

Balancing AI-Driven Cross-Border Personalized Marketing with Data Privacy Regulations

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Abstract

This paper aims to systematically examine and analyze the multidimensional interplay between AI-enabled cross-border personalized marketing and global data privacy regulations. The paper first clarifies the core theoretical implications of the “personalization-privacy paradox.” Drawing on authoritative academic research in both Chinese and English, it outlines the research landscape in this field across three interrelated dimensions: First, the technological ethics dimension and consumer behavioral responses, summarizing the transformative role of AI technology in reshaping marketing models, as well as the resulting ethical controversies—such as algorithmic transparency and excessive data collection—and the diverse psychological and behavioral manifestations of consumers; Second, the regulatory implementation and corporate strategic adaptation dimension, which analyzes the compliance pressures brought about by the GDPR-centered regulatory framework, as well as the strategic shift of enterprises from passive compliance to active adaptation, ultimately transforming privacy protection into a competitive advantage; third, the global contextual differences and localization practice dimension, which compares the prominent differences among regional markets in terms of regulatory environments, cultural perceptions, and corporate localization strategies. Existing research indicates that exploration in this field has shifted from the initial identification of contradictions to an in-depth examination of multi-dimensional balancing mechanisms. Finally, this paper identifies the limitations of current research in terms of dynamic analytical perspectives, in-depth exploration of cross-cultural theories, and coverage of small and medium-sized entities, and proposes feasible directions for future research.

Keywords: Artificial Intelligence; Cross-border Personalized Marketing; Data Privacy; GDPR; Privacy Paradox; International Marketing

1. Introduction

The deep integration of the advancement of the global digital economy and the commercialization of artificial intelligence technologies has profoundly reshaped the overall landscape of international marketing. Machine learning, deep learning algorithms, and generative AI technologies have made precise user insights and real-time personalized interactions in cross-cultural contexts a reality, significantly enhancing marketing execution efficiency. At the same time, the global wave of data privacy legislation, led by the EU's General Data Protection Regulation (GDPR), has established core principles such as legality, data minimization, and transparency in data processing, fundamentally disrupting traditional data application models in marketing. Against this industry backdrop, the “personalization-privacy paradox” has emerged as a central theoretical proposition of focus for both academia and the industry. This paradox refers to the irreconcilable internal conflict between data processing practices that underpin highly tailored personalized services and consumers' ever-increasing privacy demands and increasingly stringent legal protections.

Current research on this paradox is scattered across multiple disciplines, including marketing, law, communication studies, and information ethics, and has yet to form a unified and integrated research framework. To clarify the research trajectory, core issues, and development trends in this field, this paper focuses on addressing four key questions: First, how do existing studies define and interpret the “personalization-privacy paradox” from a multidisciplinary perspective? Second, what technical ethical conflicts, regulatory compliance challenges, and consumer behavioral characteristics do relevant findings reveal? Third, what mainstream theoretical interpretations and practical balancing solutions has academia proposed? Fourth, what regional differences and underlying causes do cross-national comparative studies reveal?

This paper employs a systematic literature review methodology to organize and synthesize relevant findings from authoritative domestic and international journals in recent years. The analysis framework is structured around three core dimensions: the micro-level (technological ethics and consumer responses), the meso-level (regulatory rules and corporate strategic adaptation), and the macro-level (global contextual differences and localized practices). This approach breaks away from the simplistic dichotomy between technology and regulation, presenting a comprehensive, multi-layered, and dynamic overview of the field. The paper concludes by synthesizing the core findings of existing research, identifying research gaps, and proposing a roadmap for future studies (Figure 1).

