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ORIGINAL

The role of Artificial Intelligence in modifying research practices in the social sciences of Ecuador

El rol de la Inteligencia Artificial en la modificación de las prácticas investigativas de las ciencias sociales de Ecuador

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ABSTRACT

Introduction: the progressive incorporation of artificial intelligence (AI) in higher education has transformed research practices at the global level. However, in Ecuador, specifically within the Faculty of Social Sciences at the Technical University of Manabí, its adoption remains incipient.
Objective: the objective of the study was to develop a theoretical framework that examines the impact of artificial intelligence on the research practices of UTM Social Sciences teachers, considering their discourses, experiences, and reinterpretations regarding the emerging or resisted use of these technologies.
Method: the study followed a qualitative approach with phenomenological design and ethnomethodological elements. A purposive sample of 51 professors was selected from a population of 79. Analysis was based on predefined analytical categories, open/axial coding in Atlas.ti, and data-investigator-theory triangulation.
Results: results revealed three main categories: positive perceptions of AI, challenges in its implementation, and proposals for responsible integration. Professors valued AI for aiding text organization and access to up-to-date sources but expressed concerns about ethical ambiguity and lack of institutional guidance.
Conclusion: AI is perceived as a methodological support tool. However, its integration requires institutional policies, ethical accompaniment, and ongoing training to align with the epistemological values of social sciences.

Keywords: Artificial Intelligence; Qualitative Research; Social Sciences; Higher Education; Ecuador.

RESUMEN

Introducción: la incorporación progresiva de la inteligencia artificial (IA) en la educación superior ha transformado las prácticas investigativas a nivel global. Sin embargo, en Ecuador, específicamente en la Facultad de Ciencias Sociales de la Universidad Técnica de Manabí, su adopción se mantiene incipiente.
Objetivo: el objetivo del estudio fue desarrollar un marco teórico que examine el impacto de la inteligencia artificial en las prácticas investigativas de los docentes de Ciencias Sociales de la UTM, considerando sus discursos, experiencias y reinterpretaciones respecto al uso emergente o resistido de estas tecnologías.
Método: el estudio siguió un enfoque cualitativo con diseño fenomenológico y elementos etnometodológicos.

Se seleccionó una muestra intencionada de 51 docentes a partir de una población de 79. El análisis se realizó a partir de categorías analíticas predefinidas, codificación abierta/axial en Atlas.ti y triangulación de datos, investigadores y teoría.
Resultados: los resultados revelaron tres categorías principales: percepciones positivas sobre la IA, desafíos en su implementación y propuestas para una integración responsable. Los profesores valoraron la IA por ayudar a la organización del texto y el acceso a fuentes actualizadas, pero expresaron su preocupación por la ambigüedad ética y la falta de orientación institucional.
Conclusiones: la IA es percibida como una herramienta de apoyo metodológico. Sin embargo, su integración requiere políticas institucionales, acompañamiento ético y formación continua para alinearse con los valores epistemológicos de las ciencias sociales.

Palabras clave: Inteligencia Artificial; Investigación Cualitativa; Ciencias Sociales; Educación Superior; Ecuador.

INTRODUCTION

Over the past decades, artificial intelligence (AI) has evolved from a futuristic promise into a tangible component of academic research. In regions such as Europe, North America, and East Asia, leading universities have established institutional programmes that integrate AI into research, teaching, and faculty training.[1,2] These initiatives have not only enhanced technical efficiency but also opened epistemological pathways that were formerly inconceivable. Within this framework, algorithms do not replace social reasoning; instead, they operate as mediators that expand interpretative possibilities.[3,4,5]

Advances in machine learning, natural language processing, and semantic mining have provided social researchers with novel methodologies to identify patterns, codify narratives, and systematise testimonies with greater efficiency, while preserving the depth of qualitative analysis.[6] This dynamism demonstrates that computational tools can be combined with human sensitivity, provided that their use is guided by ethical principles and a situated understanding of research contexts.[7,8]

Latin America, albeit at uneven rates, has also advanced in this field. Countries such as Chile, Brazil, Mexico, and Argentina have promoted training initiatives that position AI as a complementary resource in social and educational research.[9,10] Universities such as São Paulo and UNAM have established specialised laboratories exploring ways to incorporate AI into the systematisation of interviews, critical discourse analysis, and the development of socio-cultural maps from qualitative perspectives.[11] Yet, significant gaps remain: the absence of institutional policies, limited specialised training, and a persistent disconnect between emerging technologies and the region's critical epistemologies constrain the scope of these experiences.[12,13]

