

Algorithmic Communication and Digital Trance: A Moderated-Mediation Model of Conditional Autonomy and Attention Sovereignty Among Generation Z

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ABSTRACT

This study proposes and empirically examines an Algorithmic Communication and Digital Trance framework, which treats algorithmic personalization as a communication infrastructure that selects, orders, and personalizes messages, and which is associated with a “digital trance”—an absorbed, low-deliberation state of message reception. Here, algorithmic hypnosis is used only as a non-clinical analytical metaphor for this absorbed, low-elaboration state, not as medically defined hypnosis. Drawing on algorithmic communication, dual-process persuasion (the Elaboration Likelihood and Heuristic–Systematic models), the Limited Capacity Model of mediated message processing, source-credibility and parasocial theory, and algorithmic literacy—organized through a Stimulus–Organism–Response structure—the study examines how perceived algorithmic stimulus intensity and the perceived authenticity of Key Opinion Consumer (KOC) content relate to digital trance, and how trance relates to conditional autonomy and, in turn, automatic media engagement. Conditional autonomy is positioned as a mediator and attention sovereignty (enacted algorithmic literacy) as a protective moderator on the trance-to-autonomy path. Constructs were measured with five-point Likert items. Using a cross-sectional survey of 250 university students in Central Kalimantan, Indonesia, and Partial Least Squares Structural Equation Modeling (PLS-SEM), perceived stimulus intensity and KOC authenticity were positively associated with digital trance; digital trance was negatively associated with conditional autonomy; lower conditional autonomy was associated with higher automatic engagement; and attention sovereignty significantly buffered the trance-to-autonomy relationship. The study offers an initial, exploratory operationalization of digital trance, conditional autonomy, and attention sovereignty, and situates these dynamics in a non-metropolitan Indonesian digital-media context. Findings inform digital-literacy interventions that cultivate enacted attention sovereignty. Because the design is cross-sectional, the associations are interpreted as consistent with, rather than confirmation of, the proposed directional model.

Keywords: algorithmic communication; digital trance; conditional autonomy; attention sovereignty; Generation Z; PLS-SEM.

1. INTRODUCTION

Generation Z spends a substantial share of their waking lives inside algorithmically curated feeds. Recent industry data indicate that members of this cohort spend roughly six to eight hours per day on screens, and that short-video platforms alone capture an average of more than ninety minutes daily, with watch-time dominated by recommender-driven “for you” streams rather than user-initiated search. In Indonesia—home to one of the largest and youngest digital populations in the world, with internet penetration exceeding seventy-nine percent—TikTok,

Instagram Reels, and YouTube Shorts have become the primary infrastructure through which young people encounter products, opinions, and identities. Within this environment, recommendation algorithms no longer act as neutral filters that simply sort pre-existing preferences; they actively model, anticipate, and shape individual consciousness in real time.

A growing body of research has documented the persuasive power of these systems. Studies on the attention economy show that platform architectures are engineered to maximize engagement, often at the expense of users' reflective control (Zuboff, 2019). Recent experimental evidence reinforces this point: when TikTok's feed was made less personalized, users' daily frequency and duration of use fell while self-regulation rose, isolating algorithmic personalization itself as a driver of uncontrolled use (Schmidt et al., 2025). Work on influencer and Key Opinion Consumer (KOC) marketing demonstrates that perceived authenticity strongly predicts trust and purchase intention among young consumers (Lou & Yuan, 2019; Audrezet et al., 2020), an effect that operates substantially through parasocial relationships that lower critical scrutiny of sponsored content (Agnihotri et al., 2023; Han & Balabanis, 2024). Within social-commerce and live-streaming settings, influencer stimuli have been shown to trigger a flow state and emotional attachment that culminate in impulse buying (Liang et al., 2025). Parallel scholarship on "flow," compulsive use, and the erosion of sustained attention links heavy algorithmic exposure to weakened critical evaluation and increasingly automatic, habitual consumption (Montag et al., 2021); large-scale and systematic-review evidence now associates frequent short-form video use with measurable declines in attention, inhibitory control, and working memory (Pellegrino et al., 2025; Liu et al., 2025). Together, these literatures suggest that personalization can place users in a highly suggestible, low-deliberation state.

