

# “The Identity Activation Loop: A Conceptual Framework for Sustained Digital Engagement”

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**Abstract:-** Digital platforms increasingly rely on personalization, gamification, and social feedback to shape user behaviour, particularly in health and wellness contexts. Despite these advances, many digital interventions struggle to sustain engagement over time, with participation often declining once novelty or external incentives weaken. Existing engagement models largely emphasize motivation, rewards, or habit formation, yet these approaches offer limited explanation for why some behaviours persist while others relapse under similar conditions.

This paper develops the Identity Activation Loop (IAL), a conceptual framework that explains sustained digital engagement by positioning identity activation as a dynamic mediating mechanism between digital communication and long-term behaviour. Rather than treating identity as a fixed individual trait or a distant outcome of behaviour, the framework conceptualizes identity as a continuously activated process that is shaped and reinforced within digital environments.

The Identity Activation Loop consists of five interdependent stages: stimulus design, where digital cues are framed to signal identity relevance; identity internalization, through which individuals interpret behaviour as self-defining; social reinforcement, where validation and visibility strengthen identity salience; habitual action, in which identity-consistent behaviour becomes increasingly automatic; and feedback amplification, where system feedback reinforces identity alignment and reinitiates the cycle. Together, these stages form a self-reinforcing loop that explains how digital systems can stabilize behaviour beyond short-term motivation or incentives.

The framework contributes to engagement and health communication theory by clarifying why reward-based and motivation-centric designs often fail to produce durable outcomes. It further offers a structured basis for empirical testing and provides practical guidance for designing ethically responsible digital interventions that support sustainable behaviour rather than compulsive engagement.

**Keywords:** *Identity activation, digital engagement, conceptual framework, health communication, gamification, behaviour persistence, feedback systems, self-concept.*

## 1. Introduction

Digital health communication systems increasingly rely on personalization, gamification, algorithmic feedback, and social visibility mechanisms to influence sustained health behaviours. From nutrition-tracking platforms and fitness applications to chronic disease management systems and online support communities, digital infrastructures are designed not merely to initiate behaviour but to maintain engagement over time. Yet long-term engagement remains a persistent challenge. Attrition rates in digital health interventions are consistently high, with participation often declining once novelty fades or external incentives weaken (Eysenbach, 2005; Kelders et al., 2012; Perski et al., 2017).

Although persuasive design, personalization, and gamification can increase short-term participation, engagement frequently declines once novelty fades or incentives weaken. This instability reveals a conceptual limitation: existing models explain initiation more effectively than stabilization. Motivation predicts participation; rewards

increase frequency; repetition fosters automaticity. Yet none fully explains why certain behaviours persist when incentives fluctuate or contextual friction emerges.

This research introduces the Identity Activation Loop (IAL), a conceptual framework that positions identity activation as a dynamic mediating mechanism between digital communication stimuli and long-term behavioural persistence. Rather than treating identity as a static individual trait or as a distal outcome of repeated action, the IAL conceptualizes identity as a continuously activated process shaped and reinforced within digital environments.

By reconceptualizing identity as a recursive activation mechanism, the IAL offers a theoretical integrative framework that explains why some digital health behaviours stabilize beyond incentives while others relapse under comparable conditions. The framework integrates identity theory, digital communication scholarship, and behavioural persistence research into a unified, testable model.

### **Framework Positioning and Scope**

This paper is conceptual in purpose and develops a theory-driven framework for sustained digital engagement in health and wellness contexts. The Identity Activation Loop (IAL) is proposed as a mediating mechanism that explains how digital communication environments stabilize engagement beyond short-term motivation, rewards, or novelty. The framework does not assume identity as a fixed trait; instead, it conceptualizes identity as a continuously activated process shaped through platform cues, social feedback, and system-generated reinforcement within digital environments.

In this framework, sustained digital engagement refers to longitudinal continuity of identity-relevant health behaviours enacted within or supported by a digital system. Engagement is conceptualized as behavioural persistence rather than mere time spent or platform interaction frequency. Platform use is considered relevant only when it supports behaviours that are consistent with the user's self-definition.