In Ecuador, the panorama is even more incipient. While some degree programmes linked to technological innovation have begun to experiment with AI, its use within the social sciences remains marginal. At the Technical University of Manabí (UTM), despite a highly qualified faculty, no clear strategies have been implemented to accompany its adoption.[14] The lack of systematic studies documenting how Social Sciences lecturers engage with AI has generated a gap between the expectations of contemporary research and the actual conditions faced by academics.[15,16]

Beyond its research function, AI also holds considerable educational potential, facilitating personalised tutoring, immediate feedback, and support in the production of academic materials.[17,18] This dual dimension—investigative and pedagogical—strengthens the need to examine its impact from a situated and critical perspective, acknowledging both its benefits and the ethical challenges associated with its use.[19]

Against this backdrop, the relevance of the present study lies in making visible the perceptions, challenges, and proposals of Social Sciences lecturers at UTM concerning the emerging or resisted use of AI. The justification is grounded in the absence of institutional frameworks and the pressing need for ethical and pedagogical guidelines that promote responsible integration.

Accordingly, the aim of this research was to develop a theoretical framework that examines the impact of artificial intelligence on the research practices of Social Sciences lecturers at UTM, considering their discourses, experiences, and reinterpretations regarding the emerging or resisted use of these technologies.

METHOD

Type of study

This was a non-observational, descriptive, cross-sectional study with a qualitative approach. The methodological choice was consistent with the aim of exploring lecturers' meanings and experiences regarding the use of artificial intelligence (AI) in research practices, beyond numerical measurement. A phenomenological design, complemented by ethnomethodological elements, enabled access to participants lived experiences and

provided insight into how they construct meaning around the incorporation of such technologies.[20]

Universe and sample

The universe consisted of 79 lecturers from the Faculty of Humanistic and Social Sciences at the Technical University of Manabí. From this total, a purposive sample of 51 lecturers was selected, based on two inclusion criteria: (a) active participation in faculty research projects and (b) a minimum of five years of teaching experience in higher education. This strategy ensured the inclusion of critical and meaningful testimonies on the topic under study.

Variables

Given the qualitative nature of the research, no causal variables were considered. Instead, the study was guided by predefined analytical categories: (1) appropriation of AI in research routines, (2) perceived benefits, (3) perceived risks and challenges, and (4) institutional conditions. These categories informed protocol design, data collection, and coding in Atlas.ti 24.

Data collection and processing

Data were collected using two techniques:

- Documentary review, focusing on scientific articles indexed in Scopus-Elsevier over the past five years, which enabled the identification of state-of-the-art knowledge in comparable contexts.
- Semi-structured interviews with the 51 selected lecturers. The question guide was designed and validated by a panel of three experts in qualitative research to ensure item relevance. Prior to its application, the instrument underwent institutional approval (table 1).

Table 1. Questions applied to teachers of the Faculty of Humanistic and Social Sciences of the Technical University of Manabí

No.	Item
1	What transformations have your way of researching undergone since you met or began using artificial intelligence tools?
2	What obstacles have you faced — personal, institutional, or technical—when trying to integrate AI tools into your research practices?
3	From your experience, has AI enhanced or limited your creativity and critical thinking in research processes? How have you experienced it?
4	What conditions do you think should be present in the university or faculty for AI to be ethically, usefully, and meaningfully integrated into teaching research?
5	What advice or recommendations would you give to colleagues who are considering using AI in their research, but still have doubts or fears?

Interviews were audio-recorded, transcribed, and subsequently coded through open and axial coding in Atlas.ti 24. Data triangulation considered investigators, theory, and testimonies, supported by analytic memos and decision logs.

Ethical standards

The study protocol was reviewed and approved by the Research Ethics Committee of the Vice-Dean's Office for Research at the Faculty of Humanistic and Social Sciences, Technical University of Manabí. Procedures adhered to institutional guidelines and COPE recommendations.[21] Participants provided written informed consent, anonymity was ensured by alphanumeric codes (e.g., T.03, T.27), and they retained the right to withdraw at any stage without consequences.

RESULTS

From the qualitative coding process carried out in Atlas.ti version 24, three central categories were obtained: Positive perceptions of AI in research, Tensions and challenges in teacher implementation, and Proposals for meaningful integration. Each category emerged from the discourses collected in semi-structured interviews applied to the 51 participating teachers, whose testimonies were coded under an alphanumeric system, respecting the confidentiality of their identities.

