

ETHICS OF SCIENTIFIC RESEARCH IN THE PRIVATE SECTOR VS THE ACADEMIC ENVIRONMENT: A COMPARATIVE STUDY ON TRANSPARENCY AND CONFLICTS OF INTEREST

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RESEARCH ARTICLE

Abstract: *The ethical conduct of scientific research varies significantly depending on the institutional context in which it is carried out. This paper explores the differences between the private sector and the academic environment in terms of transparency practices and the management of conflicts of interest. While universities traditionally emphasize openness, peer review, and the dissemination of knowledge, private entities often operate under constraints related to confidentiality, intellectual property, and commercial interests.*

Keywords: interest, conflicts, academic, transparency

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INTRODUCTION

Scientific research plays a fundamental role in the advancement of knowledge, the development of innovative technologies, and the shaping of evidence-based public policies. As a core driver of social, economic, and technological progress, research activity is inherently linked to issues of credibility, responsibility, and ethical conduct. However, the standards governing research practices are not uniform across all institutional contexts. Instead, they are shaped by the specific missions, regulatory frameworks, and incentive structures of the environments in which research is conducted. Among these, the academic sphere and the private sector represent two of the most influential yet fundamentally different settings.

While both sectors contribute significantly to scientific and technological advancement, they operate under distinct priorities, constraints, and accountability mechanisms. The academic environment is traditionally oriented toward the production and dissemination of knowledge as a public good, emphasizing intellectual independence, critical inquiry, and the cumulative nature of scientific progress. In contrast, the private sector is primarily driven by market-oriented objectives, including innovation,

profitability, and competitive advantage. These structural differences have a direct impact on how ethical principles particularly transparency, integrity, and the management of conflicts of interest are defined, implemented, and enforced.

The divergence between these two environments raises important normative and practical questions. To what extent should research be transparent when it is conducted within a competitive economic framework? How can conflicts of interest be effectively managed in contexts where financial or strategic incentives are deeply embedded? And to what degree can common ethical standards be applied across sectors with fundamentally different goals? Addressing these questions is essential for ensuring public trust in scientific outputs, regardless of their institutional origin.

In the academic environment, research is generally guided by well-established principles such as openness, peer evaluation, academic freedom, and the free exchange of ideas. Transparency is considered a cornerstone of scientific validity, as it allows research methods, data, and results to be scrutinized, replicated, and validated by the broader scientific community. This openness not only facilitates the verification of findings but also

contributes to the cumulative development of knowledge by enabling other researchers to build upon existing work. Moreover, institutional and international norms require researchers to disclose any potential conflicts of interest that could influence the design, conduct, or interpretation of their studies. Such disclosures are essential for maintaining the credibility of research and for allowing peers and the public to assess the objectivity of scientific claims.

At the same time, the increasing complexity of research funding and collaboration particularly in contexts involving industry partnerships has introduced new challenges for maintaining transparency and managing conflicts of interest within academia. These developments highlight the need for robust ethical frameworks and regulatory mechanisms capable of adapting to evolving research landscapes while preserving the core values of scientific integrity.

MATERIAL AND METHODS

This study is based on a qualitative comparative analysis of scientific literature addressing research ethics in both private and academic environments. The sources include peer-reviewed journal articles, institutional reports and ethical guidelines issued by international organizations involved in research governance.

RESULTS AND DISCUSSIONS

The comparative analysis of the regulatory framework applicable to the academic and private research environments highlights the existence of systemic differences regarding the regulation of transparency and the management of conflicts of interest. These differences reflect both the distinct nature of the activities carried out and the specific institutional objectives of each sector. They are evident not only at the level of legal sources but also in the mechanisms of implementation and enforcement.

In the academic environment, the regulation of transparency and research

integrity is characterized by a high degree of formalization and institutionalization, supported by a multi-layered normative framework that includes international soft law instruments, European legislation, national regulations, and institutional policies. At the European level, the *European Code of Conduct for Research Integrity* constitutes a key reference instrument, establishing common standards for Member States and research institutions [1]. Although it does not have binding legal force, it functions as a normative harmonization tool, being frequently incorporated into the conditionalities of funding programs such as Horizon Europe [5]. By promoting principles of transparency, accountability, and open science, the Code indirectly contributes to the establishment of a quasi-mandatory compliance regime.

