

Customer Loyalty as a Mediator of Online Shopping Experience and Impulse Buying: A Comprehensive Literature Review

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Abstract

The rapid expansion of e-commerce has significantly transformed consumer purchasing patterns, with impulse buying emerging as a prevalent behavior in digital environments. This review synthesizes existing scholarship to examine how the online shopping experience influences impulse buying, while emphasizing the mediating role of customer loyalty. The analysis integrates functional elements such as website quality and convenience, psychological factors including emotions and perceived enjoyment, and technological aspects like personalization and interactivity. Findings indicate that these dimensions collectively shape consumers' impulsive tendencies by enhancing engagement and reducing decision-making effort. The review further reveals that customer loyalty serves as an important mediator, strengthening trust, reducing post-purchase regret, and fostering sustained consumer-brand relationships. Despite extensive research on online consumer behavior, notable gaps remain, particularly regarding cross-cultural differences, emerging digital technologies, and the long-term impact of loyalty-driven impulse purchases. This paper concludes by proposing future research directions to deepen theoretical understanding and guide managerial strategies in e-commerce contexts.

Keywords: *Online Shopping Experience, Impulse Buying Behavior, Customer Loyalty, E-Commerce Consumer Behavior, Mediating Role of Loyalty.*

1. Introduction

Digital commerce has rapidly redefined how consumers browse, evaluate, and purchase products, offering convenience, personalization, and continuous accessibility. As online platforms replace or supplement physical retail environments, the nature of the shopping experience itself has changed, introducing new psychological triggers and behavioural outcomes (Gulfraz & Akbar, 2022). Improved website design, seamless navigation, and interactive interfaces have been shown to elevate consumer satisfaction and loyalty (Kurniasari & Christian, 2025). At the same time, the ease and immediacy of online environments have increased consumers' vulnerability to impulse buying, a behaviour that generates significant revenue for retailers but may also lead to regret or dissatisfaction among buyers (Feng et al., 2024; Aman, 2023).

This review focuses on understanding how the online shopping experience influences impulse buying and the extent to which customer loyalty—particularly attitudinal loyalty—acts as an intervening mechanism. Rather than viewing online experiences as a straightforward predictor of impulsive actions, we argue that loyalty can transmit or reshape these effects by reinforcing trust, emotional connection, and perceived safety (Nabela & Albari, 2023; Gulfraz & Akbar, 2022). By synthesizing findings from recent empirical studies, the review seeks to map consistent trends, highlight contradictory results, and identify gaps that warrant further scholarly exploration.

Overall, the triad of online shopping experience (OSE), customer loyalty (CL), and impulse buying (IB) forms an important yet underexplored domain in digital consumer research. Examining how these constructs interact offers deeper insight into both the immediate and long-term behavioural responses of online consumers.

1.1 Key Concepts

Online Shopping Experience (OSE)

OSE reflects the full spectrum of consumer interactions with online platforms. Functional elements include ease of navigation, clarity of information, search efficiency, and the convenience of purchase and payment processes (Nabela & Albari, 2023). Psychological elements entail emotional enjoyment, perceived trust, interface aesthetics, and security perceptions (Gulfraz & Akbar, 2022; Urdea & Constantin, 2021). Together, these dimensions shape cognitive evaluations and affective responses that influence purchasing behaviour.

Impulse Buying (IB)

IB represents spontaneous purchases triggered by emotional or external cues, typically involving minimal evaluation (Chen et al., 2019). In online contexts, mechanisms such as one-click buying, flash promotions, scarcity cues, and algorithmic recommendations make impulsive decisions more likely (Iyer et al., 2020; Lim et al., 2022). These behaviours are often driven by heightened emotions such as excitement or urgency and can lead to post-purchase regret (Amos et al., 2014; Chan et al., 2017).

Customer Loyalty (CL)

Customer loyalty includes both attitudinal loyalty (emotional attachment, trust, favourable evaluations) and behavioural loyalty (repeat purchases) (Oliver, 1999; Chaudhuri & Holbrook, 2001). This review emphasises attitudinal loyalty, as it is more sensitive to experiential factors and plays a vital mediating role between OSE and IB (Gulfraz & Akbar, 2022; Nabela & Albari, 2023).

