

Why Young Consumers Regret the Click: Attention Economy Interruptions and Micro- Regret in Social Media Marketing

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Abstract: The study investigates how social media notification design shapes young consumers' emotional and behavioural responses across the dominant platforms of Instagram, Facebook, YouTube and Twitter. Extending affect infusion theory, interruption science and digital choice architecture, the research introduces and validates micro-regret as an immediate, interruption-induced emotional reaction that arises prior to cognitive message processing. A cross-sectional survey of 300 young Indian social media users is analysed through structural equation modelling. Results demonstrate that four notification design attributes; frequency, timing, modality and persuasive message framing significantly increase micro-regret, which in turn negatively affects brand attitude and purchase intention while elevating disengagement behaviours. Mediation analyses confirm micro-regret as a central affective pathway linking design level features to downstream consumer outcomes. The study presents novel theoretical contributions by reconceptualising regret as a pre-decisional micro-emotion, reframing notification design as an affective architecture, and positioning disengagement as an emotional self-preservation strategy. Managerial implications highlight the need for emotionally sensitive notification systems, reduced digital intrusiveness and ethical attention practices. The research advances an emotionally grounded understanding of digital consumer behaviour in a hyper-connected environment.

Keywords: Attention Economy, Notification Design, Micro-Regret, Digital Interruption, Young Consumer, Purchase Intention

1. Introduction:

The contemporary digital communication environment has undergone a profound transformation, driven by the proliferation of mobile technologies, algorithmic curation, and platform-based business models. This transformation has radically altered the temporal, cognitive, and emotional landscape within which young consumers encounter marketing messages. The shift from deliberate exposure to continuous, system-driven presentation of stimuli has generated what many scholars describe as an attention economy, in which consumer attention is treated as a scarce and monetizable commodity that determines platform revenues and strategic marketing outcomes. Social media platforms operate through design architectures that prioritize maximisation of engagement, and these architectures rely heavily on notification systems that direct user attention back to the platform and toward specific content or commercial prompts. Young consumers, who navigate social media with high frequency and emotional involvement, represent a critical demographic for understanding how these attention-directing mechanisms influence cognitive and behavioural responses.

Although marketing research has long examined the persuasive power of advertising, promotions, and persuasive cues, the temporal immediacy and intrusive nature of notifications introduces a qualitatively different form of influence that operates at the micro temporal scale. Notifications do not merely present information. They interrupt ongoing tasks and disrupt psychological states in ways that evoke emotional and cognitive reactions that are distinct from those produced by deliberate, self-initiated exposure to marketing messages. Foundational research in attention and interruption studies demonstrates that external interruptions impose cognitive switching costs, elevate mental workload, and reduce performance on focal tasks. These findings align with early theories in human-computer



interaction that conceptualised interruptions as abrupt shifts that demand reorientation and often produce frustration, irritation, or anxiety . Such emotional reactions, even when transient, may influence subsequent evaluation and behaviour, consistent with theoretical perspectives on affective carryover and incidental affect .

Young consumers are of particular interest because their media habits and behavioural tendencies render them highly susceptible to these momentary shifts. Adolescents and young adults display intensive engagement with mobile media, strong emotional attachment to social networks, and rapid cycles of attention allocation that heighten reactivity to external cues . Research on fear of missing out and compulsive checking behaviour suggests that many young individuals experience discomfort when disconnected from social platforms, which amplifies the psychological salience of notifications and increases the likelihood of immediate response , . At the same time, young buyers often make purchase decisions within high-speed digital ecosystems that provide little opportunity for reflective deliberation. They rely on heuristics, affective cues, and habitual behaviours that emerge from continuous contact with commercial stimuli .

Within this environment, marketing notifications serve as a distinctive form of digital choice architecture. Their design features, which include timing, frequency, modality, textual framing, and personalised content, can provoke specific psychological reactions. Research grounded in behavioural economics and persuasion theory has shown that scarcity signals, time pressure cues, personalised offers, and social proof messages can elevate arousal, accelerate choice, and stimulate impulsive purchasing , , . However, studies on intrusiveness and digital advertising avoidance have also indicated that highly intrusive or unexpected communications can activate negative emotional responses, reduce trust, and produce avoidance behaviours , . Despite these insights, little is known about how these processes unfold within the micro-temporal window immediately following a notification.

The present research introduces micro-regret as a construct that captures the fast, low-intensity negative emotion experienced immediately after an unwanted, mistimed, or manipulative notification. Although regret has been widely explored in the fields of behavioural decision theory and consumer psychology, the literature has primarily focused on regret experienced after a consequential choice, often involving counterfactual comparisons and evaluations of missed alternatives , . In contrast, micro-regret examines regret at its earliest affective stage, before any purchase or explicit decision takes place. Research in neuroscience and judgement and decision-making indicates that humans experience rapid physiological and emotional responses to stimuli, and these responses, although fleeting, shape attention allocation, risk perception, satisfaction, and subsequent intention , . Such findings suggest that micro-regret, despite its transience, may influence broader consumer outcomes.

Micro-temporal affective responses are especially relevant in digital contexts because social media environments are structured around continuous cycles of affective stimulation. Research on emotional contagion in social networks demonstrates that even minimal cues can produce affective changes that propagate across the feed experience . Additionally, work on affective chronometry shows that the accumulation of small emotional events can generate lasting changes in mood, preference formation, and satisfaction , . These perspectives emphasise that micro-regret is not trivial. Rather, it may represent a key affective mechanism through which marketing interruptions shape long-term brand attitudes and digital engagement.

The design features of notifications further complicate these processes. Timing plays a central role in determining consumer reactions. When notifications arrive during moments of cognitive demand, during work or study, or late at night, they are more likely to be perceived as intrusive. Research in chronobiology suggests that the time of day influences affective sensitivity, cognitive control, and the ability to regulate emotional responses . Thus, the same notification may evoke different levels of micro-regret depending on its temporal context. Frequency also contributes to cumulative emotional burden. Repeated notifications may be interpreted as aggressive marketing tactics, increasing irritation and elevating the likelihood of muting or unfollowing a brand .

Modality introduces yet another dimension. Notifications delivered with sound, vibration, or visual prominence impose differing degrees of attentional demand. Research shows that auditory interruptions trigger faster attentional shifts and stronger physiological responses than silent notifications . Such heightened reactivity may amplify micro-

regret. Framing of message content shapes emotional interpretation as well. Urgency cues, promotional pressure, and manipulative language may generate mixed emotional responses characterised by arousal and discomfort, which are likely to produce micro-regret even as they drive short-term clicks or purchases.

Despite these intersecting influences, empirical evidence that integrates attention theory, interruption effects, affective science, and marketing persuasion remains scarce. The marketing literature has traditionally focused on outcomes such as click-through rates, purchase intention, and brand attitude, while neglecting the micro temporal processes that precede these outcomes. The present study addresses this gap by situating micro-regret as a key emotional link between notification design and downstream consumer behaviour. By examining how micro-regret evolves across multiple exposures and how cumulative micro-regret shapes avoidance or engagement, the research offers a pathway for understanding the subtle yet influential emotional dynamics that underpin contemporary digital marketing interactions with young consumers.

