting a greater concern for these aspects on the part of the teaching staff compared to the doctoral candidates.

Assessment of the results obtained from the indicators in Section 2

Section 2 collects the criteria of DPOM students and professors on the level of importance they give to the proposals for tasks that are excluded as possible undesirable uses of AI in doctoral research from an ethical point of view and is composed of 17 indicators, as shown in Table 3.

Table 3.

Results of the indicators in the section Guidelines for the use of AI (undesirable uses) (question 2)

Indicador	Groups	Mean	% (4+5)	p-valor (M-W)
Substitute for the doctoral candidate's scientific reasoning.	Stud.	2.84	35.37%	0.007
	Prof.	3.39	56.76%	
	Total	3.01	41.53%	
Primary source of theoretical or empirical knowledge without verification.	Stud.	2.98	41.46%	0.002
	Prof.	3.64	62.16%	
	Total	3.18	47.46%	
Implicit author or co-author of substantive parts of the thesis.	Stud.	2.91	37.80%	0.072
	Prof.	3.22	54.05%	
	Total	3.01	42.37%	
Automatic drafting of complete methodology sections. Draft generation is permitted, but the final text must be reworked by the doctoral candidate and the AI support must be declared.	Stud.	3.67	60.98%	0.676
	Prof.	3.56	62.16%	
	Total	3.64	61.86%	
Delegating to AI the final selection of design, sample, or instruments, or accepting methodological suggestions without foundation in scientific literature and without validation by the tutor.	Stud.	2.89	37.80%	0.005
	Prof.	3.36	56.76%	
	Total	3.03	43.22%	
Accepting without verification the classifications or theoretical genealogies provided by AI; these can only be starting points for bibliographic inquiry.	Stud.	3.05	42.68%	0.051
	Prof.	3.47	59.46%	
	Total	3.18	47.46%	
Attributing to AI the formulation of the central epistemological positioning of the thesis or presenting as one's own an epistemological synthesis generated almost entirely by the tool.	Stud.	2.83	37.80%	0.003
	Prof.	3.36	56.76%	
	Total	2.99	43.22%	
Use of summaries or paraphrases generated by AI on texts that the doctoral candidate has not read directly; critical reading of sources remains mandatory.	Stud.	3.13	48.78%	0.131
	Prof.	3.44	56.76%	
	Total	3.23	51.69%	
Constructing substantive sections of the theoretical framework based solely on AI text, without support from citations to peer-reviewed literature nor verification of accuracy and context.	Stud.	2.78	37.80%	0.002
	Prof.	3.31	54.05%	
	Total	2.94	42.37%	
Allowing AI to generate complete models or algorithms without documenting parameters, instructions (prompts), and validation criteria, especially when they form part of the contribution.	Stud.	2.84	40.24%	0.007
	Prof.	3.33	54.05%	
	Total	2.99	44.07%	
Presenting products (software modules, instruments, teaching materials) produced almost entirely by AI as one's own result, without clear evidence of design, decisions, and refinements.	Stud.	2.83	40.24%	0.001
	Prof.	3.47	56.76%	
	Total	3.03	45.76%	
Use of AI to label qualitative data, extract themes, or identify patterns without manual review and without indicating in the method how this assistance was integrated.	Stud.	2.88	40.24%	0.020
	Prof.	3.25	54.05%	
	Total	2.99	44.07%	
Generation of non-existent data, modification of results, synthesis of findings not derived from the real database, or misleading alteration of tables and graphs.	Stud.	2.63	36.59%	<0.001
	Prof.	3.33	56.76%	
	Total	2.85	42.37%	
Relying on impact assessments produced by AI without supporting data or review by the committee, especially in projects with significant ethical or social implications.	Stud.	2.73	37.80%	0.003
	Prof.	3.28	54.05%	
	Total	2.90	42.37%	
Substituting formal validation processes (expert panels, pilot studies, cost-benefit analysis) with automatic AI evaluations.	Stud.	2.71	36.59%	0.002
	Prof.	3.31	54.05%	
	Total	2.89	41.53%	
Requesting AI to generate draft conclusions and then integrating them without critical reflection; any text used must be rewritten and assumed as one's own, with declaration of AI use.	Stud.	2.82	37.80%	0.010
	Prof.	3.25	54.05%	
	Total	2.95	42.37%	
Delegating to AI the formulation of final conclusions on contributions, limitations, and projections of the thesis.	Stud.	2.77	34.15%	0.001
	Prof.	3.31	56.76%	
	Total	2.93	40.68%	