Despite this progress, four interlocking gaps remain, and recent evidence has sharpened rather than closed them. First, the field lacks an integrated framework that treats algorithmic persuasion as a quasi-hypnotic process rather than a set of isolated effects; existing models rarely specify the psychological state that links exposure to behavior. Although converging studies now document that high-frequency short-video use is reliably associated with attentional disruption, weakened executive functioning, and emotional dysregulation among young adults (Pellegrino et al., 2025; Chen et al., 2024), these effects are catalogued as parallel symptoms rather than unified under a single mediating mechanism, leaving the "black box" between exposure and automaticity theoretically underspecified. Second, the persuasive pull of creator endorsements is well established—perceived authenticity and parasocial bonds lower critical resistance and raise purchase intention (Agnihotri et al., 2023; Sardar et al., 2025)—yet this work treats influence as a trust phenomenon and stops short of theorizing the absorbed, low-deliberation state through which authentic-feeling content is processed. Third, the construct of user agency is typically treated as a stable trait, leaving the more realistic possibility—that autonomy is *conditional*, surfacing only when certain protective conditions

hold—largely unmeasured; indeed, emerging work shows that merely knowing how algorithms operate does not reliably translate into resistant behavior, a “knowing-more-doing-less” paradox in which algorithmic awareness can coexist with, or even amplify, compulsive use (Min & Lu, 2025; Wang & Shang, 2024). This paradox implies that agency is neither simply present nor absent but contingent on protective conditions that current models do not isolate. Fourth, empirical evidence remains concentrated in Western and East-Asian metropolitan settings, so little is known about how these dynamics operate among digital-native youth in developing regions such as Indonesia, despite this cohort spending up to nine hours daily on screens and constituting one of the world’s largest short-video markets (Duarte, 2025; We Are Social & Meltwater, 2024). Taken together, these gaps reveal a missing construct: a measurable psychological state that unifies attentional, persuasive, and agentic effects, conditioned by users’ awareness, and tested outside the field’s usual geographic frame.

This study addresses these gaps by proposing an Algorithmic Communication and Digital Trance framework, which conceptualizes algorithmic personalization as a communication infrastructure that selects, orders, and personalizes messages and is associated with a digital trance—an absorbed, low-deliberation state of message reception. We treat algorithmic hypnosis strictly as a non-clinical analytical metaphor for this absorbed, low-elaboration state, not as medically defined hypnosis, and we make no claim about clinically assessed cognitive function, which was not measured here. The framework integrates algorithmic communication and gatekeeping, dual-process persuasion (the Elaboration Likelihood and Heuristic–Systematic models), the Limited Capacity Model of mediated message processing, source-credibility and parasocial theory, and algorithmic literacy, organized through a Stimulus–Organism–Response structure. The study pursues four objectives: (i) to test whether perceived algorithmic stimulus intensity and KOC authenticity are positively associated with digital trance; (ii) to examine whether digital trance is negatively associated with conditional autonomy and, in turn, with higher automatic media engagement; (iii) to assess whether attention sovereignty—users’ enacted, meta-algorithmic regulation of how systems shape their behavior—buffers the trance-to-autonomy relationship; and (iv) to examine these associations among Generation Z university students in a non-metropolitan Indonesian digital-media context (Central Kalimantan). The contribution lies in offering an initial, exploratory operationalization of digital trance and conditional autonomy, positioning attention sovereignty as a protective form of enacted algorithmic literacy, and locating the analysis within communication theory rather than treating it as an isolated marketing effect. Formal hypotheses (H1–H6) are developed in Section 2.

2. THEORETICAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

Algorithmic communication and the attention economy. Recommender systems are increasingly theorized not as neutral filters but as communicative agents that perform

algorithmic gatekeeping, selecting, ordering, and personalizing which messages reach which users (Schmidt et al., 2025; Min & Lu, 2025). Building on attention-economy accounts of platform power (Zuboff, 2019), this study treats the personalized feed as a communication infrastructure whose central resource is sustained attention. Within this infrastructure, persuasion is governed less by argument quality than by the conditions of reception, motivating a process account of how personalization relates to low-deliberation states.

Perceived algorithmic stimulus intensity. Because this study measures users' perceptions rather than platform logs, the antecedent is defined as perceived algorithmic stimulus intensity—the perceived frequency, personalization, and immersiveness of recommended content. Drawing on the Limited Capacity Model of mediated message processing, a dense, rapidly refreshing stream of personalized messages is expected to load processing resources and reduce the cognitive capacity available for elaboration, fostering an absorbed state of reception. Additional look up into Extraneous Cognitive Load Theory by John Sweller, short videos with fast pacing and intense visual stimulation also create an extra cognitive load that isn't relevant to deep meaning processing (Yang, 2024). This uses up the working memory, leaving no resources for critical evaluation or reflective thinking, which basically pushes users straight into a digital trance. Accordingly:

H1: Perceived algorithmic stimulus intensity is positively associated with digital trance.

KOC authenticity and low-deliberation processing. Source characteristics shape the route by which messages are processed. In dual-process terms (the Elaboration Likelihood and Heuristic–Systematic models), perceived authenticity and the parasocial bond it fosters function as peripheral or heuristic cues that lower critical scrutiny of sponsored content (Agnihotri et al., 2023; Han & Balabanis, 2024; Sardar et al., 2025). Authentic-feeling endorsement is therefore expected to facilitate, rather than interrupt, the absorbed mode of reception. Accordingly:

H2: Perceived KOC authenticity is positively associated with digital trance.