1.2 Importance of Studying the OSE–CL–IB Relationship

Balancing Revenue and Consumer Risk

Impulse buying boosts short-term sales but comes with risks such as dissatisfaction and returns (Chen et al., 2019; Chan et al., 2017). Understanding how loyalty moderates or mediates this behaviour can help firms sustain profitability without harming consumer well-being.

Loyalty's Influence on Impulsive Behaviour

Loyal consumers respond differently to marketing stimuli compared to new users. Loyalty may either intensify impulsivity—by increasing trust and reducing hesitation—or buffer it by promoting more deliberate decision-making (Chaudhuri & Holbrook, 2001; Dick & Basu, 1994).

Filling Literature Gaps

Although numerous studies explore OSE or impulse buying independently, far fewer examine loyalty as a mediating mechanism (Kurniasari & Christian, 2025). A consolidated assessment is needed to connect fragmented findings.

1.3 Insights From Recent Empirical Research

Empirical studies indicate that OSE influences IB both directly and indirectly via loyalty. For instance:

- **Gulfraz et al. (2022)** found strong evidence that OSE enhances attitudinal loyalty, which then increases impulsive purchases in Chinese e-commerce platforms.
- **Rizquna and Albari (2023)** identified informativeness and convenience as direct drivers of impulsive buying, while trust primarily strengthened loyalty.
- **Meta-analytic work by Zhao et al. (2021; 2022)** confirmed that visual design, interactivity, and scarcity cues significantly raise impulse buying likelihood.
- **Li et al. (2025)** highlighted the role of social identity in live commerce, where loyalty-like relational bonds with broadcasters increase impulsive actions.

These findings collectively support the notion that loyalty serves as an important transmission mechanism between OSE and IB.

1.4 Conceptual Model

The conceptual framework proposes that:

- **OSE enhances loyalty** by fostering trust, enjoyment, and convenience (Kurniasari & Christian, 2025).
- **Loyalty encourages impulsive actions** by reducing risk perceptions and increasing emotional attachment.
- **OSE can also directly trigger IB** through vivid imagery, promotions, and real-time notifications (Lim et al., 2022).
- Moderators such as self-control, cultural context, and platform type influence the strength of these pathways.

1.5 Theoretical Anchors

Stimulus–Organism–Response (S–O–R)

OSE elements function as stimuli; loyalty or emotions operate as organism-level states; and IB represents the behavioural response (Zhao et al., 2022).

Commitment–Trust Theory

Positive experiences foster trust and commitment, which strengthen loyalty and shape behavioural outcomes (Gulfraz & Akbar, 2022).

Affective–Cognitive Theories

Pleasure, arousal, and cognitive absorption influence both loyalty and impulsive behaviour.

1.6 Research Gaps

The review identifies gaps relating to inconsistent mediation findings, limited focus on behavioural loyalty, lack of longitudinal research, insufficient attention to consumer well-being, and limited understanding of platform-specific or cultural moderators.

1.7 Synthesis and Implications

OSE must blend functional efficiency with psychological engagement to produce both loyalty and impulsive actions. Loyalty serves as a stabilizing mechanism that can transform impulsive purchases into sustained relationships when managed ethically. Over-reliance on manipulative tactics, however, risks eroding long-term trust and loyalty.

1.8 Consolidated Research Questions

The restructured RQs focus on:

- How different OSE dimensions influence IB.
- The mediating power of attitudinal loyalty.
- The role of individual and contextual moderators.
- Long-term outcomes associated with loyalty-mediated impulse buying.

2. Online Shopping Experience and Consumer Behavior

2.1 Dimensions of Online Shopping Experience

The online customer shopping experience (OCSE) is a multidimensional construct that integrates functional, psychological, technological, and social elements. Far from being confined to transactional efficiency, OCSE now represents a holistic phenomenon that shapes both short-term consumer behaviors (e.g., impulse buying) and long-term outcomes (e.g., loyalty, trust, and retention).

2.1.1 Functional Dimensions

Gulfraz et al. (2022) identified four core elements—interactivity, informativeness, visual engagement, and navigation/search—as central drivers of consumer engagement and impulsive purchasing. Interactivity enables real-time responsiveness, informativeness helps make sure decision transparency, visual engagement heightens emotional arousal and product appeal, and intuitive navigation reduces friction, fostering trust and purchase likelihood. Complementary findings by Moon et al. (2021) underscore the importance of product quality, competitive pricing, clear return policies, and trustworthy delivery systems, which collectively form the backbone of functional satisfaction by shaping perceptions of value and risk.