## **2. Theoretical Limits of Existing Engagement Models**

### **Motivation-Centric Explanations**

Motivation-based models, particularly Self-Determination Theory (Ryan & Deci, 2000), have substantially shaped digital health intervention design. Intrinsic motivation; grounded in autonomy, competence, and relatedness; is associated with higher-quality engagement and improved behavioural outcomes. However, motivational states are inherently dynamic and sensitive to contextual variability, emotional fluctuation, and cognitive load (Murayama et al., 2010).

Digital health studies consistently report initial engagement driven by motivational salience, followed by gradual decline once novelty or reinforcement diminishes (Kelders et al., 2012). While motivation predicts behavioural initiation, it does not reliably account for behavioural stabilization under conditions of reduced novelty or fluctuating affective states.

Motivation explains why behaviour begins; it does not fully explain why behaviour endures.

### **Gamification and Reward Reinforcement**

Gamification literature demonstrates that points, badges, streaks, and leaderboards can increase short-term engagement and user interaction (Deterding et al., 2011; Hamari et al., 2014). In health communication contexts, gamified elements often enhance immediate adherence and participation (Johnson et al., 2016).

However, reinforcement-based engagement frequently exhibits diminishing marginal returns. Once reward contingencies become predictable or externally attributed, engagement may decline (Deci et al., 1999). Systems dependent on extrinsic incentives risk fostering compliance rather than integration. When incentives weaken, behaviour often regresses.

Reward structures trigger participation but do not inherently embed behaviour within self-concept.

### **Habit Formation Models**

Habit theory posits that repeated behaviour under stable contextual cues becomes automatic over time (Wood & Neal, 2007; Lally et al., 2010). Automaticity reduces cognitive effort and increases behavioural continuity. In digital health contexts, repetition mechanisms (e.g., daily reminders, streak systems) aim to facilitate habit formation.

Yet habit formation models primarily describe automation processes; they do not fully account for identity-consistent resistance to relapse under contextual disruption. Habits can decay when environmental cues change. Behavioural persistence under friction often requires self-definitional alignment rather than mere cue-based repetition.

Thus, while habit theory explains automaticity, it does not fully explain identity-stabilized persistence.

### **Why Engagement Fails Without Identity Activation**

Motivation-based engagement declines when affective intensity fluctuates. Reward-based engagement weakens when incentives become predictable or diminish. Habit-based engagement deteriorates when contextual cues are disrupted. These patterns are not anomalies; they reflect the structural limits of regulation mechanisms that do not embed behaviour within self-definition.

Motivation sustains action only while the motivational state remains salient. Reinforcement sustains action only while contingencies remain attractive. Habit sustains action only while environmental cues remain stable. None of these mechanisms alone explains why individuals persist when incentives fade, environments shift, or novelty disappears.

Attrition in digital interventions is not incidental but structural. Systematic reviews indicate that automated digital health interventions frequently experience substantial non-use and dropout, with participation declining rapidly after initial uptake (Eysenbach, 2005; Kelders et al., 2012). This pattern suggests that engagement decay is not merely a design flaw but a recurring limitation of existing incentive- or motivation-driven models.

Identity activation alters the regulatory structure. When behaviour becomes self-defining, discontinuation threatens self-consistency rather than merely reducing reward. Persistence becomes anchored in maintaining identity coherence rather than maximizing incentive value. In this way, identity activation introduces a qualitatively different stabilizing mechanism; one resistant to the volatility that weakens motivational, reward-based, or cue-dependent systems.

This distinction is central: without identity activation, engagement remains conditionally sustained. With identity activation, engagement becomes structurally stabilized.

### **Identity as a Dynamic Mediating Mechanism**

Identity theory conceptualizes identity as role-based self-definition structured through social interaction and verification processes (Stryker & Burke, 2000; Burke & Stets, 2009). Social identity theory emphasizes group-based identification and normative alignment (Tajfel & Turner, 1979). Self-perception theory further suggests that individuals infer aspects of identity from observed behaviour (Bem, 1972).

Within digital environments, identity expression and reinforcement are amplified. Online systems enable selective self-presentation, social validation, algorithmic visibility, and feedback loops that intensify identity signalling and perception processes (Walther, 1996; Zhao et al., 2008).

However, much of the digital health literature treats identity as:

- A background trait,
- A moderating variable,
- Or a distal outcome of repeated behaviour.

