« Réduire le débit » : une classification des orientations perçues de sobriété numérique au sein de communautés en ligne

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Résumé :

La sobriété numérique devient un enjeu majeur face aux impératifs environnementaux, mais sa mise en œuvre est particulièrement délicate sur les plateformes numériques de diffusion en direct. Parce qu'elles évoluent sur des marchés fondés sur la captation de l'attention, ces plateformes mettent en œuvre, par leur conception même, des stratégies contraires à celles exigées par la sobriété numérique, telles que la baisse de la résolution ou la réduction du temps de visionnage. Dans ce contexte où les plateformes peuvent difficilement inciter la sobriété numérique, l'adoption de pratiques plus sobres repose en grande partie sur le bon vouloir des utilisateurs. Or, ces individus présentent différents niveaux de préoccupation environnemental. Il manque ainsi une classification empiriquement fondée pour comprendre comment ces individus adoptent des comportements de sobriété numérique différenciés. Pour combler ce manque, nous avons réalisé une enquête auprès de 189 utilisateurs de Twitch et conduit des analyses de classification hiérarchique et *k-means*. Nos résultats mettent en évidence quatre profils (« le paresseux », « le bon élève », « l'élève en progrès » et « le paradoxal »), qui se distinguent par des configurations spécifiques d'orientation environnementale, de faisabilité de mise en œuvre et d'ancrage social. Ces configurations correspondent à des pratiques de sobriété auto-déclarées sur la plateforme. Au-delà de l'identification de profils, l'étude fournit une base pour concevoir des actions de sensibilisation et des interventions différenciées, et montre que la sobriété numérique relève d'un processus de réduction volontaire des usages du numérique, façonné par les dynamiques communautaires, plutôt que d'un choix uniquement individuel.

Mots clés :

Sobriété numérique ; Usages SI responsables ; Communautés en ligne ; Durabilité ; Green IS ; Responsabilité numérique.

“Slowing down the stream”: A classification of users’ perceived digital sobriety orientations in online communities

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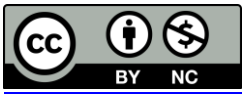
Abstract

Digital sobriety is becoming a major issue in light of environmental imperatives, yet its implementation is particularly challenging on live-streaming digital platforms. Because these platforms operate in attention-based markets, their very design relies on strategies that run counter to those required by digital sobriety, such as lowering resolution or reducing viewing time. In this context, where platforms can hardly encourage digital sobriety, the adoption of more restrained practices depends largely on users’ own willingness to engage in them. However, individuals display varying levels of environmental concern. As a result, there is still a lack of empirically grounded classifications to understand how users adopt differentiated digital sobriety behaviors. To address this gap, we conducted a survey of 189 Twitch users and performed hierarchical clustering and k-means analyses. Our findings identify four profiles (“The Unconcerned,” “The Committed,” “The Improving,” and “The Paradoxical”), which differ according to specific configurations of environmental orientation, implementation feasibility, and social embeddedness. These configurations correspond to self-reported sobriety practices on the platform. Beyond identifying user profiles, the study provides a basis for designing awareness-raising actions and differentiated interventions, and shows that digital sobriety is a process of voluntarily reducing digital usage, shaped by community dynamics rather than being solely an individual choice.

Keywords

Digital sobriety, Responsible IS uses, Online communities, Sustainability; Green IS, Responsible digital



1. Introduction

Digital sobriety has recently emerged as a salient concern in management research, as it invites renewed reflection on responsible use of digital technologies in light of environmental and societal challenges. More broadly, IS scholarship increasingly calls for rethinking what a "good" digital life entails, as digital artefacts simultaneously enable benefits and generate harms that affect individuals and societies (Ciriello, 2025; Ciriello, Mathiassen, et al., 2025). In this vein, responsibility in digital contexts is not reducible to compliance or individual "good will": it is inherently ethical and relational, and it encompasses legal, moral, and social dimensions that vary across sociotechnical settings (Ciriello, Gal, et al., 2025). Critical perspectives further warn that everyday digital practices can become normalized through mechanisms of digital entrapment and "false consciousness," making it difficult for users to recognize problematic dynamics and, ultimately, to change their practices (Ngwenyama et al., 2024). Consequently, these developments motivate a closer examination of digital sobriety, particularly in contexts where engagement is socially valued.

Digital sobriety refers to the critical reduction of non-essential digital practices and invites a reconsideration of what constitutes "necessary" digital use (Bordage, 2019; Guillard, 2021). It aligns with the broader agenda of responsible IS use and responsible platform participation, understood as mindful engagement with digital services that considers impacts on oneself, others, and the broader world (Ciriello, Mathiassen, et al., 2025). Yet, digital sobriety remains distinctive within the landscape of responsible IS behaviours. Compared with cybersecurity or privacy practices, which are often perceived as providing more direct and personally salient forms of protection, sobriety more often involves voluntary reduction, or even renunciation, of digital activities that are frequently hedonic and routine (Péréa et al., 2023). Its benefits tend to be more collective and externalized (e.g., reduced environmental impact), whereas its costs are more likely to be experienced as immediate and individual (e.g., reduced quality, lower convenience). This configuration may make sobriety particularly prone to the attitude–behaviour gap and therefore both theoretically and practically challenging to understand.

This challenge is especially salient in live-streaming platforms. The rapid growth of digital platforms has profoundly transformed media consumption, with live-streaming enabling real-time interactions

between streamers and viewers in shared community environments. Live-streaming is part of the broader expansion of online video, which comes at a significant environmental cost (Beuscart et al., 2023; Makonin et al., 2022). The Shift Project (2021)[1] argued that the increase in video traffic, coupled with the growing share of HD and UHD quality images and the shift in usage towards on-demand consumption such as streaming, are factors that are causing an explosion in network traffic. These impacts result from the combined energy demand of data centers, network transmission, and end-user devices, production and e-waste (Bordage, 2019; Flipo, 2020; Pitron, 2019; Rodhain, 2019). In this context, reducing the footprint of live-streaming constitutes a concrete domain for digital sobriety practices, such as limiting viewing time, lowering resolution to "good enough" levels, and adopting device-relating practices that avoid unnecessary replacement (ADEME, 2022; Shift Project, 2019).

However, live-streaming platforms face structural constraints when it comes to encouraging sobriety. They can hardly promote reduced resolution, shorter viewing time, or diminished engagement while simultaneously remaining competitive in attention-based markets. This tension echoes a broader paradox observed in organizational contexts, where digital sobriety and digital development may pull in opposite directions, reflecting the emerging digital sustainability conversation in IS research, which examines how digital resources and artifacts can simultaneously support and challenge sustainability objectives (Itten et al., 2020; Kotlarsky et al., 2023; Péréa et al., 2023). As a result, platforms may be reluctant or unable to "slow down the stream" through supply-side interventions alone. In such settings, a key lever becomes the willingness of users themselves to adopt more sober and responsible practices. Recent work indeed emphasizes user-side responsibility in large-scale sociotechnical systems and argues that responsible (or irresponsible) outcomes depend on how users actualize ambiguous affordances in context (Ciriello, Mathiassen, et al., 2025). Yet, we still know little about how this user-side responsibility unfolds when the target behaviour is explicitly ecological and entails voluntary reduction of hedonic platform use.

[1] The Shift Project is a French nonprofit created in 2010 in Paris that aims to limit both climate change and the dependency of our economy on fossil fuels.

More specifically, Twitch differs from on-demand streaming services (e.g. Netflix). It is a community-based IS that combines live content with continuous social interaction through features such as synchronous chat, follower and subscription systems, badges and roles, and moderation tools, which shape participation, visibility, and norms within channels (Diwanji et al., 2020; Hamilton et al., 2014; Pithon, 2024). Consistent with Ciriello, Mathiassen, et al. (2025), Twitch relies on ambiguous affordances (such as visibility, spreadability, algorithmic targetability, and persistent traceability) that can foster community building while also reinforcing attention capture. Accordingly, mechanisms such as community norms and recognition or visibility can shape (and differentiate) responsible orientations in use (Ciriello, Mathiassen, et al., 2025; Diwanji et al., 2020; Hilvert-Bruce et al., 2018), users cannot be treated as homogeneous given the documented heterogeneity in participation and motivations on Twitch (Sjöblom & Hamari, 2017) and in digital sobriety stances (Péréa et al., 2023). For this reason, we propose a framing that captures this heterogeneity through environmental orientation, enactment feasibility of reduction, and the social embeddedness of sobriety cues in the community.