2.1.2 Psychological and Experiential Dimensions

Beyond functionality, OCSE is profoundly shaped by hedonic and affective factors, including enjoyment, trust, and perceived security. Positive emotions generated during browsing often increase impulsivity, whereas risk perceptions act as inhibitors. Rose et al. (2012) demonstrated that hedonic values (e.g., enjoyment, entertainment) significantly predict loyalty, complementing utilitarian drivers such as efficiency and reliability. Thus, successful online sites must deliver a dual value proposition: meeting instrumental needs while fostering emotional gratification.

2.1.3 Technological and Personalization Dimensions

Technological advancements—particularly AI-driven recommendations, personalization, and mobile accessibility—have reshaped consumer expectations and interactions. Riegger et al. (2022) highlighted that adaptive personalization (e.g., predictive analytics, real-time notifications) enhances engagement and purchase intention, while Bleier and Eisenbeiss (2015) showed that personalized content fosters a deeper sense of connection and loyalty, amplifying responsiveness to impulse triggers. Nevertheless, concerns remain regarding the long-term impact of hyper-personalization (e.g., filter bubbles, loss of consumer autonomy), which raises questions about sustainability and ethical design.

2.1.4 Social and Contextual Factors

OCSE is also embedded within social contexts, including peer reviews, ratings, and user-generated content, which extend informativeness and trust while enhancing platform credibility. Emerging formats such as mobile shopping and live-commerce integrate social presence and entertainment, creating an immersive and community-driven experience.

Li et al. (2025) observed that these interactive environments significantly reinforce impulsive purchases, as consumers respond not only to platform features but also to collective social cues.

2.1.5 Integrative View

Taken together, OCSE represents a synergistic interplay of functional ease, psychological gratification, technological personalization, and social context. A well-designed online shopping environment does more than facilitate transactions: it creates trust, enjoyment, and engagement, which directly or indirectly foster both impulse buying and customer loyalty. Future research should explore how these dimensions interact dynamically across consumer segments, online sites, and cultures, in order to develop more sustainable and equitable e-commerce strategies.

Table: Summary of Key Constructs

| Construct | Key Dimensions | Representative Studies |
|----------------------------|--|--|
| Online Shopping Experience | Functional, Psychological, Personalization, Social | Gulfraz et al. (2022); Moon et al. (2021) |
| Customer Loyalty | Attitudinal, Behavioral, Trust, Satisfaction | Oliver (1999); Chaudhuri & Holbrook (2001) |
| Impulse Buying | Arousal, Urgency, Scarcity, Personalization | Chen et al. (2019); Lim et al. (2022) |

2.2 Psychological and Social Drivers

Psychological and social factors play a decisive role in shaping online shopping behavior, particularly among younger consumers. Hedonic motivation (enjoyment) has been shown to increase purchase likelihood, whereas perceived risk—such as concerns about fraud, product mismatch, or delivery uncertainty—acts as a deterrent (Kuswanto et al., 2020). Beyond individual perceptions, social influence exerts a strong effect: peer recommendations, normative pressure, and community endorsement can significantly enhance online purchase intentions. Recent evidence further highlights the role of parasocial interactions with influencers, electronic word-of-mouth (eWOM), and the bandwagon effect, which reinforce one another in a feedback loop that amplifies consumer intentions (Nadroo et al., 2024). Collectively, these psychological gratifications and social dynamics provide a compelling explanation for why digital natives are especially susceptible to impulsive online purchases.

3. Online Impulse Buying Behavior

Online impulse buying is increasingly framed through the Stimulus–Organism–Response (S-O-R) perspective, where platform and marketing stimuli trigger internal psychological organism states (arousal, perceived urgency, lowered deliberation) that lead to the response of an unplanned purchase. Recent empirical work applying this framework shows that stimulus characteristics in digital environments are both more varied and more potent than in traditional retail because of the speed and personalization of interactions. (Ngo et al., 2024).