Category 1: Positive perceptions of AI in research

This category captured the favourable appraisals expressed by teachers about the use of AI in their academic practices. As shown in figure 1, three specific benefits were identified. The first was Optimization of data

analysis, reflected in testimonies such as T.6, who stated that "AI helps me visualize thematic connections that used to take weeks", a clear example of automated thematic processing. The second was Improvement in scientific writing and text review, illustrated by T.3, who indicated that "with tools like ChatGPT I have been able to review previous ideas, refine arguments and strengthen theoretical frameworks in less time", evidencing support in conceptual development.

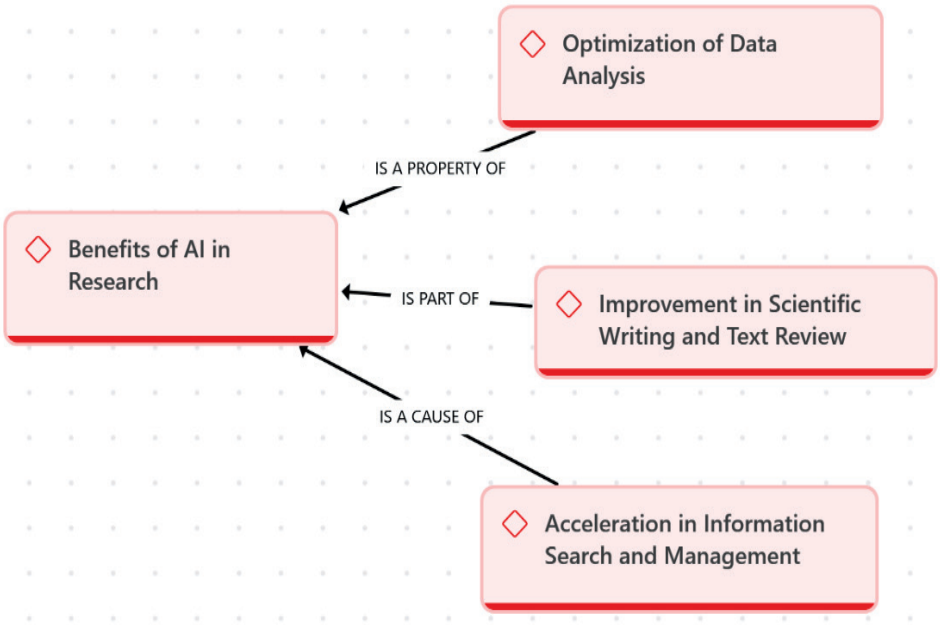

Figure 1. Structural Network of the Benefits of AI in Research

The third benefit, Acceleration in information search and management, appeared in accounts from T.11 and T.19, who agreed that AI tools facilitate quick access to updated sources and provide initial guidance without replacing analytical skills. These subdimensions demonstrate a perception of instrumental usefulness mediated by ethical and pedagogical criteria, linking the qualitative evidence directly to the structural network presented in the figure.

Category 2: Tensions and challenges in teacher implementation

This category grouped the concerns expressed by teachers regarding the integration of AI in their academic work. As shown in figure 2, three main challenges emerged. The first was Ethical ambiguity and fear of plagiarism, reflected in testimonies such as T.5, who stated that "sometimes I am not sure whether what the AI generates could be considered plagiarism if used in my classes".

