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Articles

Development and Validation of the TikTok Use Scale (TTUS): A Platform-Specific Measure of Adaptive and Maladaptive Engagement

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Abstract

Background. The rapid growth of TikTok has emphasized the need for assessment tools specifically designed to capture the psychological and behavioral characteristics of platform use. Most existing measures adapt scales developed for other social media, limiting their ability to reflect TikTok's unique affordances and usage patterns.

*Objective***.** This study aimed to develop and evaluate the psychometric properties of the TikTok Use Scale (TTUS), a self-report instrument designed to assess multiple dimensions of TikTok engagement along an adaptive–maladaptive continuum.

Methods. An initial pool of 68 items was generated based on the literature and expert review. Following item reduction procedures, 25 items were administered to a sample of 210 Italian adult TikTok users. Participants also completed the Bergen Social Media Addiction Scale to assess convergent validity. Exploratory factor analysis (EFA) using maximum likelihood extraction was conducted, followed by confirmatory factor analysis (CFA). Internal consistency, concurrent validity, and score distributions were examined.

Results. EFA supported a four-factor structure including Involvement, Intrusiveness, Temporality, and Dissociation, with strong sampling adequacy (KMO = 0.89) and a significant Bartlett's test of sphericity. CFA indicated acceptable fit indices for the proposed model. Internal consistency was satisfactory across subscales (α = .84–.89) and excellent for the total scale (α = .93). Evidence of concurrent validity emerged through moderate-to-strong correlations with social media addiction symptoms and with both self-reported and objectively recorded time spent on TikTok. Score distributions suggested that a small proportion of users may exhibit potentially problematic patterns of use.

Conclusions. The TTUS demonstrates promising psychometric properties and represents a concise, multidimensional instrument for assessing TikTok use. It may be a valuable tool for research investigating behavioral processes and adaptive versus maladaptive engagement with TikTok.

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1. Introduction

The widespread diffusion of social networking sites has substantially reshaped everyday social practices, generating growing interest in their psychological impact. While online social interactions may offer relational and emotional benefits (Gerwin et al., 2018; Kuss & Griffiths, 2017; Marino et al., 2021), excessive or dysregulated use has been associated with negative outcomes, including mood disturbance, reduction of self-esteem, and risk for uncontrolled behaviors (Müller et al., 2016). These concerns have contributed to increasing attention toward Problematic Social Media Use (PSMU), although its clinical boundaries and nosological status remain unclear (Casale, 2020). PSMU is not included in the DSM-5, partly due to conceptual and methodological inconsistencies across studies (Shannon et al., 2022) and the heterogeneity of available measurement tools (Smith & Short, 2022). As a result, many authors suggest conceptualizing social media use along an adaptive–maladaptive continuum that incorporates individual differences, motivational factors, and contextual influences (Billieux et al., 2015; Tambelli et al., 2024).

A further challenge should be ascribed to the rapid changes of social platforms (Nesi et al., 2022). Each platform is characterized by specific design features, affordances, and algorithmic architecture, eliciting distinct psychological experiences and patterns of engagement (Rozgonjuk et al., 2021; Smith & Short, 2022). Consequently, measurement approaches developed for one platform may not adequately capture behaviors on another. For example, Smith and Short (2022) found that mood modification and relapse tendencies are more characteristic of Facebook use, whereas withdrawal symptoms are more prominent among TikTok users. Such findings underscore the need for platform-specific assessment tools that reflect the unique experiential, motivational, and behavioral patterns associated with each social media environment.

In particular, TikTok has transformed content consumption through short-form, algorithmically curated video streams (Qin et al., 2023). With over 34 hours of monthly use per user (We Are Social, 2024) and strong diffusion among youngers (Montag et al., 2021), TikTok's structure fosters continuous engagement and high temporal accessibility. Its system rapidly adapts to user behavior, creating a highly personalized feed (Pedrouzo & Krynski, 2023; Smith & Short, 2022) that amplifies immersion and minimizes cognitive effort. This may contribute to the emergence of "flow" states (Csikszentmihalyi, 1975), characterized by absorption, reduced self-awareness, and temporal distortion, all components that have been directly linked to problematic TikTok use (Qin et al., 2022; Qin et al., 2023). From a motivational standpoint, Uses and Gratifications Theory suggests that TikTok's content and interaction patterns respond effectively to needs for entertainment, escapism, and social connection, potentially strengthening reinforcement dynamics underlying maladaptive use (Omar & Dequan, 2020; Qin et al., 2023).