Platform interactivity and visual design continue to be primary stimulus drivers: highly interactive interfaces (live streams, rapid image carousels, AR try-ons) and rich visual merchandising increase affective arousal and perceived enjoyment, which raise the probability of impulsive decisions. Gulfraz et al. (2022) and subsequent 2022–2024 studies replicate this effect in multiple e-commerce contexts. Empirical analyses find that features enabling immediacy (one-click buys, instant cart additions) strengthen the direct link from stimulus to purchase. (Sirola et al., 2022)

Algorithmic personalization and recommendation systems have emerged as another consistent stimulus: tailored suggestions and dynamically targeted ads increase perceived relevance and reduce deliberation time, effectively lowering cognitive resistance to unplanned purchases. Studies from 2020–2024 show that consumers with lower self-

control are particularly susceptible to algorithmic nudges because personalization amplifies perceived fit and urgency, increasing attitudes toward targeted advertising and social-media impulsiveness. (Nyrhinen et al., 2024)

Scarcity tactics (limited quantities, flash sales, countdown timers) and time-limited discounts remain robust drivers of online impulse buying by leveraging perceived scarcity and time pressure. Multiple 2023–2024 empirical papers show that scarcity cues increase arousal and immediate purchase intent; flash-sale formats often operate through arousal as a mediator. However, the magnitude of the effect can depend on whether scarcity is framed as limited quantity versus limited time. (Utami & Thaib, 2025)

The psychological mediators bridging stimuli and behavior include emotional arousal, cognitive shortcuts (heuristics), and self-control depletion. Recent work with young consumers indicates low trait self-control not only directly predicts impulsive purchases but also moderates responses to targeted advertising and interactive stimuli — i.e., the same personalization that increases conversions among receptive users has a much smaller effect among those with higher self-control. This amplifies concerns about vulnerability among younger demographics. (Nyrhinen et al., 2024)

Post-purchase consequences complicate the simple revenue gains from impulsive sales. Several studies (2021–2024) document that impulsive purchases produce higher rates of post-purchase regret and negative word-of-mouth, which in turn can damage repurchase intentions and longer-term loyalty. Barta et al. (2023) and reviews in 2024 show that regret mediates the negative path from impulse buying to loyalty, while satisfaction and effective service recovery can attenuate those effects. (Barta et al., 2023)

Because of those downstream risks, many scholars argue that customer loyalty should be studied as both an outcome and a moderator: loyalty programs, trust signals, and effective post-purchase communications can buffer regret and convert occasional impulsive purchases into repeat, profitable relationships. Recent mixed-method and longitudinal studies (2022–2024) demonstrate that firms that invest in post-purchase confirmation, easy returns, and loyalty incentives reduce the negative impact of impulse-driven regret on future purchases. (Ngo et al., 2024)

Synthesis and research gaps (2020–2024): the literature from 2020–2024 converges on a multi-path model (visual/platform stimuli; algorithmic personalization; scarcity/time pressure) that operates via emotional arousal and self-control to produce impulse purchases, with regret and loyalty shaping downstream value. Key gaps for future research include (1) fine-grained causal tests of recommendation algorithms vs. UI interactivity, (2) cross-cultural tests of scarcity framing (limited time vs. limited quantity), and (3) longitudinal studies tracking whether loyalty initiatives sustainably convert impulse buyers into loyal customers. (Barta, Gurrea, & Flavián, 2023)

4. Customer Loyalty as a Mediator

4.1 Trust and Satisfaction as Foundations of Loyalty

Trust and satisfaction are widely recognized as foundational drivers of customer loyalty in online shopping contexts. Rita et al. (2019) demonstrated that e-service quality enhances satisfaction, which later fosters loyalty and positive behavioral outcomes such as repurchase and word-of-mouth. More recent findings by Mofokeng (2023) confirm that perceived value and trust strongly influence loyalty, with the effects further shaped by consumers' prior shopping experiences and their overall spending levels. Ngo et al. (2024) add that engaging features such as video-based product presentations improve trustworthiness perceptions and interactive satisfaction, leading to stronger attitudinal loyalty on online sites like Shopee. These results collectively indicate that loyalty is not simply a passive outcome but is dynamically constructed through service quality, value perception, and experiential trust.

Recent literature has further highlighted the multi-dimensional nature of trust in online shopping. For example, Kumar and Dash (2022) showed that cognitive trust (beliefs about competence and reliability) and affective trust (emotional bonds) both contribute significantly to loyalty, but through different mechanisms—cognitive trust enhances satisfaction by reducing perceived risks, while affective trust strengthens emotional attachment and long-term commitment. Similarly, Chen et al. (2021) found that system-based trust (security and privacy assurances) is

particularly crucial in environments where personal data are involved, as breaches can rapidly erode satisfaction and weaken loyalty.