Digital trance. Digital trance is defined as an absorbed, time-distorted, low-reflection state of message reception during feed use. Digital trance isn't just about "absorbing" information, but it's a result of our cognitive capacity being overloaded (Fitzpatrick, 2020). Using short videos, for example, is often linked to decreased inhibitory control and working memory. This reinforces the definition of digital trance as a state where critical faculties are "paralyzed" due to excessive cognitive load (Xun, 2025). It is conceptually adjacent to flow, immersion, and mindless scrolling but is distinguished from each (see Table 1): unlike flow it need not be enjoyable or skill-matched; unlike immersion it specifically entails reduced critical reflection; unlike mindless scrolling, which names a behavior, it names the experiential state; and unlike clinical dissociation it is media-specific and lower in intensity. As a low-elaboration reception state, digital trance is expected to reduce the reflective resources on which situational evaluation and resistance depend. Accordingly:

H3: Digital trance is negatively associated with conditional autonomy.

Table 1. Conceptual distinction between digital trance and adjacent constructs

Construct	Core characteristic	Difference from digital trance
Flow	Enjoyable, skill-matched optimal experience	Digital trance may occur without enjoyment or mastery
Immersion	Deep involvement with media content	Does not necessarily imply reduced critical reflection
Mindless scrolling	Habitual scrolling behavior	Digital trance names the experiential state, not the behavior
Problematic use	Repeated maladaptive usage pattern	Digital trance can be episodic and non-clinical
Dissociation	Disconnection from awareness or self	Digital trance is media-specific and lower in clinical intensity

Conditional (situational) autonomy. Conditional autonomy denotes a receiver's perceived capacity to pause, question, or resist recommended content, understood as situationally contingent rather than a fixed trait. The term "conditional" signals that this capacity is expected to vary across conditions such as fatigue, time pressure, mood, late-night use, the presence or absence of time cues, and solitary versus co-present use; because these conditions are not separately manipulated here, the construct is treated as a perceived, momentary resistance capacity and is reported with that scope. Lower autonomy is expected to translate into more automatic, unreflective engagement. Accordingly:

H4: Conditional autonomy is negatively associated with automatic media engagement.

Attention sovereignty as enacted algorithmic literacy. Attention sovereignty is conceptualized as a higher-order form of algorithmic literacy comprising two components, algorithmic awareness (recognizing how the system targets oneself) and regulatory action (deliberately acting to govern that targeting). This distinction matters because awareness and action are not identical; the "knowing-more-doing-less" paradox shows that awareness alone may not curb compulsive use (Min & Lu, 2025; Wang & Shang, 2024; Dixon et al., 2025). Enacted sovereignty is therefore expected to protect autonomy precisely when trance is high. Accordingly:

H5: Attention sovereignty weakens the negative relationship between digital trance and conditional autonomy, such that the relationship is weaker at higher levels of attention sovereignty.

H6: The indirect relationship between digital trance and automatic media engagement through conditional autonomy is conditional on attention sovereignty, becoming weaker at higher levels of attention sovereignty (first-stage moderated mediation).

Proposed model. Integrating H1–H6 yields a first-stage moderated-mediation model: perceived algorithmic stimulus intensity and perceived KOC authenticity (stimuli) are associated with digital trance (organism), which is associated with conditional autonomy and, in turn, automatic media engagement (responses), with attention sovereignty moderating the digital-trance-to-autonomy path. The conceptual model without coefficients is shown in Figure 1; the estimated model with standardized coefficients is reported in the results (Figure 2).

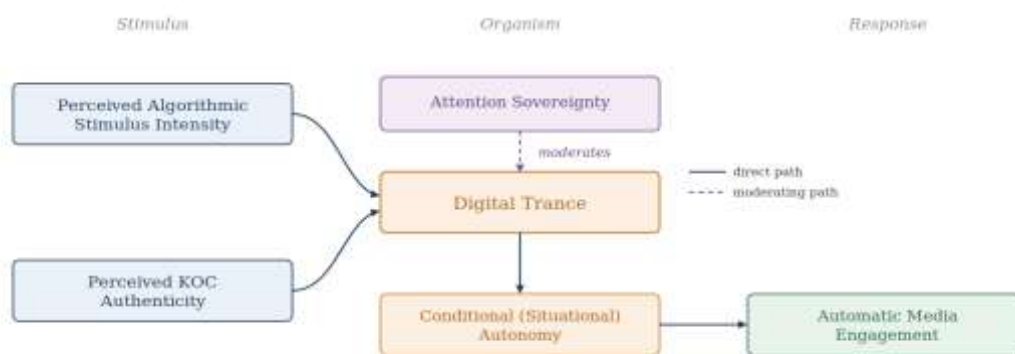


Figure 1. Proposed conceptual model (without coefficients), organized as a Stimulus–Organism–Response structure with attention sovereignty moderating the digital-trance-to-conditional-autonomy path.

