

Artificial Intelligence and Social Media Induced Impulsive Buying Behavior of Facial Cosmetic Products Among Women: A Conceptual Review

¹Razia Kulsum, ²Dr. Virupaksha Goud G

^{1,2}School of Management, Presidency University,

Abstract:

The emergence of AI technologies and social media has resulted in a highly advanced digital environment that constantly encourages women to make unexpected purchases of facial cosmetics. The present conceptual review focuses solely on studies listed in Scopus. Twelve empirical and review studies were selected, conducted between 2021 and 2025, and fall into six main theoretical paradigms, namely, the Stimulus-Organism-Response (SOR) theory, the TAM theory, the ELM theory, the CAB theory, Flow theory and Para-social Interaction theory. Besides, a critical commentary on the strong sides, weaknesses and gaps of each reviewed study has been provided. A Systematic Literature Review table based on SLR standards has been included. In addition, the paper develops a unified conceptual framework showing how AI-stimuli, including algorithmic curation, AR-enables product try-on, personalized recommendations, and targeted ads, are filtered by women's internal psychological state, such as excitement, FOMO, hedonistic motivations, poor self-control, and lead to spontaneous purchase decisions.

Keywords: Artificial Intelligence, Social Media, Impulsive Buying Behavior, Facial Cosmetics, Women, Influencer Marketing, Augmented Reality.

Introduction

Estimated at roughly USD 430 billion in 2024 and on track to expand at an annual growth rate of 5.2% through 2030, the global beauty and cosmetics sector stands among the most extensively disrupted by digital forces. Women — who constitute the principal consumer group for facial cosmetic products — now routinely identify, assess, and acquire these products within AI-powered social media environments. This transformation has substantially reshaped cosmetic purchasing decisions, shortening the path from initial discovery to final transaction and frequently eliminating deliberate, rational evaluation from the process.

The market for global beauty and cosmetics was estimated to be worth around \$430 billion by the year 2024 and would keep on growing at the pace of 5.2% per annum up till 2030. The global beauty and cosmetics industry belongs to those industries which have been highly affected by the digital revolution wave. As women are the major consumers of these products, they are now more involved in online activities regarding these cosmetics products through artificial intelligence based social media sites. Such phenomenon has drastically changed cosmetic shopping behavior, significantly reducing the distance between the act of discovery and the eventual purchase and often removing rational evaluation entirely. The spontaneous and unplanned purchase of goods made on the spur of the moment, driven by emotions and without conscious deliberation (Rook, 1987), known in the literature as impulsive buying behavior (IBB), has become one of the most dominant forms of purchase behavior in the digital cosmetics market. The combination of AI technologies like personalized recommendation, AR testing and anticipation algorithms along with popular social media sites like Instagram, Tiktok and Youtube has led to what this paper calls 'an impulse architecture of AI and social media'- specifically aimed at encouraging unplanned cosmetic purchases by women.

Impulsive buying behavior (IBB), a term that generally refers to spontaneous, emotion-laden, and unanticipated purchases (Rook, 1987), has come to embody a form of consumption in digital cosmetic shopping. The integration of AI technologies like personalized recommendations, AR try-on, and anticipatory algorithms with social media sites such as Instagram, Tiktok, and Youtube has resulted in the emergence of what this article calls an "AI-social

media impulse structure”- a consciously created environment intended to trigger impromptu purchases of cosmetics by women.

Although there have been significant academic works on the topic of social media marketing as well as impulse buying behavior, an integrated review that (a) identifies precisely the role of artificial intelligence in enhancing cosmetic IBB, (b) reviews various theories used in the extant literature and (c) analyzes the strengths and weaknesses of specific pieces of work is lacking. As (Chakraborty et al., 2024) observed, there is an urgent need for studies investigating the use of artificial intelligence in increasing consumer participation in beauty and cosmetics purchases. This paper fills this gap by analyzing 12 papers indexed in Scopus.

The paper proceeds as follows: Section 2 outlines the systematic search process; Section 3 surveys the theoretical frameworks; Section 4 presents the full systematic literature review and per-study commentary; Section 5 introduces the integrative conceptual framework; Section 6 develops implications; and Section 7 offers conclusions alongside future research directions.

2. Systematic Search Methodology

2.1 Search Protocol

This systematic review employs a very structures search protocol with preferred reporting items for Systematic Review and Meta- Analysis guidelines (PRISMA) guidelines. The Scopus database was chosen as a primary source of information due to its wide range of peer-reviewed journals that covers consumer behavior , marketing , information systems , digital consumer behavior and psychology which are the core principles that underpin this review

2.2 Search Terms and Databases

There were a set of keyword combinations used , that guided the search : (1) “artificial intelligence” AND “consumer behavior” (2) “social media” AND “impulsive buying behavior” AND “women” (3) “Algorithmic personalization” AND “beauty” AND “purchase Intention” (4) “influencer marketing” AND “impulse buying” AND “ trust” AND (5) “S-O-R model” AND “social commerce” AND “Impulse buying”. This research was focused and limited to only peer-reviewed journals published between the year 2021 and 2025.

2.3 Inclusion and Exclusion Criteria

Inclusion: (a) Articles indexed in Scopus database; (b) Publication between the Year 2021 and 2024;(c) Language limited to only English; (d) Addressing Artificial intelligence , social commerce, social media , influencer marketing and impulse buying within digital commerce settings; (e) Theoretical frameworks that are applicable to cosmetic consumer behavior among women.

