Chapter 4
Hyper-Personalised Marketing with Generative AI and Predictive Models: A Systematic Review

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ABSTRACT

This chapter examines how GenAI and predictive modelling strategies affect hyper-personalised marketing. Through a comprehensive literature review and case studies, it examines hyper-personalisation's theoretical frameworks, technical infrastructures, and ethical and governance issues. Large language models, generative adversarial networks, and diffusion models combined with advanced predictive analytics allow firms to scale real-time, highly individualised customer experiences. Effective implementation requires sophisticated data architectures, algorithmic transparency, and strong privacy protections. Integration complexity and ethical accountability are major barriers to consumer engagement and conversion, according to the research.

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Based on these findings, the chapter proposes an integrated framework that combines technological innovation with ethics and customer focus. This research advances marketing theory and provides practical advice for companies using AI-driven hyper-personalisation while maintaining consumer trust and regulatory compliance.

INTRODUCTION

The evolution of marketing strategies has been marked by a growing focus on personalisation, which involves customising communications, products, and services to align with specific consumer preferences (Kumar et al., 2021). Recent technology breakthroughs have prompted a transition from basic personalisation to hyperpersonalization, characterised by the use of real-time data, artificial intelligence, and sophisticated analytics to provide highly contextualised, personalised customer experiences (Gallery, 2024). This paradigm shift is notably important in the current market environment, as customers increasingly anticipate seamless, personalised encounters with businesses across multiple touchpoints (Hollebeek & Macky, 2019).

The integration of generative AI technologies with advanced predictive models has significantly enhanced the potential for hyper-personalisation in marketing. Generative AI (GAI), which includes tools like large language models (LLMs), generative adversarial networks (GANs), and diffusion models, helps create unique and customised content and experiences. When integrated with predictive analytics that anticipate customer behaviours and preferences, these technologies generate unprecedented prospects for marketing innovation (Davenport et al., 2020).

Despite the growing implementation of AI-driven hyper-personalisation strategies, the academic literature examining their theoretical underpinnings, practical applications, and ethical implications remains fragmented (Huang & Rust, 2021). On top of that, the research landscape surrounding hyper-personalised marketing has shifted dramatically in recent years due to the integration of GAI, resulting in transformative advancements in both the technological and theoretical foundations of consumer engagement (Madanchian, 2024). GAI techniques, including GANs, Variational Autoencoders (VAEs), and transformers, have empowered marketers to synthesise realistic consumer data and create highly tailored marketing content, supporting the design of individualised campaigns that surpass traditional segment-based ones (Joseph et al., 2025). This progression is paralleled by developments in predictive modelling, where supervised learning algorithms, deep learning networks, and ensemble methods drive more precise forecasting of user behaviours, enabling organisations to better anticipate customer needs and optimise campaign strategies