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AI Persuasion in Marketing: A Systematic Review of Algorithmic Influence on Consumer Decision-Making

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Abstract

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This article examines how artificial intelligence (AI) systems in marketing shape consumer decision-making, focusing on algorithmic personalization, recommendation, and conversational agents. The study's role is to integrate fragmented evidence from 2016-2021 into a coherent picture of "algorithmic persuasion" and its implications for autonomy, privacy, and fairness. Using a systematic literature review of peer-reviewed empirical studies, the article identifies how AI increases message relevance, compresses consideration sets, and alters interaction experiences, thereby enhancing short-term outcomes such as attention, attitudes, and behavioral intentions. The results are synthesized narratively by grouping studies according to AI application type, persuasion mechanism, and consumer response patterns, and by comparing findings across contexts and methods. The review finds that AI-based persuasion is consistently effective but ambivalent: it improves decision efficiency while simultaneously creating vulnerabilities related to perceived surveillance, manipulation, and overdependence on algorithmic guidance. These findings underscore the need for ethically informed design, transparency safeguards, and longitudinal, cross-cultural research on AI-mediated persuasion.

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1. Introduction

Artificial intelligence (AI) has rapidly become embedded in contemporary marketing practice, powering programmatic advertising, recommendation engines, and conversational agents across digital touchpoints. By automating pattern recognition on massive consumer data sets, AI systems enable firms to predict needs, tailor content, and optimize interactions at scale in ways that were previously impossible (Huang & Rust, 2018; Verma et al., 2021). This technological shift is not merely operational or efficiency-oriented: it reshapes how persuasive communications are designed and delivered, with algorithms increasingly acting as active choice architects throughout the consumer decision journey (Kumar et al., 2019). As a result, many decisions that once arose from direct interpersonal influence or static mass media campaigns are now shaped by dynamic, data-driven, and often opaque algorithmic processes.

AI-enhanced marketing tools exert persuasive influence through several mechanisms that function across channels and stages of decision-making. Personalization algorithms curate information and offers that match individual preferences, browsing histories, and psychological profiles, increasing perceived relevance, engagement, and conversion likelihood (Kumar et al., 2019; Verma et al., 2021). Field experiments in digital advertising demonstrate that psychologically targeted messages, tailored on the basis of inferred personality traits from digital footprints, can significantly increase click-through and conversion rates compared with non-tailored appeals, illustrating the power of algorithmic persuasion at scale (Matz et al., 2017). In service settings, AI-powered chatbots and virtual assistants

shape consumer attitudes and emotional connection to brands through anthropomorphic design cues and framing as intelligent, human-like agents, which can increase trust and perceived social presence (Araujo, 2018; Huang & Rust, 2018). Together, these developments signal a shift from generic persuasion to highly individualized, continuously optimized influence strategies.

At the same time, consumer responses to persuasive AI are far from uniformly positive or uncritical. Research on algorithm aversion shows that people are less willing to rely on algorithms for subjective, preference-laden, or identity-relevant decisions, even when algorithms statistically outperform human experts (Castelo et al., 2019). Studies in healthcare reveal resistance to AI-based recommendations driven by "uniqueness neglect," or the belief that algorithms cannot account for one's individual characteristics, highlighting a perceived loss of autonomy and individuality in algorithmic decision contexts (Longoni et al., 2019). These concerns intersect with broader anxieties around privacy, manipulation, and fairness in targeted persuasion, raising questions about when algorithmic influence crosses normative and regulatory boundaries. For marketers, this tension creates a strategic dilemma: how to harness AI's persuasive power while preserving perceived fairness, transparency, and consumer agency.