Exclusion: (a) Conference Papers and Book chapters; (b) Sources without any DOI’s and which are absent from Scopus database (c) research that is completely focused on business to business commerce; (d) Non-peer reviewed literatures such as grey literature and news content.

After careful screening, 12 studies were shortlisted for systematic review. These cover six theoretical frameworks that are indexed in Q1 and Q2 Scopus indexed journals including the Journal of Business Research, Journal of Retailing and Consumer services, Frontiers in psychology, Humanities and Social sciences communications, International Journal of consumer studies, SAGE open and PLOS ONE.

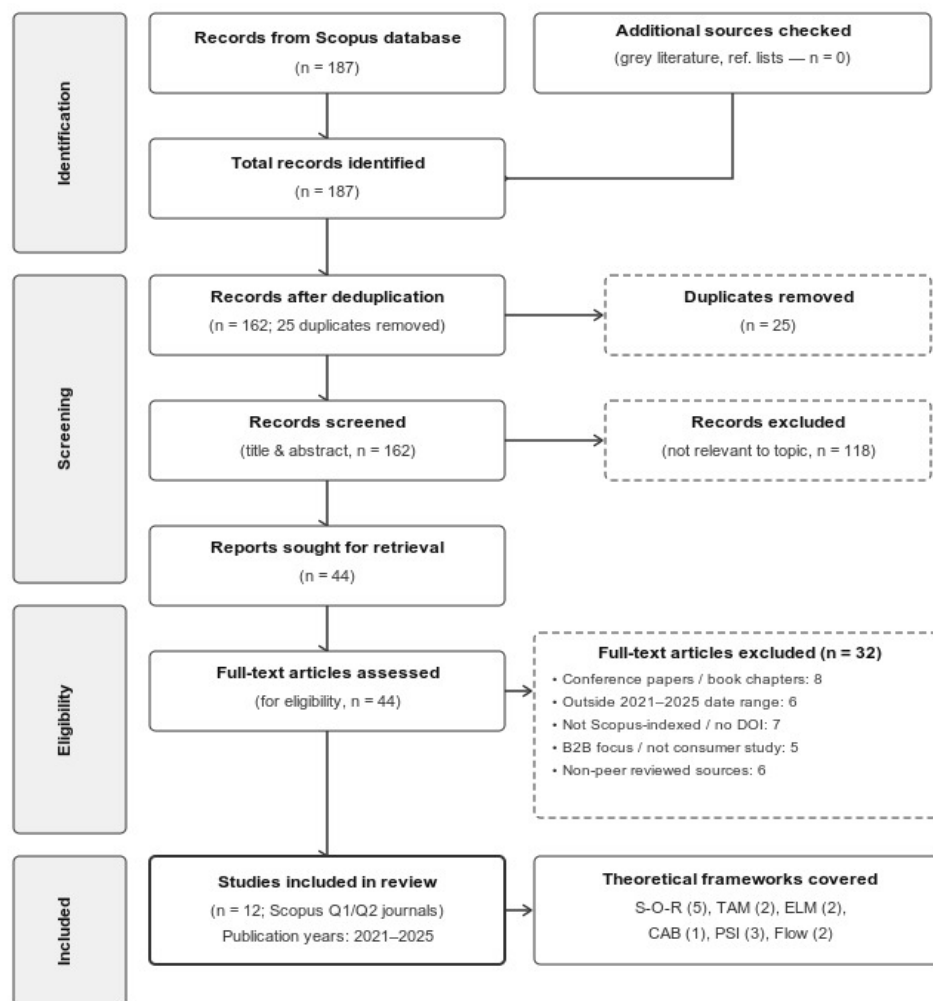


Figure1. PRISMA 2020 Flow Diagram of the Systematic Search Process (2021- 2025)

3. Theoretical frameworks

3.1 Stimulus- Organism- Response Model

The S-O-R model is one of the most widely used theories in the context of digital impulse buying. This framework was originally formulated by Mehrabian and Russel (1974). The model showcases that environmental stimuli (S) activate the internal psychological state that is the organismic level (O) that comprise of both the cognitive and affective reactions that lead to observable behavior (R). Within these settings , the AI-social media settings include algorithmically curated content , influencer recommendations , Ai- targeted ads, para-social interactions ; Organism states include emotions, hedonic drives and FOMO; The resultant behavior results in unplanned cosmetic purchasing.(Ahmad & Lilani, 2025; Chen et al., 2022a; Huo et al., 2023; Shamim & Azam, 2024a; Xia et al., 2024) apply this framework empirically.

Theoretical Relevance: The S-O-R framework is especially suited to the AI-social media setting because it is flexible enough to account for the artificial creation of stimuli, which is indeed the very purpose of using AI technology in optimizing posts to maximize emotional reaction and purchasing action.

3.2 Technology Acceptance Model (TAM)

According to (Davis, 1989), TAM suggest that the adoption of technology depends on the perception of usefulness and ease of use. IN regards to applications of AI technology for cosmetic purposes, TAM helps understand the factors under which users starts using AR virtual Try-ons, AI-chat bots and recommendation systems. (Chakraborty et al., 2024) further develop the TAM framework by integrating the theory of affordance into the concept, arguing that the capabilities afforded by AI usage, such as ability to virtually try out products, analyze the skin conditions and receive personalized suggestions, contribute to user engagement. According to (Whang et al., 2021) ,TAM is also supplemented with the notion of behavioral control, the level of autonomy over an AR experience influences the user's intention to buy.

Theoretical Relevance: In terms of TAM, technology acceptance is considered a critical factor that influences the impact of AI on IBB; People who find Ai technologies useful and credible will often be subjected to AI-stimulated purchases and therefore become vulnerable to IB.