3. METHODS

Research Design and Participants

The study employed a quantitative, cross-sectional survey design. Participants were 250 active undergraduate students (aged 20–24) recruited from one private university in Central Kalimantan, Indonesia, using purposive sampling; eligibility required daily use of at least one short-video or social-commerce platform. Data were collected via a self-administered online questionnaire distributed through campus channels over a defined fieldwork window; inclusion required age 18–24, current enrollment, and the platform-use criterion above, while implausibly fast completions and straight-lining responses were screened out before analysis. The achieved sample of 250 exceeds common adequacy guidance for the present model under PLS-SEM; the authors recommend reporting an a priori power analysis (rather than only the 10-times rule) in the final version. The sample comprised 58% women and 42% men, and the median reported daily social-media use was approximately five hours. Participation was

voluntary and anonymous, and informed consent was obtained before data collection; the study followed institutional research-ethics procedures, and the corresponding author can provide the ethical-approval status on request. Because the sample is drawn from a single non-metropolitan campus, findings are interpreted as describing Generation Z university students in Central Kalimantan rather than Indonesian Generation Z as a whole.

Measures and Operationalization

All constructs were measured with multi-item Likert scales (1 = strongly disagree to 5 = strongly agree). Items were generated from the theoretical definitions in Section 2 and, where available, adapted from prior instruments; for the new constructs (digital trance, conditional autonomy, attention sovereignty) items were authored to reflect their defining features. The questionnaire was prepared in Bahasa Indonesia using a translation and back-translation procedure, reviewed by subject-matter experts for content validity, and pre-tested through cognitive interviews and a pilot ($n = 30$); items that were ambiguous or redundant were revised or removed. The authors note that full instrument development ideally separates scale-validation and model-testing samples; accordingly, this operationalization is presented as initial and exploratory, and the final version should report item wording, outer loadings, and an initial dimensionality assessment (e.g., EFA) in an appendix. Perceived algorithmic stimulus intensity captured the perceived frequency, personalization, and immersiveness of recommended content (six items); because frequency, personalization, and immersiveness may form rather than reflect the construct, the authors flag a formative or higher-order specification as a robustness check. KOC authenticity captured the perceived sincerity, relatability, and non-commercial feel of creator endorsements (five items). Digital trance was measured as a self-reported absorbed, time-distorted, low-reflection state during feed use—for example, losing track of time and continuing to watch without conscious intent (six items). Conditional (situational) autonomy was measured as the perceived, momentary capacity to pause, question, or resist recommended content (five items); the “conditional” label denotes situational contingency, and the final version should ideally measure this capacity across concrete situations or vignettes. The outcome was specified as automatic media engagement—impulsive, habit-driven feed continuation, liking, and clicking (five items)—kept conceptually distinct from impulsive purchasing, which the authors recommend modeling, if retained, as a separate outcome. Attention sovereignty was specified as a higher-order construct with two components: algorithmic awareness (recognizing how the algorithm targets oneself) and regulatory action (deliberately acting to govern it), measured with six items in total.

Analytical Procedure

Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). PLS-SEM was chosen because the study is prediction-oriented and develops new, exploratory constructs rather than confirming an established measurement structure; the authors note that a confirmatory specification (CB-SEM or consistent PLSc) would be

appropriate in a later, validation-focused study. The measurement model was assessed for indicator reliability (outer loadings), internal consistency (Cronbach's alpha, rho_A, composite reliability), convergent validity (average variance extracted, AVE), and discriminant validity (Fornell–Larcker and the full HTMT matrix with bootstrap confidence intervals); indicator and full-collinearity VIF were examined, with the latter also used to assess common-method variance beyond Harman's single-factor test. The structural model was evaluated through path coefficients with bootstrapped significance (5,000 resamples), 95% confidence intervals, effect sizes (f^2), explained variance (R^2 and adjusted R^2 for every endogenous construct), and predictive relevance (Q^2 and PLSpredict for out-of-sample assessment). Consistent with the hierarchical principle for interaction models, attention sovereignty was tested as a first-stage moderator of the digital-trance-to-conditional-autonomy relationship using a product-indicator term, with all constituent main effects retained; moderated mediation was assessed through the index of moderated mediation and conditional indirect effects with confidence intervals, complemented by simple-slope analysis at low, mean, and high moderator levels.