Source: Own elaboration

From the results obtained, the following elements can be concluded:

- This section shows the most marked and significant differences between both groups, where professors express consistently higher agreement (statistically significant differences in 13 of 17 indicators) in rating these uses as "undesirable".
- The means for professors are in the range [3.22, 3.64], while those for students are lower [2.63-3.67]. This suggests that professors have a much higher perception of ethical risk than students regarding a wide range of possible bad practices with AI.
- The only point of relative consensus is the prohibition of automatic drafting of complete methodology sections, although draft generation may be permitted, but the final text must be reworked by the doctoral candidate and the AI support must be declared, which seems to be a more accepted use by both groups.

Assessment of the results obtained from the indicators in Section 3

Section 3 collects the criteria of DPOM students and professors on the level of importance they give to the specifications proposed regarding the use of AI in images, graphics, and modeling and is composed of eight indicators, as shown in Table 4.

Table 4.
Results of the indicators in the section use of AI in images, graphics, and modeling (question 3)

Indicador	Groups	Mean	% (4+5)	p-value (M-W)
Images generated by AI should be illustrative or explanatory in nature.	Stud.	4.24	78.05%	0.795
	Prof.	4.25	81.08%	
	Total	4.25	79.66%	
The use of images generated by AI as empirical evidence is not permitted.	Stud.	3.48	56.10%	0.001
	Prof.	4.17	75.68%	
	Total	3.69	61.86%	
It must be explicitly indicated when an image has been generated or assisted by AI.	Stud.	4.50	90.24%	0.552
	Prof.	4.56	86.49%	
	Total	4.52	89.83%	
The use of AI is only permitted to improve resolution or diagram concepts. If an image is generated entirely with AI, it must be indicated in the figure caption.	Stud.	4.34	86.59%	0.852
	Prof.	4.33	81.08%	
	Total	4.34	85.59%	
The figure caption must include an information note declaring the use of AI.	Stud.	4.37	84.15%	0.378
	Prof.	4.50	86.49%	
	Total	4.41	85.59%	
AI can be used for exploratory simulations and conceptual support.	Stud.	4.12	75.61%	0.346
	Prof.	4.25	75.68%	
	Total	4.16	75.42%	
Final models must be formalized, validated, and explained by the researcher.	Stud.	4.60	92.68%	0.323
	Prof.	4.72	91.89%	
	Total	4.64	92.37%	
AI can help write code for mathematical models. In this case, the source code must be included in the appendices.	Stud.	4.33	86.59%	0.972
	Prof.	4.36	81.08%	
	Total	4.34	85.59%	

Source: Own elaboration

From the results obtained, the following elements can be concluded:

- There is a high level of consensus between students and professors on most aspects related to transparency in the use of AI in images and models.
- The need to declare the use, the illustrative nature of images, and final validation by the researcher are points with very solid support.
- The only significant difference is found in the indicator related to the prohibition of using images generated by AI as empirical evidence, where professors, with a mean of 4.17, agree much more with this prohibition than students (with a mean of 3.48), once again showing a more cautious stance.

Assessment of the results obtained from the indicators in Section 4

Section 4 collects the criteria of DPOM students and professors on the level of importance they give to the specifications proposed regarding the citation of AI tools in the body of the doctoral thesis and their reference in the bibliography used and is composed of two indicators, as shown in Table 5.

Table 5.
Results of the indicators in the section citation and referencing of AI (question 4)

Indicador	Groups	Mean	% (4+5)	p-value (M-W)
Any use of AI in the written report of the doctoral thesis must be cited and referenced in the References section.	Stud.	3.87	62.20%	<0.001
	Prof.	4.64	86.49%	
	Total	4.10	69.49%	
In separate appendices, the prompts used in each case must be included, as well as the responses given by the AI tools used in the doctoral thesis.	Stud.	3.33	51.22%	0.001
	Prof.	4.14	72.97%	
	Total	3.58	57.63%	

Source: Own elaboration

In the results obtained from the responses given to the elements incorporated in the section related to the citation and referencing of AI, very significant differences are observed between both groups, as professors consider it much more important both the citation in references (4.64 against 3.87 for students) and the inclusion of prompts and responses in the appendices (4.14 against 3.33 for students), which reflects a greater demand for transparency and documentary traceability on the part of the faculty, while students show a more intermediate or less demanding position.