3.3 Elaboration Likelihood Model (ELM)

ELM by (Petty & Cacioppo, 1986)proposes two processes for changing attitudes: one through substantive processing of arguments through the central route, while the other process entails the use of heuristics and peripheral cues. The meta-analysis of the application of ELM in the context of electronic word of mouth communication done by (Moradi & Zihagh, 2022)indicated that peripheral cues involving cues such as attractiveness and social validation have played a dominant role in persuasion process taking place in social networking sites, which happens to be the domain where cosmetic influencer marketing is conducted, but it has been noted that there is a insufficiency in application of this model in AI-mediated and AR-enabled marketing contexts.

Theoretical Relevance: According to the ELM model, AI beauty content and recommendations by influencers can lead women to make impulsive purchase decisions because of the impact of peripheral cues like visual appeal of product images, glamour of influencers, and engagement rates (likes, comments) that surpass careful deliberation, enabling rapid and emotionally motivated purchasing.

3.4 Cognitive –Affective- Behavior (CAB) Model

Integrating cognitive appraisal, affective response, and intentional action, the CAB model provides a more psychologically nuanced framework for understanding IBB than exclusively stimulus-based approaches. (Dang et al., 2025)deploy the CAB model in conjunction with the Theory of Consumption Values (TCV) within a social commerce context, revealing that both the cognitive dimension — including assessments of value and information quality — and the affective dimension — encompassing emotional investment and social gratification — independently and jointly drive IBB. This multi-level framework maps closely onto cosmetic buying behaviour, which involves both rational product assessment and emotionally charged desires.

CAB integrates cognitive evaluation, affective reaction, and purposive action into a psychological perspective that better explains IBB than stimulus-driven theories. The study by (Dang et al., 2025) ,using CAB and TCV in social commerce situations, indicates that both cognitive (such as evaluation of value and information quality) and affective (such as emotional involvement and social satisfaction) factors, either individually or combined, play key roles in IBB. The model reflects the complex nature of cosmetic purchase behavior, in which logical product evaluation is complemented by emotional aspects.

Theoretical Relevance: CAB provides a more complex theory of IBB decision making than stimulus based theories since it considers the interplay between rational assessment of AI recommendations and emotionally stimulating beauty content created through social interaction.

3.5 Para-social Interaction theory (PIT)

Para-social Interaction Theory (Horton & Richard Wohl, 1956)describes the imagined sense of closeness and familiarity that media audiences develop toward public figures they engage with through screens. In the context

of influencer marketing, followers build what feel like personal friendships with beauty content creators, treating their product endorsements with a level of trust ordinarily reserved for genuine social relationships. (Hassan et al., 2021)document the credibility-based dimension of this bond in the cosmetics arena; (Shamim & Azam, 2024)identifies product affection — a construct closely aligned with para-social attachment — as a key mediating variable; and (Ahmad & Lilani, 2025)treat influencer trustworthiness and informativeness as stimuli that build this sense of intimacy.

Theory of Parasocial Interaction (Horton & Richard Wohl, 1956) deals with the virtual feeling of intimacy that develops when the audience engages with celebrities appearing on screens. In relation to the topic of influencer marketing, there develops a virtual friendship between the fan base and beauty influencers who are treated with the same kind of credibility one shows in real-life social interactions. (Hassan et al., 2021)explore the credibility aspect of the relationship in the cosmetics domain. . (Shamim & Azam, 2024)refers to product affection, which is very similar to Para-social interaction, as an important mediating factor in the process.

Theoretical Relevance: PSI provides the reason for why women give a greater degree of trust to beauty influencers' product recommendations in comparison to faceless recommendations from algorithms. Hence, it highlights the significance of incorporating both into the marketing process to trigger IBB. The flow theory by Csikszentmihalyi (1990) refers to a condition where an individual is completely absorbed in a task without effortful control, with altered perceptions of time and intrinsic motivations, and reduced monitoring of oneself. In terms of social commerce, the phenomenon of being in the flow act as an intermediary between external stimuli and the impulse to purchase. (Huo et al., 2023)have shown that social presence and sales promotion in a live streaming environment that create the flow experience, leading individuals to make unplanned purchases. This model holds for AI-generated social media feeds as well.

Theoretical Relevance: Flow theory provides an understanding of why continuous interaction with the AI-based social media platforms, something that is encouraged through recommendation algorithms, depleted the self-control resources and heightens vulnerability to impulsive purchases of cosmetics forming a complementary mechanism to those described by cognitive resource theory.

4. Systematic Literature Review

A review of the selected 12 articles indexed in Scopus are listen systematically in Table1 below. The table documents, for each article, the citation format as per APA 7th Edition, the theoretical model used by the authors, the research goal pursued, the key findings of the study, and an analytical perspective of the study as critiqued by an academic researcher. The table provides the theoretical framework employed, the study's primary objective, its central findings and critical researcher's commentary that evaluated thoroughly the strengths, acknowledges its limitations and identifies the gaps in knowledge in chronological numerical order for the study.