Although prior reviews synthesize the emerging literature on AI in marketing more generally, they tend to focus on technological applications, implementation challenges, or strategic implications rather than on persuasion mechanisms and consumer decision processes per se (Kumar et al., 2019; Verma et al., 2021). There remains a need for an integrative account of how algorithmic systems influence

consumer decisions across channels and touchpoints, what psychological and contextual factors moderate this influence, and where ethical tensions and vulnerabilities arise. Addressing this gap, the present article employs a systematic literature review of peer-reviewed studies published between 2016 and 2021 to map the landscape of AI-driven persuasion in marketing. Specifically, it synthesizes current evidence on algorithmic influence mechanisms, consumer reactions ranging from acceptance to resistance, and the emerging ethical challenges associated with AI persuasion. By doing so, the review aims to develop a conceptual framework of algorithmic influence on consumer decision-making and to identify promising directions for future research and responsible managerial practice.

2. Literature Review

The growing body of research on AI in marketing since 2016 documents a rapid expansion from conceptual discussions to empirical examinations of algorithmic influence on consumers. Early work in services and marketing outlines how AI transforms firm-customer interactions by automating analytical and intuitive tasks, enabling personalized engagement at scale (Huang & Rust, 2018; Kumar et al., 2019; Verma et al., 2021). Within this broader landscape, personalization and targeting have emerged as central mechanisms of algorithmic influence. A review of personalized matching effects in persuasion shows that aligning message features with stable or situational characteristics of recipients, such as goals, traits, or mindsets, tends to enhance persuasive impact, while mismatches can produce backfire effects (Teeny et al., 2021). Complementing this, field experiments in digital

advertising demonstrate that psychologically targeted advertising based on digital footprints can substantially increase persuasion outcomes, illustrating the power of algorithmic personalization at scale (Matz et al., 2017).

A second cluster of studies focuses on AI-driven conversational agents and chatbots as persuasive interfaces in customer service and commerce. Research on anthropomorphic design cues and agency framing finds that more human-like conversational agents can foster higher perceived social presence and more favorable brand evaluations, suggesting that interface design is itself a vehicle for persuasion (Araujo, 2018; Huang & Rust, 2018). Building on this interface perspective, Nordheim et al. (2019) propose an initial model of trust in customer service chatbots that integrates chatbot-related factors such as perceived expertise and responsiveness, environment-related factors such as brand perceptions and risk, and user-related factors such as propensity to trust technology, as key drivers of trust and adoption. Parallel work on experiential engagement in mobile and social contexts indicates that privacy concerns can dampen active usage, but high experiential engagement, both personal and social, can offset these concerns and sustain participation (Pagani & Malacarne, 2017). Together, these studies show that algorithmic persuasion is not only about predictive accuracy, but also about how AI systems are experienced and trusted as interaction partners.

A cross-cutting stream addresses consumer reactions, highlighting the ambivalence with which people approach algorithmic influence. Research on algorithm aversion and resistance to AI in sensitive domains finds that consumers may reject algorithmic recommendations when they perceive them as neglecting

their uniqueness or identity-relevant preferences, even when those recommendations are objectively superior (Castelo et al., 2019; Longoni et al., 2019). Studies of engagement and privacy in digital environments further demonstrate that perceived intrusiveness and privacy concerns can erode willingness to act on personalized content, unless counterbalanced by compelling experiential value and perceived control (Pagani & Malacarne, 2017). Despite these advances, the literature remains fragmented across subdomains such as advertising, recommendations, and conversational agents, and often treats persuasion-related outcomes such as attitude change, choice, or compliance as secondary to satisfaction or usage metrics. This fragmentation underlines the need for a systematic review that organizes existing evidence around explicit persuasion mechanisms, consumer decision outcomes, and moderating psychological and contextual factors in AI-driven marketing.

3. Methods

The present study employed a systematic literature review to identify and synthesize empirical evidence on AI-driven persuasion in marketing and its effects on consumer decision-making. Searches were conducted in major academic databases (such as Scopus, Web of Science, and ScienceDirect), complemented by targeted searches in Google Scholar to capture additional relevant work. Search strings combined terms related to artificial intelligence and algorithms (for example, "artificial intelligence", "machine learning", "algorithmic", "recommender systems") with marketing and persuasion constructs ("marketing", "advertising", "personalization", "persuasion", "influence", "consumer decision-making"). The

search was restricted to peer-reviewed journal articles and full conference papers published in English between 2016 and 2021. After removing duplicates, titles and abstracts were screened to exclude studies that did not involve AI-based systems in marketing contexts or did not examine persuasive outcomes. Full-text screening was then conducted to confirm eligibility.