Assessment of the results obtained from the indicators in Section 5

Section 5 collects the criteria of DPOM students and professors on the level of importance they give to each of the specifications proposed related to the declaration on the use of AI in doctoral theses and is composed of six indicators, as shown in Table 6.

Table 6.

Results of the section declaration on the use of AI (question 5)

Indicador	Groups	Mean	% (4+5)	p-value (M-W)
As an integral part of the written report of the doctoral thesis, the Declaration on the use of artificial intelligence must be included in the initial section of the document.	Stud.	3.88	69.51%	0.311
	Prof.	4.03	64.86%	
	Total	3.92	68.64%	
In the declaration on the use of artificial intelligence, the use of these tools is specified; in Appendix 1 of the thesis, it must be declared which tools were used, in which phases of the work, as well as describing the use given to them.	Stud	4.05	73.17%	0.701
	Prof.	4.08	70.27%	
	Total	4.06	72.03%	
AI is recognized as a support tool for research and writing, never as author or co-author of the thesis.	Stud	4.45	86.59%	0.112
	Prof.	4.67	83.78%	
	Total	4.52	86.44%	
Any substantive use of AI (text, ideas, code, analysis, images, models) must be authorized by the thesis tutor and the academic committee and explicitly declared in the thesis.	Stud	3.67	58.54%	0.882
	Prof.	3.67	56.76%	
	Total	3.67	57.63%	
Undeclared use or use contrary to program standards may constitute a serious academic integrity offense and be sanctioned according to institutional regulations.	Stuf	4.05	71.95%	0.282
	Prof.	4.22	72.97%	
	Total	4.10	72.03%	
Human authors are responsible for any document that includes the use of AI tools.	Stud	4.57	90.24%	0.122
	Prof.	4.75	86.49%	
	Total	4.63	89.83%	

Source: Own elaboration

From the results obtained, the following elements can be concluded:

- In this section, no statistically significant differences are found, as both groups agree on the importance of declaring the use of AI, especially regarding "AI is a tool and not an author" and that "human authors are ultimately responsible".
- The point with the least consensus, although still positive, is the need for "prior authorization for substantive uses."

Assessment of the results obtained from the indicators in Section 6

Section 6 collects the criteria of DPOM students and professors on the level of importance they give to each of the specifications proposed related to control mechanisms and ethics and is composed of seven indicators (Table 7).

Table 7.

Results of the indicators in the section control mechanisms and ethics (question 6)

Indicador	Groups	Mean	% (4+5)	p-value (M-W)
The Academic Committee of the DPOM will establish mechanisms for detecting the use of AI in order to ensure that doctoral research complies with program standards.	Stud.	4.33	78.05%	0.003
	Prof.	4.78	91.89%	
	Total	4.47	82.20%	
The Academic Committee must guarantee written communication of specific rules on AI, from entry into the program, and integrate them into research seminars and ethical training.	Stud.	4.59	90.24%	0.052
	Prof.	4.81	91.89%	
	Total	4.65	90.68%	
Tutors must agree with each doctoral candidate, from early stages, on the standards of AI use and periodically review their application in the work.	Stud.	4.61	92.68%	0.974
	Prof.	4.64	89.19%	

	Total	4.62	91.53%	
Tutors or reviewers must not upload doctoral candidate information to artificial intelligence tools where confidentiality of the information cannot be guaranteed.	Stud.	4.59	92.68%	0.552
	Prof.	4.50	83.78%	
	Total	4.56	90.68%	
Even when the AI tools used can guarantee the confidentiality of the information, reviewers must declare their use and are responsible for the criteria issued.	Stud.	4.54	90.24%	0.647
	Prof.	4.61	86.49%	
	Total	4.56	89.83%	
Doctoral candidates have the responsibility to respect the established limits and ensure that the final product constitutes their own original contribution.	Stud.	4.76	96.34%	0.064
	Prof.	4.86	91.89%	
	Total	4.79	94.92%	
The scientific committees of thesis workshops and tribunal members must assess compliance with the rules established by the Academic Committee of the DPOM.	Stud.	4.52	87.80%	0.175
	Prof.	4.69	89.19%	
	Total	4.57	88.14%	

Source: Own elaboration

From the results obtained, the following conclusions can be drawn:

- A high level of importance is observed assigned to all control mechanisms by both groups.
- The responsibility of the doctoral candidate, the leadership of the Academic Committee through specific rules on AI use, and tutoring advice are the most supported points.
- The only significant difference is found in the role of the Academic Committee in establishing detection mechanisms, where professors (mean 4.78) value this significantly more than students (mean 4.33).