The Identity Activation Loop advances a distinct position: identity functions as a dynamic mediating mechanism between digital stimuli and sustained engagement.

Identity activation refers to the process by which behaviour becomes self-defining through repeated, socially reinforced, and feedback-amplified enactment. When identity becomes salient and integrated, regulation shifts from externally driven compliance to internally stabilized self-consistency.

Thus, identity activation explains how digital health behaviours transition from externally prompted actions to identity-consistent continuity.

The remainder of this paper synthesizes limitations in dominant engagement models, develops the Identity Activation Loop with stage-by-stage theoretical logic, articulates formal propositions, and outlines theoretical contributions, ethical implications, and an agenda for empirical testing.

### The Identity Activation Loop (IAL): Stage-by-Stage Logic

The IAL conceptualizes sustained digital health engagement as a recursive process consisting of five interrelated stages.

Figure 1 presents the Identity Activation Loop as a recursive mechanism linking digital communication stimuli to sustained engagement through identity activation as a mediating process.

Figure 1. The Identity Activation Loop (IAL) Framework

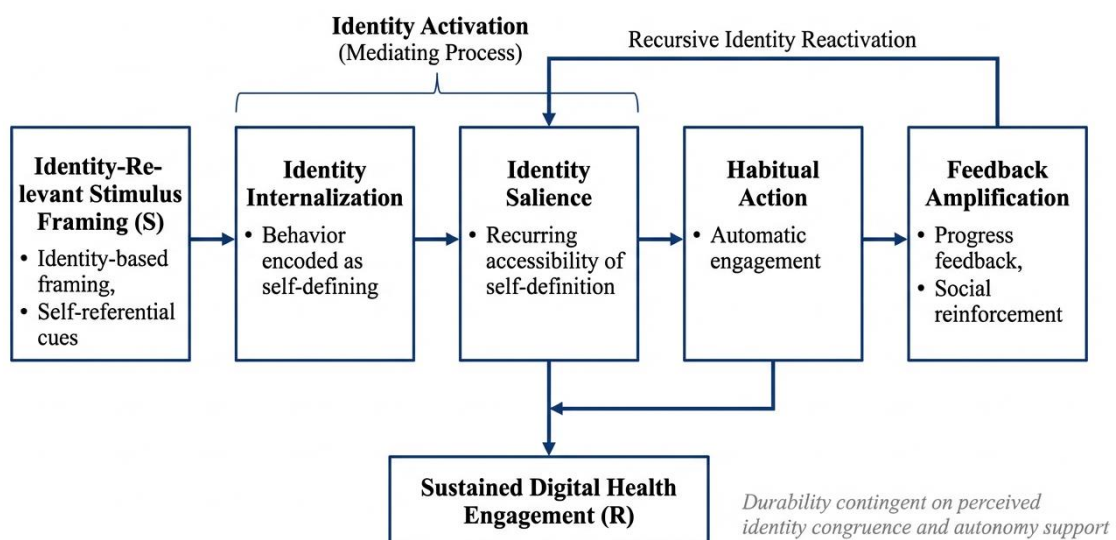


Figure 1

### The Identity Activation Loop

Note. The model specifies a recursive five-stage mechanism in which identity activation functions as the dynamic mediating process between digital stimulus design and sustained behavioural persistence. Social reinforcement and feedback amplification repeatedly re-cue identity salience, stabilizing habitual action beyond short-term motivational effects.

### Stage 1: Stimulus Design

Digital health communication systems frame behaviours through language, visuals, feedback cues, and interface structures. When behaviours are framed as identity-relevant (e.g., “You are becoming someone who prioritizes wellness”) rather than merely task-oriented (“Log today’s meal”), self-referential processing increases (Rogers et al., 1977; Markus, 1977).

This framing initiates the interpretive shift required for identity internalization but does not, by itself, guarantee stabilization.

### **Stage 2: Identity Internalization**

Repeated enactment under identity-relevant framing leads individuals to infer identity from behaviour (Bem, 1972). As behaviour is interpreted as self-descriptive, it becomes integrated into self-schema structures (Markus, 1977).

Internalization transforms regulation from externally prompted compliance to self-consistency. At this stage, regulation shifts from compliance with prompts to maintenance of self-consistency. Behaviour is sustained because discontinuation would conflict with self-definition.