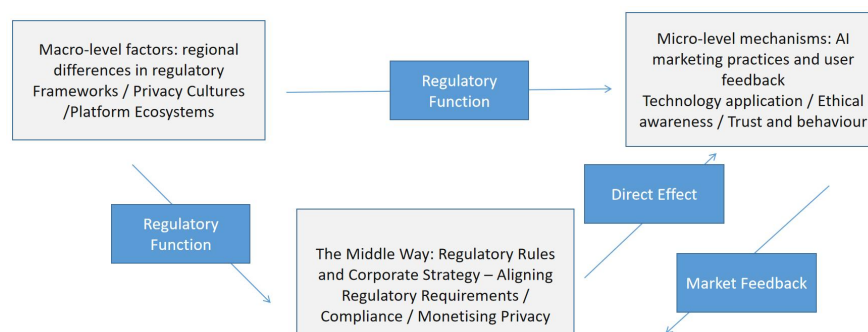


Figure 1. Technical Approach

2. Literature Dimension 1: Micro-level Mechanisms of Technological Ethics Development, User Perception, and Trust Building

2.1. Technological Iterations in AI Marketing and Their Dual Impacts

Existing literature clearly illustrates the technological evolution of AI marketing from “precision targeting” to “generative interaction.” Early research focused on collaborative filtering algorithms and user profiling, while recent studies have shifted their emphasis to the innovative value of generative AI in the creation of dynamically personalized content (Lun, 2020; Lai et al., 2024). The academic community generally agrees that generative AI has not only revolutionized content production methods but also enhanced service adaptability through contextualized interactions. However, the empowering role of this technology is two-sided: while optimizing marketing outcomes, it also amplifies potential risks at the ethical and societal levels.

2.2. Algorithmic Opacity, Insufficient Information Disclosure, and Challenges in Accountability

The lack of algorithmic explainability is a key ethical issue under academic scrutiny, directly conflicting with the principles of transparency and the right to algorithmic explanation mandated by regulations such as the GDPR. While there is a consensus in the academic community regarding the insufficient transparency of algorithms, there remains disagreement on the optimal path for disclosure: some scholars advocate for the full disclosure of algorithmic logic and decision-making criteria, while others argue that overly technical disclosures would increase the information burden on users, and that actionable user control is more practical than complex technical explanations. A survey by Yang et al. (2024) on domestic digital reading applications confirms that most platforms merely fulfill their formal notification obligations, while exhibiting significant shortcomings in the disclosure of substantive information—such as the basis for content recommendations, data weighting, and user control permissions. This not only traps users in a state of information rigidity but may also lead to security issues such as excessive processing and leakage of personal information (Wang et al., 2023; Xu, 2025; Mao et al., 2025).

2.3. The Dynamic Relationship Between Data Usage, Authorization Mechanisms, and User Trust

Academic circles have conducted critical analyses of data collection and authorization mechanisms in marketing contexts. Guo et al. (2024) argue that while the GDPR has reinforced the legal centrality of user consent, in practice, lengthy and cumbersome privacy policies and manipulative interface designs easily lead to “consent fatigue,” resulting in so-called informed consent that is not based on autonomous will or complete information.

Such data application models directly impact users’ perception of privacy and the establishment of trust. Academic conclusions regarding the relationship between personalized services and brand trust vary: some studies confirm that personalized services featuring moderate transparency and user control can effectively enhance user trust and consumption willingness (Pan et al., 2024); other studies find that overly precise personalized content can evoke a sense of surveillance among users, thereby triggering privacy concerns and reducing brand trust. These divergent viewpoints precisely illustrate that the relationship between personalized services and

user trust is not linear. The formation of user trust is a dynamic psychological process involving the balancing of the benefits of personalization against privacy risks; this process is influenced by corporate compliance strategies and exhibits significant cross-cultural and cross-jurisdictional variations. (Shen et al., 2025; Kaushik et al., 2025)

3. Literature Dimension Two: The Mesolevel Pathways of Regulatory Logic and Corporate Strategic Adaptation

3.1. In-Depth Reflection on the GDPR Regulatory Framework and Enforcement Practices

As a global benchmark for privacy regulation, the GDPR's core principles—such as “privacy by design,” “data minimization,” and “purpose limitation”—have been extensively studied by academia. Guo et al. (2024) analyzed the regulation's stringent legal and compliance foundations from a legal perspective, noting that regulatory practices' narrow interpretation of the “contractual necessity” principle has made personalized marketing increasingly reliant on users' active consent. Wu et al. (2024), in their retrospective study of five years of GDPR enforcement, noted that the enforcement process is characterized by a duality: strict regulation coexists with insufficient guidance, and privacy protection is difficult to reconcile with innovation and development, creating significant uncertainty for multinational corporations' compliance efforts.