Even when users acknowledge broader harms, they may differ in the extent to which they recognize the mechanisms that sustain intensive usage, the trade-offs they perceive as acceptable, and the social pressures they respond to, patterns consistent with the difficulty of recognizing and escaping entrenched digital dynamics (Ngwenyama et al., 2024). Despite growing calls to approach digital innovation through ethical lenses that foreground harm reduction and the common good (Ciriello, Gal, et al., 2025), existing work offers limited understanding of how live-streaming users differ in their sobriety-related beliefs and orientations, and how such heterogeneity can be systematically captured in a community-based platform context.

Accordingly, our study addresses the following research question: *How do community dynamics shape digital sobriety orientations?*

To answer this question, we focus on Twitch, one of the world's most prominent live-streaming platforms. We collected 189 survey responses from Twitch users and conducted a hierarchical and k-means cluster analysis to derive an empirically grounded classification of user profiles. Our findings identify four distinct profiles (The Unconcerned, The Committed, The Improving, and the Paradoxical)

each reflecting different combinations of beliefs and attitudes toward digital sobriety in the live-streaming context.

This study contributes to IS research in two main ways. First, it advances the emerging literature on digital sobriety by clarifying how user-side responsibility can be differentiated in a platform context characterized by hedonic use and strong trade-offs between individual convenience and collective environmental benefits. Second, it extends research on community-based platforms by highlighting how community dynamics can mediate the diffusion and reinforcement of sobriety-related orientations. From a practitioner perspective, our paper provides actionable insights for platforms and policymakers on how differentiated interventions (such as nudges, awareness campaigns, or recognition systems) could be tailored to heterogeneous user profiles rather than based on a one-size-fits-all approach.

The remainder of the paper is organized as follows. Section 2 positions digital sobriety as a form of responsible IS use and develops a parsimonious framing of user heterogeneity in live-streaming communities. Section 3 presents the research design and methodology. Section 4 reports the results of the cluster analysis and introduces the four user profiles. Section 5 discusses theoretical and managerial implications, outlines limitations, and suggests avenues for future research.

2. Digital sobriety among live-streaming users: responsible use, voluntary reduction, and user heterogeneity in community-based platforms

2.1. Digital sobriety as a specific responsible IS practice

Digital sobriety refers to the deliberate reduction of non-essential digital practices and a sufficiency-oriented stance toward digital consumption (Bordage, 2019; Guillard, 2021). Digital sobriety can be envisioned as a Responsible IS practice. Responsible IS use broadly refers to users' mindful engagement with digital systems in ways that consider and mitigate potential negative consequences for oneself, others, and society (Ciriello, Gal, et al., 2025; Ciriello, Mathiassen, et al., 2025). This stream suggests that responsible outcomes on platforms depend less on system features per se than on how ambiguous affordances are actualized by users, a process shaped by individual characteristics and situational conditions such as visibility, anonymity, and prevailing community norms (Ciriello, Mathiassen, et al.,

2025). This perspective is useful for understanding digital sobriety because it emphasizes voluntary reduction rather than improved use under continued consumption. In this view, sobriety is not limited to technological efficiency, but also involves adopting "good-enough" settings (e.g., lower resolution) and limiting time spent on discretionary uses when the added benefit of "more" does not justify its environmental cost. For instance, live-streaming is a demanding context for digital sobriety because use is often discretionary but also socially embedded. Because watching life streamed videos is intertwined with real-time interaction and community participation, reducing time or quality may be experienced not only as a personal sacrifice but also as a loss of social involvement, which can accentuate differences between users (Diwanji et al., 2020; Hamilton et al., 2014). Digital sobriety is challenging to implement because it requires moving beyond the idea of using digital technologies more responsibly toward the idea of reducing certain digital uses altogether. Precisely for this reason, users' perceptions and constraints become especially important, as individuals must assess the necessity, desirability, and feasibility of limiting practices embedded in everyday routines and social interactions. Prior IS work on technology use shows that users' environmental beliefs and attitudes may support intentions. However, translation into action remains uneven when reduction is experienced as effortful and difficult to sustain in everyday use (Chow & Chen, 2009; Ojo et al., 2019). In the case of digital sobriety, this implementation challenge is amplified by a strong asymmetry. Users are asked to accept immediate losses in convenience or experience for benefits that are largely collective and delayed. This configuration makes sobriety particularly prone to heterogeneous orientations and attitude–behaviour gaps, as users differ in how they perceive the legitimacy, feasibility, and personal costs of reduction (Péréa et al., 2023). Heterogeneity may further reflect underlying beliefs about technology and responsibility. In particular, technological solutionism, understood as the assumption that technological progress will solve environmental problems without requiring behavioural reduction, can reduce the perceived necessity to change and sustain business-as-usual use (Kerschner et al., 2018; Péréa et al., 2023).

However, positioning digital sobriety within responsible IS behavior is not sufficient to explain how users implement digital sobriety in socially reinforced settings. Eco-responsible IS research shows that

favorable beliefs and intentions may remain weakly enacted when practices are costly or inconvenient, and when social influence shapes what becomes legitimate in context (Becerra et al., 2023; Chow & Chen, 2009; Ojo et al., 2019). Building on this insight, the next section introduces a parsimonious socio-cognitive framework to explain heterogeneity of responsible uses in live-streaming sobriety orientations.

2.2. Enhancing responsible use through community relationships

User differences are likely to emerge not only in digital sobriety practices themselves, but also in the socio-cognitive mechanisms that shape them. To account for these differences, we draw on a socio-cognitive framework widely used in IS research on eco-responsible and pro-environmental technology use (Ajzen, 1991; Chow & Chen, 2009; Ojo et al., 2019). In this view, beliefs about environmental consequences shape attitudes toward sobriety, which in turn inform intentions to act (Ojo et al., 2019). Behaviour is further conditioned by perceived behavioural control, capturing the extent to which users feel able to enact digital sobriet, even if it requires breaking routines and accepting small losses in comfort or quality (Chow & Chen, 2009). In community-based settings, these mechanisms are socially embedded: peer influence and community cues can affect perceived desirability and legitimacy of eco-responsible practices, thereby reinforcing or inhibiting sobriety orientations (Becerra et al., 2023; Suki & Suki, 2019). Finally, the salience of environmental concerns can be reinforced through discussion dynamics within online communities, making environmental issues more visible and socially negotiable (Naranjo-Zolotov et al., 2022). While these constructs have been extensively operationalized in Green IT and related eco-responsible IS research (Loeser et al., 2017; Melville, 2010), we mobilize them here to explain heterogeneity in digital sobriety orientations in a community-based live-streaming setting.

Live streaming platforms such as Twitch combine media consumption with continuous, socially visible interaction, making them distinct from on demand streaming. Drawing on Faraj et al. (2016), an online community can be understood as a collective setting in which dispersed participants gather around a shared activity, interest, or identity, and where value emerges through sustained interaction and the circulation of knowledge among participants. This view is well aligned with Twitch channels, which function as community spaces where engagement is co-produced through interactional routines and

platform features, and where users vary in how they participate and what they seek from the platform (Diwanji et al., 2020; Hamilton et al., 2014). Twitch users watch streamers for heterogeneous reasons, including entertainment, escapism, and learning, which shapes participation intensity and the meaning attached to platform use (Sjöblom & Hamari, 2017). Viewer engagement is also socially shaped. Participation in chat, the use of emotes, and symbolic markers such as badges and roles foster belonging and recognition, which can reinforce continued engagement and make reduction practices socially non neutral (Hilvert-Bruce et al., 2018). In such community-based platforms, peer visibility and recognition can amplify normative influence, making sobriety either legitimate or socially costly according to the discourse made by community members (Diwanji et al., 2020; Hilvert-Bruce et al., 2018).

Beyond community interactions, the platform itself may also provide design levers that reduce the friction of sobriety without requiring strong intention alone. Choice architecture and defaults, such as making "good-enough" resolution settings salient or easy to select, can steer behavior in subtle but meaningful ways, which is consistent with the role of nudging in digital environments (Caraban et al., 2019; Thaler & Sunstein, 2021). Importantly, such levers are unlikely to affect all users similarly. Those who perceive high inconvenience, low control, or strong peer-driven engagement may respond differently than those already oriented toward reduction. This reinforces the need to move beyond homogeneous user assumptions.

These arguments help clarify both the relationship and the distinction between responsible IS behavior and digital sobriety. Responsible IS behavior broadly refers to mindful and ethical engagement with digital systems in ways that seek to limit negative consequences for oneself, others, and society while continuing to use the system (Ciriello, Gal, et al., 2025; Ciriello, Mathiassen, et al., 2025). Digital sobriety can be positioned within this broader perspective, but it refers more specifically to a sufficiency-oriented logic of voluntary reduction, in which users limit non-essential digital practices or adopt "good-enough" forms of use in order to reduce environmental impacts (Bordage, 2019; Guillard, 2021; Péréa et al., 2023). In this sense, digital sobriety is not opposed to responsible IS behavior, but represents a more specific and more demanding case of it, because responsibility is achieved not only through better use, but through reduced use itself. This distinction is particularly important in live-streaming settings

such as Twitch, where digital practices are socially embedded, hedonically valued, and reinforced by community participation and visibility, thereby making reduction potentially more effortful and socially costly (Diwanji et al., 2020; Hamilton et al., 2014; Hilvert-Bruce et al., 2018).