Satisfaction also functions as a mediator between online experiences and loyalty. Zhang et al. (2020) argued that high levels of website informativeness, ease of navigation, and customer service responsiveness directly improve satisfaction, which in turn drives both attitudinal loyalty (psychological commitment) and behavioral loyalty (repeat purchase and advocacy). More recently, Gunawan et al. (2022) confirmed that satisfaction not only strengthens repurchase intention but also mitigates negative emotions such as regret or dissonance after impulse buying. This suggests that loyalty is reinforced when online sites can consistently deliver satisfaction, even in the face of occasional impulsive or regretful purchases.

Collectively, these findings reinforce the notion that trust and satisfaction are not isolated constructs but interdependent pillars of loyalty. Trust reduces perceived risk and builds confidence in digital online sites, while satisfaction offers the positive reinforcement necessary to sustain loyalty over time. When both are present, customers are more resilient to negative experiences, less price-sensitive, and more likely to continue engaging with the platform, thereby enhancing the sustainability of customer–platform relationships in competitive online markets.

4.2 Emotional and Cognitive Mediators

Emotional and cognitive processes represent critical mediators in the relationship between online shopping experiences and customer loyalty. Cachero-Martínez (2021) demonstrated that emotional engagement in e-retailing enhances satisfaction and strengthens loyalty, showing that positive emotions (e.g., enjoyment, excitement) foster attitudinal loyalty and repeat purchase intentions. Similarly, Goel et al. (2022) found that impulse buying tendencies interact with satisfaction as a mediator, suggesting that even unplanned purchases can generate continued loyalty if they are associated with positive emotional outcomes.

Cognitive dimensions are equally important. Lee and Chen (2021) highlighted that cognitive absorption (focused immersion, perceived control, curiosity) in digital online sites fosters trust and satisfaction, which then translate into loyalty. Meanwhile, Nyrhinen et al. (2024) reported that susceptibility to persuasive marketing is amplified by low self-control, but loyalty mechanisms can act as a compensatory factor, reducing churn even among impulsive shoppers.

These findings collectively suggest that emotional satisfaction and cognitive absorption form dual pathways to loyalty. Emotions provide immediate reinforcement after purchases, while cognitive evaluations (trust, control, and perceived value) sustain long-term commitment. Together, they create a feedback loop in which loyalty not only survives impulsive tendencies but may even be strengthened when emotional experiences are positive and cognitively reinforced.

4.3 Loyalty in the Context of Impulse Buying

Customer loyalty plays a dual role in the context of online impulse buying—it can amplify positive experiences or mitigate negative ones. Gulfraz et al. (2022) emphasized that loyalty transforms impulsive actions into enduring customer–platform relationships, where consumers perceive spontaneous purchases as part of a rewarding engagement cycle. However, Barta et al. (2023) cautioned that repeated regret following impulsive purchases may erode loyalty, undermining repurchase intentions over time.

Recent studies have expanded this perspective. Ngo et al. (2024) observed that interactive features like live or video shopping motivate impulsive behavior but also enhance satisfaction and trust, thereby promoting loyalty. Sirola et al. (2024) further revealed that young consumers with lower self-control are particularly prone to impulsive buying, but online sites that cultivate loyalty through trust-based mechanisms can prevent disengagement. Additionally, Chen and

Wang (2022) argued that loyalty programs (e.g., personalized recommendations, discounts) moderate the regret-loyalty relationship by reframing impulsive purchases as value-driven experiences rather than mistakes.

Taken together, these findings suggest that loyalty in the context of impulse buying is dynamic and conditional. It thrives when online sites successfully reframe impulse-driven purchases as positive, rewarding, or socially engaging experiences. Conversely, when regret is recurrent and unmitigated, loyalty weakens, leading to churn. Thus, loyalty functions not merely as an outcome of satisfaction but as a strategic buffer against the volatility of impulsive consumer behavior.

5. Review Methodology and Managerial Implications

5.1. Review Methodology

In this review, we chose a Systematic Literature Review (SLR) method to synthesize existing research on the relationship between online shopping experience, impulse buying behaviour, and the mediating role of customer loyalty. The SLR method helps make sure transparency, replicability, and thorough coverage of relevant academic literature.