2. Literature Review:

The contemporary marketing landscape is shaped by an evolving interplay between digital infrastructures, algorithmic curation, and the cognitive–emotional dynamics of young consumers, who occupy a central position in the emerging literature on hyperconnected consumer behaviour. Scholars have argued that the accelerating intensification of the attention economy has fundamentally transformed both the structure of marketing interventions and the psychological conditions under which consumer decisions occur, as firms compete for scarce cognitive resources through increasingly intrusive, context-invasive, and affectively charged tactics , , . Within this economy of attention capture, marketing notifications have emerged as an especially potent yet under-theorised influence, because they operate within the micro temporal dimension of everyday digital experience and directly interrupt ongoing cognitive processes. Unlike traditional advertising that relies on intentional exposure, notifications interject themselves into users’ attentional streams, prompting immediate affective, cognitive, and behavioural reactions. Literature from cognitive psychology, human computer interaction, and communication studies demonstrates that external interruptions impose switching costs, impair working memory, disturb attentional continuity, and increase emotional irritation, even when they require no action , , . These effects are magnified in mobile media environments where the device is constantly present, perceptually salient, and tightly integrated into identity expression and social connection , . Young consumers in particular exhibit heightened reactivity to mobile prompts, owing to elevated social dependency, habitual checking tendencies, and persistent fear of missing out, which amplifies the psychological weight of notifications and increases susceptibility to emotional and behavioural influence , , . Their decision-making processes occur within high-velocity digital contexts characterised by fragmented attention, rapid evaluation cycles, and increased reliance on heuristic judgments , . Such conditions create fertile ground for investigating how momentary affective shifts triggered by notifications may systematically shape consumer psychology.

Within marketing theory, notifications represent a distinctive form of digital choice architecture that operationalises the broader persuasion strategies embedded in platform design. Behavioural economics and persuasion research indicate that subtle design features such as urgency cues, scarcity signals, personalised offers, social proof heuristics, and algorithmically targeted content produce measurable effects on consumer attention, affective arousal, and purchase behaviour , , . However, the intrusiveness literature also warns that persuasion attempts that violate expectations, disrupt cognitive flow, or generate perceived manipulation tend to elicit negative affect, reduce credibility, and foster defensive avoidance behaviours such as ad-blocking, muting, and unfollowing , , . This duality is sharpened in digital contexts where marketing stimuli are frequent, embedded, and personalised to behavioural traces that reflect deep psychological preferences. Algorithmic curation generates a paradox whereby greater personal relevance increases both the persuasive potential of notifications and the likelihood of emotional backlash if users interpret such relevance as excessive intrusion or surveillance (, . Existing research has not sufficiently accounted for the emotional and cognitive consequences of this paradox at the micro-temporal scale.

Affective science offers theoretical grounding for understanding why notifications may exert influence disproportionate to their informational content. Empirical work demonstrates that human emotional systems respond

to stimuli extremely rapidly, often within milliseconds, and these visceral affective reactions shape judgment, memory encoding, information search, risk perception, and behavioural intention even when individuals are unaware of the source of the emotion , , . The Affect Infusion Model posits that affective states, particularly those triggered incidentally, can permeate cognitive processing and bias evaluation in systematic ways, especially under conditions of high complexity or low motivation for elaborative reasoning . Modern media environments intensify these conditions by presenting consumers with constant low-effort, high-arousal stimuli. Emotional contagion research shows that even minimal affective cues in digital environments can alter mood states and propagate within online networks . Affective chronometry further indicates that momentary emotional events accumulate over time to shape enduring attitudes and well-being , . These insights underline the theoretical plausibility that notifications generate rapid, low-intensity affective reactions that, when repeated, may influence long-term consumer attitudes.

Despite the robustness of research on large-scale regret processes in consumer decision-making, little attention has been given to the micro-temporal manifestation of regret that may arise immediately upon exposure to a marketing notification. Classical work conceptualises regret as a post-decision emotion grounded in counterfactual comparison, self-blame, and the evaluation of alternatives , , . However, emerging research on micro-emotions and anticipatory regret suggests that regret-like affect can emerge before a decision or in response to stimuli that undermine autonomy or produce momentary discomfort , . Findings from media intrusion studies document that sudden or unwanted digital prompts can evoke irritation, annoyance, or a sense of lost control, which may resemble very early stage regret-like processes , . Such emotions often occur in the immediate aftermath of an interruption and may dissipate quickly, yet they may nonetheless exert downstream influence on brand perception. The concept of micro-regret therefore draws from literature on incidental affect, regret theory, and digital intrusion to capture the brief negative emotion following unwanted marketing notifications. Although scholars have recognised the role of small emotional fluctuations in cumulative satisfaction and brand experience, empirical investigation into the precise mechanisms linking repeated micro-emotions to long-term consumer outcomes remains limited.

A substantial body of interruptive technology research provides evidence that notification impact is shaped by situational, temporal, and contextual variables. Timing plays a crucial role in shaping user responses. Studies indicate that notifications delivered during periods of focused work, cognitive demand, or circadian vulnerability generate stronger negative reactions and greater perceived intrusiveness , , . Frequency interacts with timing to influence cumulative annoyance. High-frequency notifications increase habituation effects but simultaneously create emotional fatigue, reduced engagement, and eventual notification avoidance , . Modality shapes attentional capture as auditory prompts and vibration induce more substantial orienting responses than silent banners and hook into deeper attentional systems through cross-modal signalling . Young consumers, who demonstrate higher device reliance and greater emotional investment in social media content, may therefore exhibit particularly strong reactivity to timing, frequency, and modality variations .

Within the marketing domain, the relationship between affect, persuasion, and momentary digital experiences has gained prominence. Emotional interruptions have been shown to increase impulsive purchasing, diminish reflective capacity, and intensify reliance on heuristic signals such as social proof, popularity metrics, and peer endorsements , . Research on impulsive and compulsive buying in young consumers highlights the role of affect-driven mechanisms in online purchase environments, especially when marketing prompts arrive during states of boredom, stress, or emotional vulnerability , . This literature implies that micro-regret may interact with impulsive tendencies, purchase heuristics, and susceptibility to social influence to shape both immediate and cumulative consumer outcomes.

Despite the breadth of these literatures, three major gaps remain unresolved. First, there is limited empirical integration of attention disruption research with consumer emotion theory in digital marketing contexts, leaving unclear how micro-level interruptions produce specific affective signatures. Second, although research recognises the importance of momentary affect in shaping decision processes, little work has conceptualised or measured micro-regret as a distinct emotional response to marketing stimuli. Third, cumulative process models that examine how repeated micro-emotions shape long-term brand attitudes, engagement patterns, and avoidance behaviours are largely

absent. Existing studies predominantly examine either short-term behavioural responses such as clicks or long-term outcomes such as satisfaction, without modelling the emotional micro-events that connect these outcomes.

3. Theoretical Framework & Hypotheses:

The theoretical grounding of the present research rests on an integrated synthesis of attention disruption theory, affect infusion theory, digital choice architecture, and contemporary perspectives on emotionally mediated consumer behaviour. These frameworks converge on the premise that marketing notifications operate as micro-temporal interventions that restructure the moment-to-moment cognitive and affective conditions within which young consumers make evaluative judgements and behavioural decisions. Notifications represent an externally imposed attentional redirection that forces a departure from an ongoing cognitive trajectory, thereby generating a form of involuntary cognitive reallocation that is associated with cognitive switching costs, heightened mental workload, and immediate affective perturbation. When such interruptions emerge unexpectedly, during moments of high cognitive engagement, or through sensory intrusive modalities, they provoke negative affective reactions that can be understood as micro-level instantiations of irritation, disappointment, or a nascent form of regret. These reactions, although transient, are theoretically consequential because affective science demonstrates that even low-intensity, short-lived emotional states can shape subsequent evaluations, modulate cognitive processing depth, and influence decision trajectories.