Building on these insights, we organize the explanation of user heterogeneity around three explanatory dimensions. The first dimension is **environmental orientation**, which captures beliefs about environmental consequences and attitudes toward reduction practices (Ojo et al., 2019). The second dimension is **enactment feasibility**, which captures intention and perceived behavioural control, as well as the constraints that make reduction more or less achievable in practice (Chow & Chen, 2009). The third dimension is **social embeddedness**, which captures the extent to which sobriety related cues become salient and legitimate through peers and community discussion, and through socially visible participation dynamics (Becerra et al., 2023; Naranjo-Zolotov et al., 2022; Suki & Suki, 2019). These dimensions provide a basis for deriving a classification of Twitch users and for interpreting why similar concerns can translate into different sobriety orientations in a live streaming community setting.

3. Research methodology

3.1. Research design

We adopt a classification to describe user profiles on Twitch based on their digital sobriety practices. We rely on the three dimensions introduced in Section 2 and summarized in Figure 1 to organize the interpretation of the clusters. They are used to structure the comparison across profiles and to connect the clustering variables to a coherent reading of user heterogeneity. Twitch was selected because it is a live, community-oriented streaming platform. The central element of Twitch (besides the stream itself) is the chat, which allows interaction between the streamer and their viewers. Within this space, users' statuses (e.g., moderators, subscribers at different levels) are made visible through badges displayed next to their usernames. Twitch also offers several mechanisms designed to foster community engagement. For instance, the Hype Train feature encourages viewers to mobilize collectively and boost subscriptions within a limited time frame, reinforcing community support for the streamer. Overall,

Twitch relies on a progressive monetization model in which streamers' revenues depend on the size of their audience, making audience growth a key factor in increasing earnings.

A questionnaire was administered within a specific community. To do so, it was necessary to assess the stability of the targeted community. A twice-daily analysis of Twitch audiences, covering all streamed games, revealed significant fluctuations in game popularity. Additionally, newly released games tend to remain in the top 50 streamed titles for only a limited time, which hinders the development of a stable community.

As a result, we chose to focus on a game category known for its longevity: Role-Playing Games (RPGs). Titles such as World of Warcraft (released 11/23/2004), League of Legends (10/27/2009), and Fortnite (07/21/2017) were considered due to their substantial daily viewership and historical presence. However, similar to games in the "shooter" or FPS (first-person shooter) categories, such as Grand Theft Auto V (09/17/2013), Apex Legends (02/04/2019), Counter-Strike (08/21/2012), or Valorant (06/02/2020), these games are primarily competitive, involving players facing off in duels or team battles. Such communities are strongly performance-oriented, with motivations primarily centered on competition and achievement. While they certainly feature social belonging and peer influence, these dynamics revolve around skill recognition, ranking, and performance validation rather than the emergence of shared norms or collective identity building. Because our study focuses on how community norms, belonging, and peer influence shape eco-responsible digital practices, such competitive contexts were considered less suitable for observation.

Therefore, we prioritized selecting an RPG where the PvP (Player versus Player) mode does not foster intense competition within the community. Genshin Impact (released 09/28/2020) was thus chosen. Although its audience size does not match that of the aforementioned titles, its average daily viewership and consistent ranking among the most streamed games on Twitch ensure a stable community, with a baseline average of approximately 14,000 viewers (Appendix A).

3.2. Sample and data collection

Our sample consists of users of the Twitch platform. Data were collected in French between April and September 2023. In total, 424 individuals began the questionnaire, of which 262 responses were complete. After eliminating incomplete responses and those who failed to answer the three attention-check questions (e.g., "For this question, please answer 'somewhat agree'"), the final sample consisted of 189 usable responses (**Table 1**).

The characteristics of this sample are consistent with the population targeted in this study, namely, viewers of Twitch streams related to Genshin Impact. We deliberately chose this community because it is highly active on Twitch while being less centered on competitive or performance-oriented play than other games. This makes it particularly suitable for studying issues of awareness and attitudes toward digital sobriety, as user engagement is driven more by social interaction and narrative immersion than by competitive imperatives. Respondents are predominantly young, a pattern that aligns with reports highlighting Twitch as a platform strongly used by younger audiences. The high proportion of students and early-career individuals is also coherent with the demographics of the Genshin Impact community, which is known for its relatively young and international player base[2]. Although the sample is mostly French, it also includes respondents from several other countries, reflecting the transnational character of Twitch communities. While this focus on a single community may limit generalizability to other games or platforms, it provides a consistent and relevant basis for analyzing how users engage with digital sobriety practices within a community-based IS context.

Variable	Category	n=189	%
Age	Mean	25,4	
	Median	23	
Sexe	Female	68	35.60
	Male	112	58.64
	Other	9	4.71
Country	France	160	84.66
	Belgium	11	5.82
	Canada	2	1.06
	Switzerland	2	1.06

[2] https://www.demandsage.com/twitch-users/ consulted on September 12th, 2025

	Other (Algeria, UK, Qatar, Morocco, etc).	14	7.41
Job	Highschool	58	30.69
	University	46	24.34
	Unemployed	24	12.70
	Employed	61	32.28

Table 1: Sample characteristics (N = 189)

Participants were encouraged to take part through several streamers who shared the information either during their live streams or by posting the questionnaire link on Discord. One streamer in particular, ShiruTV, was especially involved in promoting the survey. We agreed with him that his viewer community would receive rewards based on the number of usable responses collected: €10 for 100 responses, €30 for 125 responses, €30 for 150 responses, €50 for 175 responses, and €100 for 250 responses. These rewards were cumulative. Given the number of usable responses obtained (189), four rewards were distributed by the streamer through a random draw, for a total amount of €120.

To develop our classification of Twitch users in relation to digital sobriety, we selected measurement scales from the existing literature (see Appendix B) and adapted them to the Twitch context. To minimize ambiguity, respondents were provided with operational definitions at the start of the survey, for example, digital sobriety was defined as "a process aimed at reducing the ecological footprint of ICT across their entire life cycle, from resource extraction to equipment recycling," (Bordage, 2019) while greenhouse gases were explained with their main types and role in global warming in accordance with Guillard's (2021) definition. This ensured that abstract terms such as "digital sobriety" or "environmental issues" were clearly understood.

Users' beliefs about the environmental impact of digital practices were measured using a 5-item scale from Ojo et al. (2019), originally developed for Green IT, which was adapted here to assess perceptions of Twitch usage. Attitudes toward digital sobriety were assessed with four items from the same source. Together, beliefs and attitudes operationalize the environmental orientation dimension.

Enactment feasibility was captured through two socio cognitive constructs. Intention and perceived behavioral control were measured using scales from Chow & Chen (2009), which are widely applied in IS research on Green IT. These measures capture both willingness to enact reduction and perceived ability to do so despite constraints or habits.

Social embeddedness was capture through peer influence and community discussion dynamics. Peer influence was measured with a 5-item scale from Becerra et al. (2023) and Suki & Suki (2019), capturing the role of community members in shaping eco-responsible practices, an especially relevant mechanism for community-based IS like Twitch. The frequency of environmental discussions within Twitch was measured with items adapted from Naranjo-Zolotov et al. (2022), who originally examined discussion dynamics in online communities.

In addition to these psychometric measures, we collected self-reported practices adapted from WWF (2023). Moreover, we collected self-reported usage indicators (e.g., hours spent on Twitch, uptime on a reference streamer's channel, number of messages posted, and gender). These indicators were used to enrich the interpretation of the clusters, especially regarding socially visible participation on the platform. All items were presented on a 5-point Likert scale ranging from 1 ("Strongly disagree") to 5 ("Strongly agree").

3.3. Data analysis

We performed principal component analyses (PCA) on these variables using SPSS. PCA was selected because it reduces dimensionality by grouping correlated items into latent components, which provides more reliable inputs for the subsequent cluster analysis. The results showed satisfactory KMO indices and a significant Bartlett's test of sphericity for all variables except for beliefs regarding digital sobriety practices (Appendix C). Two items from this scale had poor representation qualities (belief 1: 0.189 and belief 5: 0.289) which required their removal, leaving the scale with only 3 items. Both items were conceptually peripheral, and their removal improved the psychometric consistency of the scale (KMO = 0.631; Cronbach's $\alpha = 0.626$), confirming that the remaining items reliably capture users' green beliefs.