### **Stage 3: Social Reinforcement**

Digital platforms amplify identity processes through social validation mechanisms such as visibility, peer feedback, community interaction, and algorithmic amplification. Social verification strengthens identity salience (Burke & Stets, 2009).

When identity-congruent behaviour is socially affirmed, identity centrality increases. Social reinforcement stabilizes identity activation beyond solitary enactment.

In the IAL, social reinforcement refers specifically to human validation signals such as peer recognition, community feedback, and interpersonal visibility, whereas system-generated visibility and algorithmic resurfacing are conceptualized under feedback amplification.

### **Stage 4: Habitual Action**

As identity-consistent behaviour is repeatedly enacted, automaticity develops (Wood & Neal, 2007). Identity salience accelerates repetition because identity-consistent actions require less deliberation and feel congruent.

In this stage, habit formation is not the primary driver but an outcome of identity alignment. Automaticity emerges from repeated identity-consistent enactment.

### **Stage 5: Feedback Amplification**

Digital systems provide ongoing personalized feedback (progress dashboards, streak metrics, tailored recommendations). When feedback is interpreted as evidence of identity alignment, identity salience is reactivated.

Feedback thus reinitiates the loop: reinforced identity increases subsequent enactment, which further strengthens identity integration.

The five stages are not merely sequential but functionally interdependent. Stimulus design initiates identity-relevant interpretation, but internalization must occur before identity salience can stabilize. Social reinforcement strengthens salience but is not strictly necessary for internalization; however, it accelerates identity centrality. Habitual action emerges as a behavioural consequence of sustained identity salience rather than as an independent driver of persistence. Feedback amplification is the structural mechanism that prevents identity decay by reactivating salience under conditions of motivational fluctuation. Thus, the loop is recursive not because repetition occurs, but because identity salience is repeatedly re-cued by communication architecture.

### **Loop Stability and Failure Conditions**

The Identity Activation Loop is not self-perpetuating by default. Loop stability depends on whether identity cues are experienced as autonomy-supportive rather than externally imposed. The loop weakens when identity framing triggers psychological reactance, when social reinforcement becomes evaluative or comparison-driven, or when feedback is interpreted as surveillance rather than self-verification. Under such conditions, internalization may stall, identity salience may become fragile or aversive, and behavioural persistence may revert to incentive dependence, increasing relapse risk once external prompts diminish.

### Construct Definitions

In the IAL, *identity activation* refers to the recurring accessibility and salience of a self-definition that is cued by digital communication stimuli and reinforced through social verification and system feedback. *Identity internalization* refers to the interpretive process through which repeated behaviour is encoded as self-defining rather than merely instrumental. *Social reinforcement* refers to digitally mediated validation signals (e.g., visibility, feedback, community interaction) that strengthen identity salience. *Habitual action* refers to increasing behavioural automaticity in identity-consistent actions through repetition. *Feedback amplification* refers to system-generated feedback loops (e.g., progress dashboards, personalization, algorithmic resurfacing) that re-trigger identity relevance and reinitiate the loop.

To avoid construct conflation, the framework distinguishes between trait identity centrality (the stable importance of a health identity), identity internalization (the process through which repeated behaviours become interpreted as self-defining), and identity salience (the momentary accessibility of that identity during decision contexts). Identity activation in the IAL refers specifically to the dynamic fluctuation of identity salience over time, reinforced by internalization and digital cues.

Within the IAL, identity activation is conceptualized as the higher-order mediating process composed of two components: (1) identity internalization and (2) identity salience. Identity internalization refers to the encoding of behaviour as self-defining, while identity salience refers to the recurring accessibility of that self-definition within decision contexts. Together, these components constitute identity activation as a dynamic mediating mechanism linking digital communication stimuli to sustained behavioural persistence. In this formulation, stimulus design influences identity internalization; social reinforcement and feedback amplification increase identity salience; and the combined activation of internalization and salience predicts durable engagement outcomes.