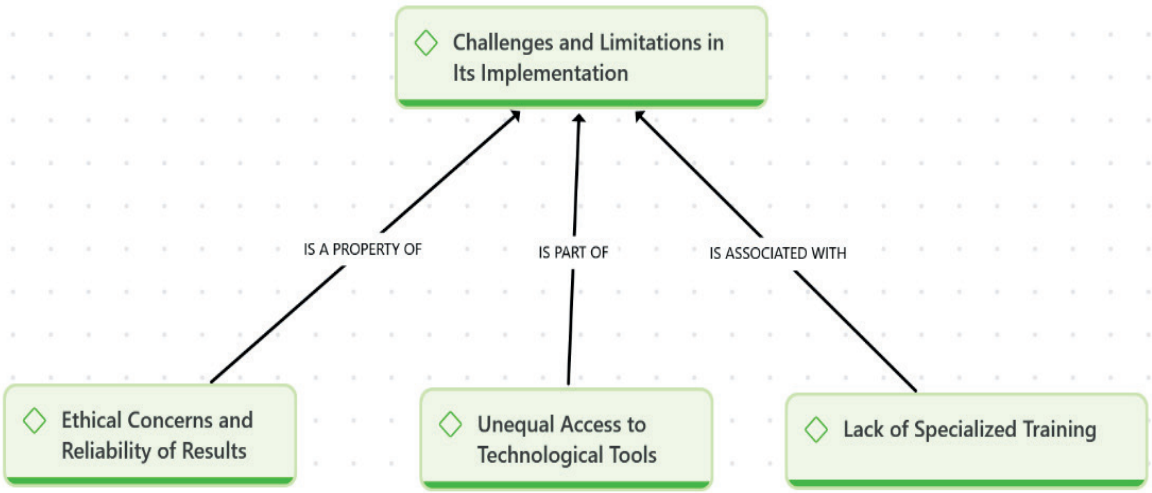

Figure 2. Structural network of challenges and constraints in AI implementation

The second challenge was Lack of institutional guidance and training, illustrated by T.12, who explained

that "there is no policy or clear protocol for how to use these tools in research or teaching". This absence of structured guidance limits the consistent and responsible adoption of AI within the institution. The third challenge, Perceived distance from the epistemological foundations of the social sciences, appeared in accounts like that of T.8, who noted that "AI tends to simplify complex issues, and this is against the analytical depth required in our discipline". These subdimensions evidence a tension between the potential benefits of AI and the need to preserve critical thinking and disciplinary identity, reinforcing the importance of developing clear regulations and pedagogical frameworks.

Category 3: Proposals for meaningful integration

This category gathered the proposals formulated by teachers to promote a responsible and pedagogically relevant integration of AI in higher education. As shown in figure 3, three main lines of action were identified. The first was Development of institutional guidelines, reflected in testimonies such as T.15, who stated that "there should be clear rules on when and how to use AI in academic work". This reflects the perceived need for official policies to avoid arbitrary or inconsistent practices.

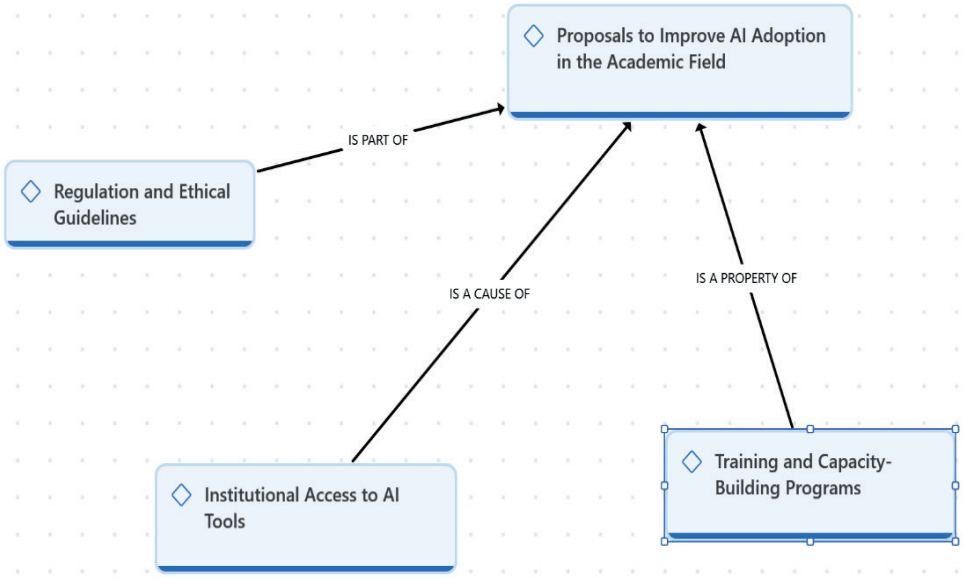

Figure 3. Structural Network of Proposals to Improve AI Adoption in Academia

The second proposal was Specialised training for teachers and students, illustrated by T.9, who explained that "many colleagues reject AI because they don't understand how it works or how it can be adapted to our discipline". This highlights the importance of targeted capacity-building processes. The third proposal, Creation of permanent spaces for dialogue and reflection, emerged in accounts like that of T.4, who indicated that "we need interdisciplinary meetings to share experiences and ethical concerns about AI use". These subdimensions show that the teaching community is not only identifying challenges but also offering practical, collaborative solutions to ensure that AI use aligns with disciplinary values and institutional objectives.