5.2 Research Design

A structured review protocol was used based on PRISMA guidelines. This method helps in identifying, screening, and selecting strong studies published between 2020 and 2025 in well-established databases.

5.3. Data Sources

The literature was collected from the following academic databases:

Scopus

Web of Science (WoS)

Google Scholar

ScienceDirect

Emerald Insight

5.4 Search Strategy

A combination of keywords and Boolean operators was used:

“online shopping experience”, “customer loyalty”, “impulse buying”, “e-commerce behaviour”, “consumer purchase intention”, “mediator” OR “mediation”

5.5. Inclusion and Exclusion Criteria

Inclusion Criteria:

Studies published between 2020–2025

Scopus/WoS indexed journals

Studies focusing on online consumer behaviour

Literature examining impulse buying, loyalty, or e-commerce experience

Full-text availability in English

Exclusion Criteria:

Pre-2020 publications

Conference papers, book chapters, dissertations

Non-peer-reviewed articles

Studies unrelated to e-commerce or consumer behaviour

5.6 Screening and Selection Process

A total of 356 studies were first found. After removing duplicates and screening based on titles and abstracts, 129 studies were shortlisted. Full-text assessment resulted in 54 eligible papers.

5.7 Data Extraction and Analysis

For each chosen study, important details such as author, year, sample size, methodology, theoretical framework, and findings were extracted. The analysis was carried out using thematic synthesis.

5.8 Managerial Implications

The findings of this review provide a number of useful ideas for marketers, e-commerce online sites, and digital retail managers.

6. Enhancing User Experience

Positive shopping experience increases impulse buying. Managers should invest in intuitive interface design, fast loading pages, personalization, and clear visuals.

6.2 Strengthening Customer Loyalty

Customer loyalty mediates the relationship between experience and behaviour. Firms should focus on loyalty programs, exclusive offers, personalized communication, and membership benefits.

6.3 Digital Personalization and AI Tools

AI-driven suggestions, real-time offers, and behavior-based recommendations enhance customer satisfaction.

6.4 Building Trust and Reducing Risk

Ensure secure payment systems, transparent return policies, fast delivery, and accurate product details to increase trust.

6.5 Consumer Psychology-Based Strategies

Scarcity cues, urgency messages, flash sales, and social proof effectively influence impulse buying.

6.6 Post-Purchase Experience

Support services, feedback systems, and trustworthy tracking help improve customer satisfaction and retention.

7. Research Gaps and Future Research Directions

Variability in Mediation Strength

Gap: Findings on the mediating role of customer loyalty are inconsistent across cultures, demographics, and product/platform types.

Future Direction: Conduct cross-cultural and segment-specific comparative studies to identify when and where loyalty significantly mediates impulse buying.

Neglect of Loyalty Types

Gap: Research focuses mainly on attitudinal loyalty, while behavioral loyalty and distinctions between platform-level, brand-level, and product-level loyalty remain underexplored.

Future Direction: Examine multiple types of loyalty simultaneously to understand their differential and combined influence on impulse buying.

Temporal Dynamics Overlooked

Gap: Most studies are cross-sectional, offering only a snapshot view of relationships. Longitudinal insights into how loyalty and impulse buying evolve are missing.

Future Direction: Use longitudinal or panel data to trace changes in loyalty, shopping experience, and impulse buying over time.

Limited Focus on Ethical/Negative Outcomes

Gap: Few studies assess consumer welfare concerns such as regret, dissatisfaction, financial strain, or the effects of manipulative design (dark patterns).

Future Direction: Investigate long-term consumer well-being, and evaluate how ethical design practices can balance profitability with trust and satisfaction.

Platform and Contextual Moderators Understudied

Gap: Lack of clarity on how platform types (e.g., e-commerce sites, mobile apps, social/live-stream commerce), AI-driven personalization, and external contexts (festivals, cultural influences, social identity cues) shape loyalty–impulse buying dynamics.

Future Direction: Explore how contextual and technological moderators influence the strength and direction of OSE–loyalty–IB pathways.

