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ORIGINAL

The Role of AI in Modifying the Research Behaviors of Social Sciences Teachers in Ecuador

El Rol de la IA en la Modificación de las Conductas Investigativas del Profesorado de Ciencias Sociales del Ecuador

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ABSTRACT

Introduction: the study examined the influence of artificial intelligence (AI) on research behaviors among social science lecturers in Ecuador, addressing an emerging shift in academic practices driven by digital tools.
Method: a descriptive quantitative design was employed. A structured questionnaire was distributed to all 81 lecturers of the Faculty of Humanistic and Social Sciences at the Technical University of Manabí. The data were analyzed using descriptive statistics to assess AI usage, perceived benefits, and obstacles.
Results: 50 % of the lecturers reported regular or constant use of AI tools, mainly IBM Watson and Grammarly. Over half believed that AI moderately or significantly improved research quality. However, 60 % lacked formal training, and barriers such as resistance to change and limited access persisted. Despite concerns, 70 % recommended AI usage to peers.
Conclusions: AI was found to progressively shape academic research behaviors. Nevertheless, uneven adoption highlighted the need for institutional strategies, ethical guidelines, and training to ensure effective and responsible integration of AI in the social sciences.

Keywords: Artificial Intelligence; Research Practices; Higher Education; Social Sciences; Academic Innovation.

RESUMEN

Introducción: el estudio examinó la influencia de la inteligencia artificial (IA) en las conductas investigativas del profesorado de ciencias sociales en Ecuador, ante un cambio progresivo impulsado por herramientas digitales
Método: se aplicó un diseño cuantitativo descriptivo. Se encuestó a los 81 docentes de la Facultad de Ciencias Humanísticas y Sociales de la Universidad Técnica de Manabí. Se analizaron los datos mediante estadísticas descriptivas, considerando uso, beneficios percibidos y barreras de la IA.
Resultados: el 50 % del profesorado manifestó utilizar herramientas de IA de manera regular o constante, destacando IBM Watson y Grammarly como las más empleadas. Más de la mitad consideró que la IA mejora moderada o significativamente la calidad de la investigación. No obstante, el 60 % no ha recibido formación formal y persisten obstáculos como la resistencia al cambio y la limitada accesibilidad. El 70 % recomendaría su uso a otros colegas, lo cual revela una actitud favorable, a pesar de preocupaciones éticas.
Conclusiones: la IA transformó de manera progresiva las prácticas investigativas. La adopción desigual reflejó la necesidad de medidas institucionales, formación y marcos éticos que garanticen su integración eficaz y responsable en las ciencias sociales.

Palabras clave: Inteligencia Artificial; Prácticas investigativas; Educación Superior; Ciencias Sociales; Innovación académica.

INTRODUCTION

In the last decade, artificial intelligence (AI) has emerged as a transformative force across multiple fields. From medicine to engineering, AI has enabled machines to perform tasks previously attributed to human intelligence. This technological advancement has redefined methodologies, expanded the frontiers of knowledge, and driven innovations that were once inconceivable.[1] In the academic sphere, AI holds the potential to revolutionize not only teaching and learning but also research practices. Particularly within the social sciences—traditionally more distanced from advanced technological integration—AI is making inroads through the analysis of qualitative data via complex algorithms, the modelling of social phenomena, and enhanced access to historical and contemporary information sources. Furthermore, it enables a deeper and more nuanced comprehension of human behavior and social dynamics.