Despite the substantial growth of research on social media use, empirical investigations focusing specifically on TikTok remain limited (Caponnetto et al., 2025a; Caponnetto et al., 2025b). Emerging evidence points to the role of personality traits, emotional vulnerability, and family or relational factors in shaping problematic TikTok use (Fortunato et al., 2023; Marengo et al., 2022), yet the mechanisms through which such factors interact with TikTok's design architecture are still not well understood. A critical barrier to progress in this area is the lack of measurement instruments tailored to the platform's unique features. Current assessment tools adapt scales originally developed for other platforms—such as the Bergen Facebook Addiction Scale (Smith & Short, 2022) or the Instagram Addiction Scale (Günlü et al., 2023)—and do not fully capture TikTok-specific experiences. While Qin et al. (2022) proposed a scale grounded in the stimulus–organism–response model and flow theory, further psychometric development is needed, particularly across different cultural contexts.

To address these limitations, the present study proposed and tested the TikTok Use Scale (TTUS), a brief, multidimensional self-report instrument designed to assess both adaptive and potentially maladaptive aspects of TikTok use among Italian adults. Anchored in existing theoretical and empirical work, the TTUS aims to identify the most salient experiential, motivational, and behavioral dimensions of TikTok use along an adaptive–maladaptive continuum while avoiding excessive pathologization of common digital behaviors. By providing a psychometrically robust, platform-specific tool, this study wants to advance measurement precision and support future research on the psychological mechanisms underlying TikTok engagement.

2. Method

2.1 Participants

The present study employed a cross-sectional design aimed at developing and providing an initial psychometric validation of a platform-specific self-report measure of TikTok use. Data were collected at a single time point to examine factor structure and reliability of the scale. An online survey was created and distributed across major social media platforms (e.g., Facebook, Instagram, Telegram) using a convenience sampling approach to recruit individuals who reported active TikTok use. A total of 322 individuals accessed the online survey. Inclusion criteria required: (a) being at least 18 years old, (b) reporting active use of TikTok, and (c) completing the full survey. Individuals were excluded if they self-reported a history of neurological or psychiatric conditions or current psychopathological symptoms (e.g., depression or anxiety). Based on these criteria, 112 respondents (34.8%) were excluded. The final sample consisted of 210 adult TikTok users (M_age = 25.2, SD = 6.44; age range: 18–56 years). Demographic characteristics of the sample are presented in Table 1.

Table 1.

Demographic characteristics of the sample

	N (%)		N (%)
Gender		**Marital Status**	
Male	27 (12.9)	Married	23 (11.0)
Female	180 (85.7)	Divorced	2 (1.0)
Non-binary	1 (0.5)	In a relationship	101 (48.0)
Prefer not to Disclose	2 (1.0)	Single	84 (40.1)
Education		**Occupational Status**	
Middle-School Degree	3 (1.4)	Student	112 (53.3)
High-School Degree	84 (40.0)	Student - worker	32 (15.2)
Undergraduation	79 (37.6)	Employed	49 (23.3)
Master's degree	37 (17.6)	Unemployed	17 (8.1)
Post-Master education degree (Ph.D., specialization)	7 (3.4)		

2.2 Measures

Demographic Information. Participants completed a brief demographic questionnaire assessing age, gender, educational level, marital status, and occupational status. These variables were used to describe the sample and information is reported in Table 1.

TikTok experience. Information regarding respondent's patterns of TikTok use was collected through a set of items assessing: (a) the need to share content, (b) dissatisfaction with the number of views received, (c) monitoring of likes and views, and (d) checking for updates. All items were rated on a 5-point Likert scale ranging from 1 (completely disagree) to 5 (completely agree). Time spent on TikTok was assessed through both self-reported daily usage and objective screen time data extracted from the device's app usage statistics.

TikTok Use Scale (TTUS). The TTUS was developed specifically for this study. An initial pool of 68 items was generated based on the existing literature on problematic social media use and behavioral addictions (e.g., Favieri et al., 2024; Griffiths, 2012; Monacis et al., 2017). Items were selected and evaluated by a panel of experts in clinical psychology, risk behaviors, and behavioral addiction to identify those most relevant for capturing psychological and behavioral aspects of

TikTok use. Item generation was theoretically grounded in existing models of problematic social media use and behavioural addiction, including components such as salience, mood modification, loss of control, and functional impairment. Each item was mapped onto these conceptual domains to ensure content relevance. The expert panel qualitatively evaluated item clarity, theoretical coherence, and representativeness of the constructions, guiding the item reduction process. Following this qualitative refinement, 25 items were retained. Items were rated on a 5-point Likert-type scale ranging from 0 (totally disagree) to 4 (totally agree). Exploratory and confirmatory factor analyses suggested a four-factor structure of TTUS, including: Involvement, Intrusiveness, Temporality, and Dissociation, representing distinct experiential and motivational facets of TikTok engagement.