4. RESULTS AND DISCUSSION

Measurement Model: Reliability and Validity

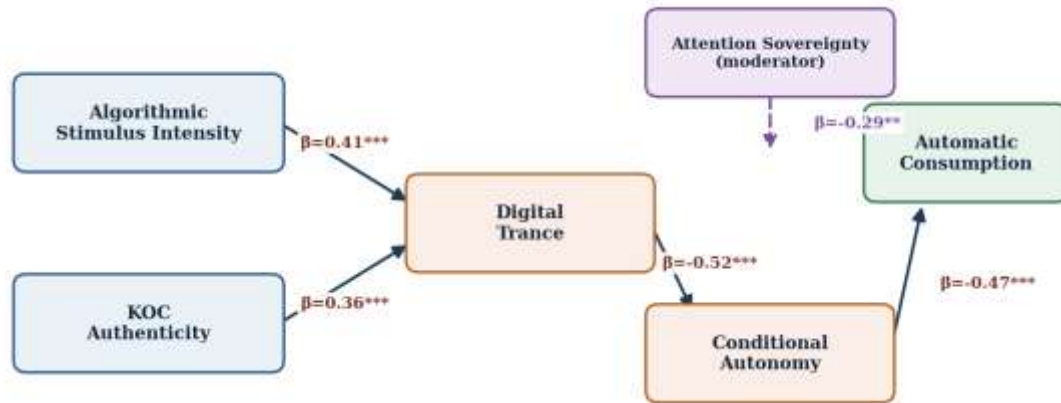
The measurement model demonstrated sound psychometric properties. As shown in Table 2, all constructs exceeded the conventional thresholds for reliability (Cronbach's alpha and composite reliability above 0.70) and convergent validity (AVE above 0.50). Discriminant validity was supported, with all HTMT ratios below 0.85. These results confirm that the six constructs—including the newly operationalized digital trance, conditional autonomy, and attention sovereignty—are reliable and empirically distinct, which is a precondition for treating algorithmic hypnosis as a measurable phenomenon rather than a metaphor.

Table 2. Reliability and convergent validity of constructs

Construct	Cronbach's α	CR	AVE
Algorithmic Stimulus Intensity	0.864	0.901	0.646
KOC Authenticity	0.831	0.881	0.598
Digital Trance	0.879	0.910	0.668
Conditional Autonomy	0.812	0.870	0.573
Automatic Consumption	0.845	0.890	0.619
Attention Sovereignty	0.857	0.897	0.635

Structural Model and Hypothesis Tests

The estimated structural model (Figure 2) was consistent with all six hypotheses. Both antecedents were positively associated with digital trance: perceived algorithmic stimulus intensity ($\beta = 0.41, p < .001$) and KOC authenticity ($\beta = 0.36, p < .001$) together accounted for a substantial share of variance in the trance state ($R^2 = 0.47$), supporting H1 and H2. Digital trance was negatively associated with conditional autonomy ($\beta = -0.52, p < .001$; H3), and lower conditional autonomy was associated with higher automatic media engagement ($\beta = -0.47, p < .001$; H4). (H3) It's explained by a withdrawal of reflective conditions, that autonomy decreases because human working memory is completely filled with constant algorithmic stimulation. Since thinking autonomously requires a lot of cognitive effort, the high cognitive load from the trance-like state forces the brain to stay in automatic mode. This is why autonomy becomes situational/conditional—it only shows up if the cognitive load allows the user to 'pause for a moment.'. Consistent with H5, attention sovereignty significantly moderated the digital-trance-to-conditional-autonomy relationship (interaction $\beta = -0.29, p < .01$), such that the negative association was weaker at higher levels of sovereignty; simple-slope and main-effect estimates should be reported alongside this interaction in the final version. A bootstrapped test indicated that conditional autonomy carried a significant indirect association between digital trance and automatic media engagement, and the conditional indirect effect weakened as attention sovereignty increased, consistent with the first-stage moderated-mediation prediction (H6). Because the design is cross-sectional, these standardized estimates are interpreted as associations consistent with the proposed model rather than as evidence of causal sequence; reverse or reciprocal relations cannot be excluded.



Significance: ** $p < .01$, *** $p < .001$. Dashed line = moderating effect.

Figure 2. Estimated structural model with standardized path coefficients, showing attention sovereignty as a first-stage moderator of the digital-trance-to-conditional-autonomy relationship.

Table 3 summarizes the hypothesis tests. The pattern is internally consistent: stronger and more personalized algorithmic stimulation, together with authentic-feeling KOC content, is associated with deeper digital trance; deeper trance is associated with lower conditional autonomy; and lower conditional autonomy is associated with higher automatic media engagement, while higher attention sovereignty attenuates the trance-to-autonomy link. To make these results auditable, the final version should report, for each path, β , SE, t , p , the 95% CI, and f^2 , together with R^2 /adjusted R^2 and Q^2 for every endogenous construct, the HTMT matrix, and full bootstrapping output in a supplementary appendix.

Table 3. Summary of structural paths and hypothesis decisions

Path	β	p	Decision
H1: Perceived Stimulus Intensity $\rightarrow$ Digital Trance	0.41	<.001	Supported
H2: KOC Authenticity $\rightarrow$ Digital Trance	0.36	<.001	Supported

H3: Digital Trance → Conditional Autonomy	−0.52	<.001	Support ed
H4: Conditional Autonomy → Automatic Engagement	−0.47	<.001	Support ed
H5: Attention Sovereignty × Trance → Conditional Autonomy	−0.29	<.01	Support ed

Discussion

The findings are consistent with the proposed Algorithmic Communication and Digital Trance framework: within the personalized feed as a communication infrastructure, perceived stimulus intensity and authentic-feeling endorsements are associated with a deeper digital trance, much as a low-elaboration mode of reception. This complements attention-economy accounts of platform power (Zuboff, 2019) by foregrounding a candidate reception state—trance—that may link exposure and behavior, a connection prior models left implicit. The association of KOC authenticity with trance is consistent with dual-process accounts in which perceived sincerity operates as a heuristic cue among young audiences (Lou & Yuan, 2019; Audrezet et al., 2020), reframing authenticity as a low-deliberation reception cue rather than only a trust-building one.