Classification methods such as cluster analysis have been used in various studies on gaming (Billieux et al., 2015; Larrieu et al., 2022). In our study, the classification was performed by combining hierarchical and non-hierarchical procedures, as recommended by Hair et al. (2018). First, participants' data were grouped using Ward's (1963) agglomerative hierarchical clustering method, based on squared

Euclidean distance. This hierarchical method helps to explore the number of clusters present when studying a phenomenon. The number of clusters was determined through a hierarchical cluster analysis also performed in SPSS, with a dendrogram suggesting the selection of four clusters. Then, to overcome the limitations of hierarchical clustering, a k-means cluster analysis (still using SPSS) was performed, grouping participants into four clusters. The distances between observations were calculated using simple Euclidean distance. The classification reached stability after 18 iterations.

The sample size (N = 189) is also adequate for PCA and cluster analysis. Methodological guidelines generally recommend a minimum of 150–200 observations or a ratio of at least 5–10 respondents per variable to ensure stable factor structures (Hair et al., 2018; Tabachnick & Fidell, 2013). Our study met these thresholds, and diagnostic statistics (KMO, Bartlett's test, communalities) confirmed the suitability of the data for PCA. In addition, robustness checks indicated that the four-cluster solution remained stable across different initializations, which further supports the reliability of the classification derived from this sample.

4. Results

We present below the four clusters resulting from our analysis. They are also shown in Figures 1 to 4, which provide a graphical visualization of these results and allow for a comparative analysis of the four profiles. These four figures were generated based on the centroids from the hierarchical cluster analyses using Excel. We interpret each profile by grouping the measured constructs into the three dimensions proposed at the end of the literature review.

4.1. Cluster presentation

The results of our analysis reveal four distinct clusters (Table 2). The first cluster, labelled "The Unconcerned," represents 32.8% of our respondents. This profile corresponds to a man who does not engage with environmental issues within his community and who does not perceive Twitch use as environmentally consequential. He displays a clearly negative attitude toward digital sobriety and reports little willingness to adopt reduction practices. He also feels little social influence from members

of his favourite channel regarding sobriety. As a result, his enactment of sobriety remains low, both in terms of using low resolution and in terms of trying to limit consumption. Despite this lack of engagement with sobriety, he remains a moderate Twitch user, which suggests that his resistance is not primarily driven by extremely intensive use, but rather by low salience of environmental issues and weak motivation to change.

Our second cluster, which we call “The Committed,” includes the majority of our respondents, 38.1% of them. This profile corresponds to a student woman who rarely discusses environmental issues within her community, but who is aware of the environmental impact of Twitch use. This awareness is associated with a positive attitude toward digital sobriety and a willingness to translate concern into concrete reduction practices. In particular, she reports adopting the sobriety practices measured in our survey, including watching at lower resolution and trying to limit time spent on Twitch. Members of her favourite Twitch channel tend to exert a relatively strong influence on her sobriety practices, which suggests that community cues can reinforce a supportive orientation even when environmental topics are not frequently discussed in chat. Overall, her profile reflects a relatively reasoned way of consuming Twitch that aligns concern, intentions, and practice.

The third cluster, named The Improving, represents 8.5% of respondents. This profile corresponds to a man streamer who acknowledges environmental issues more than The Unconcerned, yet does not report a strong intention to adopt digital sobriety practices. He is characterized by very intensive Twitch use and the highest uptime among the four profiles, which is consistent with the over representation of streamers in this cluster. This intensity likely makes reduction practices more difficult to adopt, both because streaming is intertwined with work like routines and because quality and presence can be perceived as central to the activity. Socially, he tends to be discreet in chat and often behaves as a lurker rather than an active contributor. His profile therefore combines relatively low social embeddedness through visible participation with strong behavioural engagement in Twitch, which may create constraints that limit feasibility and slow down change, even when some environmental awareness exists.

Finally, the fourth cluster, labelled The Paradoxical, represents 20.6% of respondents. This profile corresponds to a woman employee who frequently engages in environmental discussions within her community. Environmental issues are salient for her in chat, and she expresses a relatively positive intention to improve. However, this engagement does not translate into beliefs about the environmental consequences of Twitch use, and her attitude toward digital sobriety remains close to neutral. She does not report adopting sobriety practices while using the platform. At the same time, she is a regular viewer with high uptime and the highest number of chat messages posted. This profile therefore illustrates a specific form of misalignment, in which social embeddedness around environmental talk coexists with limited digital sobriety enactment. It suggests that discussing environmental topics in the community does not automatically connect environmental concern to the digital practices that sustain platform consumption.

Dimensions	Variables	The Unconcerned	The Committed	The Improving	The Paradoxical
Environmental orientation	**Beliefs** F(3.185)=10.768, p=0.000	-.500	.415	-.017	-.134
	Attitude F(3.185)=6.027, p=0.001	-.438	.277	-.079	.068
Enactment feasibility	**Intention** F(3.185)=10.005, p=0.000	-.567	.285	.129	.159
	Perceived Control F(3.185)=9.499, p=0.000	-.526	.332	-.034	.101
Social embeddedness	**Peer Influence** F(3.185)=7.837, p=0.000	-.466	.338	-.135	.031
	Frequency F(3.185)=4.619, p=0.004	-.270	.356	-.263	.460
	Number of messages posted F(3.185)=139.012, p=0.000	2	2	2	6
Practices	**Practice 1 (low resolution)** F(3.185)=10.225, p=0.000	1	3	2	2
	Practice 2 (limiting use) F(3.185)=32.806, p=0.000	2	3	2	2
Platform use intensity	**Twitch consumption** (hours/week) F(3.185)=26.374, p=0.000	3	3	5	4
	Uptime F(3.185)=180.026, p=0.000	2	1	6	5
Sociodemographic characteristics	**Gender**	Men	Women	Men	Women
	Education/employment status	/	Students	Streamers	Employees
	n	62 (32%)	72 (38%)	16 (8%)	39 (20%)

Table 2 : Final cluster centroids

4.2. Cluster comparison and analysis: varying levels of engagement with digital sobriety

4.2.1. Comparing the four profiles across the three dimensions

Figure 1 positions the four profiles along beliefs about the environmental impact of streaming and attitudes toward adopting digital practices. The profile of "The Unconcerned" is located in the bottom-left corner, where individuals display both negative beliefs and a negative attitude. Although "The Improving" also appears in this quadrant, it is positioned closer to the center, suggesting a potential shift in beliefs and attitudes toward more positive perspectives. "The Paradoxical" is placed in the bottom-right corner, confirming a dissonance between negative beliefs and a rather positive attitude toward digital sobriety practices. Finally, "The Committed" is found in the top-right corner, exhibiting both positive beliefs and a positive attitude toward the topic. One intriguing aspect highlighted by the graph is the line that can be drawn between "The Unconcerned" and "The Committed," potentially suggesting that Twitch users are primarily divided into two categories: those with negative attitudes and beliefs on one side, and those with positive attitudes and beliefs on the other.