**Table 1: Illustrative Operational Indicators for Empirical Testing of the Identity Activation Loop**

Construct	Conceptual Definition	Illustrative Indicators
Stimulus Design	Identity-relevant framing of digital cues within the platform environment	Use of identity labels (e.g., “healthy eater”), self-referential messaging, personalized prompts
Identity Internalization	Process through which repeated behaviours are interpreted as self-defining	Agreement with statements such as “This behaviour reflects who I am”
Identity Salience	Momentary accessibility of identity during behavioural decision contexts	Frequency of identity-related thoughts at choice moments; state identity activation measures
Social Reinforcement	Validation and visibility of identity expression within digital environments	Perceived recognition, visible feedback, community endorsement
Habitual Action	Increasing automaticity of identity-consistent behaviour	Behavioural automaticity scales; reduced deliberation before action
Feedback Amplification	System-generated reinforcement of identity-behaviour alignment	Personalized progress dashboards, milestone notifications, adaptive feedback cues

### Differentiating the Identity Activation Loop from Existing Engagement Frameworks

To clarify the distinct contribution of the Identity Activation Loop (IAL), it is necessary to differentiate the framework from dominant approaches in digital health engagement, particularly Self-Determination Theory (SDT), habit formation models, and gamification-based reinforcement systems.

### **Distinction From Self-Determination Theory**

Self-Determination Theory (Ryan & Deci, 2000) explains engagement through intrinsic motivation grounded in autonomy, competence, and relatedness. SDT predicts higher-quality engagement when regulation becomes internalized. However, SDT primarily focuses on motivational quality rather than on the recurring activation of identity processes within digital environments.

The IAL does not replace SDT but extends it by specifying *how* digital communication environments repeatedly cue and reactivate identity salience over time. Whereas SDT explains why intrinsically motivated behaviours may persist, the IAL explains how identity becomes dynamically reactivated through stimulus framing, social verification, and feedback amplification. Identity activation, in this framework, is not simply internalized motivation; it is a recurring interpretive process sustained by communication architecture.

### **Distinction From Habit Formation Models**

Habit theory conceptualizes persistence as the result of repeated behaviour under stable contextual cues (Wood & Neal, 2007; Lally et al., 2010). Habit models explain automaticity but do not specify the symbolic or self-definitional processes that stabilize behaviour under contextual disruption.

The IAL incorporates habit formation as a stage outcome but does not treat habit as the primary explanatory mechanism. Instead, identity salience accelerates and stabilizes habit formation by reducing deliberative conflict and reinforcing self-consistency. In this way, habit is positioned as a consequence of identity activation rather than its substitute.

### **Distinction From Gamification and Reward-Based Systems**

Gamification frameworks emphasize external incentives such as points, badges, and streaks (Hamari et al., 2014). These mechanisms increase engagement frequency but are vulnerable to diminishing returns once reward novelty declines (Deci et al., 1999).

The IAL explains why reward-based systems often fail to produce durable outcomes: without identity internalization, engagement remains externally regulated. The framework therefore distinguishes between *engagement frequency* and *engagement stability*. Identity activation stabilizes behaviour even when rewards weaken, whereas reward-based engagement alone does not ensure long-term continuity.

### **Integrative Positioning**

The IAL does not compete with motivational, reinforcement, or habit-based frameworks; it repositions them. Motivation explains initiation, reinforcement explains behavioural frequency, and habit explains automation. The IAL specifies the identity-based condition under which these mechanisms produce longitudinal continuity.

Under this view, Self-Determination Theory describes the quality of motivation, gamification describes incentive architecture, and habit theory describes automation processes. None of these frameworks independently specifies the mechanism through which digital communication environments repeatedly reactivate self-definition across time. The IAL classifies identity activation as that mechanism.

In this sense, the IAL functions as an integrative regulatory framework: it organizes existing engagement theories within a higher-order regulatory architecture centered on identity stabilization. Rather than replacing these theories, it clarifies their limits and situates them within a recursive identity-based model of persistence.

### **Theoretical Propositions**

The Identity Activation Loop specifies identity activation as a dynamic mediating mechanism linking digital communication design to sustained behavioural persistence. The following propositions articulate the sequential and recursive logic of the framework.

### **Stimulus Design and Identity Encoding**

Digital environments introduce behavioural cues through framing, personalization, and symbolic labelling. When these cues are explicitly linked to identity-relevant meanings, they increase the likelihood that behaviour is interpreted through a self-definitional lens rather than as a temporary task.

**Proposition 1.** Identity-relevant stimulus design increases the likelihood that platform-supported behaviours are cognitively encoded as identity-consistent actions rather than as externally prompted activities.