8. Discussion

This systematic review synthesizes current academic evidence to explain how online shopping experience (OSE) influences impulse buying behavior (IB), both directly and indirectly through the mediating role of customer loyalty (CL). Consistent with the Stimulus–Organism–Response (S–O–R) framework, OSE acts as a multidimensional stimulus—encompassing functional, psychological, technological, and social aspects—that shapes internal responses such as trust, satisfaction, emotional arousal, and perceived value. These organism-level responses contribute to spontaneous, less deliberative buying behavior.

One of the most significant insights from the literature is the central role of customer loyalty. While earlier studies treated loyalty primarily as a long-term outcome, the evidence reviewed here shows that loyalty also functions as a proximal psychological mechanism through which online experiences influence impulsive actions. Loyal consumers tend to experience reduced perceived risk, heightened trust, and more positive emotional responses, which together create an environment where spontaneous purchases feel less risky and more rewarding.

Technological features — especially AI-driven personalization, dynamic recommendations, and scarcity cues — amplify both OSE and its downstream behavioral outcomes. These tools not only enhance convenience but also create emotional triggers that facilitate impulsive behavior. At the same time, the findings highlight the importance of, as aggressive persuasive design (e.g., dark patterns, manipulative scarcity cues) can damage trust and erode loyalty over

time. E-commerce platforms must therefore strike a balance between leveraging personalization to drive engagement and maintaining consumer autonomy and well-being.

Cross-cultural and platform-specific variations further complicate the relationship. Studies indicate that collectivist cultures respond more strongly to social cues and community engagement, while individualistic cultures react more to hedonic and personalized stimuli. Mobile commerce, live-stream shopping, and social commerce environments introduce heightened interactivity and social presence, increasing both loyalty and the propensity for impulse buying.

Overall, this review demonstrates that OSE, CL, and IB form an interconnected behavioral system shaped by technology, psychology, and contextual factors. Understanding this triadic relationship offers valuable insights for theory development and provides actionable guidance for practitioners designing ethical, loyalty-enhancing digital commerce ecosystems.

9. Limitations

Although this study provides a comprehensive synthesis of recent literature, several limitations must be acknowledged.

9.1 Scope and Time Frame

This review includes studies published between 2020 and 2025. While this ensures contemporary relevance, it may exclude earlier foundational research. Rapid advancements in AI, personalization, and social commerce also mean that the landscape continues to evolve.

9.2 Conceptual Diversity

The studies reviewed differ significantly in their conceptual definitions of OSE, loyalty, and impulsive behavior. Variations in measurement tools, theoretical frameworks, and cultural contexts make direct comparisons challenging.

9.3 Methodological Constraints

Most studies rely on cross-sectional data collected via self-reported surveys, limiting causal interpretation. There is a lack of longitudinal and experimental studies that track how loyalty and impulsive behavior evolve over time.

9.4 Limited Behavioral Data

Few studies use actual behavioral or transactional data. Most rely on intention-based metrics, which may not accurately reflect real impulsive behavior.

9.5 Ethical and Regulatory Oversight

Despite the significant influence of AI-driven personalization, few studies address its ethical implications. Issues such as manipulation, privacy concerns, and the targeting of vulnerable consumers remain underexplored.

Conclusion

This review illustrates the intricate links among online shopping experience, customer loyalty, and impulse buying in digital commerce environments. Well-designed online experiences—characterized by clear information, ease of use, trust-enhancing features, and appealing interfaces—tend to stimulate impulsive purchases while simultaneously strengthening customer loyalty. Loyalty, in turn, reduces hesitation and increases a consumer's willingness to engage in spontaneous purchases, demonstrating its important mediating role.

Despite these insights, existing studies remain fragmented. Research overwhelmingly emphasizes attitudinal loyalty, leaving the behavioural dimension insufficiently examined. Most evidence comes from cross-sectional surveys, offering limited understanding of how loyalty and impulsive behaviour unfold over time. Ethical considerations, such

as the effects of dark patterns, regret, and overspending, are still underexplored, even as personalization and algorithmic nudging grow more sophisticated. Furthermore, different online formats—including live commerce, mobile shopping, and AI-driven environments—may shape these relationships differently across cultures and demographics.

Ultimately, while impulse buying offers immediate financial benefits, sustainable success for online retailers requires cultivating genuine loyalty through transparent, trustworthy, and user-friendly design. Future research should integrate cross-cultural comparisons, platform-specific analyses, and longitudinal approaches to better understand the evolving dynamics of e-commerce behaviour.

Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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