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An Exploratory Study on Ethical and Regulatory Perceptions of Gen-AI in Higher Education

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OUTLINE

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Context and Research Problem

The rise of Generative AI

- Over the last few years, generative AI has become a central topic in higher education.

- It is increasingly accessible to both teachers and students, transforming teaching, assessment, and research practices.

- However, this rapid adoption is occurring without fully established ethical and regulatory frameworks, raising important challenges for institutions.

Context and Research Problem

Key Challenges

Teaching and Learning

Impact on pedagogical practices and assessment models

Academic Integrity

Authorship, plagiarism and undisclosed use of AI tools

Data and Privacy

Use and storage of prompt data
Lack of transparency in data processing

Algorithmic Transparency

Black-box systems and limited explainability
Lack of transparency in data processing

Discriminatory Bias

Risk of biased outputs and reinforcement of inequalities

Institutional Regulation

Lack of clear policies
Difficulty translating regulation into practice
Inconsistent practices inside the same institution

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Research Question and Objectives

How do higher education teachers perceive the ethical and regulatory challenges associated with Generative AI within their institutional context?

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🏫 **Institutional Adoption**	⚖️ **Ethical Perceptions**	🏛️ **Regulatory Frameworks**
Understand how Gen-AI is being adopted by teachers within the Polytechnic University of Coimbra.	Identify concerns related to discriminatory bias, data usage and algorithmic transparency	Avaliar a necessidade percebida de regulação transparente e socialmente responsável no campo da Gen-AI

Theoretical Framework

To investigate these perceptions, we rely on a conceptual framework that combines three established models.

UTAUT

Unified Theory of Acceptance and Use of Technology — Explains factors influencing technology adoption and use

TRI

Technology Readiness Index — instrumento que mede a propensão dos indivíduos para adotar e utilizar novas tecnologias, integrando otimismo, inovação, desconforto e insegurança

IA Anxiety

Measures individuals' predisposition to adopt new technologies

Methodology

Approach

- Exploratory study combining quantitative and qualitative elements

- Questionnaire adapted from previously validated instruments

- Applied to teachers at the Polytechnic University of Coimbra

- Descriptive statistical analysis of responses

- Complemented with institutional context to support interpretation

Dimensions Analysed

⚖ **Macro Ethics**

System-level and societal ethical principles

🔍 **Discriminatory Bias**

Perception of bias in Gen-AI systems

⚠ **Algorithmic Transparency**

Understanding and openness of AI systems

🏛 **Regulation**

Need for clear regulatory frameworks

Data and Empirical Setup

Institution

Polytechnic University of Coimbra, Portugal

Public higher education institution with six schools - Engineering, Business, Technology and Management, Health, Education and Agriculture

Involved Schools

- Participants from 5 schools
- **No** answers from the Technology and Management School
- Number of answers 25

User Profiles and Perceptions

- Frequent vs. occasional Gen-AI users
- Levels of concern regarding discriminatory bias
- Perceptions of algorithmic transparency
- Behavioural intention and AI-related anxiety

Data Collection Instrument

- Structured questionnaire based on previously validated instruments
- Items adapted from UTAUT2, TRI and AI anxiety constructs
- Responses measured using a 7-point Likert scale

Data Analysis

- Descriptive statistical analysis
- Measures: mean, range, standard deviation
- Analysis of trends and variability across key constructs
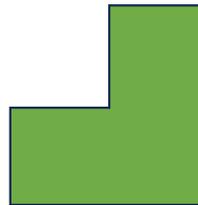
Interpretation and Discussion

Macro Ethics & Discriminatory Bias

Teachers with higher concern about AI bias show stronger support for macro-level ethical principles, suggesting a link between ethical concern and preference for macro-level governance

Algorithmic Transparency and Usage Patterns

Frequent users tend to report lower concern about algorithmic opacity compared to occasional users.

AI Use Intentions and Risk Perception

Teachers show moderate to high intention to use Gen-AI (M = 4.89), while also expressing concern about societal risks (M = 4.68).
This suggests that use and concern are not mutually exclusive.

Alignment with Recent Literature

These findings are consistent with recent studies highlighting the need for transparent, fair and socially responsible AI governance in education.

Concluding remarks

Central Contribution

This exploratory study shows that teachers from the Polytechnic University of Coimbra, a Portuguese public higher education institution, adopt a balanced position towards Gen-AI, combining active use with sustained concern about its ethical and societal implications.

Main Conclusions

- Teachers from Polytechnic University of Coimbra who are more concerned about AI bias tend to support macro-level ethical and regulatory frameworks
Intention to use Gen-AI coexists with concern about societal risks
- Integration of Gen-AI requires clear institutional rules, not only on training and technical support
- Teachers' positioning reflects both engagement and critical awareness

Policy Implications

Indicate the need for institutions to establish clear policies for responsible AI use, in line with emerging European regulatory frameworks (e.g., EU AI Act)

Social Relevance

Contribute to a more informed debate on ethical responsibility and the societal impact of generative AI

Future Work

Increase the sample size within Polytechnic University of Coimbra and extend the study to other Portuguese higher education institutions to support validation of findings

THANK YOU FOR YOUR ATTENTION!