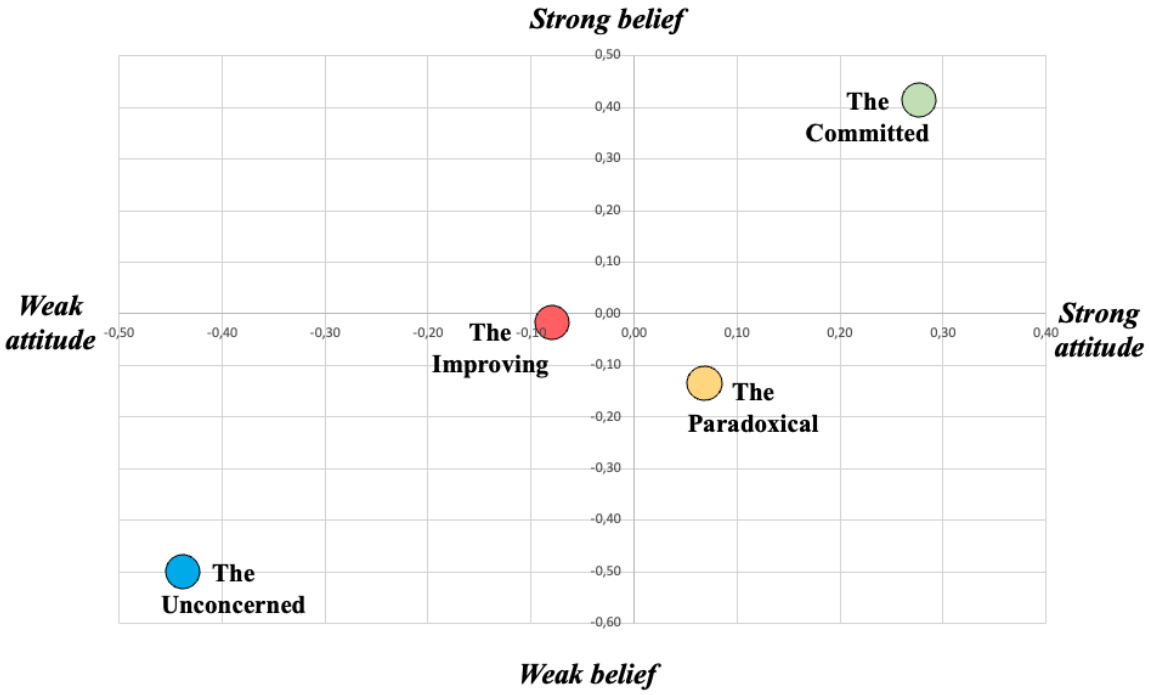


Figure 1. Beliefs and attitude toward digital sobriety

Figure 2 builds on this cleavage by jointly considering enactment feasibility (intention) and social embeddedness (frequency of environmental topics in chat). "The Unconcerned" consistently appears in the bottom-left corner, indicating low intention to adopt digital sobriety practices and limited discussion of environmental issues. In contrast, "The Improving" demonstrates a relatively higher reported intention to improve, as reflected in their position in the top-left corner of the graph, while environmental

topics remain infrequent in chat. This pattern is coherent with their profile as discreet participants who limit visible contributions. By comparison, “The Committed” is located in the top-right corner, combining strong intention with moderate exposure to environmental topics. Finally, “The Paradoxical”, despite frequently engaging in environmental discussions in the chats, also shows a relatively strong intention to improve, even though their negative beliefs about the environmental impact of Twitch remain unchanged, as previously observed.

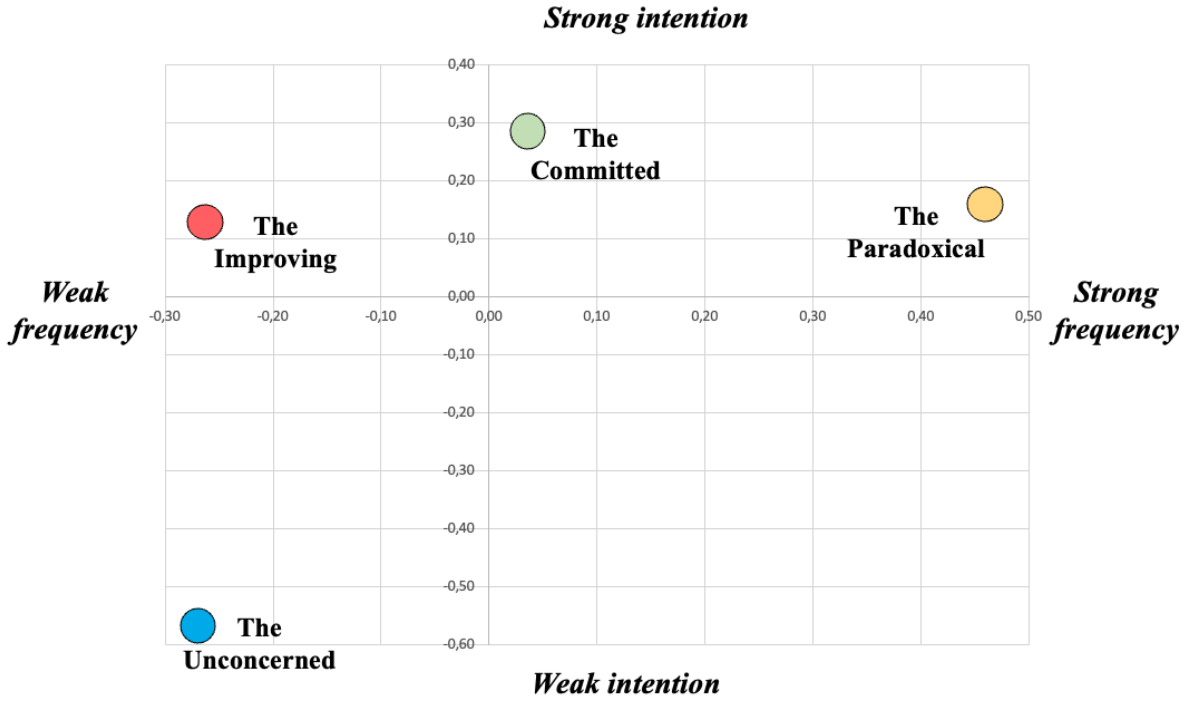


Figure 2. Intention to adopt digital sobriety practices and frequency of environmental topics in chat

Figure 3 complements previous readings by connecting environmental orientation (attitude) with enactment feasibility (perceived behavioural control). Results are consistent with the previous graphs, with participant profiles occupying the same quadrants as previously observed. However, one intriguing observation emerges: the upper-left quadrant (high control / low attitude) and the lower-right quadrant (low control / high attitude) are unoccupied by our profiles. This finding suggests a tendency within this viewer community toward alignment between attitude toward sobriety and perceived ability to enact reduction.

In other words, participants mainly fall into two distinct categories: on the one hand, those who exhibit a clear disinterest in digital sobriety and the environmental impact of streaming, characterized by low

control over their practices and limited attitude, and on the other hand, those who are supportive of such practices, demonstrating both high control and strong attitude. The rarity of profiles located in the dissonant quadrants suggests that members of this community tend to align their behaviors with their perceived ability and control over practices, an element that may significantly impact strategies for raising awareness and encouraging the adoption of more responsible digital practices.

It is worth noting that those located in the top-right quadrant are more likely to respond positively to awareness and warnings from peers and streamers, while those in the bottom-left quadrant will be more resistant to adopting digital sobriety practices due to the limited influence other community members have over them on the Twitch platform, as illustrated in Figure 3.

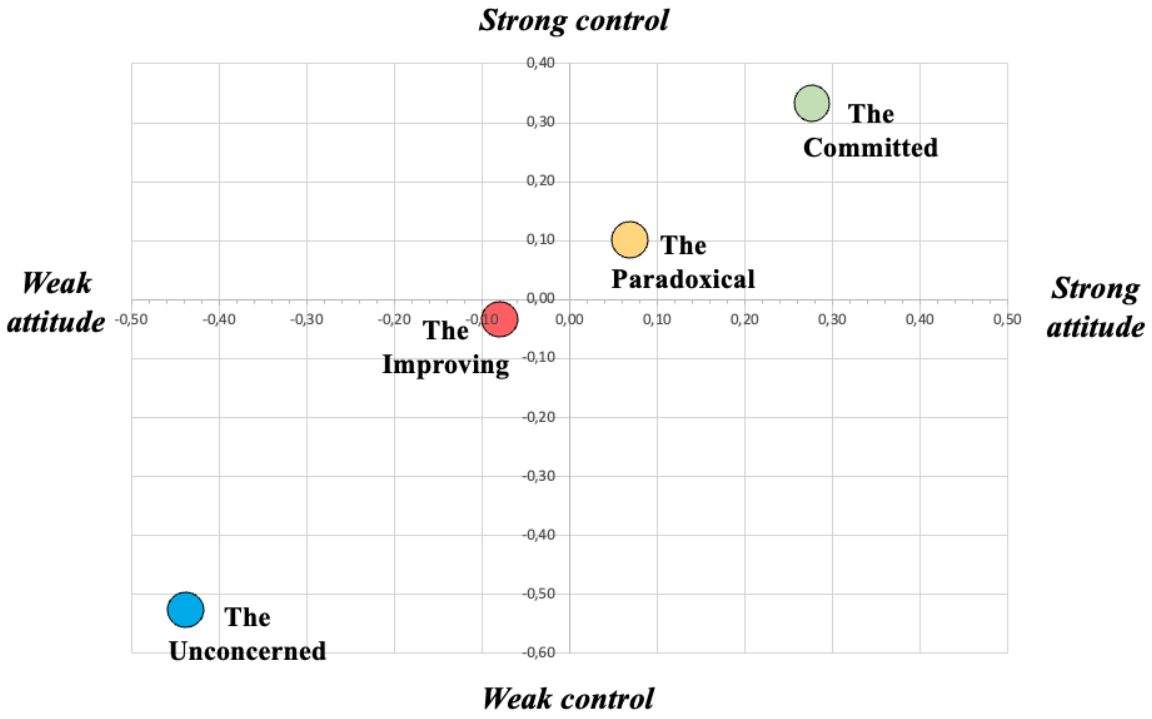


Figure 3. Control and attitude toward digital sobriety practices

Figure 4 further specifies the social side of this picture by relating environmental orientation (attitude) to social embeddedness (peer influence). “The Committed” combines a positive attitude with stronger perceived peer influence, suggesting that community cues can reinforce a supportive sobriety orientation. “The Unconcerned” combines negative attitudes with low perceived peer influence, consistent with limited social leverage for change. “The Improving” remains low on peer influence despite intensive platform use, which is consistent with their more peripheral and less visible

participation. Finally, “The Paradoxical” occupies a more intermediate position: while environmental topics are salient for her and she is socially active, peer influence does not appear sufficient to shift attitudes or translate engagement into self-reported sobriety practices.

