

Do AI-Personalised Advertisements Influence Decision Autonomy Among Young Consumers?

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Abstract

Artificial intelligence has become the invisible architecture behind most digital advertising encountered by young consumers today. Platforms such as Spotify, Instagram, and Amazon rely on collaborative filtering, behavioural prediction, and algorithmic nudging to personalise the recommendations, feeds, and advertisements that users see, raising an important question for marketing scholarship and practice: Does this personalisation expand consumer choice, or does it quietly narrow it? This review paper examines whether AI-personalised advertising influences decision autonomy among young consumers aged fifteen to twenty-five, drawing on secondary literature in consumer behaviour, digital marketing, and behavioural economics. The paper compares the recommendation mechanisms used by Spotify, Instagram, and Amazon, and critically evaluates a persistent contradiction in the existing literature: some studies report that consumers retain full autonomy under algorithmic personalisation, while others argue that autonomy is subtly eroded through filter bubbles, habit reinforcement, and manipulative interface design. This paper argues that the contradiction stems largely from differences in research methodology, platform context, age cohort, and the theoretical definition of autonomy being applied. It further considers the ethical implications of AI-personalised advertising for young consumers specifically, including data privacy, informed consent, and algorithmic transparency. The paper concludes that decision autonomy under AI personalisation is best understood not as binary but as a matter of degree, shaped by platform design choices, consumer digital literacy, and the regulatory environment in which the platform operates. Recommendations for responsible AI marketing practice and directions for future empirical research, particularly involving adolescents and cross-cultural samples, are proposed.

Keywords: AI-personalised advertising; decision autonomy; young consumers; recommendation systems; algorithmic nudging; digital marketing ethics.

1. Introduction

1.1 Background of the Study

Digital marketing has undergone a fundamental transformation over the past decade, moving from static, mass-broadcast advertising toward dynamic systems driven by artificial intelligence (AI). Where traditional advertising once relied on demographic segmentation and blanket messaging, contemporary platforms use machine learning models that continuously ingest behavioural data such as clicks, scroll speed, dwell time, and purchase history to generate individualised content in real time (Tandfonline, 2025). This shift reflects a broader movement in the marketing discipline described as algorithmic personalisation, in which the advertisement itself is no longer a fixed artefact but an output generated dynamically for a single user.

Digital engagement among young people has grown in parallel with this technological shift. Adolescents and young adults now spend a substantial proportion of their daily lives on platforms such as Instagram, Spotify, and Amazon, each of which embeds AI-driven recommendation systems directly into the user experience. Because these systems are designed to maximise engagement and conversion, they increasingly function as an invisible decision environment: a background layer of computation that quietly shapes which songs are heard, which posts are seen, and which products appear first in a search result (Puntoni et al., as cited in Tandfonline, 2025).

The emergence of AI-powered recommendation systems, including collaborative filtering, content-based filtering, and reinforcement learning models, has therefore introduced a new set of questions for marketing theory. If algorithms are capable of anticipating consumer preferences before consumers themselves articulate them, the traditional assumption that consumers approach the marketplace as independent, self-directed decision-makers becomes harder to sustain. This paper situates itself within this emerging debate, using the specific cases of Spotify, Instagram, and Amazon to examine how AI-personalised advertising may be reshaping consumer decision autonomy.

1.2 AI-Personalised Advertising in Everyday Life

Spotify's recommendation ecosystem exemplifies how deeply personalisation has been woven into everyday digital experience. Features such as Discover Weekly and Daily Mix are generated through a combination of collaborative filtering, content-based audio analysis, and natural language processing applied to text written about music online (Stratoflow, 2025; Music Tomorrow, 2026). Spotify's collaborative filtering model has reportedly been trained on samples of hundreds of millions of user-generated playlists, allowing the platform to infer taste profiles that extend well beyond what a listener has explicitly searched for (Music Tomorrow, 2026).

Instagram operates a comparable but visually oriented system. Its Explore page and Reels feed rely on behaviour-prediction algorithms that rank content according to predicted engagement, effectively curating a personalised information environment for each user (Aptisi Transactions on Technopreneurship [ATT], 2025). Because Instagram blends organic content with sponsored posts within the same algorithmically ranked feed, the line between recommendation and advertisement is frequently indistinct to the user.

Amazon's recommendation engine, meanwhile, is oriented explicitly toward purchase conversion. Collaborative filtering techniques are estimated to drive a substantial share of Amazon's product selections, historically cited at around thirty-five percent of choices on the platform (Lamere & Green, as cited in Sharma et al., 2020). Mechanisms such as the "Amazon's Choice" badge, cross-selling prompts, and personalised pricing discussions illustrate how recommendation and advertising functions are combined into a single, continuously optimised interface (ScienceDirect, 2025). Together, Spotify, Instagram, and Amazon demonstrate that AI has become an ambient, largely invisible feature of the decision environment that young consumers navigate on a daily basis.

1.3 Decision Autonomy as an Emerging Marketing Concern

Decision autonomy, understood broadly as the capacity to make choices that are self-directed and free from undue external control, has long been a foundational assumption of consumer behaviour theory. Classical models of consumer decision-making presuppose a rational actor who gathers information, evaluates alternatives, and selects the option that best satisfies personal preferences. AI-personalised advertising complicates this assumption because it does not merely provide information; it actively shapes the choice set that a consumer perceives as available (Husairi & Rossi, as cited in Frank et al., 2026).

