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► To cite this version:

Maricel Rodriguez Blanco, Boris Attencourt. Governing through Algorithms? Uses, Obstacles, and Inequalities in the Adoption of Artificial Intelligence by Business Leaders.. Sixth International Colloquium CERALE Opportunities, Risks, and Challenges in the Age of Artificial Intelligence. Geopolitical, Entrepreneurial, and Social Perspectives., CERALE (Latin America - Europe Research Center at ESCP Business School); FGV EBAPE, Jun 2026, Rio de Janeiro (BR), Brazil. <hal-05561904>

HAL Id: hal-05561904

<https://hal.science/hal-05561904v1>

Submitted on 22 Mar 2026

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3. SMEs, Entrepreneurship, and Innovation in the Age of AI

Governing through Algorithms? Uses, Obstacles, and Inequalities in the Adoption of Artificial Intelligence by Business Leaders

Introduction / Objectives

Artificial intelligences (AI) and algorithms are increasingly recognized as structuring technologies in the economy, often presented as major levers for innovation, competitiveness, and resilience for small and medium-sized enterprises (SMEs). However, their use remains socially differentiated and shaped by power relations, particularly related to gender and age.

This paper presents the preliminary results of a comparative study mapping AI use by business leaders in France and Argentina, in start-ups and SMEs across diverse sectors: technology, scientific research, culture, textiles, international trade, and communication. The objective is to identify the challenges and obstacles to the appropriation of these technologies in managerial activity, with particular attention to gender and generational inequalities.

Specifically, the research focuses on:

1. How AI concretely transforms managerial practices;
2. The organizational, social, and symbolic conditions of adoption;
3. Emerging financial, organizational, ethical, and epistemic challenges.

The aim is to show that technological innovation cannot be separated from the social relations that frame its appropriation.

Literature Review

Contemporary research on AI in business is rapidly expanding, including studies on performance, organizational transformation, and algorithmic governance (De Vaujany, 2025). However, these studies often treat AI primarily as a technological device, privileging strategic adoption and performance for entrepreneurial innovation (Botelho, Gulati, & Sorenson, 2024), at the expense of a detailed analysis of actual use, bricolage, and everyday resistance. Leaders are often portrayed as rational or visionary actors, without examining their social trajectories, dispositions, or dependencies on consulting markets or technology providers.

This study adopts an approach rooted in the sociology of digital technologies and organizations (Attencourt, 2025; Flécher, 2025), considering AI as embedded in social structures, power relations, and organizational configurations. AI is thus analyzed as a sociotechnical assemblage (Musiani, 2022), transforming professional norms and modes of authority.

Following the work of Léo Mignot on AI in healthcare and Bishop on start-ups (2025), the question is not whether algorithms “perform better” than professionals, but how delegation to algorithmic systems is negotiated and what managerial reconfigurations result. Few empirical studies show how these tools concretely transform work and hierarchical relations. As in Christin’s (2020) study of newsrooms, algorithms and metrics reshape hierarchies, work, and decisions. Managers must balance data and autonomy, standardization and human judgment, to prevent technology from becoming an arbitrary prescription.

Mignot (2025) shows that automating administrative tasks raises little debate, whereas delegating diagnostic tasks generates significant tensions, revealing the social and digital

division of labor. This sociological approach goes beyond sensationalist discourses on AI, highlighting observed uses and limitations in practice. Combining the sociology of use, digital sociology, and economic sociology provides a comprehensive understanding of AI in business—not merely as optimization tools but as socially situated devices.

This research examines how professional trajectories, age, gender socialization, and perceived legitimacy influence AI adoption. It also captures differentiated forms of AI appropriation: routine use, occasional use, delegation, or circumvention. We analyze how AI use by female business leaders reshapes the boundaries of their expertise: is the algorithm a tool of empowerment or a new center of dependency? Do these uses shape the “sociotechnical cognitive frameworks” of entrepreneurship (Attencourt, 2025) and propose “market epistemologies” (Mirowski, 2001)? We test the hypothesis that algorithms carry norms and logics that strongly influence leaders’ behavior. A new logic constrains managerial activity: as the injunction to become “scalable” illustrates (Lee & Kim, 2024), economic value is not only produced but also measured by digital indicators, influencing how female leaders undertake entrepreneurial activity (Bishop, 2025).

Methodology

The research combines three data sources:

1. 52 in-depth interviews: 32 with female business leaders in France and Argentina, and 20 with French scientists connected to start-ups and public–private partnerships;
2. A questionnaire distributed to an international association of women leaders;
3. Focus groups with female business leaders to observe collective dynamics, AI representations, and adaptation strategies.

Focus groups, including participants of diverse profiles and ages, provide a privileged setting to observe actual managerial practices. This triangulation allows the combination of fine-grained qualitative analysis and comparative objectification of practices.

Progress

Data collection is well underway: 30 interviews have been conducted, with the questionnaire and focus groups ongoing (February–March). Thematic coding of qualitative materials has begun.

Results and Contributions

Preliminary results indicate that AI adoption does not result from simple economic calculation. It depends on professional trajectories, digital socialization, organizational resources, and perceived legitimacy. Identified uses include chatbots, operational automation, decision support, communication management, delegation, occasional use, and non-use. Collective discussions reveal fears, barriers, ethical dilemmas, and adaptation strategies.

Beyond technological obstacles, financial, organizational, ethical (opacity, responsibility), and epistemic (data reliability) challenges were identified. Gender and generational dynamics partly explain variations in appropriation.

This study contributes to research on digital inequalities and differentiated technology appropriation, in relation to SME digital transformation and studies on gender and entrepreneurship. It also provides methodological insights into using focus groups to study collective practices and obstacles faced by female entrepreneurs.

Implications and Recommendations

Innovation support policies must go beyond purely financial approaches to include training, mentoring, and reducing digital inequalities. For management research, this study emphasizes the importance of a sociological perspective to understand AI as a social process that transforms authority relations and entrepreneurial leadership norms.

Keywords: Artificial intelligence; SMEs; female entrepreneurship; innovation; digital inequalities

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