Assessment of the results obtained from the indicators of section 7

Section 7 collects the criteria of DPOM students and professors on the level of importance assigned to each of the sections in which it is proposed to structure the proposed policy for AI use in doctoral research, as observed in Table 8.

Table 8.

Results of the assessment of each of the sections of the policy (question 7)

Sections	Groups	Mean	% (4+5)	p-value (M-W)
Guiding principles for the use of AI in doctoral theses.	Stud.	4.46	84.15%	0.967
	Prof.	4.42	78.38%	
	Total	4.45	82.20%	
Guidelines for the use of AI tools (prohibited uses).	Stud.	4.57	89.02%	0.612
	Prof.	4.47	78.38%	
	Total	4.54	86.44%	
Use of AI in the elaboration of images, graphics, and process modeling.	Stud.	4.37	82.93%	0.470
	Prof.	4.22	72.97%	
	Total	4.32	80.51%	
Forms of citation and referencing (APA 7th Edition).	Stud.	4.34	82.93%	0.523
	Prof.	4.25	72.97%	
	Total	4.31	80.51%	
Declaration of AI Use section.	Stud.	4.34	80.49%	0.916
	Prof.	4.36	75.68%	
	Total	4.35	79.66%	
Control and ethics mechanisms.	Stud.	4.61	87.80%	0.192
	Prof.	4.39	75.68%	
	Total	4.54	84.75%	

Source: Own elaboration

From the results obtained, the following conclusions can be drawn:

- No statistically significant differences are found, as both groups value the inclusion of all proposed sections of the policy as very important, with means exceeding 4.22 in all cases in both groups.
- The guidelines for use, control and ethics mechanisms, and guiding principles for the use of AI in doctoral theses are the best-valued sections overall, reinforcing the need for a practical guide and a clear supervision system.

However, if we compare the results of the responses to each indicator of section 7 (importance assigned to each section of the proposed policy) with the results obtained by averaging the responses to each indicator within each specific section, it can be observed how there are significant differences in the case of sections 2 and 4 (those corresponding to prohibited uses of AI and forms of citation and referencing), where it is shown that the values obtained in the overall assessment of each section are much higher, compared to the averages obtained in each section from the specific responses to each indicator within those sections (Table 9). The above alerts to the importance of considering these differences when proposing a definitive policy.

Table 9.

Comparison of the results of question 7 (assessment of each section) with the averages of the specific indicators in each section

Sections	Assessment in question 7		Average values per section (1-7)	
	Mean	% (4+5)	Mean	% (4+5)
Guiding principles for the use of AI in doctoral theses.	4.45	82.20	4.61	90.02
Guidelines for the use of AI tools (prohibited uses).	4.54	86.44	3.04	45.18
Use of AI in the elaboration of images, graphics, and process modeling.	4.32	80.51	4.29	81.61
Forms of citation and referencing (APA 7th Edition).	4.31	80.51	3.84	63.73
Declaration of AI Use section.	4.35	79.66	4.15	74.24
Control and ethics mechanisms.	4.54	84.75	4.60	89.56

Source: Own elaboration

As a summary of the quantitative results of the applied survey, the following can be noted:

1. There is broad consensus among DPOM students and professors on the need to establish a clear policy for the use of AI. Both groups consider the guiding principles, the proposed sections of the policy, and control mechanisms as very important, indicating maturity and shared awareness of the relevance of the topic.
2. The most significant finding of the study is the perception of ethical risk among students and professors, as the latter are consistently more stringent and cautious, manifesting significantly greater agreement in rating a wide range of uses as "undesirable" (question 2) and in demanding more rigorous transparency measures, such as detailed citation and

inclusion of prompts (question 4). This gap suggests that students might have a more pragmatic or less cautious view of the ethical limits of AI, while professors, from their role as tutors and guarantors of academic integrity, adopt a more cautious stance.

3. There is total agreement on the importance of *authorship*, scientific rigor, and that "AI is a tool, not an author," and there is also consensus on the need for transparency in the use of images and final validation of models by the researcher.
4. The main differences are concentrated in *transparency* (question 1), Ethical responsibility (question 1), the prohibition of using images as empirical evidence (question 3), the need to "cite all AI use" and include *prompts* (question 4), and in almost all proposed undesirable uses (question 2), where professors are significantly more demanding in all these aspects.
5. Regarding implications for policy design, the results obtained point to the following:

    - The policy must be clear and explicit, especially in defining what constitutes "misuse" of AI, since this is where there is greater divergence of criteria, as it cannot be assumed that students automatically share the same perception of risk as professors.
    - It is necessary to implement specific training actions for students, focused on AI ethics, the risks of replacing critical thinking, and the importance of traceability and documentary transparency, as the results suggest that students could benefit from deeper guidance on these limits.
    - Control and ethics mechanisms (role of the Academic Committee, professors, tutors, and scientific committee) must be incorporated as a way to ensure compliance with the approved policy.
    - Practical guidelines and concrete examples (such as citation formats or types of use declarations) will be well received by both groups and will facilitate policy application.