The distinction between behavioural influence and independent decision-making has therefore become a

central concern in marketing ethics. Some scholars argue that personalisation reduces search costs and improves the quality of choices by surfacing options a consumer would genuinely prefer (Sustainability, 2026). Others contend that when recommendation systems are optimised for engagement or profit rather than consumer welfare, they can subtly narrow the range of options a consumer encounters, a phenomenon closely associated with algorithmic "filter bubbles" (Pariser, 2011).

This concern carries particular weight for young consumers. Adolescents and young adults are still developing the cognitive and critical evaluation skills needed to recognise persuasive intent in algorithmically curated content, and they are also the demographic most intensively targeted by platforms such as Instagram and Spotify (ATT, 2025). Understanding whether and how AI personalisation affects their decision autonomy is therefore not only a matter of academic interest but also a matter of consumer protection.

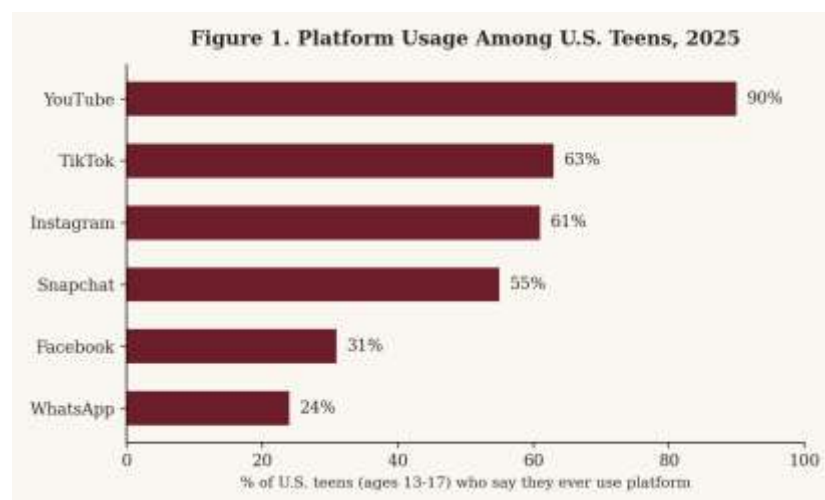


Figure 1: Platform usage among U.S. teens aged 13-17, 2025. Instagram and other algorithmically curated platforms account for the majority of teen digital engagement, underscoring the scale of AI-personalised advertising exposure in this age group. [Source: Pew Research Center (2025)]

1.4 Problem Statement

Despite the rapid expansion of AI-personalised advertising, consumer understanding of how these systems operate remains limited. Recommendation algorithms are typically proprietary and opaque, and most users interact with the outputs of these systems, personalised feeds, playlists, and product suggestions, without insight into the underlying data collection or decision logic (arXiv, 2025). This opacity creates an asymmetry of information between platform and user that is difficult to reconcile with the concept of informed, autonomous choice.

At the same time, increasing reliance on AI-generated recommendations means that young consumers are making an expanding share of everyday decisions, what to listen to, what to look at, what to buy, within environments substantially shaped by algorithmic curation. Ethical concerns regarding subtle behavioural influence, including the use of dark patterns in consent interfaces and default settings that favour data collection over privacy, compound this problem (Tandfonline, 2025b; Utz et al., as cited in arXiv, 2020). The central problem addressed in this paper is therefore twofold: to establish how AI-personalised advertising mechanically operates across major platforms, and to assess, through the secondary literature, whether this operation measurably affects the decision autonomy of young consumers.

1.5 Objectives of the Review

1. To examine how AI-personalised advertising operates across major digital platforms.
2. To understand the influence of AI-personalised advertising on young consumers.
3. To analyse existing literature on decision autonomy within digital marketing.
4. To compare AI-personalised advertising practices across Spotify, Instagram, and Amazon.
5. To identify research gaps and propose directions for future research.

1.6 Research Questions

- What mechanisms enable AI-personalised advertising on digital platforms?
- How does AI influence consumer decision-making processes among young people?
- Does personalised advertising measurably affect consumer decision autonomy?
- How do Spotify, Instagram, and Amazon differ in their approach to AI personalisation?
- What ethical issues emerge from AI-driven advertising directed at young consumers?

1.7 Scope of the Study

This paper is a secondary review that synthesises existing peer-reviewed literature, industry publications, and policy reports rather than presenting original empirical data. The scope is deliberately focused on young consumers between the approximate ages of fifteen and twenty-five, a cohort frequently described in the literature as "digital natives" who have limited memory of a pre-algorithmic media environment (ATT, 2025). The analysis is further limited to three representative digital advertising platforms, Spotify, Instagram, and Amazon, chosen because each exemplifies a distinct application of AI personalisation: audio and mood-based recommendation, social and visual content curation, and e-commerce purchase optimisation, respectively. The paper approaches the topic primarily from a consumer behaviour and marketing perspective, while drawing selectively on behavioural economics and digital ethics literature where relevant.

2. Literature Review

2

.1 Evolution of Digital Advertising

2.1.1 Traditional Advertising

Traditional advertising was built around mass communication and broadcast marketing, in which a single message was distributed uniformly to a large, undifferentiated audience through television, radio, and print. This model assumed relatively passive consumers and relied on repetition and emotional appeal rather than individualised targeting. While traditional advertising could segment audiences by broad demographic categories, it had no mechanism for tailoring content to the specific preferences of an individual consumer in real time.

