



How Personalized Ads Based On Browsing History and Online Behavior Trigger Impulse Buys

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ABSTRACT

As individuals browse websites and search for information, digital advertising tracks these online behaviors to deliver relevant promotional messages tailored to personal interests. This paper examines how constant personalization may amplify impulse buying by reducing thoughtful consideration and intensifying emotion. Drawing from studies of consumer behavior and the brain, we propose that customized ads increase feelings of relevance, trigger regions linked to reward, and exploit hints of scarcity to prompt unplanned purchases. We outline a mixed research plan where participant internet actions are monitored on a simulated shopping site, then some face generic ads while others view personalized promotions. Intention to buy on impulse will be measured through self-reported ratings, physical arousal (galvanic skin response), and speed of decisions. We expect customized ads will boost impulse-buy intention by at minimum 25% as emotion mediates this effect and individual self-control moderates it. Findings may help shape ethical guidelines for targeted advertising by balancing a platform's goal to increase sales with protecting consumers through adding transparency and options to opt



out. This exploration contributes to marketing theory by shedding light on the thought processes and feelings through which personalization drives impulsive purchasing behavior.

Introduction

Online retailers increasingly profile users, analyzing clicks, queries, and shares to target ads. Tailored ads claim higher engagement and sales. However, impulse purchases—spontaneous buys rarely deliberated—also increase.

Impulse buying entails sudden urges to purchase without routine weighing of costs and benefits. Psychology links it to heightened feelings, scare tactics, and weakened self-discipline. Digitally, personalization intensifies these, presenting alluring items when receptiveness peaks.

While widely adopted, psychology and physiology underlying how personalized ads trigger impulse buys remain unclear. Past studies examined broader click and sales effects but few isolated impact on unplanned spending or explained arousal and burden variations. Understanding this critical for optimizing profits and safeguarding shoppers.

This paper plans a mixed test to examine how history-aligned ads influence impulse intentions. Self-reports, skin responses, and speed assess impulse inclination. Emotional activation and self-control differences as moderators are investigated. Results may guide ethical personalization balancing commercial aims with consumer interests.

Literature Review:

2.1 Impulse Buying: Definitions and Core Drivers Definitions: Sudden, compelling urges to buy immediately without typical deliberation processes characterize impulse buying (Rook, 1987). Emotional arousal heightened affect like excitement and desire amplifies vulnerability to unplanned purchases (Beatty & Ferrell, 1998). Limited cognitive control stress, time pressure or multitasking reduces resistance to impulse cues (Verplanken & Herabadi, 2001). Contextual triggers scarcity ("only 2 left!"), urgency ("ends in 1 hour!"), and vivid imagery strengthen impulsive responses (Hausman, 2000).

2.2 Personalized Advertising: Techniques and Outcomes Behavioral targeting tracks clicks, search queries, purchase histories and time on pages empirically raising click-through rates 50-200% over generic ads (Tucker, 2014). Predictive analytics and machine learning collaborative filtering and deep



learning recommenders anticipate tastes and suggest products before searches (Jannach et al., 2016). Dynamic creative optimization (DCO) assembles headlines, images and calls to action customized to profiles in real time (Lambrecht & Tucker, 2013). Measured outcomes increases in conversion, average order value and repeat purchases but limited research isolates effects on planned vs unplanned buys (Tam & Ho, 2005).

2.3 Cognitive and Affective Mechanisms Underlying Personalization Perceived relevance personalization heightens attention matching interests reducing resistance (Smit et al., 2007). Emotional resonance custom content evokes stronger positive emotion using reward pathways (Phelps et al., 2014). Cognitive ease familiar items require less effort leading to faster less deliberative decisions (Reber et al., 2004). Neurophysiological evidence fMRI shows personalized cues activating reward centers; GSR correlates with arousal from tailored messages (Knutson et al., 2007; Lim et al., 2015).

2.4 Moderators and Boundary Conditions Self-control high trait self-control mitigates impulse responses; low self-control amplifies personalization's impact (de Ridder et al., 2012). Format and context video ads elicit stronger emotion than static ads intensifying impulse buying (Pine & Gilmore, 2013); trust in advertisers can boost or dampen effectiveness (Goldfarb & Tucker, 2011).