### **Identity Internalization as Interpretive Mechanism**

Repeated engagement with identity-framed cues facilitates interpretive integration, whereby behaviours are no longer viewed as discrete tasks but as reflections of the self. This internalization process shifts behavioural motivation from external prompting toward self-consistency.

**Proposition 2.** The repeated interpretation of behaviour as self-defining increases identity internalization, strengthening the integration of the target behaviour into the individual's self-concept.

### **Identity Salience as Dynamic Mediator**

Internalized identity does not guarantee behavioural continuity unless it remains cognitively accessible during decision moments. Digital environments sustain engagement when identity is repeatedly reactivated through contextual cues and symbolic reinforcement.

**Proposition 3.** Identity salience mediates the relationship between identity internalization and subsequent behavioural enactment, such that stimulus design influences behaviour indirectly through sequential internalization and salience activation.

### **Social Reinforcement and Identity Stabilization**

Validation from peers or system-generated visibility strengthens identity salience by confirming alignment between behaviour and social recognition. Social reinforcement therefore stabilizes identity activation across time.

**Proposition 4.** Perceived social reinforcement strengthens identity salience, increasing the consistency of identity-congruent behavioural enactment over time.

### **Identity Activation and Habitual Action**

As identity-consistent behaviours are repeatedly enacted, behavioural execution requires reduced deliberation. Identity activation thus contributes to behavioural automaticity by aligning action with self-consistency motives.

**Proposition 5.** Sustained identity activation increases behavioural automaticity, facilitating the transition from effortful action to habitual enactment.

### **Identity-Based Engagement and Behavioural Durability**

Engagement grounded in identity activation is more resilient than engagement driven solely by extrinsic incentives or novelty-based reinforcement. When behaviour aligns with self-definition, discontinuation produces self-inconsistency rather than mere incentive loss.

**Proposition 6.** Engagement rooted in identity activation demonstrates greater long-term behavioural durability and resistance to relapse compared to engagement primarily driven by external incentives.

### **Ethical Divergence of Identity Activation**

Identity activation can stabilize behaviour in both beneficial and problematic directions depending on cue framing. Autonomy-supportive identity cues promote durable health behaviour, whereas autonomy-threatening or shame-based cues risk reinforcing platform dependence without proportional behavioural benefit.

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**Proposition 7.** When identity cues are autonomy-supportive and user-endorsed, identity activation strengthens durable health-relevant engagement. When identity cues are autonomy-threatening or shame-leveraged, identity activation strengthens platform-dependent engagement without proportional improvement in health behaviour.

### Theoretical Contributions

The Identity Activation Loop (IAL) advances engagement theory by repositioning identity from a static trait or distant behavioural outcome to an active mechanism operating within digital environments. Rather than treating identity as something individuals either possess prior to engagement or develop only after repeated action, the framework conceptualizes identity as a process that is continuously cued, reinforced, and reactivated through communication design.

The framework contributes in four primary ways.

First, it reconceptualizes identity as a dynamically activated process embedded within digital communication systems. By specifying how stimulus framing, social reinforcement, and system feedback repeatedly cue identity salience, the IAL explains how behaviour becomes self-defining over time. This shifts the focus from individual motivation alone to the interaction between self-concept and communication architecture.

Second, the framework addresses a limitation in motivation- and reward-based engagement models. While Self-Determination Theory and gamification research explain behavioural initiation and short-term participation, they do not fully account for why engagement often declines when novelty or external incentives weaken. By identifying identity activation as the mediating process through which behaviour becomes integrated into self-definition, the IAL explains how behavioural persistence can extend beyond fluctuations in motivation or reward structures.

Third, the IAL integrates identity theory, digital communication scholarship, and habit formation research into a unified explanation of stabilization. Rather than treating motivation, reinforcement, and habit as competing mechanisms, the framework specifies the identity-based conditions under which these processes generate durable continuity. In this model, motivation supports initiation, reinforcement increases frequency, and habit supports automation, but identity activation anchors persistence.

Fourth, the IAL provides a clearly structured and testable conceptual model. By distinguishing identity internalization from identity salience and specifying recursive feedback processes, the framework enables longitudinal, mediation-based, and process-oriented empirical testing. This strengthens its applicability to digital health communication research, where sustained engagement remains a central challenge.