2.1.2 Behavioural Advertising

The introduction of cookies and user tracking technologies in the early 2000s marked the transition toward behavioural advertising, in which consumer browsing activity across websites was used to infer interests and deliver interest-based targeting. This period established the infrastructure, third-party data brokers, tracking pixels, and browser identifiers, that would later underpin AI-driven personalisation. However, behavioural advertising in this earlier form remained comparatively static, relying on rule-based targeting rather than adaptive machine learning.

2.1.3 AI-Driven Advertising

Contemporary AI-driven advertising builds on this earlier infrastructure but adds machine learning, predi-

ctive analytics, and real-time optimisation capable of adjusting content on a per-user, per-session basis. This has enabled what the literature terms hyper-personalisation, in which the specific combination of product, price, timing, and creative execution shown to a consumer is calculated dynamically rather than selected from a small number of pre-set segments (Sustainability, 2026). This evolution is central to understanding why concerns about decision autonomy have intensified: earlier advertising models influenced what consumers saw, whereas AI-driven advertising increasingly influences what consumers are even aware exists as an option.

2.2 Artificial Intelligence in Consumer Marketing

AI Recommendation Systems generally fall into three categories: collaborative filtering, content-based filtering, and hybrid models that combine both approaches. Collaborative filtering identifies patterns among users with similar behaviour, operating on the principle that if two users share several preferences, other preferences of one user are likely to be relevant to the other (Attract Group, 2026). Content-based filtering, by contrast, analyses the attributes of the items themselves, such as audio features of a song or descriptive metadata of a product, to recommend similar items regardless of what other users have done. Hybrid recommendation systems, used extensively by Spotify and Amazon, combine both approaches to mitigate weaknesses such as the "cold-start" problem, in which a system has insufficient data about a new user or item (Scale Events, 2025).

Predictive Consumer Analytics: Beyond recommendation, platforms increasingly deploy predictive analytics to anticipate future consumer behaviour, including the probability that a given user will make a purchase, the likelihood of continued engagement, and the optimal moment for dynamic targeting. A study employing a multi-task learning model on Amazon review data, for example, combined purchase-intention classification, satisfaction prediction, and sentiment analysis within a single system, illustrating how modern predictive frameworks integrate multiple behavioural signals simultaneously (ScienceDirect, 2025c).

Reinforcement Learning in Advertising: A growing subset of recommendation systems now incorporate reinforcement learning, in which the algorithm adjusts its strategy based on continuous feedback from user responses rather than relying solely on static historical data. Amazon's badge-based recommendation systems, for instance, have been shown to use adaptive optimisation informed by real-time consumer feedback, allowing the platform to refine which products are surfaced as "recommended" in a continuous consumer response loop (ScienceDirect, 2025d). This adaptive quality distinguishes contemporary AI advertising from earlier, more static personalisation methods and raises the stakes for questions of consumer autonomy, since the system is not simply responding to consumer preference but actively shaping it over time.

2.3 Understanding Decision Autonomy

Decision autonomy in the consumer behaviour literature refers to the capacity of an individual to engage in self-directed decision-making, free from manipulation or undue external control, and grounded in independent evaluation of available options. Autonomy in this sense does not require the complete absence of external influence, since all consumer decisions occur within some informational context, but it does require that the consumer retain meaningful capacity to recognise, question, and resist influence when desired (Ahmad Husairi & Rossi, as cited in Frank et al., 2026).

Behavioural economics offers a complementary lens through the concept of choice architecture, the idea that the way options are presented can systematically influence the decisions people make, even without

altering the substantive content of those options. Nudging, a term popularised in behavioural economics, describes design interventions that steer behaviour in a predictable direction while preserving the formal freedom to choose otherwise. Related work on cognitive biases demonstrates that consumers routinely rely on heuristics, mental shortcuts, rather than exhaustive evaluation, which makes them especially susceptible to well-designed algorithmic nudges embedded in recommendation interfaces (Utz et al., as cited in arXiv, 2020)

Within marketing scholarship specifically, the tension between persuasion and consumer agency has become a defining ethical question of the AI era. Ethical marketing frameworks generally hold that persuasion is acceptable when it operates through transparent argument and genuine information provision, but becomes problematic when it exploits psychological vulnerabilities or conceals its own operation. Recent work on AI-driven personalisation has proposed a "responsible-personalisation" framework that links marketing effectiveness to perceived relevance, perceived control and transparency, and ethical data governance as three interdependent conditions for preserving consumer agency (Sustainability, 2026).

2.4 Young Consumers in Digital Environments

Young consumers aged roughly fifteen to twenty-five have been characterised in the literature as digital natives, a cohort that has never experienced a media environment without algorithmic curation. This lack of a pre-algorithmic reference point may affect their capacity to recognise personalisation as a distinct influence on their choices, since a fully personalised feed or store page appears to this cohort as simply how digital platforms work, rather than as an active intervention shaping their attention (ATT, 2025).

Research on filter bubbles among adolescents highlights a further concern: heavy platform dependency. Studies of teenage Instagram users in Indonesia found that algorithmic curation contributed to lifestyle changes centred on consumerism and idealised self-presentation, with participants describing the platform as central to how they discovered products, trends, and aspirational identities (ATT, 2025). Such dependency intensifies the influence any single platform's recommendation logic can exert over everyday decision-making.

Because platforms such as Instagram are inherently social, algorithmic recommendations interact with peer influence and influencer marketing in ways that traditional advertising did not. A large factorial study involving 1,600 participants found that algorithm-generated recommendations increased purchase intention regardless of whether consumers rated the algorithmic source as more trustworthy than an influencer, suggesting that the mere presence of an algorithmic recommendation carries persuasive weight independent of perceived credibility (ScienceDirect, 2025e).