Inclusion criteria required that studies (a) investigated AI or algorithmic systems applied in marketing, advertising, digital platforms, or customer service, (b) reported empirical findings (quantitative, qualitative, or mixed methods), and (c) assessed at least one persuasion-relevant outcome, such as attitudes, intentions, choices, behavioral responses, or perceived influence mechanisms. Conceptual papers, purely technical algorithm studies without consumer outcomes, and work focused solely on operational efficiency were excluded. For each included study, data were extracted on publication details, methodological approach, sample characteristics, AI technology and application domain, measured persuasion-related outcomes, and key moderators or boundary conditions. A qualitative, narrative synthesis was then conducted to group studies by type of AI application and persuasion mechanism, to compare findings across methodological approaches and contexts, and to identify gaps and future research opportunities related to algorithmic influence on consumer decision-making.

4. Results and Discussion

Across the included studies, AI persuasion in marketing was consistently found to shape consumer decision-making by altering how people process

information, evaluate options, and experience the decision process itself. Experimental work on personalized targeting and psychological profiling shows that AI driven systems can increase message relevance, brand attitudes, and conversion intentions by matching content to consumers' traits, preferences, or digital footprints (Matz et al., 2017; Pagani & Malacarne, 2017; Teeny et al., 2021; Verma et al., 2021). These effects are particularly pronounced in high choice complexity environments where algorithms reduce cognitive effort and search costs, effectively narrowing the decision space and steering consumers toward a smaller set of "recommended" options. At the same time, several studies report ambivalent reactions, where perceived intrusiveness, reactance, or loss of control emerge alongside improved relevance, indicating that algorithmic persuasion often operates through a simultaneous mix of facilitation and pressure (Jung, 2017; Castelo et al., 2019).

One major theme that emerged concerns AI based personalization and recommendation as a driver of both decision quality and potential consumer risk. Studies on data driven personalization show that tailored ads and recommendations can enhance perceived usefulness, enjoyment, and behavioral intentions when consumers see clear value in the exchange of data for relevance (Matz et al., 2017; Teeny et al., 2021; Verma et al., 2021). However, research on personalization effectiveness from a consumer psychology perspective highlights that the same mechanisms that increase attention and emotional connection can also heighten feelings of being monitored or manipulated, especially as frequency and granularity of targeting intensify (Abdel Monem, 2021). In parallel, work on algorithm

overdependence demonstrates that consumers may rely too heavily on recommender systems, sometimes selecting inferior options because they treat algorithmic outputs as implicitly validated, thereby exposing themselves to welfare risks when system objectives diverge from consumer interests (Banker & Khetani, 2019). Together, these findings suggest that AI persuasion can simultaneously improve decision efficiency and introduce new vulnerabilities, making consumer autonomy and informed consent central boundary conditions for acceptable practice.

A second cluster of studies focuses on conversational agents and chatbots as persuasive interfaces that blend social presence with algorithmic intelligence. Anthropomorphic design cues and communicative agency framing have been shown to increase perceived warmth, competence, and trust, which in turn foster more favorable attitudes toward both the agent and the brand it represents (Araujo, 2018). Empirical work on service chatbots indicates that design features such as social presence, responsiveness, and professionalism influence trust and compliance with chatbot recommendations, and that these relational evaluations often spill over to the company as a whole (Nordheim et al., 2019). Because chatbots are able to sustain persistent, data rich dialogues, they can gradually refine their persuasive appeals based on interaction history. This shifts persuasion from one shot message exposure toward adaptive, ongoing influence, intensifying the need to understand how consumers calibrate trust and skepticism in long term human AI relationships.