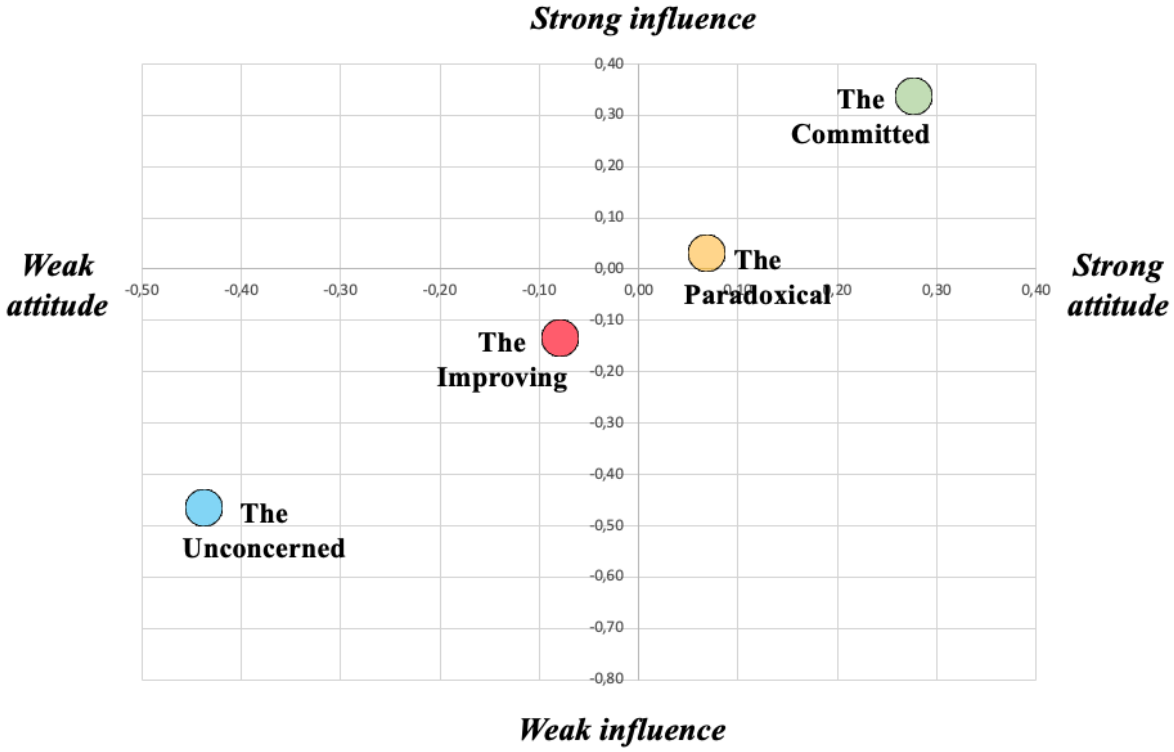


Figure 4. Peer influence and attitude toward Digital Sobriety Practices

4.2.2. Environmental orientation, enactment feasibility, and social embeddedness shaping sobriety practices

Beyond these individual profiles, our results also highlight the differentiated role of community interactions in shaping users’ practices. For “The Unconcerned,” their weak number of exchanges on environmental topics in the chat, combined with a low perception of peer influence, suggests that the community does not act as a driver of awareness or change. In contrast, “The Committed” illustrates how community dynamics can reinforce responsible attitudes: peers within the favorite channel exert a strong normative influence that supports the adoption of digital sobriety practices. “The Improving,” although aware of environmental issues, remains mostly a lurker, which indicates that community exposure may play a latent role through observation rather than direct engagement, potentially paving the way for future behavioral adjustments. Finally, “The Paradoxical” actively participates in environmental discussions in the chat, yet this involvement is not translated into digital sobriety

practices. This dissonance reveals that community discussions may increase awareness without necessarily fostering alignment between environmental concerns and digital practices. Taken together, these findings suggest that the sample of the Twitch community studied functions as both amplifiers and moderators of users' attitudes, but their influence varies significantly depending on the level and nature of participation.

5. Discussion

Our findings resonate with IS research on digital sobriety and responsible IS use by confirming that sobriety cannot be reduced to a purely technical or efficiency-oriented matter. In line with Bordage (2019), Guillard (2021), and Péréa et al. (2023), digital sobriety appears here as a sufficiency-oriented practice of voluntary reduction rather than a simple optimization of digital use. At the same time, our results are consistent with responsible IS research showing that responsible outcomes depend on how users actualize digital services in context rather than on system features alone (Ciriello, Gal, et al., 2025; Ciriello, Mathiassen, et al., 2025). On Twitch, sobriety is not only a matter of recognizing environmental consequences. The contrast between "The Committed," "The Unconcerned," and "The Paradoxical" shows that environmental beliefs, attitudes, intentions, and practices do not systematically align. This echoes prior eco-responsible IS studies suggesting that favourable beliefs and intentions do not always translate into behaviour when responsible practices are perceived as effortful, inconvenient, or socially costly (Chow & Chen, 2009; Ojo et al., 2019).

Our results also highlight the importance of the community-based nature of live streaming for understanding digital sobriety. Consistent with prior work on Twitch and online communities, platform use is socially embedded in interaction routines, visibility, and peer recognition (Diwanji et al., 2020; Hamilton et al., 2014; Hilvert-Bruce et al., 2018). In such a setting, community dynamics can reinforce sobriety, as illustrated by "The Committed," but they can also fail to produce behavioural change, as shown by "The Paradoxical," or remain largely absent, as in "The Unconcerned." The case of "The Improving" further suggests that intensive use and role-related constraints may limit the enactment of sobriety even when some awareness is present. Altogether, these findings support the idea that digital sobriety in platform environments is shaped not only by environmental orientation, but also by

enactment feasibility and social embeddedness. They therefore invite us to discuss digital sobriety not as a homogeneous responsible behaviour, but as a differentiated and socially situated set of orientations toward reduction.

5.1. Theoretical contributions

Our findings contribute to IS research on responsible digital practices by clarifying how digital sobriety operates as a form of responsible IS use and by theorizing heterogeneity in sobriety orientations within a community-based platform context.

First, our study strengthens the conceptual positioning of digital sobriety within responsible IS behaviour by showing that sobriety is not only an issue of responsible engagement, but also an issue of responsible reduction. This extends recent work arguing that responsibility in digital contexts cannot be reduced to compliance and depends on how users enact digital services in context (Ciriello, Gal, et al., 2025; Ciriello, Mathiassen, et al., 2025). From this perspective, digital sobriety can be understood as a harm-reducing orientation toward digital use because it targets the reduction of environmentally costly consumption, complementing responsible IS use approaches that address other forms of harm in digital contexts. In line with digital sobriety research emphasizing sufficiency and voluntary reduction (Bordage, 2019; Guillard, 2021; Péréa et al., 2023), our results show that the mechanisms commonly mobilized in eco responsible IS research remain relevant, but they do not converge toward a single behavioural pattern when the target behaviour is reduction. Even when users report favourable beliefs and attitudes and express intention, reduction practices can remain limited or absent. This supports the idea that sobriety is theoretically demanding because it combines immediate perceived costs with collective and delayed benefits, which makes uneven enactment likely even when responsibility is salient (Chow & Chen, 2009; Ojo et al., 2019; Péréa et al., 2023). More broadly, this suggests that models developed around adoption of eco responsible practices need to be reinterpreted for sufficiency-oriented behaviours, where responsible outcomes depend as much on feasibility and social costs as on intention.

Second, we move from an empirical classification toward a more general theorization of heterogeneity in digital sobriety orientations in community-based platforms. Building on responsible IS research, we suggest that this heterogeneity can be organized around three complementary dimensions that remain consistent with a parsimonious socio cognitive structure while also accounting for the social embeddedness of platform participation (Becerra et al., 2023; Chow & Chen, 2009; Ojo et al., 2019; Suki & Suki, 2019). Environmental orientation captures the degree to which users recognize the environmental stakes of digital practices and evaluate reduction positively. Enactment feasibility captures willingness and perceived ability to enact reduction in practice despite constraints, habits, and experience related losses. Social embeddedness captures the extent to which sobriety cues become salient and legitimate through peers, discussion dynamics, and socially visible participation.