For adolescents in particular, social media use is closely tied to identity formation, including the curation of a public self-image. Because Instagram's algorithm rewards content that aligns with prior engagement patterns, young users may find their own self-presentation increasingly shaped by what the algorithm has learned performs well, creating a feedback loop between algorithmic reward and personal identity that extends beyond simple purchase decisions into broader self-concept (ATT, 2025).

2.5 Platform-Specific AI Advertising

Spotify's personalisation strategy centres on mood-based recommendations, audio advertising inserted between tracks on its free tier, and continuously updated playlist personalisation such as Discover Weekly and Daily Mix. The platform's recommendation engine blends collaborative filtering, informed by the co-occurrence of songs within millions of user-generated playlists, with content-based audio analysis derived from its acquisition of The Echo Nest, enabling recommendations that extend a listener to artists they have

never searched for directly (Stratoflow, 2025; TechAhead, 2026).

Instagram's advertising model is built around visual recommendation systems, extensive integration with influencer marketing, and the ranking logic of its Explore page and Reels feed. Because sponsored content is algorithmically interspersed with organic posts based on predicted engagement, Instagram advertising operates less through discrete advertisement units and more through continuous behavioural prediction applied to the entire content stream (ATT, 2025).

Amazon's recommendation engine directly ties personalisation to commercial outcomes through product rankings, cross-selling prompts such as "customers who bought this item also bought," and algorithmically generated badges, including Amazon's Choice. Because Amazon's recommendation badges are generated by non-transparent AI algorithms, researchers have noted that consumers frequently cannot distinguish organically ranked products from algorithmically promoted ones, a distinction that matters significantly for assessing whether resulting purchase decisions are autonomous (ScienceDirect, 2025d).

2.6 Consumer Responses to AI Advertising

The literature identifies a consistent set of dimensions along which consumers evaluate AI-personalised advertising: perceived relevance, trust, privacy concerns, the degree of personalisation itself, convenience, and intrusiveness. Perceived relevance and convenience are generally associated with positive consumer responses, including higher satisfaction and purchase intention, while privacy concerns and intrusiveness are associated with negative responses such as reactance, a psychological state in which consumers actively resist a perceived threat to their freedom of choice (Tandfonline, 2025b, drawing on Brehm, 1966, 1972).

Trust functions as a mediating variable across much of this literature. A large-scale study of AI and social media personalisation found that ethical and privacy-related factors significantly shaped consumer decision-making, with a Kruskal-Wallis analysis yielding a statistically significant result that confirmed the importance of these factors rather than treating them as peripheral concerns (ScienceDirect, 2025b). This suggests that the four positive dimensions, relevance, trust, convenience, and personalisation, cannot be considered independently of the two negative dimensions, privacy concern and intrusiveness, since consumer response is ultimately a balance between them.

2.7 Existing Research Findings

A considerable body of research finds that AI personalisation improves consumer experience, increases purchase intention, and supports better product discovery. Studies of e-commerce recommendation systems consistently report that algorithmic recommendations significantly increase click-through rates and purchase intentions, and that consumers demonstrate a calculated trade-off in which they willingly surrender some control in exchange for reduced search costs and improved decision efficiency (ResearchGate, 2026). Similarly, research on customer experience journeys finds that effective personalisation strengthens consumer-brand relationships, satisfaction, and long-term loyalty (Tandfonline, 2025c).

A parallel body of research raises concerns about manipulation, privacy invasion, reduced autonomy, and algorithmic dependence. A systematic review of AI's impact on consumer behaviour toward brands concluded that the highly segmented, personalised, and automated purchasing process enabled by AI in e-commerce can foster dependence and a form of dehumanisation that runs counter to the autonomy individuals require in decision-making (Springer, 2025). Likewise, research on customer journeys found that personalisation can undermine consumer autonomy by shielding consumers from alternative products or brands they might otherwise have considered (Tandfonline, 2025c, citing Husairi & Rossi, 2024;

Wertenbroch et al.).

2.8 Research Gap

Existing literature on AI-personalised advertising has concentrated heavily on purchase intention, click-through behaviour, consumer engagement, and brand loyalty as outcome variables. These measures are commercially significant but do not directly capture the construct of decision autonomy, which concerns the process and conditions of choice rather than its commercial outcome. Comparatively limited literature examines decision autonomy as a distinct construct, particularly among young consumers, and even less research offers a systematic comparative platform analysis across audio, social, and e-commerce contexts within a single framework.

Long-term behavioural implications also remain underexamined. Much of the available research relies on cross-sectional surveys or short-duration experiments, leaving open questions about how sustained exposure to AI personalisation across adolescence and early adulthood may cumulatively shape decision-making habits, risk tolerance, and the capacity for independent choice later in life. This paper addresses part of this gap by focusing specifically on the comparative and cross-platform dimension of decision autonomy among young consumers, while acknowledging that longitudinal empirical research remains a task for future primary studies.

3. Comparative Analysis of AI-Personalised Advertising

3.1 Spotify

Spotify's recommendation mechanism rests on three interlocking techniques: collaborative filtering based on playlist co-occurrence, content-based audio analysis of acoustic features, and natural language processing applied to text written about music across the web (Illumin Magazine, 2024; Music Tomorrow, 2026). The platform's item-based filtering identifies songs frequently placed on the same playlists as ones a listener already enjoys, while user-based filtering matches a listener with others who display similar listening patterns. Because music consumption is closely tied to mood and emotional state, Spotify's system has been described as engaging in a form of emotional personalisation, adjusting recommendations to time of day, activity, and inferred mood rather than genre preference alone.