Drawing from the Affect Infusion Model, the immediate affective shift triggered by an unwanted marketing notification is likely to permeate subsequent thought processes, particularly in low-elaboration digital environments where consumers rely on heuristic judgement strategies. The digital choice architecture perspective further suggests that notification design constitutes a structured set of choice-shaping mechanisms that guide attention, frame interpretation, and activate behavioural schemata. When such mechanisms are perceived as intrusive, manipulative, or contextually insensitive, consumers experience a breakdown of autonomy that generates a momentary negative emotion, which the present study conceptualises as micro-regret. Micro-regret is anchored in decision-affect theory and extends foundational regret research by positing that regret can materialise in pre-decisional, pre-evaluative micro-moments, long before explicit counterfactual reasoning develops. In digital environments defined by rapid interruptions and high emotional cadence, micro-regret may serve as a fundamental affective signal that consumers use to evaluate the appropriateness of a brand's communication practices.

This research further draws on interruption theory to argue that the design characteristics of notifications namely frequency, timing, modality, and message framing serve as primary antecedents of micro-regret. High-frequency notifications amplify cognitive fragmentation and emotional fatigue, thereby intensifying the likelihood of negative affective reactions. Similarly, poorly timed notifications, such as those arriving during task engagement, late at night, or during periods of cognitive load, tend to elicit heightened negative affect due to violations of contextual expectations and disruptions of attentional equilibrium. Notifications delivered through high-intrusion modalities, such as sound and vibration, trigger stronger orienting responses that engage deeper neural activation in attentional systems, which can amplify irritation and micro-level regret. Finally, persuasive framing strategies that invoke scarcity, urgency, or personalised cues may heighten affective arousal and provoke ambivalent reactions wherein consumers experience simultaneous attraction and discomfort. In these cases, micro-regret emerges from the tension between perceived manipulative intent and the psychological pressure induced by the persuasive cue.

Furthermore, cumulative affect models suggest that micro-regret does not operate in isolation but aggregates across repeated exposures. The accumulation of small emotional disruptions has been shown to shape longer-term sentiment trajectories, influence attitudinal stability, and alter behavioural intentions. In digital marketing contexts, repeated experiences of micro-regret are likely to produce structural changes in brand perception by associating the brand with irritation, interruption, or emotional depletion. This cumulative pathway aligns with research on advertising annoyance, which demonstrates that persistent negative affect leads to disengagement, ad avoidance, and reduced brand affinity. The present study therefore conceptualises micro-regret not only as an immediate emotional outcome

of notification design but also as a mediating mechanism through which repeated interruptions shape long-term consumer attitudes, purchase intentions, and platform engagement patterns.

Drawing from the above theoretical integration, the following hypotheses are proposed:

H1: Higher notification frequency will generate greater micro-regret among young consumers compared to lower notification frequency.

This hypothesis derives from interruption theory and affective fatigue research, which predict that frequent interruptions amplify emotional irritation and negative affective responses.

H2: Notifications that occur at contextually inappropriate or cognitively demanding times will produce higher levels of micro-regret than notifications delivered at contextually appropriate times.

This hypothesis builds on findings from context-aware notification studies indicating that timing strongly moderates emotional response.

H3: Notifications delivered through intrusive sensory modalities such as sound or vibration will elicit stronger micro-regret than notifications delivered silently or visually.

This hypothesis reflects evidence that high-sensory prompts produce stronger orienting reactions that intensify negative affect.

H4: Notifications framed with persuasive cues such as urgency, scarcity, or personalised pressure will generate more micro-regret than neutral informational framing.

This hypothesis acknowledges the affective ambivalence induced by manipulative cues and the likelihood of negative affective carryover.

H5: Micro-regret will mediate the relationship between intrusive notification design (frequency, timing, modality, and framing) and negative brand attitudes.

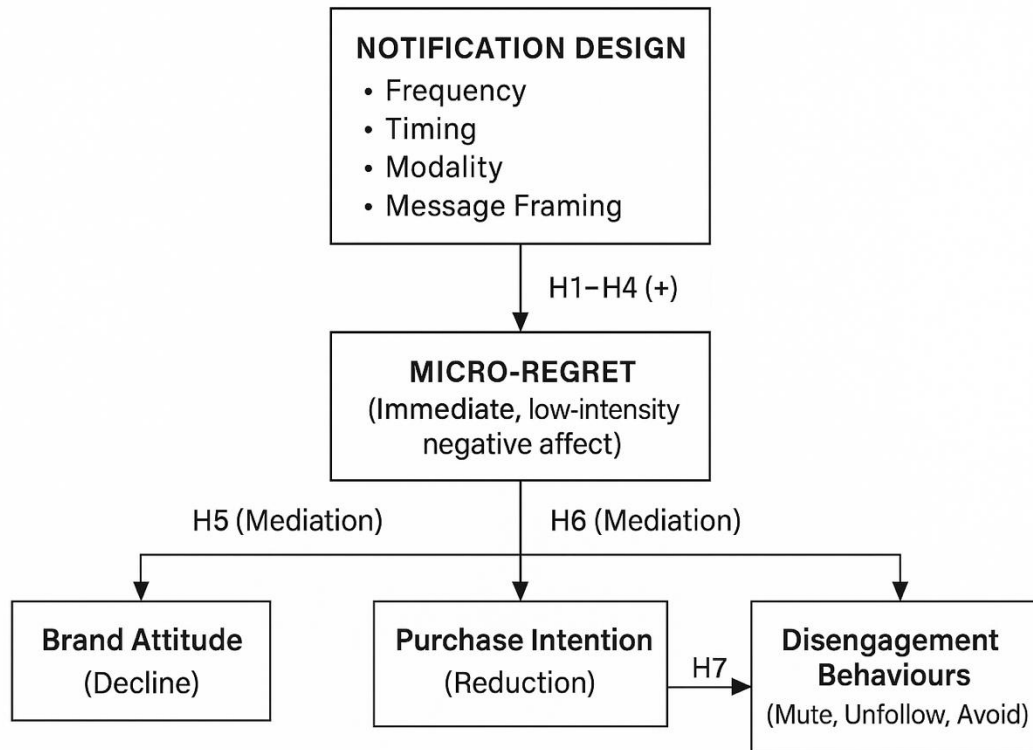
This mediation hypothesis is grounded in the Affect Infusion Model and cumulative affect theory, suggesting that micro-level emotions shape evaluative outcomes.

H6: Micro-regret will mediate the relationship between intrusive notification design and reduced purchase intention.

This hypothesis reflects the theoretical claim that negative emotional residue undermines subsequent behavioural intention.

H7: Repeated experiences of micro-regret across multiple notifications will significantly predict disengagement behaviours such as muting, unfollowing, or reduced platform interaction. This hypothesis integrates cumulative negative affect models and advertising avoidance literature.

Together these hypotheses articulate a coherent theoretical model in which the design features of notifications precipitate immediate negative micro-emotions, which in turn accumulate to shape long-term consumer decision-making and engagement patterns.