In addition, relevant European legislation concerning data protection and access to information such as Regulation (EU) 2016/679 on the protection of personal data [6] influences how transparency is implemented in practice, by setting limits and conditions for the processing and dissemination of research data [7]. Consequently, transparency obligations must be balanced with privacy requirements, resulting in a complex legal equilibrium between openness and the protection of fundamental rights. This balancing exercise is particularly relevant in fields involving sensitive data, such as medical or social research, where ethical approval procedures and data anonymization protocols are legally required [9].

At the national level, in Romania, the legal framework is primarily shaped by Law No. 1/2011 on National Education, which establishes the obligation for higher education institutions to adopt codes of ethics and to create ethics committees with deliberative and sanctioning roles [15]. These committees are competent to examine breaches of academic integrity, including cases involving conflicts of interest, plagiarism, or lack of transparency in research activities. Furthermore, Law No.

206/2004 on good conduct in scientific research, technological development, and innovation explicitly defines categories of misconduct and corresponding sanctions, thereby strengthening a coherent legal regime in the field of research ethics [14].

An essential role in the enforcement of these norms is played by the National Council for Ethics in Scientific Research, Technological Development and Innovation (CNECSDTI), which evaluates cases of alleged misconduct and issues advisory opinions. Although its decisions are not always directly binding, they carry significant interpretative authority and contribute to the harmonization of institutional practices [4]. Nevertheless, the effectiveness of these mechanisms depends on procedural efficiency, institutional cooperation, and resource allocation, which may vary across institutions.

Another important dimension of the academic regulatory framework concerns the increasing emphasis on research assessment and accountability mechanisms at the European level. Initiatives related to Responsible Research and Innovation (RRI) promote transparency, public engagement, and ethical reflexivity as core components of research governance [16]. These developments aim to reduce systemic pressures such as the “publish or perish” culture that may incentivize questionable research practices [8].

By contrast, the private research sector is regulated predominantly through private law norms and self-regulatory mechanisms, characterized by flexibility and adaptability to market dynamics. In the absence of explicit legal obligations regarding transparency comparable to those in academia, companies establish their own internal policies on ethics and compliance, typically incorporated into corporate codes of conduct and compliance systems. These frameworks generally include procedures for declaring conflicts of interest, internal reporting mechanisms (whistleblowing), and ethical audits [10]. In many cases, multinational corporations align these

policies with international standards such as ESG (Environmental, Social, and Governance) principles, which increasingly integrate ethical considerations into corporate governance [12].

From a legal perspective, transparency in the private sector is limited by mandatory rules concerning the protection of trade secrets and intellectual property. Directive (EU) 2016/943 on the protection of undisclosed know-how and business information grants companies the right to restrict access to sensitive information, significantly reducing the level of external transparency [7]. Additionally, patent law and copyright regulations reinforce this orientation toward confidentiality, aimed at safeguarding competitive advantage [17]. This legal architecture reflects a fundamental tension between the protection of innovation and the public interest in access to knowledge.

Furthermore, contractual arrangements play a central role in structuring research activities in the private sector. Instruments such as non-disclosure agreements (NDAs), licensing contracts, and research collaboration agreements often include detailed provisions on confidentiality and conflict of interest management [2]. These legally binding mechanisms may be more immediately enforceable than certain soft law standards in academia, yet they remain largely inaccessible to public scrutiny.

Regarding conflicts of interest, in the private sector they are treated primarily as corporate governance risks rather than matters of public interest. Their management is therefore conducted through internal policies and contractual obligations, without the requirement of extensive public disclosure. International standards, such as those promoted by the Committee on Publication Ethics (COPE), apply mainly to the publication phase and do not comprehensively regulate internal research processes [3]. This creates potential asymmetries in transparency, particularly

where privately funded research has significant societal implications.