S.No .	Study (APA 7th Citation)	Framework Used	Objective	Key Findings	Researcher's Comment
1	(Ahmad & Lilani, 2025) Telematics and Informatics Reports https://doi.org/10.1016/j.teler.2025.100239	Stimulus-Organism-Response (S-O-R) Model	This study investigated how the personal attributes of beauty influencers drive unplanned purchasing via perceived trust as a mediating variable, employing PLS-SEM analysis on a sample of 296 respondents.	The study found that an influencer's reliability and ability to provide useful information strengthen perceived trust among followers, which in turn substantially predicts impulsive buying within the beauty sector.	Strength: Pioneering application of S-O-R specifically to beauty influencer attributes and IBB with robust PLS-SEM methodology. Limitation: Geographically confined sample (India) restricts applicability across different cultural settings. Gap: The study overlooks AI-enhanced influencer content and the amplifying role of algorithmic distribution of influencer material — a crucial element in today's AI-powered social media landscape.
2	(Shamim & Azam, 2024) Humanities and Social Sciences Communications https://doi.org/10.1057/s41599-024-03796-7	Signalling Theory + S-O-R Model	The research examined which communication-related factors in influencer marketing generate trust in sponsored posts and how such trust subsequently triggers the urge to buy impulsively, while assessing persuasion knowledge as a boundary condition.	Credible influencer communication fosters consumer trust, which in turn activates the urge to buy impulsively. Product attachment was identified as a mediator in the trust-UBI pathway, while limited persuasion knowledge heightens susceptibility to impulsive purchasing.	Strength: Combines two distinct but complementary theoretical frameworks and identifies product affection as an original mediating variable. Limitation: The cross-sectional nature of the data restricts conclusions about causality. Gap: No distinction is drawn between content curated algorithmically

					by AI and organically created influencer posts — a distinction of growing importance. The persuasion knowledge finding has significant practical implications for consumer literacy initiatives.
3	(Chakraborty et al., 2024) Journal of Retailing and Consumer Services https://doi.org/10.1016/j.jretconser.2024.103842	Technology Acceptance Model (TAM) + Affordance Theory	This review explored the transformative capacity of AI-enabled tools such as AR and VR within the beauty and cosmetics industry and their effects on consumer engagement and satisfaction levels.	AI-driven features — most notably AR virtual try-on and AI-powered skin assessment — substantially improve customer engagement and satisfaction, while delivering individualised beauty experiences that elevate the likelihood of purchase.	Strength: Offers a thorough examination of AI applications in the beauty and cosmetic industry, creatively integrating TAM with Affordance Theory. Limitation: Conceptual in nature, relying on no original empirical data collection. Gap: The specific connection between AI-heightened engagement and unplanned purchase decisions remains unexplored; empirical work is needed to determine whether AI-driven satisfaction yields hedonic

					or goal-directed purchase motives.
4	(Chen et al., 2022) <i>Frontiers in Psychology</i> https://doi.org/10.3389/fpsyg.2022.1011337	S-O-R Model + Cognitive Resource Theory	This study explored how both active engagement with and passive consumption of social media content influence impulsive buying, with emotional reactions, gender, materialism, and self-regulation serving as mediating and moderating variables among a Chinese undergraduate sample.	Passive consumption of social media content more powerfully predicts emotional arousal and impulse purchasing than active engagement. Self-regulation significantly buffers IBB. Gender serves as a meaningful boundary condition, with female participants demonstrating unique emotional sensitivity to social media-based triggers.	Strength: One of the few studies to explicitly incorporate gender as a moderator, making it particularly applicable to cosmetic buying contexts. The active-versus-passive consumption distinction adds conceptual depth to S-O-R applications. Limitation: The student sample limits transferability to employed women or older consumers who constitute a major segment of cosmetics buyers. Gap: Cosmetics-specific stimuli such as beauty tutorials and AR product trials are absent from the study — such stimuli warrant investigation within gender-stratified models.
5	(Hassan et al., 2021) <i>PLOS ONE</i> https://doi.org/10.1371/journal.pone.0249286	Source Credibility Theory (SCT)	This study analysed the extent to which the perceived	The overall credibility of influencers — spanning	Strength: Precisely targeted at cosmetics and

			credibility of social media beauty influencers — assessed through dimensions of trustworthiness, expertise, and attractiveness — shapes cosmetic purchase decisions among young millennial women.	trustworthiness, domain expertise, and perceived attractiveness — meaningfully shapes young women's choices of cosmetic products. Influencers are viewed as considerably more credible and personally relatable than conventional advertising formats.	female consumers, rendering its findings directly applicable to the present review. SCT provides a well-grounded theoretical basis for influencer-centred research. Limitation: The study centres on deliberate product selection rather than unplanned or impulsive purchasing; the credibility-IBB relationship is inferred but not empirically verified. Gap: The study does not account for AI-driven amplification of influencer visibility — for instance, how algorithmic curation preferentially surfaces high-engagement influencer content — a mechanism central to contemporary digital cosmetic marketing.
6	(Huo et al., 2023)SAGE Open https://doi.org/10.1177/21582440231172678	S-O-R Model	This study explored the antecedents of impulsive purchase behaviour in	Social presence and promotional incentives act as effective environmental	Strength: Provides empirical validation of the S-O-R model in live-streaming

			live-streaming commerce environments, treating social presence and promotional incentives as stimuli, flow state as the psychological organism, and IBB as the behavioural outcome.	stimuli that generate a flow state in consumers, and this flow state in turn drives impulsive purchasing in live-stream shopping settings.	— a context heavily powered by AI-driven platform features. The theorisation of flow experience as a mediating psychological state is especially compelling. Limitation: Findings apply specifically to the live-streaming format; results may not generalise to static or pre-recorded beauty content. Gap: How AI systems actively engineer social presence signals and promotional cues within live-streaming platforms remains unexamined — an important mechanism that warrants dedicated investigation.
7	(Hussain et al., 2023)Journal of Retailing and Consumer Services https://doi.org/10.1016/j.jretconser.2023.103512	FOMO Framework + Mindfulness Theory	This study examined the predictive relationship between Fear of Missing Out and compulsive buying behaviour, incorporating mindfulness as	FOMO demonstrates a significant and positive association with compulsive buying tendencies. Mindfulness meaningfully moderates this	Strength: The study's large sample (n=511) confers robust statistical credibility; it provides the strongest available empirical evidence for the FOMO-CBB