This emotional personalisation contributes to habit reinforcement, since features such as Daily Mix are engineered to feel familiar and comfortable rather than challenging, encouraging repeat engagement with a relatively narrow, algorithmically reinforced taste profile. A field experiment examining the relationship between engagement and diversity on Spotify found that recommender systems drive a substantial proportion of consumption choices across streaming platforms, underscoring both the scale of algorithmic influence and the ongoing academic debate over whether such systems homogenise consumption or, alternatively, help listeners discover music that broadens their taste (arXiv, 2020).

Advantages: Spotify's personalisation reduces search costs in an catalogue containing tens of millions of tracks, helping listeners discover music aligned with their taste without extensive manual searching. Features such as Discover Weekly have been widely credited with supporting the discovery of independent and emerging artists who might otherwise struggle for visibility.

Challenges: The same mechanisms that support discovery can also narrow long-term exposure to unfamiliar genres or artists outside a listener's established profile, reinforcing existing preference rather than expanding it. Because Spotify's free tier relies on audio advertising, the platform also has a commercial incentive to maximise listening time, which may favour recommendations that maximise engagement over those that best serve a listener's broader interests.

3.2 Instagram

Instagram's recommendation architecture is built around AI-generated content ranking, an integrated influencer ecosystem, and continuous behaviour prediction applied to the Explore page, Reels, and main feed. Unlike Spotify, where content and advertising are relatively distinct, Instagram's ranking system interleaves organic and sponsored content within a single algorithmically ordered stream, meaning that behaviour prediction simultaneously shapes both a user's social experience and their exposure to advertising (ATT, 2025).

Research on the filter bubble phenomenon on Instagram found that algorithmic personalisation had a considerable influence on how adolescents developed preferences, habits, and modes of social engagement, with the platform's Explore and Reels features amplifying repetitive content aligned with past behaviour and thereby narrowing exposure to alternative viewpoints and product categories (ATT, 2025). A broader systematic review of thirty studies on filter bubbles and echo chambers among youth similarly concluded that algorithmic systems structurally amplify content homogeneity, although the same review found that young users demonstrate partial awareness and adaptive strategies, such as cross-platform verification, that constrain but do not eliminate this effect (MDPI, 2025b).

Advantages: Instagram's behaviour-prediction system allows brands to reach highly specific audience segments efficiently, and it enables users to discover content, communities, and products aligned with their interests more quickly than an unranked chronological feed.

Challenges: The blending of sponsored and organic content within a single ranked feed makes it difficult for users, particularly younger users, to distinguish advertising from authentic content. The systematic review of filter bubble research also noted that youth agency in navigating these systems remains constrained by opaque recommender logic and uneven digital literacy across different user groups (MDPI, 2025b).

3.3 Amazon

Amazon's recommendation algorithms are structured explicitly around purchase prediction and consumer nudging, combining collaborative filtering, sentiment analysis of review text, and reinforcement learning models that adjust recommendation strategy based on real-time consumer feedback (ScienceDirect, 2025c). The Amazon's Choice badge exemplifies this nudging function: it is generated by a non-transparent algorithm and displayed prominently on search results pages, distinguishing it from the comparatively transparent Best Seller label, which is calculated using a disclosed, sales-based methodology (ScienceDirect, 2025d).

Research on recommendation badge transparency found that the black-box nature of Amazon's Choice can affect the quality of consumer decision-making, since users cannot access the factors that led to a given recommendation and are therefore unable to evaluate its relevance critically before acting on it (ScienceDirect, 2025d). Complementary research on recommendation algorithms and consumer search behaviour found that platforms can strategically position recommended products within search results, for instance, in a prominent early position, to stimulate purchase intention independent of the product's actual fit with the consumer's preferences (ScienceDirect, 2025f, citing Guo et al., 2023).

Advantages: Amazon's system reduces the time required to locate a suitable product within a huge catalogue and has been shown to increase overall consumer satisfaction and order value by matching recommendations closely to inferred preference (AIMS Press, 2024).

Challenges: Because Amazon's recommendation algorithms are optimised for conversion rather than for the disinterested provision of information, badges such as Amazon's Choice can function as a form of

algorithmic endorsement that consumers may mistake for independent, objective quality assurance, raising direct questions about informed and autonomous purchasing decisions.

3.4 Comparative Summary

Comparing the three platforms across AI sophistication, consumer engagement, personalisation intensity, decision influence, transparency, and ethical concern reveals both shared patterns and important differences. All three platforms rely on collaborative filtering as a foundational technique, and all three combine this with a secondary method, content-based filtering for Spotify, behavioural ranking for Instagram, and reinforcement learning for Amazon, that intensifies personalisation over time. Personalisation intensity appears highest on Instagram, where the algorithm governs nearly the entirety of the user's content stream, and lowest on Spotify, where personalisation is largely confined to discrete playlist features rather than the full listening experience.

Decision influence, understood as the extent to which the algorithm's output directly shapes a subsequent behavioural or purchase decision, appears strongest on Amazon, where recommendation badges are directly and immediately tied to a transactional outcome. Transparency is comparatively weakest on Amazon and Instagram, both of which rely on largely undisclosed ranking criteria, whereas Spotify has published more detail about its underlying collaborative filtering and audio analysis methodology, though this does not necessarily translate into meaningful transparency for the average listener. Ethical concern, correspondingly, is most acute on Instagram, given its combination of high personalisation intensity, an adolescent-heavy user base, and the blending of organic and sponsored content within a single feed.