2.5 Gaps in the Literature Lack of experimental isolation of impulse vs planned buys with personalized vs generic ads. Sparse use of physiological measures (e.g. GSR, EEG) with self-reports to validate emotion. Limited analysis of ethics and consumer controls with high personalization. This establishes a foundation for a mixed methods study combining behavioral, self-reported and physiological data to understand how personalized ads trigger impulse purchases.

Research Objectives:

1. Delineate influential Psychological Drivers
 - Distinguish how individualized pitches (e.g., merchandise recommendations, customized copy) affect sensed significance, emotional arousal, and intellectual comfort, consequently fueling impetuous purchasing urges.
2. Measure the Impact of Real-Time Customization
 - Quantify divergences in impulse-buy intention, click-through rates, and judgment latencies between users uncovered to individualized versus generic promotions.
3. Inspect Emotional Stimulation as a Mediator



- Assess if physiological arousal (by means of galvanic skin response) and self-reported excitement make clear the bond between promotion personalization and impulse-buy intention.
4. Test Moderating Effects of Self-Control and Ad Format
 - Decide how singular variances in trait self-control weaken or intensify personalization's impact, and if opulent media (e.g., video) intensifies impulse responses more than stationary banners.
 5. Develop Ethical and Design Guidance
 - Translate empirical discoveries into best-practice recommendations for balancing marketing effectiveness with consumer protection—such as transparency disclosures, opt-out features, and “cool-down” intervals.

Data Analysis

Analysis of how tailored promotions grounded in browsing history and online behavior can trigger impulse purchases reveals several staunch, evidence-driven patterns that closely align with your study objectives:

1. Mechanisms: How Customization Triggers Impulse Buys

Individualized advertisements that dissect and leverage users' browsing history and online behaviors considerably heighten perceived relevance and novelty, both of which are powerful triggers for impulse buying in digital environments. These promotions provide a sense of tailored discovery, making customers feel that the message or merchandise “fits” their preferences—thereby decreasing cognitive resistance and increasing the likelihood of spontaneous purchases.

When personalized advertisements reflect recently searched items, they frequently act as reminders reigniting dormant desires or igniting novel urges. The emotional engagement from this intimate targeting amplifies both practical and pleasurable motivations to promptly procure without extensive rumination.

2. Quantitative Influence: Divergences in Outcomes:

Perceived Personalization and Buying Behavior: Repeated regression and survey analyses consistently find a statistically significant, positive link between the degree of ad targeting and impulse online transactions. As an example, investigational employing path coefficients has exhibited the impact measurement (β -worth) for the association between envisioned ad customization and impulse purchase goal often surpasses 0.3–0.4 (on a standardized scale), denoting a robust impact.



Mediating Factors: The effects are partly mediated by notions like envisioned relevance, novelty, and payment comfort. Customized advertisements not just amplify the perception of ad importance but in addition amplify emotional arousal, rendering swift buys more probable.

Purchase Frequency and Susceptibility: The sway of customization is even more pronounced in groups with higher online shopping recurrence, though some studies note that "purchase frequency" moderates this connection—frequent buyers may ultimately evolve resistance, which weakens the effect over time.

Real-time Behavioral Targeting: Advertisements that refresh in real time and mirror the most recent browsing history (e.g., deserted cart reminders, dynamically changing selections) have the highest impact sizes for prompt click-through and conversion rates.

3. Emotional Stimulation and Attitude: Mediation Analysis:

Emotional response is both a predictor and mediator: Attitudes toward personalized promotions (calculated through metrics of promotion "appeal," "interest," and "trust") strongly align with arousal, which then mediates the jump to impulse purchases¹⁴. Studies employing mediation models demonstrate that affective involvement (enjoyment, excitement) describes a significant portion of the complete impact—often elucidating over 30% of the pathway from promotion exposure to impetuous actions⁴⁵.

4. Moderators and Individual Variations:

Several moderators qualify the relationship:

Privacy worries: Anxiety concerning privacy weakens the impact of customization by reducing positive perspectives and reliance on promotion cues.

Self-control: Lower inherent self-control amplifies reactivity to personalized promotions and heightens impulse purchases⁴.

Cultural environment: Cross-country investigations display the influence is robust, but concerns regarding privacy and trust introduce some cultural variability³.

Promotion format: Live shopping experiences, video promotions, and interactive formats that integrate customization outperform banners or static content owing to higher participation and perceived value⁵.

5. Data-Informed Guidelines

The accumulated findings underscore the necessity for e-retailers to:



Guarantee ethical use of data and transparency to sustain trust.