			a psychological boundary condition, using PLS-SEM methodology applied to 511 consumer respondents.	pathway, with higher levels of mindfulness mitigating the effect of FOMO on compulsive purchasing.	link. The introduction of mindfulness as a moderating variable yields practically actionable recommendations for consumer welfare policy. Limitation: Compulsive buying and impulsive buying, though related, are conceptually distinct — FOMO's effect specifically on IBB in a cosmetics context requires independent empirical investigation. Gap: The research does not explore how platform-embedded FOMO triggers — AI-generated scarcity alerts, countdown timers, or trending product notifications — specifically operate within cosmetic social commerce settings.
8	(Whang et al., 2021) Journal of Business Research https://doi.org/10.1016/j.jbusres.2021.04.057	Technology Acceptance Model (TAM) + Perceived	This research examined the influence of augmented reality on consumers' intention to	Exposure to AR experiences positively shapes consumers' intentions to	Strength: Among the earliest studies to apply a control-theory perspective to AR in the

		Behavioural Control	purchase beauty products, with particular attention to how consumers' sense of agency over the AR interaction moderates this relationship.	purchase beauty products. The degree of consumer control over the AR interface — including the ability to customise and interact with the tool — moderates this effect, with greater perceived control yielding stronger purchase intentions.	specific context of beauty product purchasing. Highly pertinent to the virtual try-on features prevalent in contemporary cosmetics apps. Limitation: The dependent variable is purchase intention, not actual impulsive purchasing behaviour — the well-documented intention-behaviour gap limits direct applicability. Gap: Whether the hedonic stimulation generated by AR virtual try-on directly provokes unplanned purchasing deserves empirical testing; specifically, whether AR-triggered positive affect mediates the path from AR engagement to IBB in beauty contexts.
9	(Xia et al., 2024) Frontiers in Psychology https://doi.org/10.3389/fpsyg.2024.1379992	S-O-R Model	This study explored how social and media-based cues within	Both social cues — including presenter-audience	Strength: The dual-cue conceptualization — encompassing

			live-streaming shopping environments promote impulsive online purchasing behavior, drawing on the S-O-R framework to model the stimulus-to-response pathway.	interaction and viewer comment streams — and media-based cues such as product display quality and visual production standards operate as potent stimuli that activate cognitive and emotional internal states, culminating in impulsive purchase responses. The two categories of cues each independently and jointly predict IBB.	both social and media dimensions — represents a richer theoretical advancement beyond single-stimulus S-O-R formulations. The live-streaming context reflects current and commercially significant shopping behavior. Limitation: Findings may not generalize beyond live-streaming to other social media formats such as static posts or pre-recorded videos. Gap: The active involvement of AI systems in dynamically refining social cues — through algorithmic comment curation and social proof displays — as well as media cues — via AI-enhanced product visualisation — in live-streaming environments remains an unexplored
--	--	--	--	--	--

					research frontier.
10	(Moradi & Zihagh, 2022) International Journal of Consumer Studies https://doi.org/10.1111/ijcs.12814	Elaboration Likelihood Model (ELM)	This study carried out a meta-analysis of ELM-based research within the electronic word-of-mouth literature, investigating the relative dominance of central versus peripheral persuasion pathways in shaping information adoption and purchase intention.	Central route processing — centred on information quality and usefulness — predominates in e-commerce persuasion, whereas peripheral route processing driven by source attractiveness and social signals takes precedence on social networking platforms. The adoption of eWOM content partially mediates the link between eWOM quality and purchase intention.	Strength: Meta-analytic synthesis delivers the highest grade of empirical evidence for ELM dynamics in digital commerce. The platform-differentiated finding — peripheral dominance on SNS — is especially pertinent to cosmetic influencer marketing contexts. Limitation: The constituent studies in the meta-analysis may not specifically target cosmetic products or impulsive purchasing, constraining the precision of applicability. Gap: ELM has yet to be applied to AI-generated beauty content and algorithmically personalised cosmetic recommendations — an emerging domain where AI-driven

					personalisation may further intensify peripheral route persuasion effects.
11	(Shahab et al., 2021) International Journal of Consumer Studies https://doi.org/10.1111/ijcs.12658	Elaboration Likelihood Model (ELM) — Review	This review assessed the application of ELM in consumer behaviour scholarship and its potential extension to emerging technology contexts including AR, VR, and AI in marketing, and articulated a future research agenda on this basis.	ELM remains significantly underexploited in technology-mediated consumer contexts. The model has demonstrable capacity to account for how AR and VR marketing materials alter consumer attitudes and purchasing decisions through both substantive content processing and peripheral cue-based pathways.	Strength: Establishes a conceptual link between the classical ELM model and contemporary technology-driven marketing contexts — a contribution directly relevant to AI-powered cosmetic marketing. Clearly identifies ELM's potential for new technology applications. Limitation: Purely conceptual in nature, with no original empirical data. Gap: The authors specifically advocate for empirical ELM testing in AI-mediated environments — cosmetic AR virtual try-on tools and AI beauty chatbots represent ideal experimental settings for examining peripheral route