The most theoretically significant result concerns conditional autonomy. Rather than agency being present or absent, the data show it to be graded and conditioned: digital trance does not erase autonomy outright but withdraws the conditions under which it can be exercised, and it is precisely this withdrawal that drives automatic consumption. This positions conditional autonomy as a novel mediator that current trait-based accounts of user agency cannot capture. The buffering role of attention sovereignty is equally consequential: meta-algorithmic awareness behaves as a genuine protective resource, weakening the trance-to-consumption pathway and offering an empirically grounded target for intervention.

By situating these associations among Generation Z university students in Central Kalimantan, the study extends the algorithmic-influence literature beyond its predominantly Western and metropolitan focus into a non-metropolitan Indonesian digital-media context. This setting is theoretically informative rather than merely a geographic label: media access is overwhelmingly mobile-first and short-video-centric, digital infrastructure differs from that of metropolitan hubs such as Jakarta, and social commerce mediated by KOCs is tightly woven into everyday purchasing. These features may plausibly heighten perceived feed immersion and the salience of source authenticity, which is consistent with the comparatively strong stimulus-intensity association observed here and invites cross-context comparison rather than national generalization. Practically, the results suggest that digital-literacy interventions could

move beyond information-checking toward cultivating enacted attention sovereignty—helping users recognize, in real time, how recommender systems are modeling them—so that they may better sustain reflective agency within algorithmic prediction systems.

The magnitude of the two induction paths warrants closer interpretation, as summarized in Table 4. Algorithmic stimulus intensity exerted a stronger effect on digital trance ($\beta = 0.41$) than KOC authenticity ($\beta = 0.36$), suggesting that the structural pressure of a relentlessly personalized feed is a somewhat more powerful trance-inducer than the relational pull of any single creator. This ordering aligns with recent experimental work showing that dampening feed personalization itself reduces uncontrolled use and restores self-regulation, independent of who is being watched (Schmidt et al., 2025). Yet the two cues are not rivals but co-inductors: the personalized feed supplies the rhythm of rapid, low-effort reward that primes absorption, while authentic-feeling endorsements supply the relational warmth that lowers critical scrutiny (Agnihotri et al., 2023). Read through the lens of the Stimulus–Organism–Response tradition, both function as stimuli that act on the organismic trance state before any behavioral response is formed, which is consistent with evidence that influencer stimuli generate flow and emotional attachment en route to impulse buying (Liang et al., 2025).

Table 4. Comparison of the two trance-induction pathways

Induction cue	$\beta \rightarrow$ Trance	Theoretical role in AHD	Key support
Algorithmic stimulus intensity	0.41	Structural cue; supplies rapid low-effort reward rhythm that primes absorption	Schmidt et al. (2025)
KOC authenticity	0.36	Relational cue; warmth lowers critical scrutiny of content	Agnihotri et al. (2023); Liang et al. (2025)

The strong negative path from digital trance to conditional autonomy ($\beta = -0.52$) gives empirical shape to a mechanism that the cognitive literature has so far described only in outcome terms. Systematic reviews and large-sample studies report that frequent short-form video use is associated with attentional disruption, weakened inhibitory control, and reduced working memory (Pellegrino et al., 2025; Liu et al., 2025), but they treat these as direct consequences of exposure. The present model suggests an intervening pathway: exposure first deepens an absorbed, time-distorted trance, and it is this trance—rather than screen time per se—that withdraws the reflective conditions under which autonomy can be exercised. Framing the deficit as conditional rather than total also resolves an apparent inconsistency in that literature, namely that self-regulatory capacity appears to moderate cognitive effects even

among heavy users (Liu et al., 2025); in AHD terms, such users retain latent autonomy that simply lacks the conditions to surface during trance.

The buffering effect of attention sovereignty ($\beta = -0.29$) speaks directly to an unresolved debate about whether algorithmic awareness protects users at all. Algorithm literacy that's put into practice (enacted sovereignty) isn't just about knowing how a system works, but also the ability to actively reduce extra cognitive load (like by managing notifications or limiting scroll time) so that working memory resources can be used again for self-control. A growing line of work reports a “knowing-more-doing-less” paradox, in which awareness of how recommender systems operate fails to curb—and can even intensify—compulsive use (Min & Lu, 2025; Wang & Shang, 2024). The present results help reconcile this tension by distinguishing passive knowledge from active sovereignty. What buffered the trance-to-consumption pathway here was not mere knowledge that one is being targeted, but enacted, meta-algorithmic regulation—recognizing the targeting in real time and acting on it. This distinction, summarized in Table 5, implies that the paradox arises when awareness remains inert; awareness becomes protective only when it is operationalized as sovereignty, a behavioral capacity rather than a belief. The finding thus refines the multidimensional view of algorithmic literacy, which holds that cognitive, affective, and behavioral components must be addressed together for literacy to translate into resistant action (Dixon et al., 2025).