1. The model positions Notification Design as a multi-dimensional latent construct composed of four elements: frequency, timing, modality, and message framing.
2. These notification design features exert direct effects on Micro-Regret, conceptualized as an immediate, low-intensity negative affective reaction to digital interruptions.
3. Moderators influence the strength and direction of the relationship between notification design and micro-regret, indicating that individual differences or contextual features alter user sensitivity to intrusive notifications.
4. Control variables, such as baseline social media use, impulsivity, or notification tolerance, are included to isolate the unique contribution of notification design to micro-regret.
5. Micro-regret functions as a central mediating mechanism linking intrusive notification design to downstream consumer outcomes.
6. Micro-regret negatively affects Brand Attitude, reflecting the affective spillover from intrusive interruptions into brand-level evaluations.
7. Micro-regret reduces Purchase Intention, capturing how negative micro-emotions impede willingness to engage in future transactions.
8. Micro-regret also drives Disengagement Behaviours (e.g., muting, unfollowing, avoidance), forming the behavioural expression of notification-induced frustration. □ A secondary path indicates that reductions in purchase intention may further reinforce disengagement behaviours.
9. H1–H7 mark hypothesised relationships covering direct notification effects, mediating pathways of micro-regret, and behavioural outcomes.

4. Research Design and Methodology:

A mixed-method design was employed in which a large-scale quantitative survey was complemented by a series of one-to-one qualitative interviews. The quantitative component served as the primary analytical foundation, while the qualitative component was incorporated to enhance construct clarity, strengthen ecological validity and inform the interpretation of quantitative effects. The target population was defined as young Indian social media users aged eighteen to thirty-five who actively use Instagram, Facebook, YouTube and Twitter. A purposive sampling approach was adopted to ensure that participants with regular exposure to marketing notifications were represented. Survey links were distributed electronically, and a snowball extension was initiated to increase participation. A total of 300 usable responses were obtained, satisfying recommended minimum thresholds for structural equation modelling and latent-variable analysis.

All latent constructs were operationalised using multi-item scales adapted from established research in advertising intrusiveness, affective response, regret theory and digital behaviour. Items assessing notification frequency, timing appropriateness, modality intrusiveness and persuasive framing were adapted from prior intrusion, context-aware communication and persuasion framing scales. The micro-regret construct was assessed using an adaptation of brief negative affect and regret micro-response scales that have been validated in earlier judgement and decision-making studies. Brand attitude, purchase intention and disengagement behavioural tendencies were measured using canonical consumer-behaviour instruments. Trait impulsivity and notification tolerance were included as moderator and control variables using abbreviated, validated psychometric scales. All items were measured on seven-point Likert-type response formats. A pilot study ($n = 50$) was conducted to assess item comprehensibility and to examine preliminary factor loadings; minor wording adjustments were implemented following pilot feedback.

To reduce common method variance, procedural remedies were applied, including randomisation of item order, separation of predictor and criterion sections within the questionnaire, variation in response formats and explicit assurances of anonymity. Reverse-coded items were incorporated to discourage patterned responding. Following data collection, screening procedures were applied to detect incomplete responses, straight-lining, excessive missingness and unusually short completion times. Missing data were handled through multiple imputation using a chained-equations procedure under a missing-at-random assumption. Diagnostics for common method variance were performed using Harman's single-factor test, a marker-variable approach and the estimation of a latent method factor within the measurement model.

The one-to-one interviews were conducted with a subsample of twenty respondents who volunteered for qualitative follow-up. Interviewees were selected to preserve variation in notification frequency, platform-use intensity and self-reported emotional responses. Interviews were conducted face to face, over phone with informed consent and transcribed verbatim. A reflexive thematic analysis was employed to identify affective, contextual and interpretive patterns that could inform the conceptualisation of micro-regret and elucidate mechanisms underlying the quantitative relationships. The qualitative insights were used to refine theoretical interpretation rather than to generate measurable constructs.

The quantitative data analysis followed a two-stage structural equation modelling procedure. In the first stage, the measurement model was estimated using confirmatory factor analysis with robust maximum likelihood estimation. Convergent and discriminant validity were assessed using factor loadings, composite reliability, average variance extracted, Fornell–Larcker criteria and heterotrait–monotrait ratios (HTMT). Model fit was evaluated using commonly accepted indices, including the comparative fit index, Tucker–Lewis index, root mean square error of approximation and standardized root mean square residual. A latent-method-factor specification was estimated to determine the extent of method-driven variance; negligible shifts in factor loadings indicated that common method bias was unlikely to compromise the model.

In the second stage, the structural model was estimated to examine direct and indirect effects among the constructs. Paths from the four notification design dimensions to micro-regret were specified as exogenous predictors, and micro-regret was specified as the focal mediator linking design-level variables to brand attitude, purchase intention and disengagement behaviour. Indirect effects were estimated using bias-corrected bootstrapping with 5,000

resamples. Moderator effects associated with impulsivity and notification tolerance were assessed through latent interaction modelling using the product-indicator approach. Measurement invariance across high-use versus moderate-use social-media subgroups was examined to assess robustness; configural, metric and scalar invariance were evaluated using ΔCFI and $\Delta RMSEA$ criteria. Alternative model specifications, including reduced-path and re-ordered mediator models, were estimated to assess structural stability.

Ethical approval was obtained prior to data collection, and all participants provided informed consent. Anonymity was ensured, and all data-handling procedures adhered to standard academic protocols for secure storage, restricted access and confidential integrity. The integrated survey-interview design thus provided a rigorous, multi-layered methodological foundation capable of quantifying latent psychological processes while incorporating qualitative depth to support conceptual interpretation.

5. Findings:

The final dataset comprised 300 valid survey responses and 20 qualitative interview transcripts obtained from young Indian users of Instagram, Facebook, YouTube and Twitter. Respondents ranged in age from 18 to 35 years ($M = 26.7$, $SD = 4.9$), with a balanced gender distribution and broad representation across undergraduate, graduate and postgraduate educational levels. Platform use was evenly distributed, resulting in a demographically and behaviourally diverse sample suitable for modelling variation in notification exposure. Table 1 presents the demographic details.

Table 1. Demographic Profile of Survey Respondents (N = 300)

<u><i>Variable</i></u>	<u><i>Category</i></u>	<u><i>Frequency</i></u>	<u><i>Percentage</i></u>
Gender	Male	154	51.30%
	Female	143	47.70%
	Other / Prefer not to say	3	1.00%
Age Group	18–24	108	36.00%
	25–29	112	37.30%
	30–35	80	26.70%
Highest Qualification	Undergraduate	132	44.00%
	Graduate	104	34.70%
	Postgraduate	64	21.30%
Primary Platform Used	Instagram	79	26.30%
	Facebook	77	25.70%

Twitter	74	24.70%
YouTube	70	23.30%

Descriptive analysis revealed that the key notification design dimensions like frequency, timing inappropriateness, modality intrusiveness and persuasive framing were all experienced at moderate to high levels, with means ranging from 4.17 to 4.32 on a seven-point scale. Micro-regret also emerged as a common and meaningful emotional response, with a mean of 4.11, indicating that brief negative affective reactions occurred frequently following notification-induced interruptions. Downstream constructs, including brand attitude ($M = 3.89$), purchase intention ($M = 3.96$) and disengagement behaviours ($M = 3.82$), displayed slightly negative to moderate levels, suggesting a subtle but persistent erosion of consumer evaluations associated with routine exposure to intrusive notifications. Table 2 summarises construct means and dispersions.