The third theme concerns transparency, fairness, and accountability as moderators of algorithmic influence on consumers. Research on algorithmic

interfaces shows that transparency can increase trust when outcomes violate expectations, but that providing too much technical detail may overwhelm users and actually erode confidence in the system (Kizilcec, 2016). Conceptual and review work on algorithmic fairness further argues that data driven decision systems can reproduce or amplify structural biases unless fairness and accountability are deliberately built into their design and governance (Lepri et al., 2018). In a marketing context, these insights imply that there is likely a "just enough" level of explanation that allows consumers to perceive AI mediated persuasion as procedurally fair without overloading them with information or revealing proprietary logic. The review also indicates that most existing transparency work has focused on trust and perceived fairness, with relatively less attention to how different forms of disclosure shape actual choice outcomes, long term brand relationships, or resistance to persuasion.

Finally, the synthesis points to several unresolved tensions and gaps in the literature. First, there is an asymmetry between the sophistication of AI systems used to optimize persuasion and the relatively limited evidence on their long term psychological and societal consequences. While most studies evaluate short term metrics such as click through, purchase intention, or immediate attitudes, few examine cumulative effects such as overdependence, narrowing of consideration sets, or shifts in perceived autonomy over time (Lepri et al., 2018; Banker & Khetani, 2019). Second, ethical and regulatory frameworks are often discussed at a high level, but rarely integrated empirically into studies of real marketing systems that operate under constraints such as privacy regulation or platform policies (Kizilcec, 2016;

Boerman et al., 2017). Third, cross cultural and vulnerable consumer perspectives remain underexplored relative to Western, digitally mature samples, even though algorithmic persuasion strategies may have different implications across contexts. Overall, the reviewed evidence suggests that AI persuasion in marketing is effective but double edged, enhancing relevance and efficiency while raising significant questions about consumer welfare, fairness, and informed agency. These findings underscore the need for future work that combines rigorous behavioral evaluation with explicit normative criteria for what constitutes acceptable algorithmic influence in marketplace settings.

5. Conclusion

Taken together, the studies reviewed here show that AI systems in marketing are effective instruments of persuasion that operate by increasing relevance, compressing choice sets, and reshaping how consumers experience interactions with brands. Personalization, recommender systems, and conversational agents reliably improve short term outcomes such as attention, attitudes, and behavioral intentions when consumers perceive clear value in data driven tailoring. At the same time, the same mechanisms that enable fine grained matching of content to individuals also create vulnerabilities around perceived surveillance, manipulation, and overreliance on algorithmic guidance. On balance, the evidence supports a conclusion that AI persuasion is both powerful and ambivalent. It enhances decision efficiency while simultaneously challenging established norms of autonomy, privacy, and fairness in the marketplace.

However, several limitations of the existing literature and of this review qualify these conclusions. Most included studies rely on short term, self-reported, or laboratory-based outcomes, which constrains inferences about long term psychological and societal effects. The evidence base is also dominated by Western, digitally mature populations and a narrow range of AI applications, which limits generalizability to other cultural and regulatory contexts. Methodological heterogeneity and publication bias toward positive or novel results may further skew the apparent strength and consistency of AI persuasion effects. These constraints mean that the conclusions drawn here should be interpreted as describing robust short-term tendencies rather than definitive statements about the enduring impact of AI persuasion on consumer welfare.

Building on these strengths and limitations, future research should move beyond isolated demonstrations of effectiveness toward integrated, longitudinal, and cross-cultural programs of study. Priority areas include examining how sustained exposure to AI mediated persuasion shapes perceived autonomy, trust, and brand relationships over time; investigating differential effects on vulnerable or digitally less literate consumers; and experimentally testing how transparency, control, and fairness safeguards can mitigate harms without undermining legitimate marketing objectives. For practitioners and policymakers, the central implication of this review is that responsible AI persuasion must be designed and governed with explicit attention to consumer welfare, not only conversion metrics. A next generation of research that combines rigorous behavioral evidence with clear normative

benchmarks will be essential to ensure that algorithmic influence in marketing remains both effective and ethically defensible.

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