Bergen Social Media Addiction Scale (BSMAS; Andreassen et al., 2016; Italian Version: Monacis et al., 2017). The BSMAS is a six-item scale assessing problematic social media use based on core addiction components. Items are rated on a 5-point Likert scale from 1 (very rarely) to 5 (very often). The BSMAS was administered to evaluate convergent validity of the TTUS. Both original version and Italian validation reported good reliability (for both the studies reported Cronbach's α was of 0 .88).

2.3 Procedure

Data was collected through an online survey disseminated via major social media platforms (e.g., Facebook, Instagram, Twitter, Telegram) from August 2023 to March 2024. After accessing the survey, participants were informed about the purpose of the study and provided digital informed consent. The survey sequence included: (a) demographic questions to verify eligibility criteria, (b) items assessing TikTok usage patterns, and (c) the TTUS and BSMAS. Time duration was approximately 15 minutes. No personal information allowing identification (e-mail, name, family name) was collected, ensuring full anonymity. The study received ethical approved from the Ethics of the Department of Dynamic and Clinical Psychology and Health Studies (Prot. n. 0000683 del 02/05/2022) and in compliance with the principles of the Declaration of Helsinki.

2.4 Data Analysis

All statistical analyses were conducted using jamovi (version 2.6.44.0). Descriptive statistics (means, standard deviations, and frequencies) were computed for all demographic and study variables. Preliminary to factorial analyses, item distributions, inter-item correlations, and sampling adequacy indices were examined. The suitability of the data was verified through the Kaiser–Meyer–Olkin (KMO) measure and Bartlett's test of sphericity. The participant-to-item ratio (8:1) exceeded commonly cited guidelines suggesting between 5 and 10 participants per item (Kyriazos, 2018; Lingard & Rowlinson, 2006). Given the excellent KMO value and acceptable communalities, the sample was deemed adequate for both exploratory and confirmatory factor analyses.

An Exploratory Factor Analysis (EFA) was conducted using maximum likelihood extraction with oblimin rotation. The oblique rotation was selected given the theoretical expectation that the latent dimensions of TikTok use would be correlated, as commonly observed in behavioural addiction frameworks. Factor retention follows the Kaiser criterion (eigenvalues > 1) and inspection of the scree plot. Item quality was evaluated through factor loadings, communalities, and item–total correlations; items with primary loadings below .40 or substantial cross-loadings were considered for removal. Factor correlations were examined to assess relations among latent dimensions. Model fit for the EFA was evaluated via RMSEA and TLI. Confirmatory Factor Analysis (CFA) was performed to test the four-factor structure identified in the EFA. The model specified four correlated latent factors (Involvement, Intrusiveness, Temporality, and Dissociation) each indicated by their respective items. Maximum likelihood estimation was used. Model fit was assessed using multiple indices: χ^2, Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), Goodness-of-Fit Index (GFI), Incremental Fit Index (IFI), Root Mean Square Error of Approximation (RMSEA) with 90% confidence interval, Standardized Root Mean Square Residual (SRMR), and Normed Fit Index (NFI).

Internal consistency reliability was estimated using Cronbach's alpha coefficients for each TTUS subscale and for the total score. Convergent validity was examined through Pearson correlations between TTUS scores (total and subscales) and the Bergen Social Media Addiction Scale (BSMAS). Concurrent validity was assessed through correlations with each self-reported daily time spent on TikTok and device-recorded usage time.

A high-risk range for elevated engagement was operationalized as scores exceeding two standard deviations above the sample mean, to identify participants displaying unusually high levels of TikTok-related behaviors within the distribution. Group differences between individuals within and outside this range were evaluated using independent samples *t*-tests.

3. Results

3.1 Factorial Analyses

The factorial structure of the TTUS was examined through a two-step approach, consisting of an exploratory factor analysis (EFA) followed by a confirmatory factor analysis (CFA) to test the stability of the identified model.