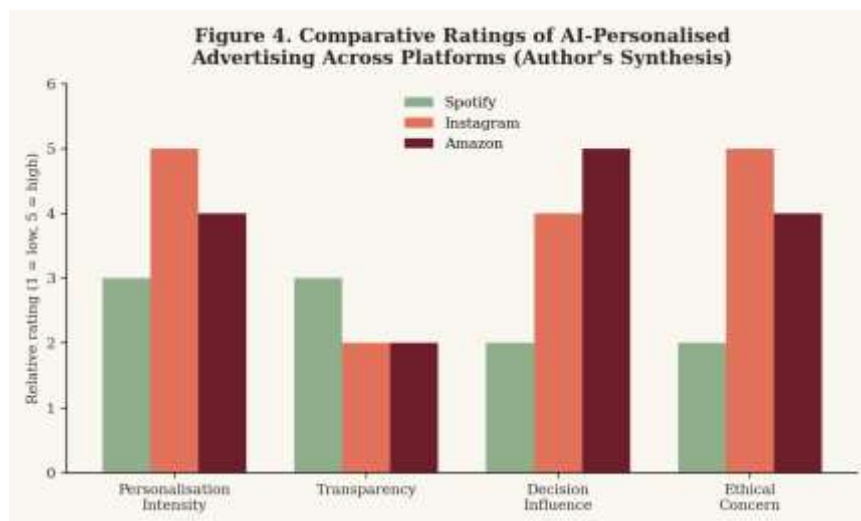


Figure 2: Comparative ratings of Spotify, Instagram, and Amazon across personalisation intensity, transparency, decision influence, and ethical concern. Ratings reflect the author's synthesis of the comparative analysis in Chapter 3, on a scale of 1 (low) to 5 (high), and are illustrative rather than measured values.

4. Critical Evaluation

4.1 Positive Contributions of AI Personalisation

AI personalisation delivers several well-documented benefits to consumers. Improved customer experience is consistently reported across the literature, with personalised recommendations reducing the cognitive burden of searching through vast catalogues of songs, content, and products (AIMS Press, 2024). Reduced search costs translate directly into increased efficiency, allowing consumers to reach satisfactory

outcomes more quickly than they could through unaided search. Better product discovery is particularly evident on Spotify, where algorithmic curation has been credited with helping listeners find music, including from independent artists, that they would be unlikely to encounter through manual search alone. Higher customer satisfaction follows from this combination of relevance and efficiency. A mixed-methods study on AI personalisation in sustainable marketing found that perceived relevance, perceived control and transparency, and ethical data governance together explain when personalisation is experienced as both effective and responsible, suggesting that well-designed personalisation is not inherently at odds with positive consumer welfare (Sustainability, 2026).

4.2 Risks to Consumer Decision Autonomy

Against these benefits, the literature identifies a consistent set of risks. Algorithmic dependence describes a pattern in which consumers increasingly rely on system-generated recommendations rather than exercising independent search or evaluation, a pattern the systematic review of AI's impact on consumer behaviour toward brands directly associated with reduced autonomy and a degree of dehumanisation in the purchasing process (Springer, 2025). Reduced exploration and filter bubbles are closely related risks: because recommendation systems are trained to maximise predicted relevance based on past behaviour, they can create a self-reinforcing loop in which users are shown progressively narrower content, a dynamic documented extensively in research on Instagram's Explore and Reels algorithms (ATT, 2025; MDPI, 2025b).

Choice narrowing extends this concern from content consumption to purchasing decisions, as recommendation badges and prominent product placement on Amazon can direct consumer attention toward a small subset of algorithmically favoured options, effectively narrowing the practical choice set even when the full catalogue technically remains accessible (ScienceDirect, 2025d, 2025f). Habit formation, finally, describes the way in which repeated exposure to algorithmically reinforced content, whether music, social media posts, or products, can consolidate consumption patterns that are increasingly difficult for a consumer to consciously interrupt or diversify.

4.3 Ethical Concerns

Data privacy sits at the centre of ethical debate around AI-personalised advertising, since all three platforms depend on continuous behavioural data collection to function. Research on artificial intelligence and social media personalisation found that privacy and ethical considerations were not peripheral moderators of consumer decision-making but statistically significant, central determinants of it, underscoring that privacy cannot be treated as a secondary concern relative to personalisation quality (ScienceDirect, 2025b).

Consumer consent has attracted particular scrutiny following the implementation of the General Data Protection Regulation (GDPR) in the European Union. A large-scale study of consent interfaces following the GDPR found that a majority of sampled notices, over fifty-seven percent, contained nudging or dark pattern elements designed to promote privacy-unfriendly choices, including pre-selected data collection boxes and privacy settings concealed behind additional clicks (Utz et al., as cited in arXiv, 2020). The same research found that acceptance rates for tracking rose dramatically, from roughly 0.16 percent to over 83 percent, when consent options were pre-selected by default, demonstrating the substantial behavioural effect that interface design alone can exert on ostensibly voluntary consent (arXiv, 2020).

Transparency concerns are compounded by algorithmic bias, since recommendation systems trained on historical behavioural data can reproduce and amplify existing patterns of inequality or exclusion within their outputs. Manipulative nudging, finally, describes design choices that exploit psychological

vulnerabilities, particularly relevant to young consumers, to steer behaviour in a direction that benefits the platform rather than the user. A study of persuasive system design among 273 fourteen-year-old girls in Scandinavia found that participants frequently struggled to recognise key aspects of digital nudging and dark patterns embedded in the platforms they used daily, providing direct evidence that this population is especially vulnerable to manipulative design (Fair Patterns, 2025).