A defining element of the distinction between the two sectors lies in the coercive nature of applicable norms. In academia, rules concerning transparency and integrity are supported by explicit sanctioning mechanisms, including disciplinary measures, withdrawal of academic titles, or exclusion from funding programs [14]. In contrast, sanctions in the private sector are primarily contractual or internal, and the absence of direct public oversight reduces external accountability. Nonetheless, regulatory intervention may occur in areas such as competition law, consumer protection, or public procurement [11].

It is also important to consider the growing intersection between academia and industry, particularly through public-private partnerships and collaborative research initiatives. These hybrid arrangements often raise complex legal and ethical issues regarding data ownership, publication rights, and disclosure of conflicts of interest [13]. Managing these tensions requires carefully negotiated frameworks that balance transparency with legitimate confidentiality interests.

This is why the legislative analysis reveals a more rigorous and transparent legal regime in the academic environment, characterized by standardization, institutional oversight, and public accountability, whereas the private sector operates within a more flexible framework based on self-regulation and confidentiality. This dichotomy directly influences how conflicts of interest are identified, disclosed, and managed, as well as the degree of public access to research-related information. At the same time, ongoing regulatory developments suggest a gradual convergence of standards, particularly in contexts where private research intersects with public interest concerns.

CONCLUSIONS

In conclusion, the comparative analysis of transparency and conflict of interest management in academic and private research environments reveals a fundamental divergence rooted in their distinct institutional missions, regulatory frameworks, and accountability structures. While both sectors contribute significantly to the advancement of scientific knowledge and innovation, they operate under different normative logics that shape how ethical principles are interpreted and applied in practice.

The academic environment is characterized by a highly structured and formalized ethical and legal framework, which promotes transparency as a core value and a prerequisite for scientific validity. Through a combination of international guidelines, European-level instruments, and national legislation, academic research is subject to clear standards regarding openness, disclosure, and accountability. Mechanisms such as peer review, ethics committees, and national oversight bodies ensure that conflicts of interest are not only identified but also publicly acknowledged and, where necessary, sanctioned. This system reinforces the role of research as a public good and supports the credibility and reproducibility of scientific outputs.

In contrast, the private research sector operates within a more flexible and less publicly visible regulatory environment, where ethical conduct is largely governed by internal policies, contractual obligations, and market-driven considerations. Transparency, while not absent, is often subordinated to the protection of intellectual property, trade secrets, and competitive advantage. As a result, conflict of interest management tends to be internalized, with limited external disclosure and reduced public scrutiny. Although such an approach is justified by the need to foster innovation and economic efficiency, it may also generate challenges in terms of accountability and trust, particularly in cases where privately

funded research has broader societal implications.

Importantly, these differences should not be interpreted in strictly normative terms as a dichotomy between “ethical” and “less ethical” systems, but rather as expressions of different functional priorities. The academic sector prioritizes openness and collective knowledge-building, whereas the private sector emphasizes confidentiality and strategic innovation. Nevertheless, the increasing interaction between these two spheres through collaborative research, public-private partnerships, and shared funding mechanisms blurs these boundaries and creates new ethical complexities. In such hybrid contexts, the coexistence of divergent standards necessitates careful balancing between transparency and confidentiality, as well as the development of interoperable ethical frameworks.

Moreover, contemporary trends at the European and international levels indicate a gradual convergence toward higher standards of accountability across both sectors. Initiatives promoting open science, responsible research and innovation, and corporate transparency suggest that ethical expectations are becoming more aligned, particularly in areas where research outcomes have a direct impact on public welfare. This evolution reflects a growing recognition that trust in science depends not only on the quality of results but also on the integrity of the processes through which those results are produced.

Ultimately, ensuring effective management of conflicts of interest and an appropriate level of transparency across all research environments requires a nuanced and context-sensitive approach. It involves not only the existence of formal regulations but also their consistent implementation, institutional support, and the cultivation of a strong ethical culture. Bridging the gap between academic and private research standards remains a key challenge for policymakers, institutions, and researchers

alike, and represents an essential step toward maintaining the legitimacy and societal value of scientific research in an increasingly complex and interconnected world.

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