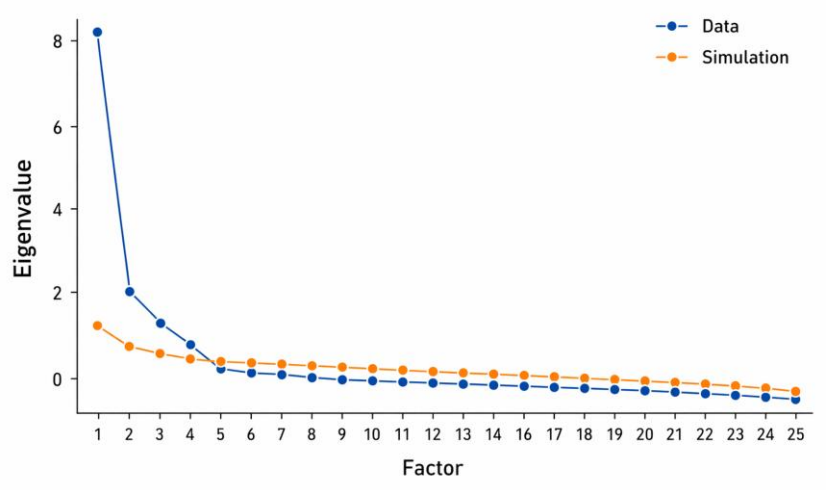
3.1.1 Exploratory Factor analyses

Preliminary data analyses for EFA indicated excellent overall adequacy, with a significant Bartlett's test of sphericity ($\chi^2(300) = 2779, p < 0.001$) and a good Kaiser–Meyer–Olkin index (KMO = 0.891), with individual item MSAs ranging from 0.80 to 0.94, confirming the suitability of the data for factor extraction.

From the EFA four factors emerged, accounting for 53.2% of the total variance. The first factor explained 16.9% of the variance (SS loadings = 4.22), the second 13.9% (SS = 3.48), the third 12.9% (SS = 3.23), and the fourth 9.4% (SS = 2.36). The scree plot supported a clear four-factor solution (see figure 1). Factor intercorrelations ranged from 0.23 to 0.49, indicating moderate relationships among the latent dimensions and supporting the use of an oblique rotation. Communalities were acceptable, ranging from 0.34 to 0.66, indicating adequate shared variance across the items. Model fit indices for the EFA further supported the adequacy of the four-factor solution (RMSEA = 0.067, 90% CI [0.057, 0.077]; TLI = 0.88).

Figure 1.

Scree Plot



3.1.2 Confirmatory Factor Analysis

The CFA to test the four-factor structure of the TTUS specified four correlated latent factors: Involvement, Intrusiveness, Temporality, and Dissociation. Overall, standardized factor loadings were moderate to high across all items, all statistically significant at $p < .001$, supporting the four-factor structure of the TTUS (see table 2).

Model fit indices indicated an adequate, although not optimal, fit of the four-factor model to the data ($\chi^2(269) = 641$, $p < 0.001$; CFI = 0.86; TLI = 0.84; RMSEA = 0.08(90% CI [0.07, .09]); SRMR = 0.08). Given the complexity of the model and the acceptable values of RMSEA and SRMR, the four-factor solution was retained as a reasonable representation of the underlying structure.

The four latent factors were moderately to strongly correlated, with standardized correlations ranging from 0.37 to 0.69. Specifically, Involvement showed strong associations with Temporality (r = 0.69) and Intrusiveness (r = 0.51), while Dissociation was moderately correlated with the other factors (r range = 0.37–0.56). This pattern of correlations supports the interpretation of the TTUS as a multidimensional but coherent measure of TikTok use.

Table 2.

EFA's and CFA factor loading

	Factor (Involvement)	Factor 2 (Intrusiveness)	Factor 3 (Temporality)	Factor 4 (Dissociation)	CFA standardized factor loading
Item 1			0.53		0.81
Item 2			0.54		0.74
Item 3			0.62		0.81
Item 4			0.73		0.53
Item 5			0.69		0.66
Item 14			0.57		0.75
Item 17			0.50		0.79
Item 6		0.58			0.73
Item 7		0.46			0.59
Item 11		0.73			0.75
Item 12		0.73			0.69
Item 13		0.58			0.61
Item 15		0.63			0.72
Item 20		0.48			0.59
Item 8	0.73				0.71
Item 9	0.74				0.70
Item 10	0.77				0.76
Item 16	0.50				0.67
Item 18	0.57				0.67
Item 19	0.74				0.74
Item 21	0.79				0.75
Item 22				0.79	0.72
Item 23				0.68	0.75
Item 24				0.79	0.79
Item 25				0.40	0.56

*Items are reported in original and English version in supplement 1.

3.2 Distribution of Scores and Risk Range

A *risk range* was identified using the criterion of two standard deviations above the sample mean (Forte et al., 2021; Mastropietro et al., 2020). This method allows for the identification of individuals falling within an unusually elevated range compared to the distribution of the sample, without implying the presence of a clinical disorder. Using this approach, 3.8% of participants (n = 8) scored within the high-risk range for problematic patterns of TikTok use. To examine behavioral correlates of elevated TTUS scores, independent-samples *t*-tests compared individuals within and outside the high-risk group. Participants scoring in the high-risk range reported significantly greater TikTok use, both in self-reported daily time ($t = –3.63, p < .001$) and in device-recorded usage ($t = –3.20, p < .001$). Despite the low percentage of participants with a high-risk profile, these findings provide preliminary external validity evidence for the risk-range classification, suggesting that elevated TTUS scores correspond to objectively higher levels of engagement.