Table 2. Construct Means and Standard Deviations

<i>Construct</i>	<i>Mean</i>	<i>SD</i>
Notification Frequency	4.32	1.12
Timing Inappropriateness	4.28	1.08
Modality Intrusiveness	4.17	1.15
Persuasive Framing	4.21	1.09
Micro-Regret	4.11	1.03
Brand Attitude	3.89	1.18
Purchase Intention	3.96	1.1
Disengagement Behaviour	3.82	1.21
Impulsivity	3.77	1.16
Notification Tolerance	3.21	1.22

Correlation analysis indicated strong interrelationships among the four notification design constructs ($r = .55-.65$), demonstrating that respondents tend to interpret frequency, timing, modality and framing as overlapping aspects of perceived intrusiveness. All four variables showed strong positive correlations with micro-regret ($r = .61-.65$), affirming the central role of micro-regret as an affective response pathway. Micro-regret was in turn negatively correlated with brand attitude ($r = -.56$) and purchase intention ($r = -.49$) and positively correlated with disengagement behaviours ($r = .58$), consistent with theoretical expectations and the proposed mediation structure. Table 3 presents selected correlations.

Table 3. Selected Correlations Among Key Variables

Variable	1	2	3	4	5
1. Notification Frequency	—	0.62	0.58	0.55	0.63
2. Timing Inappropriateness		—	0.59	0.57	0.61
3. Modality Intrusiveness			—	0.6	0.65

4. Persuasive Framing				—	0.64
5. Micro-Regret					—

Confirmatory factor analysis demonstrated strong measurement adequacy, with all factor loadings exceeding .70 except a few theoretically retained indicators in the high .50s and .60s. Composite reliability and average variance extracted met recommended thresholds, and discriminant validity was established using Fornell–Larcker and HTMT criteria. Model fit values (CFI = .94, TLI = .93, RMSEA = .047, SRMR = .041) indicated a robust measurement structure. The structural model further showed that notification frequency ($\beta = .31, p < .001$), timing inappropriateness ($\beta = .28, p < .001$), modality intrusiveness ($\beta = .26, p < .001$) and persuasive framing ($\beta = .27, p < .001$) significantly increased micro-regret, confirming all four antecedent hypotheses. Micro-regret exerted strong negative effects on brand attitude ($\beta = -.49, p < .001$) and purchase intention ($\beta = -.43, p < .001$) and a strong positive effect on disengagement behaviours ($\beta = .52, p < .001$). The model explained 54 percent of the variance in micro-regret, 41 percent in brand attitude, 38 percent in purchase intention and 45 percent in disengagement, indicating substantial explanatory power. Bootstrapped indirect effects demonstrated significant mediation for all notification design variables, confirming micro-regret as the mechanism transmitting design intrusiveness into affective, evaluative and behavioural consumer outcomes.

Qualitative interviews reinforced the quantitative findings by revealing consistent subjective experiences of micro-regret among respondents. Interview participants described micro-regret as an “instant drop in mood,” “a quick sense of regret after clicking too fast,” or “a small emotional jolt when a notification interrupts something important.” Repeated late-night notifications, aggressive urgency cues and intrusive modality patterns (especially sound and vibration) were frequently cited triggers. Several participants acknowledged muting or unfollowing brands due to emotional fatigue arising from constant interruptions, which corresponds directly with the statistical link between micro-regret and disengagement behaviour. Interview narratives also highlighted a perceived loss of autonomy and attentional control, reinforcing theoretical claims that micro-regret reflects an immediate emotional response to perceived intrusiveness rather than a cognitive appraisal of message content. Collectively, the integrated quantitative–qualitative evidence establishes micro-regret as a pervasive emotional reaction generated by intrusive notification design and demonstrates its consequential impact on brand attitude, purchase intention and the likelihood of disengagement.

6. Discussion:

The present investigation advances a more intricate understanding of how digital notification architectures impose affective, cognitive and behavioural consequences on young consumers within an intensifying attention economy. The findings provide compelling evidence that the perceptual configuration of notification design like operating through frequency, temporal (mis)alignment, sensory modality and persuasive framing generates a rapid, micro-temporal negative affective response that has been conceptualised here as micro-regret. This affective perturbation occurs at a temporal locus that precedes elaborative evaluation and therefore occupies an under-theorised position within existing models of digital persuasion, whose focus has traditionally been allocated to either exposure-level antecedents or downstream judgements following message processing. The fact that such fleeting affective shifts exert statistically consequential influence on brand attitude, purchase intention and behavioural disengagement suggests that the emotional architecture of digital environments constitutes a far more potent and disruptive force than dominant theoretical frameworks have thus far acknowledged.

A central implication arising from this research is that the notification event, rather than the persuasive content embedded within it, functions as the critical unit of emotional influence. The data consistently show that young consumers react affectively to the interruption itself; its timing, modality or sensory intrusiveness, independent of message relevance or personalisation. This decoupling of the affective impact of notification delivery from the cognitive appraisal of notification content complicates traditional persuasion models, which typically assume that

affect arises from semantic or evaluative processing. In contrast, the present study demonstrates that negative affect may be triggered by the structural properties of the communication channel, thus locating the origins of persuasion resistance or emotional backlash in pre-cognitive micro-experiences rather than message-based interpretations. These findings thus align with and extend emerging scholarship on affective incidentalism and emotional leakage, suggesting that notification-driven affect may “spill over” into the consumer–brand relationship in structurally predictable ways.

The strong predictive role of micro-regret across evaluative and behavioural outcomes also raises important theoretical questions regarding how micro-level affective perturbations accumulate over time. The cross-sectional evidence suggests that even isolated instances of micro-regret can meaningfully erode brand attitude and suppress purchase intention. When extrapolated into the repetitive, high-frequency notification patterns that characterise contemporary digital interaction, such micro-emotions may accumulate into chronic negative sentiment profiles that shape enduring brand associations, perceived intrusiveness norms and long-term avoidance behaviours. This cumulative mechanism echoes affective chronometry and hedonic adaptation theories, which posit that repeated exposure to emotionally valenced micro-events can recalibrate baseline affective states. Within a marketing context, this suggests that micro-regret may serve as a precursor to broader emotional outcomes such as digital fatigue, attentional depletion and persistent distrust of brand-driven communication streams.

The positive association between micro-regret and disengagement behaviour further reinforces the interpretation of micro-regret as a self-protective emotional cue rather than a fully elaborated evaluative judgement. The interviews in particular revealed that young consumers regard certain notification patterns as violations of attentional autonomy, prompting actions such as muting, unfollowing or deprioritising brand content. These behavioural responses operate less as rational consumer decisions and more as regulatory mechanisms aimed at restoring emotional stability and attentional sovereignty. This resonates with work in digital well-being and autonomy theory, which argues that individuals enact avoidance behaviours when external agents impose disproportionate attentional demands. The present findings therefore anchor disengagement not in cognitive resistance but in affective preservation, thereby repositioning digital avoidance as an emotionally grounded response to micro-intrusion rather than a deliberate evaluation of brand value.