3.2. Corporate Strategic Adaptation: From Compliance to Value Creation

In the face of regulatory pressure, the literature documents a progressive strategic shift by enterprises from passive response to proactive planning, and related research has evolved from the “compliance cost theory” to the “compliance value theory.”

(1) Strategic Adaptation and Compliance Game Theory: Early research viewed companies as passive executors of regulatory rules, while subsequent studies found that companies engage in flexible strategic games within the regulatory framework. For example, research in the *Journal of Marketing* shows that nearly half of companies obtain user consent through hybrid methods such as rights-based guidance and phased authorization, balancing regulatory requirements with data collection needs.

(2) Exploration of Technological Solutions: To reconcile the conflict between data utilization and privacy protection, academia and industry are jointly promoting the application of privacy-enhancing technologies, including federated learning, differential privacy, and data clean rooms. These technical approaches achieve “data usability without visibility,” enabling model training and content generation for personalized marketing without directly collecting raw personal information.

(3) From Compliance Cost to Strategic Asset: Early research viewed privacy compliance as an additional operational cost for enterprises, but recent cutting-edge studies propose the opposite view, arguing that robust privacy compliance can transcend the realm of costs to become a core strategic asset for brand differentiation and trust-building. By implementing privacy-by-design principles, optimizing information disclosure mechanisms, and enhancing user control over their data, enterprises can build stronger user trust and brand loyalty.

There is a deep, two-way interdependence between regulatory rules and user trust. A stringent regulatory environment not only directly governs corporate compliance but also raises users' awareness and expectations regarding their data rights, reinforcing the aforementioned psychological trade-off between privacy and benefits, thereby making user trust a pivotal factor in corporate strategic competition. Furthermore, the effectiveness of corporate compliance practices varies significantly depending on the intensity of regulation and differences in privacy culture across different markets.

4. Literature Dimension Three: Global Market Differences and Macro-Conditions for Localization Practices

4.1. Differences in Regional Regulatory Environments and User Privacy Cultures

The extent of the impact of the technological-ethical controversies mentioned earlier, as well as the choices of corporate compliance strategies, are contingent upon specific market environments. Significant differences in regulatory frameworks and privacy cultures across global regions not only pose challenges to standardized models of cross-border marketing but also constitute the core external conditions for interpreting the dynamic balance of the “personalization-privacy paradox.”

Comparative studies reveal a clear divergence in regulatory environments and user attitudes across major global markets:

(1) Europe: Deeply influenced by the GDPR, the regulatory framework is mature and stringent. Users have a high level of awareness regarding their data rights and are highly sensitive to the authenticity and quality of consent, leading to relatively standardized corporate compliance practices.

(2) North America: Companies prioritize data security and compliance risks. In marketing, they tend to rely on predictive models to assess user needs rather than actively collecting first-party user data.

(3) Asia-Pacific: Overall privacy concerns are relatively low across the region, but domestic privacy regulations in economies such as China and India are rapidly evolving—for example, China's Personal Information Protection Law—creating unique compliance challenges. Tang (2024) comparative study of China and Europe provides a macro-level framework for interpreting the core differences in regulatory philosophies and policy tools between the two regions.

(4) Latin America: Relevant research has identified a unique phenomenon: while companies in this region rank among the highest in terms of concern over privacy risks, they also demonstrate a high level of maturity in data integration and the application of zero-party and first-party data. This suggests that a heightened perception of risk actually drives companies to develop more refined and compliant data application strategies.