3.3 Convergent and Concurrent Validity

Convergent validity was supported by a significant association between the TTUS total score and the Bergen Social Media Addiction Scale (BSMAS; $r = .59, p < .01$), indicating that higher levels of TikTok engagement were moderately related to general tendencies toward problematic social media use. Concurrent validity was further confirmed through significant correlations with each self-reported daily time spent on TikTok ($r = .44, p < .001$) and device-recorded usage time ($r = .44, p < .01$). Also, all four TTUS dimensions were significantly associated with the BSMAS, with correlations ranging from moderate to strong (Involvement: $r = .59, p < .001$; Intrusiveness: $r = .40, p < .001$; Temporality: $r = .39, p < .001$; Dissociation: $r = .46, p < .001$). These findings indicate that each dimension captures meaningful aspects of the broader construct of problematic social media involvement.

3.4 Associations with TikTok-Related Behaviors

Analyses examining the relationship between TTUS scores, and additional behavioral variables showed no significant differences in total scores as a function of gender ($F < 1, p = 0.42$), type of user ($F < 1, p = 0.88$), or overall frequency of content sharing ($r = .003, p = 0.96$).

However, several platform-specific behaviors were positively associated with higher TTUS scores. Individuals who reported a stronger need to share content ($r = 0.17, p = 0.01$), greater dissatisfaction with the number of views on their posts ($r = 0.26, p = .001$), more frequent monitoring of likes and views ($r = 0.15, p = 0.03$), and more habitual checking of TikTok updates ($r = 0.39, p < 0.001$) showed significantly elevated TTUS scores. In addition, the tendency to frequently check for TikTok-related updates demonstrated a particularly strong association with TTUS total scores ($r = 0.49, p < 0.001$).

4. Discussion

This study aimed to develop and validate the TikTok Use Scale (TTUS), offering a reliable, platform-specific instrument and preliminary evidence on the psychological dimensions underlying TikTok engagement. In line with the theoretical background conceptualizing online behaviors along an adaptive–maladaptive continuum that distinguishes between high engagement, problematic use, and addiction-like processes (Billieux et al., 2015; Favieri et al., 2024), the TTUS was constructed to avoid overpathologization while identifying patterns associated with elevated risk for problematic use. Specifically, high engagement may reflect intensive but non-pathological involvement driven by motivational and contextual factors that may be framed into the leisure activities context, whereas problematic use implies reduced control and functional impairment more related to risk for mental health (Billieux et al., 2015; Kardefelt-Winther et al., 2017). Finally, addiction-like patterns involve more pervasive and persistent dysregulation, involving core components similar to addiction such as salience, mood modification, tolerance, withdrawal, and conflict (Cheng et al., 2022; Griffiths, 2005). The TTUS was specifically designed to capture variability along this continuum without excluding normative digital behaviors with clinical conditions. Within this frame, psychometric analyses supported a stable four-factor structure including Involvement, Intrusiveness, Temporality, and Dissociation, each reflecting meaningful experiential, motivational, and regulatory components of TikTok use. These dimensions show partial overlaps with established components of behavioural addiction frameworks.

In particular, the *Involvement* dimension captures emotional and cognitive engagement in TikTok use, including motivations related to mood regulation and affective enhancement (e.g., 'When I use TikTok, I am deeply involved'; 'Using TikTok calms me down'), which have been consistently identified as key motivational drivers of problematic social media use (Marino et al., 2021). These mechanisms are central to reinforcement processes of digital media engagement (Montag et al., 2021). When online spaces become primary ways for emotional regulation, difficulties in impulse and use control can arise (Kardefelt-Winther, 2016; Kessling et al., 2023). The *Intrusiveness* factor reflects key components of behavioral addiction, such as salience and loss of control ('I stop whatever else I am doing when I feel the need to go on TikTok'; 'I get so engrossed in TikTok that I forget to eat or put off eating'), withdrawal-like experiences (e.g, 'I feel distressed when I stop using TikTok for a certain period'), and interference with daily functioning activities ('I think that all the time I spend on TikTok has compromised my relationship with my loved ones") (Griffiths, 2005). These are central features of addictive behaviours (Brand et al., 2025; Griffiths, 2005), and they are in line with previous studies on problematic social media behaviors and suggest how TikTok can occupy increasing