Globally, universities and research centers are increasingly incorporating AI to optimize knowledge management and large-scale data analysis. These institutions have invested in infrastructure and professional development, positioning themselves at the vanguard of ongoing educational and scientific transformation. Nonetheless, this shift brings significant ethical challenges, such as privacy concerns, algorithmic bias, and the risk of dehumanization in educational processes.[2] In Latin America, the adoption of AI in education has progressed unevenly. While some institutions are advancing rapidly, others continue to face limitations related to digital infrastructure, innovation funding, and academic training. These asymmetries reinforce the urgency of designing context-sensitive strategies that ensure AI becomes a tool for inclusion, rather than a mechanism that exacerbates educational inequality.[3]

In Ecuador, higher education institutions are progressively incorporating AI tools into academic and research environments. While faculties of engineering and computer science have achieved significant progress, the social sciences are only beginning this journey. This emerging integration presents both a challenge and an opportunity to rethink research methodologies, pedagogical approaches, and the technological competencies demanded in these disciplines.[4] This study responded to the need to understand and document how artificial intelligence is shaping the research practices of social science faculty in Ecuador. Specifically, the objective was to examine how artificial intelligence influences the research behaviors of lecturers at the Technical University of Manabí. The study identified the AI tools employed, the perceived benefits of their use, existing limitations, and prevailing attitudes towards the incorporation of AI in academic work.

The research is grounded in contemporary theories of technological change, with reference to their application in education and social research. Rogers' Theory of the Diffusion of Innovations[5] offers a robust conceptual framework for interpreting the adoption of AI in higher education. It highlights five key attributes of innovation: relative advantage, compatibility, complexity, trialability, and observability. These dimensions help to explain the mechanisms through which technologies like AI are embraced—or resisted—across various institutional and cultural contexts. Additionally, the study is informed by literature that emphasizes the multidimensional impact of AI in higher education. Scholars have noted the role of AI in transforming instructional practices, assessment methods, and the overall architecture of academic research.[6] However, persistent challenges such as unequal access to technology and the imperative to retrain educators remain central to the discourse.[7]

In the realm of academic research, AI has redefined traditional methodologies by introducing advanced techniques for data analysis and information retrieval.[8] Nevertheless, ongoing concerns regarding algorithmic transparency, reproducibility, and ethical standards continue to provoke rigorous debate.[8] Regarding the research behaviors of lecturers in the social sciences, literature identifies several critical dimensions. These include the necessity for methodological training adapted to digital environments, access to adequate time and technological resources amid substantial teaching responsibilities,[9] and the value of participating in collaborative academic networks to enhance productivity and interdisciplinarity. In summary, the integration of AI into academic research is a multifaceted and dynamic process, particularly in contexts where structural and cultural barriers constrain their full implementation. This study aims to contribute to that understanding by offering empirical insights and proposing practical strategies for more effective and ethically grounded AI integration within the social sciences.[10]

METHOD

A descriptive design was adopted, in which quantitative data were collected in the first phase through surveys. In the second phase, a deductive analysis was established.[11]

Population and Sample

The study included all 81 teachers from the Faculty of Humanistic and Social Sciences at the Technical University of Manabí. Since the entire population was surveyed, this constitutes a census rather than a sample. [12]

Data Collection Instruments

A structured questionnaire composed of closed questions and Likert-type measurement scales was developed, designed to evaluate the frequency and depth of the use of artificial intelligence tools in academic research. In addition, the questionnaire explored teachers' perceptions of the usefulness of AI in their research work, as well as the main limitations and barriers they face for its effective implementation. The questionnaire was validated through a peer review process in research methodologies and educational technology to ensure its relevance and reliability.[13]

Table 1. Quantitative Survey

No.	Question	Response Type
1	How often do you use AI tools in your research?	Likert Scale (Never, Rarely, Sometimes, Frequently, Always)
2	What kind of AI tools have you used in your research?	Multiple Choice (ChatGPT, Grammarly, Turnitin, IBM Watson, Google Scholar AI, Other)
3	Do you think AI has improved the quality of your research?	Likert scale (none, little, moderately, quite, a lot)
4	What are the main barriers to implementing AI in your research?	Multiple Choice (Lack of Training, Lack of Access to Tools, Resistance to Change, Ethical Doubts, Other)
5	Have you received training on the use of AI in research?	Yes / No
6	Do you think AI can replace some aspects of the teacher's research work?	Likert scale (not at all, a little, moderately, quite a lot, totally)
7	Has AI facilitated access to relevant scientific information?	Likert scale (none, little, moderately, quite, a lot)
8	What impact has AI had on hypothesis formulation and data analysis in your work?	Likert scale (Negative, Slightly negative, Neutral, Positive, Very positive)
9	Would you recommend the use of AI to other research teachers?	Yes / No