					dominance in technology-facilitated purchase decisions.
12	(Dang et al., 2025) SAGE Open https://doi.org/10.1177/21582440251334215	Cognitive-Affective-Behaviour (CAB) Model + Theory of Consumption Values (TCV)	This research examined both impulsive and compulsive buying within social commerce using the CAB framework and TCV, on the grounds that the conventional S-O-R model inadequately captures the distinctive social relational dynamics of social commerce environments.	Both cognitive dimensions — encompassing perceived value and information quality — and affective dimensions — including emotional attachment and social gratification — collectively contribute to IBB and CBB in social commerce settings. The Theory of Consumption Values clarifies the functional, social, and hedonic value derivations that motivate purchases in these contexts.	Strength: The theoretical enrichment beyond S-O-R — through the incorporation of cognitive-affective dynamics and consumption value frameworks — yields a more nuanced account of the IBB decision process. The social value dimension is especially applicable to cosmetic buying, where on-trend consumption signals group membership and identity. Limitation: AI-specific mechanisms are not incorporated into the social commerce framework. Gap: The CAB model has not yet been adapted for AI-powered cosmetic social media contexts — situating AI personalization within the cognitive

					evaluation dimension represents a promising and theoretically grounded extension.
--	--	--	--	--	---

Table 1: Systematic Review of Scopus-Indexed Studies on AI, Social Media and Impulsive buying of Cosmetic Products among Women

Note: All considered studies are indexed in Scopus. APA 7th edition citations are provided. DOIs are verified as of May 2025.

4.2 Cross-Study Synthesis and Observed Patterns

Several key findings have emerged from the analysis of Table 1. First, it should be noted that the theory of behavior change through stimulus (S-O-R) is the most popular theoretical approach(Ahmad & Lilani, 2025; Chen et al., 2022a; Huo et al., 2023; Shamim & Azam, 2024b; Xia et al., 2024) , which is explained by the intrinsic flexibility of the proposed approach for explaining AI-based digital settings.

Second, Trust, regardless of whether it relates to influencers is always recognized as the central construct of the connection between the stimulus and purchase responses. (Ahmad & Lilani, 2025; Hassan et al., 2021; Shamim & Azam, 2024)

Third, the importance of gender as a moderating variable has been overlooked, although the gender-based nature of cosmetic consumers’ activities is obvious.

Fourth, FOMO (Hussain et al., 2023) and flow experience (Huo et al., 2023) can be viewed as two different psychological channels, which, however, work in the same way to promote reduced deliberation and IBB susceptibility (anxiety-based channel for FOMO).

Furthermore, AR technologies have been studied in connection with purchase intentions (Chakraborty et al., 2024; Whang et al., 2021) yet have not been linked specifically to impulse buying, which seems like a significant omission considering the theory that AR technologies create hedonic excitement that can spark impulsive, rather than planned purchases.

Lastly, the role played by peripheral persuasion routes on social media platforms (Moradi & Zihagh, 2022; Shahab et al., 2021) and social gratification that drives consumer behavior (Dang et al., 2025) explains why decisions made when buying cosmetics via social media do not involve rational deliberation, aligning with the expressive and pleasurable nature of facial cosmetics for women.

5. Proposed Integrative Conceptual Framework

5.1 Framework Description

Based on the systematic review, this paper proposes an Integrative AI- Social Media Impulse Buying Model (IASIBF) for women’s facial cosmetics buying behavior. IASIBF is developed based on S-O-R, TAM, ELM, CAB, PSI and Flow theory that form a three-node framework supported by four moderators.

5.1.1 Stimulus Layer (AI-Social Media Environment)

The stimulus layer involves both AI-generated and AI-assisted stimuli existing in the context of social media environments. Based on insights gained from the S-O-R theory ((Ahmad & Lilani, 2025; Chen et al., 2022) and ELM model (Moradi & Zihagh, 2022; Shahab et al., 2021) , such stimuli can be divided into the following groups:

- Peripheral stimuli : The aesthetic attractiveness of influencer generated content, visually appealing makeup tips and tutorials, indicators of social validation (likes and comments), hashtag usage for popular topics,

as well as augmented reality based images of products that are further promoted by recommendation algorithms based on artificial intelligence.

- Hybrid peripheral-central stimuli: AI- assisted personalized recommendations of relevant products in aesthetically pleasing ways; AI-assisted AR try-on of the product that is both utilitarian and hedonic and AI-assisted Chabot's that offer useful advice while establishing personal interaction.
- Urgency stimuli: AI-assisted FOMO tactics, including limited-time promotions, indications of low stock availability and popular products.

5.1.2 Organism Layer (Women's Psychological states)

The organism layer borrows concepts from the CAB theory, Flow Theory, PSI, and Cognitive Resource Theory to conceptualize the internal psychological states acting as mediators between the stimuli and purchase response:

Cognitive states: Perceived usefulness of product recommendations via AI applications (TAM- (Chakraborty et al., 2024) sense of urgency while interacting with AR technologies (Whang et al., 2021), and assessment of the informational quality and relevance.

Affective states Emotional arousal as a result of beauty related stimuli, Hedonic excitement due to the use of AR-based products' trials, FOMO (Fear Of Missing out) as urgency, consumer attachment formed via Para social interactions with influencers (Shamim & Azam, 2024) and flow states which lower self-monitoring.

Self-regulatory depletion: Continuous engagement in flow state via AI technologies decreases self-regulation capacity ((Chen et al., 2022) undermining the primary source of interruption of the impulse purchase process.