portions of cognitive space (Müller et al., 2016). The *Temporality* and *Dissociation* factors appear to tap into attentional absorption and altered time perception, constructs that are closely related to immersive media experiences and flow-like states (Csikszentmihalyi, 1975; Csikszentmihalyi, 2014; Montag et al., 2021; Nakamura & Csikszentmihalyi, 2014) ('I tend to lose track of time when I use TikTok') and immersive absorption ('I happen to have "daydreams" on TikTok'). Moreover, these experiences are consistent with the growing evidence that attentional absorption during smartphone or social media use contributes to loss of temporal awareness, underlying sustained engagement and potential dysregulation in digital environments (Duke & Montag, 2017), especially when frequent or chronic (Butler, 2004; Ryding & Kuss, 2020; Zadik et al., 2022). Research has increasingly demonstrated that flow-like or immersive states are associated with problematic social media or smartphone use, supporting their inclusion as core experiential features captured by the TTUS. However, the TTUS extends traditional addiction models by explicitly incorporating platform-specific experiential features linked to algorithm-driven content delivery. Unlike earlier frameworks developed for more static or socially oriented platforms, TikTok's continuous, personalised, and low-effort content stream may amplify attentional capture, reinforce habitual checking, and facilitate prolonged immersion. By integrating these platform-sensitive dynamics, the TTUS provides a more ecologically valid representation of contemporary social media engagement.

A comprehensive analysis of the TTUS subscales may furnish interesting insight into the psychological features of TikTok use and, eventually, problematic use. TikTok's architecture is characterized by rapid content changes, algorithmic personalization, and minimal interaction costs, facilitating sustained attentional capture and promotes flow-like experiences (Pedrouzo & Krynski, 2023; Smith & Short, 2022). This design may efficiently trigger reinforcement mechanisms via repetition and persistence (Baughan et al., 2022; Montag et al., 2021). The TTUS dimensions, particularly Temporality and Dissociation, may reflect the subjective correlates of these mechanisms, such as time distortion, absorption, and difficulty disengaging features widely documented in research on problematic TikTok use (Qin et al., 2022, 2023). These results support the importance of considering both platform-specific affordances and individual vulnerabilities. As previous studies have shown, personality traits, emotional instability, and coping strategies may interact with TikTok's algorithmic dynamics to amplify problematic trajectories and further studies should deep this aspect (Fortunato et al., 2023; Marengo et al., 2022). Specifically, considering time, the moderate associations observed between TTUS scores and both self-reported and objective usage suggest that these measures capture partially overlapping but distinct aspects of engagement.

While objective indicators may reflect behavioral exposure, self-reported measures may better represent perceived involvement and subjective experience. Future research should further investigate these discrepancies and their implications for the assessment of problematic versus non-problematic use.

Within this framework, the TTUS was specifically designed to capture variability along a continuum of use, integrating both adaptive and maladaptive dimensions while avoiding the merge of normative digital engagement with clinically relevant patterns. This distinction has been widely emphasized in the behavioral addiction literature, which highlights the risk of overpathologising highly engaged but non-problematic users and underscores the need to differentiate between adaptive, habitual, and maladaptive forms of digital behaviour (Billieux et al., 2015; Kardefelt-Winther et al., 2017). Empirical work further suggests that high-frequency or intensive use does not necessarily correspond to problematic involvement unless it is associated with loss of control, escapism motives, or interference with daily functioning (Slack et al., 2022).

Regarding prevalence, the present study identified a high-risk subgroup corresponding to 3.8% of the sample, using a distribution-based criterion (mean + 2 SD). This estimate aligns with the lower end of prevalence ranges reported in meta-analytic research (Cheng et al., 2021), which highlights wide variability, ranging from a minimum of 0% to a maximum of 82%, depending on assessment tools and diagnostic thresholds. Importantly, this "risk range" may represent exclusively a non-clinical indicator, capturing statistically elevated patterns rather than diagnostic category. The fact that individuals within this range displayed significantly higher levels of both self-reported and smartphone-recorded use supports the external validity of this classification.

Analyses of usage characteristics revealed that higher TTUS scores were associated not with demographic variables or general content-sharing frequency, but with specific platform-related behaviors, such as greater need to share content, dissatisfaction with views, repetitive monitoring of likes and views, and constant checking for updates (e.g., 'I feel the need to post a video after/during an outing with friends, an event, a new purchase, etc.'; 'I feel unhappy with the number of views, likes and comments I receive'). TikTok's characteristics, which emphasize visibility, popularity metrics, and ongoing updates, likely amplifies these tendencies by offering continuous social feedback and opportunities for comparison (Pedrouzo & Krynski, 2023). However, although TikTok may satisfy these affective needs, which motivates the user to continue using the platform (Montag et al., 2021), the high investment in these areas could be associated with a negative side use, characterized by high intrusiveness, high levels of dissociation, lack of temporality control and high level of investment, that may affect other personal dimensions. These behaviors reflect social-evaluative processes, including fear of

missing out (FoMO) and social comparison, which are well-establishedexpression of of problematic social media use (Coker et al., 2025; Przybylski et al., 2013; Vogel et al., 2014; Bucknell Bossen & Kottasz, 2020). This would be in line with what was reported about anxiety and social isolation as predictive of problematic use when associated with the personalization and entertainment that TikTok provides (Zhang et al., 2019). Also, Smith & Short (2022) showed that compared to non-problematic users, those with TikTok addiction traits exhibit greater perceptions of loneliness and tendencies towards extroversion. These findings reinforce the complexity of the interactions between socio-relational and psychological variables, suggesting the need to analyze multiple factors to delineate a psychopathological risk trajectory (Billieux et al., 2015) and to understand the dynamics of social network addiction fully.