DISCUSSION

Artificial intelligence (AI) can be understood as a set of algorithmic processes capable of processing information, adapting to new contexts and supporting complex problem-solving without constant human intervention.[22] In this study, the narratives revealed that teachers perceived AI as a facilitator of research processes, particularly in tasks such as refining theoretical frameworks, organising ideas and accelerating the retrieval of academic sources. These perceptions converge with prior findings in higher education contexts, where AI has demonstrated improvements in information retrieval efficiency, support for academic writing and assistance in structuring content.[15,23]

From the authors' perspective, this instrumental appropriation reflects both an opportunity and a risk. While it confirms the usefulness of AI in supporting writing and research management, it also reveals a dependence that may limit deeper epistemological reflection if not critically mediated. These findings are consistent with recent Latin American studies that describe AI as a complementary but insufficient resource when detached from ethical and institutional frameworks.[6,13,16,24]

This alignment suggests that the appropriation of AI in the analysed context responds to a predominantly instrumental perspective, albeit mediated by personal ethical considerations.[25,26] From a phenomenological

standpoint, as indicated by Betti[27], the interpretation of lived experiences allows the identification of tensions between the adoption of technological tools and the epistemological values of the social sciences. In this research, such tensions emerged in the form of uncertainty about the academic legitimacy of AI, a lack of institutional training, and the absence of clear regulatory policies. These findings confirm that without defined governance frameworks, integration processes risk remaining fragmented and dependent on individual initiative rather than collective institutional strategy.

Comparable results were reported by Crompton and Burke[22] who also highlighted fragmented institutional adoption in higher education. Similarly, Martínez-Comesaña et al.[16] found that AI integration in primary and secondary education remained uneven due to limited teacher training. Our findings resonate with these patterns, showing that Ecuador shares similar structural limitations, although with a slower adoption process.

The concerns documented here echo those described by Joo and Park[9] who emphasise that knowledge production in digital environments requires renewed conditions of interpretation, legitimation and ethical oversight. In the teachers' testimonies, ethical ambiguity, fear of plagiarism and doubts about algorithmic transparency stood out. Such apprehensions indicate that the challenge is not limited to technical proficiency, but extends to safeguarding academic integrity, preserving critical thinking and reinforcing disciplinary identity.

As Hinostroza et al.[14] argue, the adoption of educational technologies depends not only on access but also on the meanings and interpretative frameworks built around their use. The proposals gathered in this study—ranging from systematic internal training to the creation of ethics committees and the inclusion of AI in strategic institutional plans—reflect a proactive and situated vision. These are not isolated operational suggestions; they are demands grounded in an epistemic understanding of the role AI should play in the academic ecosystem.

In this interpretative frame, AI is positioned neither as a substitute for human analysis nor as a threat to disciplinary autonomy, but as a mediator that requires ethical regulation, pedagogical guidance and alignment with the socio-cultural realities of the local academic environment. The evidence supports the notion that successful integration depends on contextualised training, policy clarity and spaces for critical dialogue. Consequently, the results offer a theoretical foundation for designing institutional strategies that ensure a responsible, reflective and pedagogically coherent incorporation of AI into research practices within the social sciences.

This study is not exempt from limitations. Firstly, the sample was restricted to one faculty within a single university, which limits the generalisation of findings to other contexts. Secondly, the qualitative design, while allowing in-depth exploration, does not provide statistical representativeness. Finally, the rapid evolution of AI tools may render some observations time-bound, requiring longitudinal studies to capture changes over time. Future research should therefore expand to other institutions, employ mixed methods, and consider longitudinal designs to strengthen the evidence base.

CONCLUSION

The aim of this study was to develop a theoretical framework that examines how artificial intelligence (AI) influences the research practices of Social Sciences lecturers at the Technical University of Manabí. The findings confirm that AI is already perceived as a methodological support tool that facilitates writing, organisation of ideas, and access to updated information. However, its integration remains limited by institutional gaps, ethical ambiguities, and uneven training opportunities. More broadly, the study highlights that AI adoption in the social sciences is neither automatic nor homogeneous but conditioned by cultural, institutional and epistemological factors. This insight situates Ecuador within wider regional and global debates, where AI is acknowledged as useful but insufficient in the absence of governance frameworks and critical pedagogical guidance.

The conclusions reached here are not intended to generalise statistically but to provide interpretative bases for understanding how AI is appropriated in academic contexts with structural limitations. For universities, this implies the urgency of developing clear policies, ethical standards, and systematic training programmes that enable responsible and reflective integration. This research contributes an initial conceptual basis for future inquiries into the intersection of AI and social sciences. Further studies should expand to other faculties and institutions, apply mixed-methods designs, and assess longitudinal changes, thereby consolidating evidence to inform educational policy and strengthen epistemic practices in higher education.

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