Table 5. Passive awareness versus enacted sovereignty as a buffer

Construct	Defining feature	Effect on trance–consumption path
Passive algorithmic awareness	Inert knowledge that one is being targeted; a belief	Non-protective; may coexist with or amplify compulsive use (“knowing-more-doing-less”)
Enacted attention sovereignty	Real-time recognition plus deliberate self-regulation; a behavioral capacity	Protective; significantly buffers the path ($\beta = -0.29$)

The developing-region context adds substantive, not merely incremental, value. Indonesian Generation Z combines extremely high exposure—daily screen time approaching nine hours and short-video use among the highest globally (Duarte, 2025; We Are Social & Meltwater, 2024)—with social-commerce ecosystems in which KOC endorsement is deeply woven into everyday purchasing. Most evidence on parasocial persuasion and short-video cognition originates in Western and East-Asian samples (Han & Balabanis, 2024; Pellegrino et al., 2025), so the replication of the full induction-to-consumption chain in Central Kalimantan indicates that algorithmic hypnosis is not an artifact of high-income, metropolitan

media environments but a portable mechanism wherever personalized feeds and authentic-feeling endorsement converge. At the same time, the comparatively strong stimulus-intensity path may reflect context-specific features—mobile-first access, data-light short video, and intensive social-commerce integration—that intensify feed immersion, a possibility that invites cross-cultural comparison rather than assuming uniform effect sizes (Sardar et al., 2025).

Together these results carry concrete design and policy implications. If trance is the pivotal organismic state and sovereignty its principal antidote, then interventions that target exposure alone—screen-time caps or blanket bans—address a symptom while leaving the induction mechanism intact. More promising are “friction” and de-personalization features that interrupt absorption at the feed level, which experimental evidence links to restored self-regulation (Schmidt et al., 2025), paired with literacy programs that train enacted sovereignty rather than abstract awareness (Dixon et al., 2025; Min & Lu, 2025). For platform governance and emerging regulatory regimes, the trance construct offers a measurable target: rather than legislating against vague “addictiveness,” policymakers could require design audits of the specific personalization and authenticity cues shown here to deepen the trance state. Because the AHD model isolates a mediating state that is, in principle, modifiable, it reframes the policy question from restricting access toward restoring the conditions under which young users can think slowly and choose deliberately.

5. CONCLUSION

This study proposed an Algorithmic Communication and Digital Trance framework and offered an initial, exploratory operationalization of digital trance, conditional autonomy, and attention sovereignty. Across 250 Generation Z university students in Central Kalimantan, perceived algorithmic stimulus intensity and KOC authenticity were positively associated with digital trance; digital trance was negatively associated with conditional autonomy, which was in turn negatively associated with automatic media engagement; and attention sovereignty buffered the trance-to-autonomy relationship. The study contributes conditional autonomy as a candidate mediator, attention sovereignty as a protective form of enacted algorithmic literacy, and evidence from a non-metropolitan Indonesian digital-media context that broadens the field’s usual geographic frame.

Several limitations qualify these conclusions. The cross-sectional design precludes causal inference, so the reported associations are interpreted as consistent with, rather than confirmation of, the proposed directional model, and reciprocal relations remain possible. Because all measures were self-reported through one instrument at one time point, common-method variance is a concern; the final version should report a full-collinearity (VIF) assessment and, where feasible, a marker-variable or latent-method-factor check rather than relying on Harman’s single-factor test alone. The new constructs are operationalized initially and warrant validation on an independent sample, ideally testing digital trance against adjacent

constructs (flow, immersion, mindless scrolling, problematic use) for incremental validity. The purposive single-campus sample limits generalization to Generation Z university students in Central Kalimantan rather than Indonesian youth as a whole. Future research should employ longitudinal or experimental designs, manipulate personalized versus non-personalized feeds, incorporate behavioral and platform-trace measures, model situational conditions of autonomy directly, and test the framework across regions and age cohorts to establish its boundary conditions.