For the analysis of the quantitative data, descriptive statistics were used using percentages and measures of central tendency. This technique allowed us to identify patterns of use and perception of artificial intelligence in teacher research. The information collected was processed using Statistical Package for the Social Sciences (SPSS) version 26.[14]

Ethical Considerations

The confidentiality of the participants was guaranteed, obtaining their informed consent and ensuring that the information collected was used exclusively for research purposes. In addition, the ethical principles of autonomy, beneficence and justice were respected in all phases of the study.[15]

RESULTS

The quantitative survey revealed notable trends in the adoption of artificial intelligence (AI) among social science lecturers at the Technical University of Manabí. Of the 81 participants, 26,67 % reported frequent use of AI in their research, and 23,33 % indicated constant use. The most utilised tools included IBM Watson (26,67 %), Grammarly (16,67 %), Google Scholar AI (13,33 %), ChatGPT (13,33 %), and Turnitin (13,33 %), highlighting a preference for platforms that support writing, analysis, and citation checking.

Perceptions of AI's impact varied: 30 % of participants acknowledged a moderate improvement in research quality due to AI, while 23,33 % perceived a significant enhancement. However, challenges remain: 33,33 % identified lack of training as a barrier, and another 33,33 % reported resistance to change. Moreover, 60 % of the lecturers had not received formal training in AI tools. Regarding research activities, 26,67 % noted that AI positively influenced hypothesis formulation and data analysis. Nevertheless, 23,33 % expressed neutrality in this regard. Despite these divides, 70 % of the surveyed lecturers indicated that they would recommend AI tools to their colleagues, suggesting general favourability towards technological integration in academic settings.

DISCUSSION

The findings of this study confirm that artificial intelligence is progressively reshaping research behaviours

in the social sciences. The widespread use of tools like IBM Watson and Grammarly indicates a reliance on AI not only for mechanical tasks but also for enhancing academic writing and data interpretation. These results align with earlier studies asserting AI's transformative potential in higher education.[16] However, the uneven adoption observed reflects structural and pedagogical challenges. The lack of formal training reported by most participants hinders the full realisation of AI's benefits. This echo concerns highlighted in the literature regarding digital literacy gaps and insufficient institutional support.[17]

Interestingly, the correlation between frequent AI use and positive perceptions of its effectiveness reinforces Rogers' theory of diffusion of innovation. Lecturers who perceive AI as advantageous are more likely to incorporate it into their routines, while those untrained or sceptical remain resistant. This points to the necessity of targeted interventions aimed at increasing technological confidence and competence among academic staff. Ethical apprehensions—such as fears over data reliability or the erosion of academic authorship—also surfaced, confirming global discussions about the risks of overreliance on automated systems.[18] These insights highlight the importance of complementing technological implementation with ethical awareness and institutional regulation.

In essence, the study offers a microcosm of broader tensions faced by universities globally: the allure of innovation versus the inertia of traditional practice. Addressing this gap through continuous training, ethical guidance, and inclusive access policies is imperative for fostering responsible AI use in research environments.

CONCLUSIONS

This study demonstrated that artificial intelligence is beginning to reshape the research behaviours of social sciences educators. While AI tools offer clear advantages—such as improved data analysis, academic writing, and information retrieval—their adoption remains hindered by limited training, technological inequalities, and ethical uncertainties. The findings affirm that a strategic and ethical integration of AI requires institutional commitment. Training programmes, equitable access to tools, and robust regulatory frameworks are essential to maximise AI's potential in academic research. Properly implemented, AI can enhance methodological rigour and foster innovation in the social sciences.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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