Avoid overexposing frequent buyers, as “promotion fatigue” can emerge.

Permit consumer controls for customization scope and promotion exposure.

In summary, rigorous data evaluation uncovers that personalized promotions powered by browsing history and online behavior meaningfully increase impulse purchasing. They accomplish this by boosting perceived applicability, emotional arousal, and cognitive ease—particularly for frequent shoppers and in engaging formats—while worries concerning privacy and self-control moderate these impacts.

Key Psychological Mechanisms:

Personalized ads significantly increase impulsive purchases by leveraging immediate gratification, emotional response, and lowering cognitive barriers through greater perceived relevance. AI-driven recommendation systems, using extensive browsing histories and complex observed online behaviors, adeptly predict nuanced user preferences and present a vast array of products likely to pique the individual’s interest—including items the user may not have previously considered, thus fostering spontaneous, oftentimes exhilarating purchases.

Psychological triggers such as excitement, pleasure, fear of missing out, and the profound sense of relevance are all amplified by highly tailored digital content, strategically implemented countdown clocks, limited time offers, and streamlined one-click purchasing interfaces. The cumulative effect of these factors can overwhelm typical rational decision-making faculties.

Quantifying the Impact of Real-Time Personalization:

Rigorous research indicates that up to a third of all purchases on Amazon can be attributed to their sophisticated recommendation systems exquisitely tailored to each user’s unique browsing patterns and prior transactional histories. Quantitative academic studies report a statistically significant positive relationship between perceived ad personalization and impulsive online shopping behavior, with path coefficients typically

ranging from 0.3–0.4. This denotes a robust, immediate effect. Mediation analysis in meticulous survey studies found that perceived relevance, novelty, and expedited payment convenience all meaningfully explain the relationship between ad customization and impulse buying.



Emotional Arousal as a Mediator:

Emotional engagement lies at the core: personalized advertisements generate excitement and pleasure or heighten urgency, acting as a direct mediator between exposure and impetuous action. Behavioral research illustrates that the greater the perceived novelty and pertinence of an ad, the higher the consumer's arousal and the stronger the impulse purchase intent.

Test Moderating Effects of Self-Control and Ad Format:

Demographic studies find that impulse buying is particularly prevalent among younger segments aged 18–39, who generally possess lower self-regulation and are more drawn to innovative, personalized promotions.

Self-control variably moderates the impacts; those with lower self-control are vastly more inclined to spontaneously act when exposed to customized digital promotions, while concerns for privacy (as tested in certain settings) did not powerfully reduce the impacts.

Distinct media platforms and convenient purchasing options (e.g. single-click shopping, streamlined app payments) further fuel impulse purchases by removing friction points and heightening perceived benefit.

Ethical and Design Guidance:

Information Privacy: Moral issues emerge regarding data surveillance, manipulation, and confidentiality. Research emphasizes the necessity for transparency, informed consent, and simple opt-out possibilities.

Design Recommendations: Retailers are urged to adopt clear privacy disclosures, furnish user controls for ad customization, and avoid manipulative “dark designs.” Budgeting tools and ad blockers are advised for customers to mitigate excessive impulse shopping.

Summary Table: Findings from Empirical Studies

Research Objective	Empirical Finding	Psychological Mechanisms
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Boosted relevance,	emotional arousal,	FOMO, and cognitive ease drive impulses
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Real-Time Customization Impact	Significant increase in impulse purchasing, with 30–40% effect size or purchase rates	Emotional Arousal as Mediator
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Relevance and novelty trigger emotional excitement,	mediating purchase intent	Moderating Effects
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Lower self-control amplifies, privacy is less impactful, convenience accelerates the process Ethical & Design Recommendations

Transparency, opt-out features, user education, and anti-dark-pattern guidelines advised

Conclusion:

Tailored ads—powered by behavioral data—considerably increase impulse purchases by enhancing product relevance, emotional response, and convenience, specifically in young adults and under conditions of reduced self-control. The process is significantly mediated by perceived relevance, novelty, and payment ease. While highly capable for retailers, these tactics raise ethical questions that require clear privacy practices and user empowerment to ensure consumer well-being.

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- These papers address the impact of AI-driven personalized marketing, psychological mechanisms, advertising values, and the moderating effect of self-control, all directly relevant to your research objectives.
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