This three dimensions framing provides a theoretical bridge between responsible IS use and digital sobriety. Responsible IS use research emphasizes that responsible outcomes depend on how users enact services in context and how they respond to the social and material conditions of use (Ciriello, Gal, et al., 2025; Ciriello, Mathiassen, et al., 2025). Our findings extend this perspective by specifying that digital sobriety is a form of responsible reduction shaped by a combined logic of orientation, feasibility, and social embeddedness. This matters because it explains why sobriety cannot be theorized only as a matter of awareness or intention, and why uniform interventions are unlikely to work across a user base, even within the same platform. It also enables cumulative theorizing by suggesting that different configurations of these dimensions can produce distinct sobriety orientations, ranging from coherent reduction to symbolic endorsement without enactment, or from routinized high consumption despite awareness.

This framing also enriches community-based platform research by clarifying the dual role of social dynamics in sobriety. Prior work on Twitch and similar environments shows that participation and meaning making are co-produced through visible interaction routines, roles, and channel climates (Diwanji et al., 2020; Hamilton et al., 2014). Our study suggests that these dynamics can support sobriety through legitimacy cues and peer influence, but they can also sustain intensive consumption by reinforcing engagement norms and by making reduction socially costly. Community visibility and

discussion may therefore increase the salience of environmental concerns without necessarily translating into sobriety enactment when feasibility constraints or engagement norms dominate. This extends existing work by showing that social embeddedness is not only a driver of adoption, but also a potential mechanism of stabilization for high intensity consumption in attention-oriented communities.

Although our analysis is exploratory, this framing offers a basis for cumulative research on digital sobriety across platforms, channel types, and user roles, which are all likely to shift the relative weight of these dimensions in sobriety trajectories.

5.2. Practitioner implications

From a managerial perspective, our user classification suggests that digital sobriety in live streaming cannot be addressed through one size fits all interventions. Platforms and streamers can instead design differentiated levers that target the three dimensions highlighted in our theoretical framing, namely environmental orientation, enactment feasibility, and social embeddedness.

First, interventions can strengthen environmental orientation by making the environmental consequences of streaming more intelligible and personally relevant. This includes awareness campaigns that translate abstract impacts into concrete cues, as well as contextualized information that connects everyday viewing practices to their ecological footprint. Such levers are particularly important for users who show low environmental beliefs and weak attitudes toward sobriety.

Second, interventions can increase enactment feasibility by reducing practical frictions and lowering the perceived inconvenience of sobriety practices. Nudging strategies are relevant here because they can facilitate action without requiring strong deliberation for every decision. In digital environments, choice architecture mechanisms such as defaults and opt out options have been documented as effective ways to steer behaviour in subtle but meaningful ways (Caraban et al., 2019; Thaler & Sunstein, 2021). For live streaming, feasible levers include making low resolution settings more salient and easier to select, or proposing watch time management options that users can activate with minimal effort. Such levers are especially relevant for profiles that do not translate intentions into practices or that face habit related constraints.

Third, interventions can leverage social embeddedness by shaping how sobriety becomes visible, legitimate, and discussable within channels. Recognition systems such as badges or symbolic roles can reinforce sobriety orientations for users who are sensitive to peer cues and community approval. Streamers and moderators can also play a pivotal role by legitimizing sobriety practices, integrating environmental topics into community talk, and making reduction socially acceptable rather than socially costly. In this respect, the profiles suggest that social visibility may amplify engagement with environmental topics, yet not necessarily convert talk into reduction practices, which implies that social levers should often be coupled with feasibility levers rather than used alone.

Finally, platforms face a broader strategic tension because sobriety can appear misaligned with attention-based business models. However, proactive sobriety initiatives can generate reputational and trust benefits and may anticipate evolving regulatory expectations. Over time, platforms could explore stronger forms of demand management, but the most actionable implication from our findings is the need for targeted and combined levers that reflect heterogeneous user orientations rather than assuming uniform responsiveness.

5.3. Limitations and future research

This study has several limitations that open avenues for future research. First, we captured digital sobriety through a limited set of practices focused on streaming resolution and consumption reduction. Future work could expand the behavioural scope by considering additional reduction practices and device related choices, which may differ in accessibility for viewers and streamers and may involve different perceived sacrifices (Bordage, 2019; Elgaaied-Gambier et al., 2020; Kolli, 2022).

Second, our empirical setting focuses on a sample from one community and one platform. Replicating the study across other live streaming environments and platforms would strengthen external validity and allow comparison across participation architectures and channel climates. Such extensions would also help clarify whether the three dimensions that structure our framing remain stable or whether their relative weight shifts across contexts.

Third, the study relies on self-reported survey data, which limits behavioural precision and raises common concerns about social desirability. Future research could combine surveys with behavioural and interactional traces to better capture platform participation and community dynamics. This could include log-based indicators of viewing behaviour or the analysis of naturally occurring chat activity, which would support triangulation between declared orientations and observable engagement patterns.

Fourth, our cross-sectional design supports classification but not causal inference. Future studies could adopt experimental or quasi experimental designs to test whether targeted interventions effectively shift sobriety practices. Building on work on digital nudging (Caraban et al., 2019; Thaler & Sunstein, 2021), research could compare feasibility-oriented interventions such as defaults and friction reduction with socially embedded interventions such as social comparison cues or recognition mechanisms, and assess whether effectiveness differs across user profiles.

Finally, several potentially relevant sources of heterogeneity were beyond our measurement model. Future research could enrich the explanatory space by integrating constructs that map onto the three dimensions of our framing. For environmental orientation, this includes ecological self-identity and broader environmental awareness. For enactment feasibility, this includes perceived sacrifice, habit strength, and perceived helplessness in the face of climate issues. For social embeddedness, this includes norm sensitivity and role differences between viewers and streamers (Aitken et al., 2011; Dorr, 2017; Elgaaied-Gambier et al., 2020; Kimbrough & Vostroknutov, 2016; Kolli, 2022). Configurational approaches such as fsQCA could also complement variable centred analyses by identifying combinations of conditions that are sufficient for sobriety enactment or, conversely, for persistent non adoption.

6. Conclusion

Beyond the specific case of live streaming, this study invites a broader dialogue with IS research on digital harms and the sociotechnical conditions that make certain forms of digital engagement difficult to regulate or reduce. From this perspective, digital sobriety should not be understood only as an individual disposition toward moderation, nor only as a responsible form of reduction. It can also be

approached as a response to environments in which continued use is constantly facilitated, normalized, and socially reinforced. This shift in perspective is important because it suggests that the challenge of digital sobriety lies not only in raising awareness or strengthening intentions, but also in understanding how platforms, social norms, and participation routines can maintain users in patterns of recurrent consumption. Digital sobriety thus appears as a particularly relevant entry point for extending responsible IS research toward questions of digitally entrapping environments, where responsibility is not only about using digital systems well, but also about preserving the capacity to step back from them.

CRediT author statement

Julien de Benedittis: Conceptualization, Investigation, Methodology, Supervision, Visualization, Writing-orginal draft, Writing-review & editing.

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Céline Péréa: Conceptualization, Methodology, Writing-review & editing.

Disclosure of the use of Generative Artificial Intelligence technologies

During the preparation of this manuscript, the authors used ChatGPT to improve the language and clarity of the text. Following its use, the authors reviewed and edited the content as necessary and take full responsibility for the final version of the publication.

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Appendix

Appendix A: Audience and ranking of Genshin Impact on Twitch

Genshin Impact is an action-RPG video game developed and published by the Chinese studio HoYoverse. It belongs to the open-world genre, offering players the opportunity to explore a vast and ever-expanding universe, solve puzzles, and battle various creatures. One of Genshin Impact's defining features is its dynamic combat system, which allows players to control a team of characters with unique elemental abilities, creating powerful elemental interactions.

The game also includes a storyline, with new chapters added regularly, along with numerous side quests that enrich the overall player experience. Players are free to explore different regions, each with a unique atmosphere and inspired by distinct cultural influences. For example, in August 2023, players discovered Fontaine, a region heavily influenced by French culture, while in August 2022, Sumeru introduced elements drawn from Middle Eastern traditions. More recently, in August 2024, the region of Natlan came out and incorporate cultural references inspired by Latin America.