4.2. Specific Manifestations in Platform Ecosystems and Cross-Cultural Marketing Practices

Regional differences are not only evident at the regulatory and cultural levels but also permeate platform ecosystems and specific marketing operations. Existing research has thoroughly analyzed how differences in market platforms influence personalized marketing. For instance, TikTok's algorithm plays a guiding role in global youth consumer culture, while China's luxury marketing, relying on super-apps like WeChat and Douyin and the ecosystem of opinion leaders, has formed a marketing model distinctly different from that of Western markets.

Comparative studies of cross-cultural user behavior also provide micro-level evidence for regional differences. Huang and Zhou (2025), through a comparative study of China and the UK, found that Chinese users are more significantly influenced by social media marketing. These cultural behavioral differences directly alter the effectiveness of personalized marketing and the standards for perceiving privacy risks, further confirming the moderating role of the macro-environment on micro-level user responses.

5. Summary of Key Findings and Future Research Agenda

5.1. Core Consensus and Development Trends in Existing Research

Through a systematic review of the three interrelated dimensions, this paper summarizes three core consensus points and evolving directions in existing research:

Scholarly perspectives have expanded from a single dimension to multiple layers, departing from the early narrow focus confined merely to legal compliance and evolving into an interdisciplinary framework integrating technological ethics, user psychology, corporate strategy, and global governance. "Dynamic equilibrium" has solidified as the core research paradigm shaping the field. Moving beyond the outdated binary logic that contrasts technology against regulation, modern research delves into multifaceted dynamic balance mechanisms connecting technology, law, ethics, and commercial value. Situational adaptability has also become a prevailing consensus within academic circles. No universal remedy exists for the inherent paradox under examination, as regional regulatory norms, cultural perceptions, industrial characteristics, and platform ecosystems all serve as vital moderating factors.

5.2. Research Limitations and Future Directions

Although existing research has yielded substantial results, this paper identifies four major research gaps that urgently need to be addressed:

Existing research lacks dynamic and longitudinal perspectives. Dominated by cross-sectional analyses, current scholarship cannot reflect how balancing models for tensions between personalization and privacy evolve amid technological iteration, regulatory improvement and shifting public opinion, indicating that longitudinal tracking inquiries deserve greater emphasis in future exploration.

Cross-cultural comparative studies also fall short in theoretical depth. Most transnational investigations remain confined to descriptive elaboration. Subsequent research can adopt mature theoretical frameworks such as Hofstede’s cultural dimensions to carry out empirical analysis, thereby probing into the inherent cultural roots behind divergent user attitudes and behaviors toward privacy protection.

Prospective exploration targeting emerging technologies remains relatively underdeveloped. Ethical and compliance risks stemming from generative AI, neural-technology-driven deepfake applications and mental health data utilization are still at an early research stage, which urgently demands innovative progress in theoretical systems and empirical testing.

Moreover, insufficient attention has been paid to small and medium-sized entities in the academic field. Prior studies overwhelmingly focus on large tech enterprises and multinational brands, while neglecting the compliance dilemmas, innovative coping tactics and survival modes of resource-limited SMEs facing global privacy regulations — an underexplored direction with considerable theoretical value and practical significance.

6. Conclusion

This systematic review demonstrates that the interplay between AI-driven cross-border personalized marketing and global data privacy regulations constitutes a dynamic interdisciplinary research field. Existing research has progressed from identifying the “personalization-privacy paradox” to exploring balanced approaches across multiple dimensions, including technology, regulation, ethics, and global contexts.

Integrating existing research findings, the core path to resolving this paradox lies in establishing a flexible, efficient, trust-based collaborative governance system adaptable to diverse contexts. This requires enterprises to integrate privacy ethics into their core strategies, rather than treating it merely as a passive compliance measure; it requires academia to conduct more refined, dynamic empirical and cross-cultural comparative studies; and it requires regulators to consider the practical effects of regulations and find a reasonable balance between user privacy protection and digital economic innovation. The research limitations identified in this paper—particularly regarding dynamic evolution, cross-cultural mechanisms, and SME practices—provide a clear roadmap for future research. In the global digital market competition, a company’s ability to transform data protection into the co-creation of trusted value will become a core sustainable competitive advantage.

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