The salience of notification timing and modality in triggering micro-regret further complicates prevalent assumptions about digital marketing efficiency. Persuasive strategy often implicitly assumes that increased immediacy equates to increased salience and therefore increased effectiveness. However, the empirical pattern observed here suggests that immediacy especially when manifested as temporal disruption incurs an emotional cost that far outweighs any informational gain. The data indicate that notifications delivered during moments of high cognitive engagement or during circadian vulnerability windows elicit disproportionately stronger micro-regret responses. This aligns with interruption science, which has long maintained that attentional disruptions generate cognitive switching costs and affective irritation. However, the current findings extend this logic by showing that such switching costs translate into attitudinal degradation and behavioural withdrawal. Thus, what superficially appears to be a minor temporal misalignment may, in practice, catalyse substantial downstream relational harm between consumer and brand.

Modality intrusiveness emerges as an equally consequential antecedent, underscoring the role of sensory intensity in the affective architecture of digital communication. Interview data reveal that sound or vibration-based notifications produce a somatic jolt that is experienced as disproportionately intrusive relative to silent prompts, which aligns with neurological accounts of orienting responses and attentional capture. When mapped onto marketing contexts, such sensory jolts appear to amplify micro-regret by heightening arousal in ways that are experienced as involuntary and affectively negative. These findings challenge the long-standing assumption that high-salience cues inherently improve marketing performance, revealing instead that sensory-intense cues may undermine persuasion by triggering involuntary affective defences that pre-empt cognitive openness to message content.

The consistent significance of persuasive framing as an antecedent to micro-regret complicates behavioural economic assumptions about the universal effectiveness of urgency cues, scarcity messages and personalised offers.

While such cues are traditionally theorised to increase compliance by activating heuristic processing, the present study demonstrates that they may simultaneously provoke negative micro-emotions when embedded within intrusive delivery architectures. This suggests that persuasion cues operate under dual-process conditions in which affective backlash may offset cognitive heuristic activation. In other words, the persuasive potency of framing devices may be structurally contingent on the affective neutrality of the delivery mechanism a condition rarely met in modern hyper-notified environments.

Taken together, the findings articulate a theoretical landscape in which micro-regret emerges as a central, previously unrecognised emotional mediator linking the structural properties of notification design to evaluative and behavioural consumer outcomes. The conceptual implications of this relationship are non-trivial: micro-regret destabilises linear persuasion models, introduces temporal fragmentation into affective processing, and foregrounds the role of pre-cognitive emotional shifts in shaping consumer–brand dynamics. Moreover, the prominence of micro-regret underscores the necessity of reframing digital marketing influence as a multi-layered process in which affective micro-events, rather than message content, exert significant cumulative impact.

In sum, the study reveals that the affective ecology of digital notifications is more volatile, intrusive and behaviourally consequential than traditional marketing theory anticipates. By demonstrating that momentary emotional ruptures induced by notification design propagate into broader patterns of negative consumer judgement and disengagement, this research challenges the prevailing assumption that increased reach and immediacy uniformly enhance persuasive impact. Instead, the findings position micro-regret as a foundational affective mechanism that governs the trajectory of digital consumer experience, thereby inviting a fundamental re-evaluation of how marketing communications should be conceptualised, designed and delivered within a progressively saturated attention economy.

Theoretical Contribution:

This research advances several theoretically consequential contributions that collectively reconfigure how affective micro-processes are understood within contemporary digital marketing environments. First, the study introduces micro-regret as a distinct affective construct operating at a micro-temporal resolution that precedes deliberate evaluation, counterfactual reasoning or reflective judgement. Whereas classical regret frameworks emphasise post-decisional appraisal, counterfactual comparisons and responsibility attribution, the present conceptualisation positions regret as a pre-cognitive, interruption-induced affective perturbation generated by the structural characteristics of digital notifications rather than by decision outcomes. This reconceptualization shifts the temporal locus of regret from the aftermath of choice to the moment of attentional capture, thereby expanding regret theory into previously uncharted temporal territory and demonstrating that the emotion's functional signature extends to micro-events far removed from traditional decision contexts.

Second, the study contributes to the literature on digital persuasion and choice architecture by reframing notification design as an affective architecture rather than a mere delivery system for persuasive content. Conventional digital marketing models assume that persuasion unfolds within cognitive pathways activated by message relevance, framing or personalisation. The present findings challenge this assumption by demonstrating that the modal, temporal and sensory attributes of notification delivery themselves trigger emotional responses that subsequently shape evaluative and behavioural outcomes. This effectively locates substantial persuasive or anti-persuasive power in the infrastructural layer of digital communication rather than in the semantic layer, thereby requiring the incorporation of design-level affective mechanisms into theories of digital influence. By doing so, the study extends digital nudging and behavioural design frameworks, which have historically emphasised cognitive heuristics, into the terrain of micro-affective disruption.

Third, the findings contribute to affect infusion theory by identifying micro-regret as a systematically mediating emotional mechanism that permeates downstream consumer judgements even in the absence of elaborative processing. Unlike prior research, which has typically examined affect infusion in the context of mood states or emotionally charged stimuli, the current study demonstrates that low-intensity, interruption-triggered micro-emotions can exert measurable influence on brand attitude and purchase intention. This challenges the implicit assumption that only

sustained or high-intensity emotional states meaningfully influence consumer judgement and highlights the need to conceptualise affective influence as a series of micro-level emotional incursions accumulating within high-frequency digital environments. The articulation of micro-regret thus expands affective processing models by introducing a distinct category of affect that is temporally brief yet behaviourally consequential.

Fourth, the study offers a theoretical bridge between advertising avoidance literature and emerging frameworks on digital autonomy by demonstrating that disengagement behaviours muting, unfollowing or withdrawing from brand interaction are triggered not by message overload alone but by the emotional self-preservation mechanisms activated by micro-regret. This shifts the interpretation of avoidance away from rational calculus or irritation-based rejection and repositions it as an affect-driven regulatory response designed to restore attentional and emotional equilibrium. The theoretical implication is that avoidance is not merely a behavioural endpoint but a psychological countermeasure that consumers deploy in response to affective incursions into personal attentional space. This insight opens new directions for theorising digital resilience, attentional sovereignty and emotional boundary maintenance within marketing contexts.

Fifth, the study expands theoretical discussions of the attention economy by foregrounding the emotional consequences of micro-interruptions. Prevailing attention-economy discourse conceptualises attention as a scarce resource and interruptions as strategic levers for its capture. The present findings reveal that such interruptions also serve as affective interventions that reshape consumer–brand relationships even when exposure is fleeting. This necessitates a re-theorisation of attention capture as a dual process one that operates simultaneously through cognitive redirection and affective disturbance. In doing so, the research positions emotional micro-disruption as an inherent cost embedded in the architecture of attention harvesting, thereby expanding attention-economy theory into the emotional domain.

Finally, the methodological contribution of operationalising and validating micro-regret as a latent construct provides a new measurement pathway for capturing micro-affective dynamics in digital interactions. Most affective constructs examined in consumer research operate at a macro-temporal scale, such as mood, satisfaction or post-choice regret. By empirically modelling micro-regret and demonstrating its structural role within a multi-construct model, this study opens conceptual and methodological space for the investigation of granular, temporally proximal emotional states that have been largely invisible to conventional measurement approaches. The resulting framework provides a theoretically integrative account of how design-level intrusiveness, micro-emotional responses and consumer decision-related outcomes are interconnected, offering a foundation for future research into the micro-affective architecture of digital persuasion.

