# Chapter 4
# Artifical Intelligence and Digital Marketing: Ethical Challenges in the Algorithmic Era

**Andreia Couto**
*Polytechnic University of Cávado and Ave, Portugal*

**Bruno Barbosa Sousa**
http://orcid.org/0000-0002-8588-2422
*UNIAG, School of Hospitality and Tourism, Polytechnic University of Cávado and Ave, Portugal*

**Lara Gonçalves Santos**
http://orcid.org/0000-0001-6927-8906
*Polytechnic University of Cávado and Ave, Portugal*

## ABSTRACT

*The rapid rise of generative AI has redefined the boundaries of personalization, but it has also amplified the risks of opacity and algorithmic manipulation. This chapter is justified by the immediate need to reconcile the effectiveness of automated campaigns with the principles of ethics by design, and it offers a response to the empirical research gap linking marketing performance to algorithmic fairness. In this sense, this chapter analyzes the influence of Artificial Intelligence (AI) on digital marketing, focusing on the ethical, security, and data privacy implications. Starting from the evolution of marketing, we discuss how digitization, machine learning, Generative AI (GIA), and LLMs transform the collection, analysis, and use of data to automate campaigns, segment audiences, and personalize content in real time.*

DOI: 10.4018/979-8-3373-8337-8.ch004

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*Through a bibliometric study in the Web of Science (WoS), scientific production at its intersection is mapped. Thematic clusters are identified on AI applications, ethical and privacy risks, and IAG in the personalization economy.*

## 1. INTRODUCTION

The contemporary landscape is defined by unprecedented technological convergence, in which digitization, machine learning, and Artificial Intelligence (AI) have reconfigured the fundamental structures of the global economy (Gupta et al., 2017). In the digital marketing ecosystem, this transformation manifests as a shift from passive communication platforms to autonomous systems capable of generating and processing colossal volumes of data in real time (Yadav et al., 2024). AI thus emerges not only as a support tool but also as the key technology for turning the "noise" of social media data into automated, competitive intelligence strategies (Labib, 2024).

Adopting these solutions gives organizations a sustainable competitive advantage by enabling deep insights into consumer behavior, which are essential for retention and loyalty in a volatile market (Garafonova et al., 2025; Labib, 2024). In fact, the evolution of brand-customer interaction over the past decade has radically changed decision-making processes, making the incorporation of AI into marketing plans a strategic requirement rather than just a technical option (Gantumur, 2025; Labib, 2024). Through predictive analytics, companies can now segment audiences, personalize content, and adjust campaigns in real time, maximizing return on investment (ROI) and operational efficiency (Gbadegeshin et al., 2025a). However, this rise of "algorithmic performance" reveals a critical structural tension. Although AI ushers in an era of unprecedented efficiency, the speed of innovation has outpaced society's ability to establish robust ethical and regulatory barriers. Recent literature begins to highlight the risks inherent in this integration, namely the dehumanization of consumer relationships and the vulnerability of individual privacy (Lobschat et al., 2021a). Issues such as the opacity of profiling algorithms, data surveillance on social media, and persistent flaws in the protection of sensitive information (Cascavilla et al., 2018) call into question the sustainability of data-driven marketing. In this scenario, it is imperative that managers and researchers understand not only the disruptive potential of technology but also its ethical and legal limits (Davenport et al., 2020). Despite the proliferation of generative AI tools and automated models, a critical gap persists in the literature: the need for models that operationalize ethics and data security (privacy by design) as strategic pillars rather than merely reactive obligations (Du & Xie, 2021; Potwora et al., 2024).

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