Assessment of respondents' answers to open-ended questions

As part of the survey applied to the DPOM student and professor sample, in each section of the survey, the possibility was provided for them to express other opinions related to each section freely. In summary, of the 118 respondents, 66 answered at least one open-ended question, representing 55.93%, corresponding to 48 responses in the case of students (58.54%) and 18 responses in the case of professors (50%).

Among the main regularities that can be mentioned from the analysis are:

- High support for the policy initiative was found, with a mostly positive assessment in both groups (41.67% of students and 37.50% of professors expressed explicit support).
- The fundamental consensus is seeing AI as a tool and not a substitute, that it should not replace the researcher's reasoning, authorship, and responsibility.

- The indicator with the greatest convergence, from the point of view of criticism of the proposal, was the inclusion of *prompts* in appendices (questioned by 26.67% of students and 40.00% of professors).
- The need for training is a recurring theme: in ethical principles (students), in AI use (both), and in control capacity (professors).

For the development of the policy proposal and its implementation, they suggest:

- Achieving a balance between regulation and facilitation, so that clear limits are established against clearly improper uses, avoiding excessive bureaucratic obstacles and incorporating agile updating mechanisms to adapt to rapid technological evolution.
- Based on the rejection demonstrated by both groups, it is considered appropriate to rule out from the beginning the inclusion of prompts and to make the forms of citation and referencing of AI more flexible, adapted to the general specifications offered by APA standards.
- Include within the doctoral program, as part of its training component (propadeutic, mandatory, or elective courses) on ethics and AI use for doctoral candidates, training for professors and tutors on detection tools and good practices, and periodic updating workshops on AI evolution and its academic implications.
- Ensure that all courses in the doctoral program address, within their contents, the use of AI in scientific research, with a marked presence in the core of Research Methodology.
- Ensure access to detection tools (e.g., Turnitin) and the training of students, professors, and tutors with a technological infrastructure that allows effective verification.

In summary, the results point to a strong consensus that AI is a tool and not a substitute for the researcher, which provides great possibilities for the success of the AI use policy in doctoral research that may be proposed, being perceived as a guide for the ethical use of these tools and not as a threat or limitation for doctoral training. However, as explained in the Methods section, the instrument was sent to the entire population of the Doctoral Program in Organizational Management and participation was voluntary, so a possible non-response bias cannot be ruled out. Likewise, the exploratory nature of the research and the use of descriptive and bivariate analyses allow identifying patterns of consensus and discrepancy between the participating groups, but not establishing explanatory relationships of greater complexity. In future research, it would be advisable to incorporate probabilistic samples or expand the study to other doctoral programs, as well as use other statistical techniques that allow delving deeper into the factors associated with perceptions about the use of artificial intelligence in doctoral training.

Conclusions

Based on the results of the research carried out, it can be stated that generally there is consensus among doctoral candidates, professors, and tutors who responded to the instrument on the vast

majority of the proposed elements, while they demand an AI use policy.

The main challenge for the policy that is approved will be to balance the more open vision of students with the more cautious and regulatory stance of professors and tutors, to ensure that the final proposal is fair, clear, applicable, and sufficiently robust, without being perceived as an obstacle to doctoral research, and that it can become a lever to promote innovation and scientific productivity while protecting academic integrity and the scientific quality of results.

The definitive policy proposal for the use of AI in doctoral research of the DPOM must ensure the possibility of continuous improvement, flexibly, based on the results gathered from its application, so that it does not become a brake on good research performance.

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Declaration of authorial responsibility:

Orestes Coloma Rodríguez: Was in charge of conceptualization, methodology, project administration, supervision, validation, writing, and preparation of the original draft.,

Maritza Salazar Salazar: Contributed to the conception of methodology and formal analysis. Collaborated in research, validation, writing, review, and editing.

Manuel Enrique Coloma Salazar: Contributed to data curation and selection and use of software. Collaborated in research, validation, review, and editing.

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