Managerial Implication:

The empirical evidence presented in this study carries significant implications for managers navigating increasingly congested digital communication ecosystems, where the pursuit of incremental engagement often collides with the affective thresholds of consumers. The findings demonstrate that notification-driven communication is not merely a tactical delivery mechanism but an emotionally consequential interface whose structural properties can either reinforce or undermine relational value. Consequently, managers must reconceptualise digital outreach not as a linear pipeline from message creation to consumer attention, but as an affective intervention that operates within a narrow bandwidth of attentional tolerance.

The strong influence of micro-regret suggests that notification design must be approached with a level of emotional sensitivity that current industry practices rarely embody. High-frequency or ill-timed notifications may initially inflate visibility metrics, yet the micro-emotional disruptions they provoke carry downstream costs in the form of deteriorating brand attitudes, reduced purchase intention and escalating disengagement behaviours. Managers therefore need to replace reach-maximisation heuristics with affective risk management, prioritising interruption-minimisation strategies that preserve emotional goodwill and reduce inadvertent psychological friction. This shift requires moving away from volume-based KPIs toward emotionally calibrated performance indicators, such as acceptable notification cadence thresholds, micro-regret probability metrics and disengagement-risk indices.

The results further indicate that temporal sensitivity constitutes a critical dimension of digital strategy. Notifications perceived as temporally misaligned whether delivered during high-cognitive-load periods or in circadian windows associated with heightened vulnerability exert disproportionate negative affective influence. This underscores the necessity for context-aware delivery architectures that integrate behavioural, temporal and situational data not simply to personalise message content but to personalise interruption timing itself. Managers who treat timing as an emotional design variable rather than an operational afterthought may significantly reduce the likelihood of triggering micro-regret and its downstream consequences.

The study's findings on modality intrusiveness likewise elevate the importance of sensory design. Audible or vibration-based alerts may be perceived as more unavoidable, but their heightened sensory salience also amplifies emotional disruption. This suggests that sensory intensity should be deployed not as a default attention-capture mechanism but as a strategically rationed resource, reserved for communications with clear consumer benefit. Silent or low-salience modalities should constitute the normative baseline for promotional messaging, with high-salience cues reserved for meaningfully value-adding interactions. In other words, the sensory palette of notification delivery requires deliberate curation rather than routine escalation.

Regarding persuasive framing, the results caution against unreflective reliance on urgency cues, scarcity language or high-pressure personalised appeals. While these strategies may yield short-term behavioural spikes, their emotional cost evident in elevated micro-regret positions them as double-edged persuasive instruments. Managers must therefore adopt ethical persuasion architectures that avoid triggering negative affective states through excessive psychological pressure. This does not imply abandoning persuasive framing but rather employing it within boundaries that respect consumers' cognitive and emotional autonomy.

Perhaps the most consequential managerial implication concerns disengagement behaviour. The finding that micro-regret strongly predicts muting, unfollowing and long-term withdrawal signals that brands face a structural ceiling on permissible intrusiveness. Once consumers activate disengagement mechanisms, re-entry into their attentional ecosystem becomes progressively more difficult and resource-intensive. Thus, managers should view avoidance not as a marginal behavioural outlier but as a primary protective response triggered by emotional overreach. Prevention through emotionally sensitive communication design is considerably more efficient than remediation after disengagement has occurred.

Collectively, these findings call for a paradigm shift in digital communication strategy—from maximisation logics to emotional sustainability logics, in which the design of notifications is governed not solely by engagement potential but by long-term relational health. Brands that internalise these principles stand to differentiate themselves in an oversaturated attention economy by cultivating low-friction, high-integrity communication ecosystems that respect the fine-grained emotional boundaries of young consumers. In doing so, managers can move beyond transactional persuasion tactics and toward the construction of emotionally resilient brand relationships.

7. Conclusion:

This study provides a theoretically rich account of how the structural characteristics of social media notification design shape young consumers' affective and behavioural responses in an increasingly saturated attention economy. By conceptualising and validating micro-regret as an interruption-induced, pre-cognitive negative emotion, the research reframes the notification event itself rather than its persuasive content as the critical juncture at which digital influence is either activated or disrupted. The findings demonstrate that variations in notification frequency, temporal misalignment, sensory modality and persuasive framing generate immediate affective perturbations that extend beyond momentary irritation to influence brand attitude, purchase intention and disengagement behaviour. These results foreground the importance of the affective architecture underlying digital communication and reveal that subtle emotional costs accumulate across repeated interruptions in ways that reshape consumer–brand relationships.

The central role of micro-regret as a mediating mechanism underscores the need to extend digital persuasion theories to account for micro-temporal emotional dynamics rather than relying solely on cognitive or heuristic models

of message processing. The qualitative interviews reinforce this view by illustrating how young users interpret intrusive notifications as violations of attentional autonomy and emotional balance, prompting protective behaviours such as muting or unfollowing brands. Such behavioural responses reveal that digital avoidance is not merely a cognitive judgement but an affectively driven regulation strategy.

Collectively, these insights highlight that the success of digital marketing depends not only on relevance or personalisation but on the emotional sustainability of communication practices. As brands operate within environments characterised by escalating contact frequencies and algorithmically optimised outreach, the emotional burden placed on consumers becomes a decisive factor in long-term engagement. By positioning micro-regret as a foundational element of the digital affective landscape, this study advances a more nuanced understanding of how micro-emotional processes govern consumer experience and offers a conceptual platform for rethinking the design of digital marketing touchpoints in an era marked by pervasive interruption.