Despite interesting findings, the present study clearly shows some limitations. Although the short version of the questionnaire allows rapid assessment, it reduces its ability to analyze other behavioral aspects. However, this choice comes from the desire to furnish screening tools. The sample's characteristics represent another limit. The survey was mainly disseminated via social networks. This approach allowed access to active TikTok users but does not ensure representativeness of the general population. On the one hand, this allowed us to collect data from a large sample; on the other hand, this snowball choice resulted in partial coverage of the general population that influenced the possibility of furnishing a real frame of the phenomenon. It especially excluded all the people who did not use social networks, specifically TikTok because they could not access the survey, that in further studies should be considered to understand the differences in terms of individual (both psychological and cognitive) characteristics as specific risk factors. Given the non-probabilistic nature of the sampling procedure, caution is warranted in generalizing the findings beyond populations with similar characteristics. Moreover, this choice did not allow for a real understanding of the continuum characteristics, especially preventing the positive aspects of this activity as a leisure one, compared to the total absence of TikTok use. Also, considering sample, the main presence of females contributes to limit the generalizability of the findings. The sample was predominantly female, which may limit the generalizability of the findings. Evidence from large-scale studies indicates that females not only report higher levels of social media and smartphone use but also show stronger associations between digital media engagement and psychological well-being (Twenge & Martin, 2020). These differences would reflect a greater sensitivity to interpersonal dynamics, including social comparison, relational evaluation, and feedback-seeking processes in online contexts. Accordingly, gender imbalance may have shaped the observed factor structure, potentially accentuating dimensions related to emotional involvement, social validation, and immersive engagement. Future research should therefore aim to recruit more balanced samples and test

measurement invariance across gender groups to ensure the robustness and generalizability of the scale. Another limitation concerns the CFA model fit, which, although acceptable, did not reach optimal thresholds. This suggests that further validation studies are needed to test alternative structural models and to confirm the stability of the factor solution across different samples and contexts. Future research could explore higher-order models to examine whether the identified dimensions reflect a broader latent construct, as well as bifactor models to disentangle general and specific sources of variance. Additionally, longitudinal Structural Equation Modeling could be employed in future research to assess the temporal stability of the factor structure. Finally, measurement invariance analyses across demographic groups and cultural contexts would further strengthen the generalisability and robustness of the scale. Also, the adoption of a cut-off based on the standard deviation from the mean may represent a further limitation. Although this strategy may help us identify the extreme of the scores according to the mean distribution, it should be clear that classifying the behavior into risk categories represent a simplification. Further studies should verify the robustness of these cut-offs. Another limitation is the lack of comparison with other questionnaires adopted to measure TikTok behavior (e.g., adapted BFAS or IAS scales), to define if similar data were reported cross-sectionally independently from the tools. Finally, this scale was validated in an Italian-speaking population, and future research should include cross-cultural validation procedures, including measurement invariance testing across different linguistic and cultural contexts, to ensure the broader applicability of the TTUS.

5. Conclusion

In conclusion, this study highlights the psychometric properties of the TikTok Use Scale (TTUS), identifying key subscales— Involvement, Intrusivity, Temporality, and Dissociation— that help assess the risk of problematic TikTok use according to multiple features. The findings suggest that motivational factors like emotional engagement, time distortion, and social validation play significant roles in contributing to problematic use, as well as characteristics that interact and eventually interfere in the shift from real to digital world (see dissociation) (Ye et al., 2025b). The study also emphasizes the importance of understanding individual vulnerabilities and coping strategies in explaining these behaviors, considering the specificities of each social network platform in terms of contents, interactions, and algorithm. Despite its limitations, such as sample bias and the need for further cross-cultural validation, the TTUS offers a promising tool for screening and assessing TikTok-related issues that may be implemented also for the clinical field (Ye et al., 2025a; Caponnetto et al., 2025b).

Ethical approval

The study was conducted in accordance with the Declaration of Helsinki and approved by the Ethics Committee of Ethics Committee for Transdisciplinary Research of "Sapienza" University of Rome (protocol code: CERT_18EC7747B2E; date of approval 27/04/2024). Written informed consent was obtained from all individual adult participants included in the study.