Genshin Impact is also well known for its gacha system, which enables players to collect new characters and equipment by using virtual or real-world currency. This feature has contributed significantly to the game's popularity, although the core gameplay can still be enjoyed without any monetary investment.

Data for this study were collected daily at 12:00 p.m. and 9:00 p.m. We recorded the number of viewers displayed on the "Browse" page of Twitch.

Over several months, we conducted a standardized longitudinal monitoring of Twitch audiences to assess the stability of the Genshin Impact category. Data were manually collected twice a day at fixed times (12:00 and 21:00). For each observation, we recorded the date/time, the total

number of games/categories streamed simultaneously (platform activity context), and the audience levels for the Top 50 categories at that moment. This dataset allowed us to track whether Genshin Impact consistently appeared in the Top 50 and to position it relative to dominant categories.

The website twitchtracker.com provides statistical insights into major trends on the platform, but does not offer detailed data for each individual game. However, it does allow for the collection of weekly data on the average number of games being streamed. During the data collection period, an average of 3,070 different games were streamed simultaneously on the platform.

We then built a second, game-focused table aggregating observations by month and time slot to compute three indicators for Genshin Impact: average viewers (typical audience level), average ranking (typical position among categories), and the standard deviation of rank (ranking variability). Together, these measures provide a concise assessment of both visibility and stability over time.

It’s also important to note that Genshin Impact viewership fluctuates significantly due to the game’s content cycle. Every six weeks, a new update is released. At the start of each update, new limited-time characters (and sometimes new areas) are introduced, drawing in a large number of viewers. Halfway through the update (three weeks later), another character is also released, either a brand-new one or a rerun of a previously released character, available again for a three-week period. The biggest updates (the X.0 versions) are released at the end of summer and typically feature an entirely new region in the game world.

Appendix B: Survey and measurement scales

Items	Responses	Sources
Twitch usage		
What is your Twitch username	*Open field. This field was required to enter the giveaway and be eligible for a reward.*	
On average, how many hours per week do you watch Twitch? (if you are a streamer, you can include the hours spent streaming)	0-2h, 3-5, 6-10, 11-20, +21.	Diwanji et al. (2020)
On average, how many different streamers do you watch per week on Twitch?	1, 2, 3, 4, 5, 6+	
How many streamers do you follow on Twitch?	1-5, 6-10 ; 10 à 20, 21-40, 40-100, 100 +	
Can you estimate the total amount (in euros) you've donated to streamers on Twitch? (including subs, gifted subs, bits, donations, etc.)	*Numeric open field*	
Which of the following Genshin Impact streamers do you follow and watch the most frequently (between once a week and daily)?	*List of Genshin Impact streamers*	
Your favorite Genshin Impact streamer's channel		
From the list below, select THE streamer whose community you feel you belong to the most (if you are a streamer yourself, you can select your own name).	*List of Genshin Impact streamers*	
On this channel, you are…	The streamer ; a moderator ; a VIP ; a viewer	
On this channel, you are rather…	Very active (you interact a lot in the chat) ; active (you regularly interact in the chat) ; lurker (you rarely interact in the chat) ; inactive (your never interact in the chat)	
How many months have you been following this channel?	*Numeric open field*	Deng et al. (2015)
How many months have you been subscribed to this channel?	*Numeric open field*	
What is your uptime on this channel? (in hours)	0-250, 251-500, 501-750, 751-1 000, 1 001-1 500, 1 501-2 000, +2 001	
How many messages have you posted in this streamer's chat?	0-200, 201-500, 501-1 000, 1 001-2 000, 2 001-5 000, 5001-10 000, +10 001	
Frequency		
I discuss environmental issues with members of my favorite channel	Strongly disagree; Disagree; Neither agree nor disagree; Agree; Strongly agree.	Naranjo-Zolotov et al. (2022)
I discuss environmental issues with members of another channel		
Beliefs		
I believe that IT equipment and systems dedicated to Twitch usage contribute to greenhouse gas emissions.		Ojo et al. (2019)

I believe that Twitch users should be responsible for reducing Twitch's greenhouse gas emissions.	Strongly disagree; Disagree; Neither agree nor disagree; Agree; Strongly agree.	
I believe IT can be used to reduce Twitch's total carbon footprint (i.e., emission of carbon dioxide).		
I believe that Twitch users can play significant roles in reducing their carbon footprint (i.e., emission of carbon dioxide)		
I believe that tackling the carbon footprint of Twitch IT systems should be a core part of this platform		
Digital practices		
I watch Twitch videos using the lowest possible resolution	Strongly disagree; Disagree; Neither agree nor disagree; Agree; Strongly agree.	Adapted from WWF (2023)
I try to limit my Twitch consumption		
Attitude		
I feel that digital sobriety practices are a convenient thing for me to practice on Twitch.	Strongly disagree; Disagree; Neither agree nor disagree; Agree; Strongly agree.	Ojo et al. (2019)
I feel that digital sobriety practices are a good thing for me to practice on Twitch.		
I feel that digital sobriety practices are a pleasant thing for me to practice on Twitch.		
I feel that digital sobriety practices are a sensible thing for me to practice on Twitch.		
Influence		
I have learned a lot about environmental issues from members of my favorite Twitch channel	Strongly disagree; Disagree; Neither agree nor disagree; Agree; Strongly agree.	Becerra et al. (2023); Suki & Suki (2019)
Members of my favorite Twitch channel often recommend environment friendly practices to me		
Members of my favorite Twitch channel often recommend green IT products		
I follow advice of members from my favorite Twitch channel regarding digital sobriety practices		
When searching for digital sobriety practices, I ask members of my favorite Twitch channel what practices are best		
Intention		
I will intent to practice digital sobriety	Strongly disagree; Disagree; Neither agree nor disagree; Agree; Strongly agree.	Chow & Chen (2009)
I will try to practice digital sobriety		
I will plan to practice digital sobriety		
Control		
I have totally controlled the quality of my digital sobriety practices	Strongly disagree; Disagree; Neither agree nor disagree; Agree; Strongly agree.	Chow & Chen (2009)
I can improve the quality of my digital sobriety practices in the forthcoming months		
I definitely could improve the quality of my digital sobriety practices in the forthcoming months		
It is mostly up to me whether or not I improve the quality of my digital sobriety practices in the forthcoming months		

Your profile	
Which country do you live in?	France, Belgium, Switzerland, Canada, Other.
What is your gender?	Male, Female, Other.
What is your year of birth?	*Numeric open field*
What is your current status?	Middle school student; high school student; University student; Unemployed; Streamers; Employee; Self-employed.

Appendix C: Construct reliability and validity

Construct	Item	Factor loading	KMO	Bartlett's test	Cronbach's Alpha	Explained variance (%)
Belief	I believe that Twitch users should be responsible for reducing Twitch's greenhouse gas emissions.	0.795	0.631	$\chi^2(3)=68.272$	0.626	57.2
	I believe IT can be used to reduce Twitch's total carbon footprint (i.e., emission of carbon dioxide).	0.694		$p<0.001$		
	I believe that Twitch users can play significant roles in reducing their carbon footprint (i.e., emission of carbon dioxide)	0.776				
Attitude	I feel that digital sobriety practices are a convenient thing for me to practice on Twitch.	0.738	0.758	$\chi^2(6)=193.260$	0.771	59.5
	I feel that digital sobriety practices are a good thing for me to practice on Twitch.	0.794		$p<0.001$		
	I feel that digital sobriety practices are a pleasant thing for me to practice on Twitch.	0.747				
	I feel that digital sobriety practices are a sensible thing for me to practice on Twitch.	0.803				
Peer influence	I have learned a lot about environmental issues from members of my favorite Twitch channel	0.842	0.834	$\chi^2(10)=649.387$	0.905	72.7
	Members of my favorite Twitch channel often recommend environment friendly practices to me	0.894		$p<0.001$		
	Members of my favorite Twitch channel often recommend green IT products	0.886				
	I follow advice of members from my favorite Twitch channel regarding digital sobriety practices	0.774				
	When searching for digital sobriety practices, I ask members of my favorite Twitch channel what practices are best	0.861				
Intention	I will intent to practice digital sobriety	0.933	0.767	$\chi^2(3)=469.460$	0.933	88.2
	I will try to practice digital sobriety	0.944		$p<0.001$		
	I will plan to practice digital sobriety	0.940				
Perceived control	I have totally controlled the quality of my digital sobriety practices	0.673	0.734	$\chi^2(6)=324.649$	0.801	64.1
	I can improve the quality of my digital sobriety practices in the forthcoming months	0.905		$p<0.001$		
	I definitely could improve the quality of my digital sobriety practices in the forthcoming months	0.906				
	It is mostly up to me whether or not I improve the quality of my digital sobriety practices in the forthcoming months	0.686				