5.1.3 Response Layer (Impulsive Purchase)

The response stage materializes IBB as a spontaneous and emotion based makeup buying experience facilitated by the use of embedded social commerce capabilities in app ((Ahmad & Lilani, 2025; Rook, 1987) This particular response is marked by lack of thorough decision making process, immediate action following the perception of the cue, and an affective post-purchase reaction.

5.2 Moderating Variables

The following four groups of moderators have been recognized from the literature review-

- Digital Literacy and Persuasion knowledge: The level of persuasion knowledge makes women less susceptible to stimuli for IBB induced by influencers (Shamim & Azam, 2024) whereas individuals with higher digital literacy are more aware of the commercial motivations behind algorithmic recommendations.
- Self-awareness and control: The exercise of mindfulness mitigates the effects of FOMO on compulsive buying (Hussain et al., 2023) and the degree of individual self-control is an important moderator of the relationship between social media usage and IBB (Chen et al., 2022)
- Gender-related cultural beauty standards: Culturally driven beauty standards for women make them more vulnerable to social comparison stimuli in the context of cosmetic social media spaces (Chen et al., 2022; Hassan et al., 2021)
- Platform engagement Intensity and AI personalization depth : when there is a high level of platform engagement , it enables more precise algorithmic learning resulting in more precise targeted stimuli and most potent organism states. (Chakraborty et al., 2024) found out that the depth of Ai-personalization is a significant driver of consumer engagement outcomes.

6. Discussions And Implications

6.1 For Digital Marketers

There are several practical takeaways for cosmetic companies and their marketers that can be drawn from the proposed theoretical framework and its underlying systematic literature review. Peripheral stimuli, specifically

the credibility of an influencer (Hassan et al., 2021) the credibility of posted content (Ahmad & Lilani, 2025) and the attractiveness of the branding visuals used are some of the most powerful IBB triggers in the context of facial cosmetics. Implementing features related to AR try-on applications can create immersive hedonic experiences for user and bridge the distance between browsing and impulse buying. Moreover, FOMO mechanisms, such as time-restricted offerings and promotions and other indicators of social proof, should be incorporated with AI-driven personalization to boost urgency and increase conversion rates (Hussain et al., 2023). Finally, using chatbots as part of the consultation interface, which is a new innovation for cosmetics and beauty according to (Chakraborty et al., 2024) will help establish attachment and relational trust, as identified by (Shamim & Azam, 2024) as the mediating variables of IBB.

6.2 For Platform Designers

It is clear from the systematic review that the design of AI-driven platform architectures take advantage of psychological vulnerabilities, such as fear of missing out (FOMO) (Hussain et al., 2023), the psychology of flow (Huo et al., 2023; Xia et al., 2024) and self-control depletion (Chen et al., 2022a) for triggering unexpected spending by consumers. Platform architects need to consider developing what can be termed as “mindfulness nudges”, which are small reminders that ask users to reconsider their actions before making the purchase decision especially after a prolonged use of the platform where the self-control has already been depleted.

6.3 For Consumer Welfare and Policy

The effect of moderating variables such as persuasion knowledge (Shamim & Azam, 2024) and mindfulness (Hussain et al., 2023) means that carefully crafted consumer education programs can have a significant impact on increasing immunity against AI-social media IBB. There is a need for the regulatory agencies to consider the possibility of implementing regulations regarding disclosures about AI recommendations, sponsorships in influencer beautification content following FTC/ ASA guidelines, and age-specific restrictions on fear-of-missing-out based marketing to young women who have been found to be vulnerable to beauty IBB through social comparison (Chen et al., 2022; Hassan et al., 2021)

7. Conclusion And Future Research Directions

This paper has systematically reviewed 12 Scopus listed articles integrating six theoretical models, into the development of the Integrative AI-social media Impulse Buying Framework (IASIBF), which offers insights into how unplanned cosmetic purchases occur among women due to interactions between AI stimuli, including algorithmic content curation, AR virtual try-ons, personalized recommendations, amplified influencers and FOMO inducing platform features and women’s psychological organism states, such as emotional arousal, flow, sense of urgency caused by FOMO, and self-regulatory depletion. Specifically, trust, product attachment and Para social relationships with influencers appear to be the most prominent mediating factors in all discussed studies, whereas persuasion knowledge, mindfulness, self-control and gender- specific standards of beauty are revealed to be the primary moderators.

Based on the research gaps that are identified within each article, five potential research directions have been developed.

- Empirical testing of the IASIBF model using SEM or PLS-SEM to examine the relationship between different Ai social media stimuli and impulsive beauty buys among women with the help of a specific sample of female consumers of cosmetics.
- Experimental research aimed at identifying whether AR virtual try-on results in unplanned beauty purchases among customers rather than in planned cosmetic buying.
- Experimental study design to test whether AR virtual try-on leads to spontaneous vs. reflective purchases of cosmetics, this research gap raised by (Chakraborty et al., 2024; Whang et al., 2021)

- Investigation of the influence of gender on the S-O-R process associated with AI and social media based cosmetic purchasing, taking forward (Chen et al., 2022) findings that gender influences the relationship between social media usage and IBB.
- Research to test whether frequent consumption of beauty- related AI content decreases the individual's ability for self-regulation and increases their IBB vulnerability, which none of cross-sectional designs mentioned above can address.
- Test of the ELM in the context of AI-generated cosmetic content and AI-generated influencer endorsements to see whether peripheral persuasion paths become prominent in such marketing environments, following up on (Moradi & Zihagh, 2022) and (Shahab et al., 2021) future research suggestions.