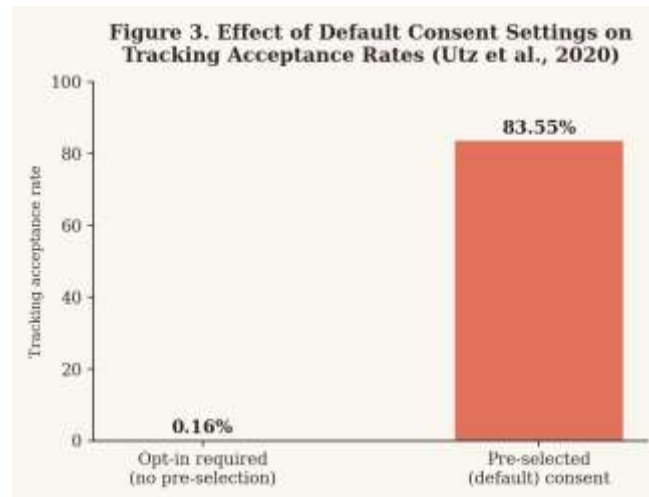


Figure 3: Effect of default (pre-selected) consent settings on tracking-acceptance rates. Source: Utz et al. (2020), as reported in *Dark Patterns after the GDPR*.

4.4 Contradictions in Existing Literature

A central tension runs through the literature reviewed in this paper. Some studies conclude that consumers remain fully autonomous under AI personalisation, emphasising the calculated trade-offs consumers make and their demonstrated capacity to adapt and resist algorithmic influence when they choose to (ResearchGate, 2026; MDPI, 2025b). Other studies argue that AI subtly reshapes behaviour without consumers necessarily noticing, pointing to measurable effects such as the dramatic shift in consent rates produced by default settings and the documented struggle of teenage users to identify dark patterns in digital interfaces (arXiv, 2020; Fair Patterns, 2025).

Several factors help explain these contradictory findings. Different methodologies produce systematically different results: qualitative interview-based studies, such as research on AI-driven recommendations conducted with South Korean consumers, tend to surface nuanced, context-dependent perceptions of autonomy that resist simple categorisation, whereas large-sample quantitative or experimental studies, such as the GDPR consent research, are better equipped to detect the small but statistically significant behavioural effects of specific design choices (Tandfonline, 2026a; arXiv, 2020).

Different age groups also account for a meaningful share of the disagreement. Studies involving adult samples aged twenty to fifty, such as the South Korean interview study, often report a stronger sense of retained autonomy than studies focused specifically on adolescents, such as the Scandinavian persuasive design study, which found pronounced difficulty among fourteen-year-olds in recognising manipulative design (Tandfonline, 2026a; Fair Patterns, 2025). This suggests that decision autonomy under AI personalisation may not be a fixed property of the technology itself but a variable outcome shaped by the cognitive and critical-evaluation capacities of the population being studied.

Different platforms further complicate comparison, since autonomy findings drawn from e-commerce rec-

ommendation research do not necessarily generalise to social media or streaming contexts, given the substantial differences in personalisation intensity and the degree to which advertising and content are blended, as demonstrated in the Chapter 3 comparative analysis. Cultural differences add another layer of variation: research conducted in different regulatory and cultural contexts, for instance the Indonesian study on Instagram filter bubbles among adolescents in Palembang, reflects locally specific norms around consumerism, self-presentation, and family oversight of technology use that may not translate to other cultural settings (ATT, 2025).

Finally, differing definitions of autonomy underlie much of the disagreement. Studies that define autonomy narrowly, as the formal freedom to select any product or content within the full catalogue, tend to find that autonomy remains largely intact, since users can technically search outside their recommended feed. Studies that define autonomy more substantively, as the practical, psychologically unconstrained capacity to consider genuine alternatives, are more likely to find that autonomy is compromised, since algorithmic defaults and behavioural nudges measurably reduce the likelihood that a consumer will exercise that formal freedom in practice.

4.5 Implications for Marketing

These findings carry direct implications for responsible marketing practice. Responsible AI design requires embedding consideration of consumer autonomy into the recommendation system itself, rather than treating autonomy as an external constraint to be addressed only through post-hoc disclosure. Transparent advertising, including clearer labelling of algorithmically generated recommendations and sponsored content, can help narrow the gap between formal and substantive autonomy identified in Section 4.4.

Consumer education represents a further avenue for closing this gap, since research on youth filter bubble navigation found that young users who possessed greater algorithmic literacy demonstrated more effective adaptive strategies for diversifying their own content exposure (MDPI, 2025b). Ethical recommendation systems that incorporate diversity metrics alongside relevance metrics, and that allow users meaningful control over the degree of personalisation applied to their feed, represent a practical design response to the risks outlined in Sections 4.2 and 4.3. Over the long term, these practices are likely to support rather than undermine long-term brand trust, since research on privacy and ethical factors found these to be significant, rather than peripheral, determinants of consumer decision-making and, by extension, of sustained brand relationships (ScienceDirect, 2025b).