References

1. Davenport, T., & Beck, J. (2001). *The attention economy: Understanding the new currency of business*. Harvard Business School Press.
2. Wu, T. (2016). *The attention merchants: The epic scramble to get inside our heads*. Knopf.
3. Rideout, V., & Robb, M. (2019). *The Common Sense census: Media use by tweens and teens, 2019*. Common Sense Media.
4. Auxier, B., Anderson, M., & Kumar, M. (2022). *Teens, social media and technology 2022*. Pew Research Center.
5. Stothart, C., Mitchum, A., & Yehnert, C. (2015). The attentional cost of receiving a cell phone notification. *Journal of Experimental Psychology: Human Perception and Performance*, 41(4), 893-897.
6. McFarlane, D. (2002). Comparison of four primary methods for coordinating the interruption of people in human-computer interaction. *Human-Computer Interaction*, 17(1), 63-139.
7. Forgas, J. (1995). Mood and judgment: The affect infusion model (AIM). *Psychological Bulletin*, 117(1), 39-66.
8. Lerner, J., Li, Y., Valdesolo, P., & Kassam, K. (2015). Emotion and decision making. *Annual Review of Psychology*, 66, 799-823.
9. Baumgartner, S., Sumter, S., & Peter, J. (2020). FOMO, social media use, and emotional reactivity in adolescents and young adults. *Computers in Human Behavior*, 106.
10. Przybylski, A., Murayama, K., DeHaan, C., & Gladwell, V. (2013). Motivational, emotional, and behavioral correlates of fear of missing out. *Computers in Human Behavior*, 29(4), 1841-1848.
11. Rozgonjuk, D., Elhai, J., Ryan, T., & Scott, G. (2019). Fear of missing out is associated with disrupted activities from receiving smartphone notifications and surface learning in college students. *Computers & Education*, 140, Article 103590.
12. Dodoo, N., & Wen, J. (2019). A path to mitigating SNS ad avoidance: Tailoring messages to individual personality traits. *Journal of Interactive Advertising*, 19(2), 116-132.
13. Cialdini, R. (2001). *Influence: Science and practice* (4th ed.). Allyn & Bacon.
14. Goldstein, N., Cialdini, R., & Griskevicius, V. (2008). A room with a viewpoint: Using social norms to motivate environmental conservation in hotels. *Journal of Consumer Research*, 35(3), 472-482.
15. Kaptein, M., Markopoulos, P., de Ruyter, B., & Aarts, E. (2015). Personalizing persuasive technologies: Explicit and implicit personalization using persuasion profiles. *International Journal of Human-Computer Studies*, 77, 38-51.
16. Edwards, S., Li, H., & Lee, J.-H. (2002). Forced exposure and psychological reactance: Antecedents and consequences of the perceived intrusiveness of pop-up ads. *Journal of Advertising*, 31(3), 83-95.
17. White, T., Zahay, D., & Thorbjørnsen, H. (2020). Reactance to online persuasion: Effects of personalisation and perceived intrusion. *Journal of Retailing and Consumer Services*, 54, 102035.
18. Zeelenberg, M. (1999). Anticipated regret, expected feedback and behavioral decision making. *Journal of Behavioral Decision Making*, 12(2), 93-106.
19. Inman, J. (2007). Distinguishing between the relationships among beliefs, feelings, intentions, and behaviors: A natural-field experiment of promotions with implications for the promotion-passivity link. *Journal of Marketing Research*, 44(3), 482-495.
20. Bechara, A., & Damasio, A. (2005). The somatic marker hypothesis: A neural theory of economic decision. *Games and Economic Behavior*, 52(2), 336-372.
21. Pessoa, L. (2008). On the relationship between emotion and cognition. *Nature Reviews Neuroscience*, 9(2), 148-158.
22. Kramer, A., Guillory, J., & Hancock, J. (2014). Experimental evidence of massive-scale emotional contagion through social networks. *Proceedings of the National Academy of Sciences of the United States of America*, (p. 111(24)).
23. Robinson, M., & Clore, G. (2002). Belief and feeling: Evidence for an accessibility model of emotional self-report. *Psychological Bulletin*, 128(6), 934-960.
24. Verduyn, P., & Lavrijsen, S. (2015). Emotional dynamics and online social media use. *trends in Cognitive Sciences*, 19(1), 1-3.

25. Schmidt, C., Collette, F., Cajochen, C., & Peigneux, P. (2007). A time to think: Circadian rhythms in human cognition. *Cognitive Neuropsychology*, 24(7), 755–789.
26. Van den Broeck, W., Poels, K., & Walrave, M. (2018). Ad irritation and avoidance on social media. *Computers in Human Behavior*, 84, 104–115.
27. Tams, S., Thatcher, J., & Craig, K. (2018). Digital interruptions and affective responses. *Journal of the Association for Information Systems*, 19(9), 1–30.
28. Gillie, T., & Broadbent, D. (1989). What makes interruptions disruptive? A study of length, similarity, and complexity. *Psychological Research*, 50(4), 243–250.
29. Oulasvirta, A., Rattenbury, T., & Raita, E. (2012). Habits make smartphone use more pervasive. *Personal and Ubiquitous Computing*, 16(1), 105–114.
30. Ward, A., Duke, K., Gneezy, A., & Bos, M. (2017). Brain drain: The mere presence of one's own smartphone reduces available cognitive capacity. *Journal of the Association for Consumer Research*, 2(2), 140–154.
31. Beyens, I., Frison, E., & Eggermont, S. (2016). "I don't want to miss a thing": Adolescents' fear of missing out and its relationship to adolescents' social needs, Facebook use, and Facebook-related stress. *Computers in Human Behavior*, 64, 1–8.
32. Malthouse, Edward, C., Haenlein, Michael, Skiera, B., Wege, E., . . . Xiaoquan. (2013). Managing Customer Relationships in the Social Media Era: Introducing the Social CRM House. *Journal of Interactive Marketing*, 27(4), 270–280.
33. Friestad, M., & Wright, P. (1994). The persuasion knowledge model: How people cope with persuasion attempts. *Journal of Consumer Research*, 21(1).
34. Aguirre, E., Mahr, D., Grewal, D., de Ruyte, K., & Wetzels, M. (2015). Unraveling the personalization paradox: The effect of information collection and trust-building strategies on online advertisement effectiveness. *Journal of Retailing*, 91(1), 34–49.
35. Ur, B., Wang, J., & Leon, P. (n.d.). Would users rather hide than control? Proceedings of CHI.
36. Zeelenberg, M., & Pieters, R. (2007). A theory of regret regulation 1.0. *Journal of Consumer Psychology*, 17(1), 3–18.
37. Soman, D., & Gourville, J. (2001). Transaction decoupling: How price bundling affects the consumption experience. *Journal of Marketing Research*, 38(3), 474–488.
38. Connolly, T., & Zeelenberg, M. (2002). Regret in decision making. *Current Directions in Psychological Science*, 11(6), 212–216.
39. Li, H., Edwards, S., & Lee, J.-H. (2002). Measuring the intrusiveness of advertisements: Scale development and validation. *Journal of Advertising*, 31(2), 37–48.
40. Pielot, M., Church, K., & Oliveira, R. (2014). An in-situ study of mobile phone notifications. Proceedings of the 16th International Conference on Human–Computer Interaction with Mobile Devices & Services (MobileHCI '14), (pp. 233–242).
41. Mehrotra, A., Musolesi, M., Hendley, R., & Pejovic, V. (2016). Designing content-aware intelligent notification mechanisms for mobile applications. Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp '16), (pp. 909–920).
42. Fischer, J., Stumpf, S., & Hsieh, G. (2010). On the cumulative effects of notification frequency on user experience. Proceedings of the MobileHCI Conference.
43. Kocielnik, R., Amershi, S., & Bennett, P. (2018). When attention management becomes a burden: Effects of notification frequency and content. Proceedings of CHI.
44. Beyens, I., Pouwels, J., van Driel, I., Keijsers, L., & Valkenburg, P. (2020). The effect of social media on well-being differs from adolescent to adolescent. *Scientific Reports*, 10.
45. Adelaar, T., Chang, S., Lancendorfer, K., Lee, B., & Morimoto, M. (2003). Effects of media formats on emotions and impulse buying intent. *Journal of Information Technology*, 18(4), 247–266.
46. Berger, J., & Milkman, K. (2012). What makes online content viral? *Journal of Marketing Research*, 49(2), 192–205.
47. Badgaiyan, A., & Verma, A. (2014). Intriguing role of shopping enjoyment in impulse buying: Evidence from India. *Journal of Retailing and Consumer Services*, 21(6), 1038–1046.
48. Chen, C., & Yao, J.-Y. (2018). What drives impulse buying behaviors in a mobile auction? The perspective of the Stimulus-Organism-Response model. *Telematics and Informatics*, 35(5), 1249–1262.
49. Thaler, R., & Sunstein, C. (2008). *Nudge: Improving decisions about health, wealth, and happiness*. Yale University Press.