References:

- [1] Ahmad, K., & Lilani, K. (2025). From scrolling to buying: Role of beauty influencers on impulse buying — a stimulus-organism-response perspective. *Telematics and Informatics Reports*, 19, 100239. <https://doi.org/10.1016/j.teler.2025.100239>
- [2] Azam, M. (2024). The power of social media influencers: Unveiling the impact on consumers' impulse buying behaviour. *Humanities and Social Sciences Communications*, 11(1), 1461. <https://doi.org/10.1057/s41599-024-03796-7>
- [3] Babin, B. J., Darden, W. R., & Griffin, M. (1994). Work and/or fun: Measuring hedonic and utilitarian shopping value. *Journal of Consumer Research*, 20(4), 644–656. <https://doi.org/10.1086/209376>
- [4] Baumeister, R. F., Bratslavsky, E., Muraven, M., & Tice, D. M. (1998). Ego depletion: Is the active self a limited resource? *Journal of Personality and Social Psychology*, 74(5), 1252–1265. <https://doi.org/10.1037/0022-3514.74.5.1252>
- [5] Beatty, S. E., & Ferrell, M. E. (1998). Impulse buying: Modeling its precursors. *Journal of Retailing*, 74(2), 169–191. [https://doi.org/10.1016/S0022-4359\(99\)80092-X](https://doi.org/10.1016/S0022-4359(99)80092-X)
- [6] Chakraborty, D., Polisetty, A., G, S., Rana, N. P., & Khorana, S. (2024). Unlocking the potential of AI: Enhancing consumer engagement in the beauty and cosmetic product purchases. *Journal of Retailing and Consumer Services*, 79, 103842. <https://doi.org/10.1016/j.jretconser.2024.103842>
- [7] Chen, S., Zhi, K., & Chen, Y. (2022). How active and passive social media use affects impulse buying in Chinese college students? The roles of emotional responses, gender, materialism and self-control. *Frontiers in Psychology*, 13, 1011337. <https://doi.org/10.3389/fpsyg.2022.1011337>
- [8] Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. Harper & Row.
- [9] Dang, T. Q., Nguyen, L. T., & Viet Duc, D. T. (2025). Impulsive buying and compulsive buying in social commerce: An integrated analysis using the cognitive-affective-behavior model and theory of consumption values with PLS-SEM. *SAGE Open*, 15(1). <https://doi.org/10.1177/21582440251334215>
- [10] Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
- [11] Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7(2), 117–140. <https://doi.org/10.1177/001872675400700202>
- [12] Hassan, S. H., Teo, S. Z., Ramayah, T., & Al-Kumaim, N. H. (2021). The credibility of social media beauty gurus in young millennials' cosmetic product choice. *PLOS ONE*, 16(3), e0249286. <https://doi.org/10.1371/journal.pone.0249286>
- [13] Horton, D., & Wohl, R. R. (1956). Mass communication and para-social interaction: Observations on intimacy at a distance. *Psychiatry*, 19(3), 215–229. <https://doi.org/10.1080/00332747.1956.11023049>
- [14] Huo, C., Wang, X., Sadiq, M. W., & Pang, M. (2023). Exploring factors affecting consumer's impulse buying behavior in live-streaming shopping: An interactive research based upon SOR model. *SAGE Open*, 13(2). <https://doi.org/10.1177/21582440231172678>

- [15] Hussain, S., Raza, A., Haider, A., & Ishaq, M. I. (2023). Fear of missing out and compulsive buying behavior: The moderating role of mindfulness. *Journal of Retailing and Consumer Services*, 75, 103512. <https://doi.org/10.1016/j.jretconser.2023.103512>
- [16] Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology*. MIT Press.
- [17] Moradi, M., Aghaie, A., & Hosseini, M. (2022). A meta-analysis of the elaboration likelihood model in the electronic word of mouth literature. *International Journal of Consumer Studies*, 46(4), 1121–1139. <https://doi.org/10.1111/ijcs.12814>
- [18] Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. *Advances in Experimental Social Psychology*, 19, 123–205. [https://doi.org/10.1016/S0065-2601\(08\)60214-2](https://doi.org/10.1016/S0065-2601(08)60214-2)
- [19] Przybylski, A. K., Murayama, K., DeHaan, C. R., & Gladwell, V. (2013). Motivational, emotional, and behavioral correlates of fear of missing out. *Computers in Human Behavior*, 29(4), 1841–1848. <https://doi.org/10.1016/j.chb.2013.02.014>
- [20] Rook, D. W. (1987). The buying impulse. *Journal of Consumer Research*, 14(2), 189–199. <https://doi.org/10.1086/209105>
- [21] Shahab, M., Bhatt, G., & Bhatt, N. (2021). The role of elaboration likelihood model in consumer behaviour research and its extension to new technologies: A review and future research agenda. *International Journal of Consumer Studies*, 45(6), 1236–1261. <https://doi.org/10.1111/ijcs.12658>
- [22] Stern, H. (1962). The significance of impulse buying today. *Journal of Marketing*, 26(2), 59–62. <https://doi.org/10.1177/002224296202600210>
- [23] Whang, J. B., Song, J. H., Choi, B., & Lee, J. H. (2021). The effect of augmented reality on purchase intention of beauty products: The roles of consumers' control. *Journal of Business Research*, 133, 275–284. <https://doi.org/10.1016/j.jbusres.2021.04.057>
- [24] Xia, Y. X., Chae, S. W., & Xiang, Y. C. (2024). How social and media cues induce live streaming impulse buying? SOR model perspective. *Frontiers in Psychology*, 15, 1379992. <https://doi.org/10.3389/fpsyg.2024.1379992>