4.6 Future Research Directions

- Longitudinal studies examining how sustained exposure to AI personalisation during adolescence shapes decision-making autonomy into adulthood.
- Research focused specifically on adolescents under the age of eighteen, a population underrepresented relative to the eighteen-to-thirty-five cohort that dominates existing consumer behaviour research.
- Cross-cultural comparative research examining how differing regulatory environments, such as the GDPR in Europe compared with less restrictive frameworks elsewhere, affect the practical autonomy of young consumers.
- Controlled experimental research capable of isolating the causal effect of specific design elements, such as badge transparency, on autonomous decision-making.
- Research into explainable AI in advertising, examining whether providing consumers with accessible explanations of why a given recommendation was generated measurably improves their sense of and capacity for autonomous choice.

5. Ethical Implications for Young Consumers

5.1 Privacy as a Precondition for Autonomy

Privacy and autonomy are conceptually linked rather than separate concerns, since a consumer's capacity to make an independent decision depends partly on being free from continuous behavioural surveillance that can be used to predict and pre-empt that decision. Young consumers are particularly exposed to this dynamic because platforms such as Instagram and Spotify collect data from an early age, often before users possess the critical understanding required to evaluate what is being collected or why. Research on AI and social media personalisation confirmed that privacy-related factors significantly shape consumer decision-making, reinforcing that privacy protection functions as a precondition for, rather than a separate issue from, meaningful decision autonomy (ScienceDirect, 2025b).

5.2 Consent and the Limits of the Opt-In Model

The prevailing regulatory approach to protecting consumer autonomy, the consent-based opt-in model exemplified by the GDPR, assumes that users who are given a genuine choice will exercise meaningful control over their own data. The evidence reviewed in Section 4.3 complicates this assumption considerably. The finding that pre-selected consent options increased acceptance rates from roughly 0.16 percent to over 83 percent demonstrates that the presence of a formal choice does not guarantee a substantively free one (arXiv, 2020). For young consumers, who research suggests are less likely to recognise dark patterns embedded in consent interfaces, the gap between formal consent and substantive autonomy is likely to be even wider than it is for the general adult population (Fair Patterns, 2025).

5.3 Algorithmic Transparency

Transparency remains one of the least developed dimensions of current platform practice. Amazon's Amazon's Choice badge and Instagram's content ranking system both operate through undisclosed criteria, meaning that consumers cannot readily distinguish between a product or post that has earned prominence through genuine popularity and one that has been algorithmically favoured for commercial reasons (ScienceDirect, 2025d). Research on recommendation badge design found that transparency of the underlying criteria directly affected the quality of consumer decision-making, suggesting that increased disclosure is not merely an ethical nicety but a measurable determinant of decision quality (ScienceDirect, 2025d).

5.4 What This Means for Young Consumers Specifically

Taken together, the privacy, consent, and transparency concerns discussed above carry heightened significance for young consumers for three interrelated reasons. First, young consumers have comparatively less developed critical evaluation skills with which to recognise persuasive or manipulative design, a vulnerability directly evidenced by the Scandinavian study of teenage girls and persuasive system design (Fair Patterns, 2025). Second, young consumers are heavier users of the platforms most associated with high personalisation intensity, particularly Instagram, meaning their cumulative exposure to algorithmic influence is likely to exceed that of older, less digitally embedded populations (ATT, 2025). Third, because young consumers are still forming long-term consumption habits and identity, the habit-formation and identity-related effects discussed in Sections 2.4.4 and 4.2 may have a more durable influence on this population than on adult consumers whose preferences and self-concept are comparatively more settled.

These considerations do not imply that young consumers are wholly without agency. The systematic review of filter bubble research found that many young users develop adaptive strategies, including cross-platform verification and deliberate content diversification, that constitute a genuine, if partial, exercise of

autonomy within an algorithmically structured environment (MDPI, 2025b). The appropriate policy and industry response is therefore not to treat young consumers as incapable of independent decision-making, but to reduce the structural asymmetries, opaque criteria, default-driven consent, and manipulative interface design that currently make the exercise of that agency more difficult than it needs to be.

Conclusion

This paper set out to examine whether AI-personalised advertising influences decision autonomy among young consumers, using Spotify, Instagram, and Amazon as comparative case studies. The review finds that all three platforms rely on variations of collaborative filtering, supplemented by content-based analysis, behavioural ranking, or reinforcement learning, to generate individualised recommendations that function simultaneously as content curation and advertising. While these systems demonstrably improve search efficiency, product discovery, and consumer satisfaction, they also introduce measurable risks to decision autonomy, including filter bubbles, choice narrowing, habit formation, and consent mechanisms that are frequently structured through dark patterns rather than informed choices.

The apparent contradiction in the literature, between studies finding that consumers remain fully autonomous and studies finding that autonomy is subtly eroded, is best explained not as a failure of the research itself but as a reflection of genuine variation across methodology, age group, platform, cultural context, and the underlying definition of autonomy being tested. Autonomy under AI personalisation is therefore most accurately understood as a matter of degree rather than a binary condition, shaped substantially by platform design choices that are, in principle, within the control of the companies that build these systems.

For young consumers specifically, the combination of high platform dependency, developing critical evaluation skills, and heavy exposure to personalisation intensity, particularly on Instagram, suggests that this population faces a genuinely elevated risk of autonomy erosion relative to the general adult population, even as evidence of adaptive, partially autonomous behaviour among young users complicates any simple narrative of manipulation. Responsible marketing practice, grounded in transparency, meaningful consent, and diversity-aware recommendation design, offers a practical path toward narrowing the gap between the formal freedom to choose and the substantive capacity to do so. Future empirical research, particularly longitudinal and cross-cultural studies focused specifically on adolescents, is needed to determine how these dynamics evolve as today's most digitally immersed generation moves into adulthood.

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