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

Data are available upon request to the corresponding authors.

Conflict of interest statement

The authors declare no conflict of interest.

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Authors' Contribution

F.F. and G.F. (conceptualization, methodology, formal analysis, writing original draft, writing – review & editing); A.M. (data collection, writing original draft); M.C. (methodology, writing – review & editing). R.T. (supervision, project administration writing – review & editing.).

AI Disclosure Statement

The authors declare that they did not use AI software for the purposes of preparing this article.

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TIKTOKE USE SCALE

Indication: The following questions will be related to your experience as a TikTok user. Please answer each question by indicating your degree of agreement (from **I totally disagree** = 0 to **I totally agree**= 4) with the statement presented. Remember, there are NO RIGHT OR WRONG ANSWERS, but it is necessary that you answer as HONESTLY as possible

(Involvement) 1. Penso spesso a TikTok quando non lo sto usando

I often think about TikTok when I'm not using it.

(Involvement) 2. Mi è capitato di sentire il bisogno di passare sempre più tempo su TikTok

I've sometimes felt the need to spend more and more time on TikTok.

(Involvement) 3. Mi capita di usare TikTok per distogliere l'attenzione dai miei problemi personali

I happen to use TikTok to take my mind off my personal problems.

(Involvement) 4. Penso che usare TikTok possa migliorare il mio umore

I think using TikTok can improve my mood.

(Involvement) 5. Usare TikTok mi calma

Using TikTok calms me down.

(Intrusiveness) 6. Quando non posso usare TikTok mi sento depressa/o, irritabile e/o nervosa/o

When I can't use TikTok I feel depressed, irritable and/or nervous.

(Intrusiveness) 7. Penso che tutto il tempo che trascorro su TikTok abbia compromesso il rapporto con i miei affetti

I think all the time I spend on TikTok has compromised my relationships with loved ones.

(Temporality) 8. Ho difficoltà a controllare la quantità di tempo che passo su TikTok

I have trouble controlling the amount of time I spend on TikTok.

(Temporality) 9. Tendo a perdere la cognizione del tempo quando uso TikTok

I *tend to lose track of time when I use TikTok.*

(Temporality) 10. Penso di trascorrere troppo tempo su TikTok

I think I spend too much time on TikTok.

(Intrusiveness) 11. Preferisco usare TikTok piuttosto che stare insieme alle altre persone

I prefer to use TikTok rather than be with other people.

(Intrusiveness) 12. Preferisco stare su TikTok piuttosto che partecipare ad attività ricreative (uscire, fare sport, hobby)

I prefer to be on TikTok rather than participate in recreational activities (going out, playing sports, hobbies).

(Intrusiveness) 13. Interrompo qualsiasi altra cosa stia facendo quando sento il bisogno di andare su TikTok

I stop whatever else I'm doing when I feel the need to go on TikTok.

(Involvement) 14. Quando uso TikTok, sono profondamente coinvolta/o

When I use TikTok, I am deeply involved.

(Intrusiveness) 15. Mi sento angosciata/o quando smetto di usare TikTok per un certo periodo di tempo

I feel distressed when I stop using TikTok for a period of time.

(Temporality) 16. La qualità del mio sonno è peggiorata a causa dell'uso eccessivo di TikTok

My sleep quality has worsened due to excessive TikTok use.

(Involvement) 17. Dopo una giornata storta, sento il bisogno di usare TikTok

After a bad day, I feel the need to use TikTok.

(Temporality) 18. Mi capita di pensare "ancora un altro video e spengo" quando uso TikTok

I happen to think "just one more video and I'll turn it off" when I use TikTok.

(Temporality) 19. Trascorro su TikTok molto più tempo di quanto pensassi

I spend much more time on TikTok than I thought

(Intrusiveness) 20. Mi capita di essere talmente presa/o da TikTok da dimenticare di mangiare o rimandare il momento del pasto

I happen to be so caught up in TikTok that I forget to eat or postpone mealtime.

(Temporality) 21. Dico "solo qualche minuto in più a me stessa/o quando sono su TikTok, ma continuo a usarlo.

I say "just a few more minutes to myself" when I'm on TikTok, but I keep using it.

(Dissociation) 22. Mi capita di fare dei "sogni a occhi aperti" su TikTok

I happen to have "daydreams" about TikTok.

(Dissociation) 23. TikTok mi stimola un'immaginazione senza limiti

TikTok stimulates my boundless imagination.

(Dissociation) 24. Ho la sensazione di viaggiare, sognare o essere come in un film quando sono su TikTok

I feel like I'm traveling, dreaming or being in a movie when I'm on TikTok.

(Dissociation) 25. TikTok influenza i miei pensieri o i miei sogni

TikTok influences my thoughts or dreams.