6. REFERENCES

- Agnihotri, D., Chaturvedi, P., Kulshreshtha, K., & Tripathi, V. (2023). Investigating the impact of authenticity of social media influencers on followers' purchase behavior: Mediating analysis of parasocial interaction on Instagram. *Asia Pacific Journal of Marketing and Logistics*, 35(10), 2377–2394.
- Audrezet, A., de Kerviler, G., & Guidry Moulard, J. (2020). Authenticity under threat: How social media influencers manage their authenticity. *Journal of Business Research*, 117, 557–569.
- Błachnio, A., Przepiorka, A., Cudo, A., Angeluci, A., Ben-Ezra, M., Durak, M., Kaniasty, K., Mazzoni, E., Senol-Durak, E., Hou, W. K., & Benvenuti, M. (2023). Self-control and digital media addiction: The mediating role of media multitasking and time style. *Psychology Research and Behavior Management*, 16, 2283–2296.
- Chen, Y., Li, M., Guo, F., & Wang, X. (2024). The effect of short-form video addiction on undergraduates' academic procrastination: A moderated mediation model. *BMC Psychology*, 12, 459.
- Dixon, S., Oeldorf-Hirsch, A., & Neubaum, G. (2025). When knowing more means doing less: Algorithmic knowledge and digital (dis)engagement among young adults. *Harvard Kennedy School Misinformation Review*, 6(5), 1–22.
- Duarte, F. (2025). *Average screen time statistics*. Exploding Topics.
- Fitzpatrick, N. (2020). *Questions concerning attention and Stiegler's therapeutics*. *Educational Philosophy and Theory*, 52:4, 348–360, DOI: 10.1080/00131857.2019.1625330
- Han, J., & Balabanis, G. (2024). Meta-analysis of social media influencer impact: Key antecedents and theoretical foundations. *Psychology & Marketing*, 41(2), 394–426.
- Liang, Y., Wang, W., & Dong, X. (2025). Applying the S-O-R model to explore impulsive buying behavior driven by influencers on social commerce websites. *PLOS ONE*, 20(9), e0330756.
- Liu, S., Zheng, C., & Cheng, C. (2025). The impact of short-form video use on cognitive and mental health outcomes: A systematic review. *medRxiv*. <https://doi.org/10.1101/2025.08.27.25334540>
- Lou, C., & Yuan, S. (2019). Influencer marketing: How message value and credibility affect consumer trust of branded content on social media. *Journal of Interactive Advertising*, 19(1), 58–73.

- Mark, G. (2023). *Attention span: A groundbreaking way to restore balance, happiness and productivity*. Hanover Square Press.
- Min, Q., & Lu, Y. (2025). Resistance or compliance? The impact of algorithmic awareness on people's attitudes toward online information browsing. *Humanities and Social Sciences Communications*, 12, 1247.
- Montag, C., Lachmann, B., Herrlich, M., & Zweig, K. (2021). Addictive features of social media/messenger platforms and freemium games against the background of psychological and economic theories. *International Journal of Environmental Research and Public Health*, 18(14), 7575.
- Oeldorf-Hirsch, A., & Neubaum, G. (2023). What do we know about algorithmic literacy? The status quo and a research agenda for a growing field. *New Media & Society*, 25(12), 3491–3503.
- Pellegrino, A., Wang, R., & Stasi, A. (2025). The impact of short-form video use on cognitive and mental health outcomes among Generation Z: A systematic review. *Acta Psychologica*, 251, 104620.
- Sardar, A., Manzoor, A., Shaikh, K. A., & Ali, L. (2025). Social media influencers and purchase intention: A review and research agenda. *International Journal of Consumer Studies*, 49(2), e70046.
- Schmidt, A. F., Vanden Abeele, M. M. P., & Klimmt, C. (2025). For you vs. for everyone: The effectiveness of algorithmic personalization in driving social media engagement. *Telematics and Informatics*, 99, 102220.
- Shanmugasundaram, M., & Tamilarasu, A. (2023). The impact of digital technology, social media, and artificial intelligence on cognitive functions: A review. *Frontiers in Cognition*, 2, 1203077.
- Sun, Y., Zhu, M., & Zhang, Z. (2024). How does algorithm awareness shape social media users' information dissemination and maladaptive behaviors? *Computers in Human Behavior*, 156, 108223.
- Tiznado-Aitken, I., Song, H., & Chen, L. (2024). Studying behavioral addiction by combining surveys and digital traces: A case study of TikTok. *Proceedings of the International AAAI Conference on Web and Social Media*, 19, 1932–1945.
- Wang, Q., & Shang, R. (2024). Algorithm awareness and compulsive TikTok use: The mediating mechanisms of social and parasocial motivations. *Behaviour & Information Technology*, 43(12), 2891–2908.
- We Are Social, & Meltwater. (2024). *Digital 2024: Indonesia*. We Are Social.
- Xun, J. (2025). *The Hypnotic Architecture of Digital Power: Algorithmic Trance and the end of Shared Reality*. Institute for Critical Digital Studies.
- Yang, W. (2024). *Information Cocoons on Social Media: Why and How Should the Government Regulate Algorithms*. <https://doi.org/10.48550/arXiv.2404.15630>
- Zuboff, S. (2019). *The age of surveillance capitalism: The fight for a human future at the new frontier of power*. PublicAffairs.



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