Collectively, these contributions clarify how digital communication systems can move beyond short-term activation toward long-term behavioural stabilization. By identifying identity activation as the mechanism linking communication design to durable engagement, the IAL advances theoretical understanding of sustained digital health behaviour in technologically mediated environments.

### Ethical Implications

The IAL highlights that identity activation can support sustained health behaviour, but the same mechanisms can be deployed in ways that intensify compulsive engagement rather than sustainable wellbeing. Because identity activation operates at the level of self-definition rather than surface behaviour, its misuse carries implications for autonomy, identity stability, and psychological dependency that extend beyond conventional persuasive communication effects. Ethical digital health communication design therefore requires distinguishing between (a) identity support; where identity cues reinforce autonomy-consistent self-definition and facilitate durable health behaviours and (b) identity manipulation; where platforms amplify identity salience primarily to increase retention metrics through dependency-like feedback loops. Practically, ethically responsible design should (1) avoid framing that induces identity threat or shame as an engagement lever, (2) ensure transparency in feedback mechanisms and personalization logic, (3) prioritize user autonomy and informed control over notification intensity and visibility settings, and (4) evaluate whether reinforcement structures promote sustainable behaviour or merely increase usage frequency.

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### Empirical Testing Agenda

The IAL can be tested using longitudinal and process-oriented designs that capture identity activation over time. First, mediation tests can examine whether identity internalization statistically explains the relationship between identity-relevant stimulus exposure and sustained engagement beyond reward effects. Second, time-lagged models can test the recursive nature of the loop by assessing whether feedback amplification at time  $t$  predicts renewed identity salience and engagement at time  $t+1$ . Third, moderation tests can assess whether social reinforcement intensity strengthens identity salience and speeds movement toward habitual action. Operationalization can use repeated measures of identity salience (state accessibility), identity internalization (self-definitional interpretation), social reinforcement exposure (visibility/validation frequency), habit strength (automaticity indices), and system feedback intensity (personalization frequency and progress metrics). Future empirical work should distinguish between trait identity centrality and state-level identity salience to avoid conflating dispositional identification with dynamic activation effects.

Advanced testing may employ cross-lagged panel models or latent growth curve analyses to assess identity salience trajectories over time, as well as experimental manipulations of identity-relevant framing to establish causal mediation.

### 3. Future Research Directions

Future research should examine the mediating structure of identity activation using longitudinal and experimental designs that distinguish trait identity centrality from state-level identity salience. Cross-cultural comparisons may clarify how identity congruence and autonomy norms influence internalization dynamics. Comparative studies should test reward-dominant systems against identity-integrated systems to evaluate differences in persistence following incentive withdrawal. Longitudinal modelling can assess identity salience trajectories over time, while experimental manipulation of identity-relevant framing can establish causal mediation. Additionally, generational analyses may reveal how digital-native cohorts differ in susceptibility to identity-based stabilization mechanisms within health communication environments.

### 4. Conclusion

Sustaining digital health engagement remains a central challenge in health communication research. While motivational intensity, reward systems, and repetition mechanisms can initiate participation, they do not consistently explain why engagement stabilizes over time or persists once incentives weaken. This limitation is particularly consequential in health contexts, where behavioural continuity directly affects long-term outcomes.

The Identity Activation Loop offers a structural explanation by identifying identity activation as the mediating process through which digital communication environments generate behavioural durability. Rather than treating identity as a static trait or as a delayed consequence of repeated behaviour, the framework conceptualizes identity as a continuously reactivated process shaped by stimulus design, social reinforcement, and feedback architecture. Engagement stabilizes when behaviour becomes self-defining and when communication systems repeatedly cue that self-definition.

By integrating identity theory with digital communication and behavioural persistence research, the IAL clarifies the conditions under which motivation, reinforcement, and habit contribute to long-term continuity. Motivation supports initiation, reinforcement increases frequency, and habit enables automaticity. Identity activation, however, anchors persistence by linking behaviour to self-consistency.

In reframing digital engagement as a process of identity stabilization rather than motivational intensity alone, the Identity Activation Loop advances theoretical understanding of sustained digital health behaviour and provides a structured foundation for empirical investigation and ethically responsible design.

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