Explaining the success of social media with gratification niches: Motivations behind daytime, nighttime, and active use of TikTok in China

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A B S T R A C T

Drawing from niche theory and the uses and gratifications approach, this study explores the gratification niches of TikTok as a new social media app. As a first step, we developed a catalogue of motives for using TikTok to assess users' gratifications. As a second step, we explored the predictive value of these motives for TikTok's competitive displacement potential among its users during the day and night and actively posting content. In a sample of $N = 1051$ TikTok users in China, parallel analysis revealed four distinct gratifications for TikTok use: *socially rewarding self-presentation*, *trendiness*, *escapist addiction*, and *novelty*. Age−gender stratified analyses showed that *novelty* was the most relevant motives for using TikTok across all users. Age was positively correlated with *trendiness* and negatively correlated with *escapist addiction*. We could only observe one gender difference for *addictive escapism* being more relevant for women. Finally, TikTok's potential for competitive displacement of other social media apps seemed to be "time-of-day-specific" with *trendiness* driving daytime use, *novelty* driving nighttime use, and posting TikTok videos being driven by *socially rewarding self-presentations*. Our findings therefore come with implications for theorizing on comparative social media uses and gratifications.

1. Introduction

Since its launch in China in 2016, the social media app TikTok became a global success, with over 2 billion downloads worldwide as of 2020 (TikTok, 2020a). In China alone, the app has 600 million daily users who use, share, and follow the user-uploaded, mostly user-generated content. Despite its fast-growing user base, TikTok stands out from other social media apps with its high user engagement: Within only a short amount of time, TikTok now surpassed Facebook as the app with the highest monthly use in minutes (Southern, 2021). In order to explain this immense success of a relatively new social media platform in such a short amount of time, the question arises what motivates TikTok users to regularly spend time on the new app and where the time comes from assuming limited available time budgets.

Whenever a new social media platform gains traction next to the established 'top dogs' on the market, the question arises: what motivates individuals to use the new platform? More specifically, with what time budget can an individual use this new platform comparative to its competitors that already have the users time and attention?

Fortunately, gratification niches (Randle, 2003) are a useful tool to understand how a new social media app gains traction in fighting over the users' attention. The approach combines the application of niche theory to mass media (Dimmick & Rothenbuhler, 1984) and the uses and gratifications approach (Blumler & Katz, 1974) and argues that newer media competitively displaces older apps because of a combination of their functional overlap and superiority. Studies in this tradition predominantly asked *how much* a new medium is used over older ones assuming the cannibalization of the limited time available to the audience, which then drives the competitive displacement of older media. However, in the current social media reality, users seem to appreciate each app's specialty in conjunction with other apps (see Boczkowski et al., 2018). Thus, the relevant question to be asked now seems to shift more towards *at what time during the day* does a specific app best fulfil user gratifications, and in this sense, gratification niches can be thought of as time pockets throughout the day.

This article presents four distinct motives for using the social media app TikTok and explores their predictive value for the general use of the platform as well as for its use during the day and at night. Additionally, we explored how gratifications help to anticipate whether users actively post content on TikTok, given that most social media use is usually passive (Pempek et al., 2009). However, active social media use seems to be overall more beneficial to users (Verduyn et al., 2021). Therefore, the

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findings speak to TikTok's competitive displacement potential throughout the day from the viewpoint of niche theory and broaden this scope by including active use, and additional age−gender stratified analyses. We built upon a survey conducted in China using a large sample of TikTok users who answered multiple questions about the reasoning behind using the app alongside what specific time of the day they used it. By condensing a larger pool of possible motives for TikTok use this is also the first study suggesting a coherent set of motives for TikTok use.

2. Social media use through the lens of gratification niche theory

Niche theory (Dimmick & Rothenbuhler, 1984) is a useful tool to understand the advent of new social media platforms. The theory has been mostly used to explain either the audience shift from older to newer media in retrospect or explain changes in the media system in the present. When applied to new social media, niche theory assumes that new platforms have to compete for the audiences' attention when entering the social media market and, thus, have to occupy a niche large enough to survive. Notably, a new platform's success is defined by the overlap of some of its gratifications as well as the superiority of others as seen by its users and compared to the competition (Dimmick et al., 2004). In other words, a new social media platform must show an overlap with other social media regarding its gratifications (Boczkowski et al., 2018), but it must also add unique gratifications, in which the new platform is superior to existing ones to find its niche and survive by competitively displacing its rivals (Dimmick & Rothenbuhler, 1984). Only recently, have scholars paid more attention to niche theory as a helpful tool to understand how different social media is used in addition to one another (Boczkowski et al., 2018). Thus, gratification niches can be interpreted as unique sets of gratifications offered by a social media platform that competitively displace other social media in their use at a certain time of the day.

2.1. Uses and gratifications of social media

The uses and gratifications of social media can be structured along the lines of an Input-Process-Output (IPO) perspective with the inputs referring to the antecedents of the motivations to spend time on a social media platform (see Chan & Ngai, 2011). These can be fundamentally divided into user-centered conceptualizations and platform-centered, affordances-based approaches (e.g., Sundar & Limperos, 2013) suggesting that people use social media to satisfy needs created by the technology. Both user- and platform-centered approaches are helpful to identify antecedents of social media use on the "input" side.

Following Sundar and Limperos' (2013) MAIN model (Modality, Agency, Interactivity, Novelty), a pool of general affordances of social media should be refined by adding distinct features of TikTok. General social media features include forming and keeping social connections and interactions (Raacke & Bonds-Raacke, 2008), obtaining a sense of social belonging (Young et al., 2017), but also self-expression, escapism (Lee et al., 2015), novelty-seeking, entertainment, relaxation, or being part of a new trend (Smock et al., 2011). Importantly, comparative social media studies that simultaneously investigate different social media (e.g., Alhabash & Ma, 2017) show that older platforms (Facebook, Twitter) come with a narrower set of gratifications, while newer platforms (Instagram, Snapchat) are used for a more diverse set of use gratifications. Distinct TikTok features tap, for example, into the modality affordance reflected by actually being able to look into other people's lives in videos (in contrast to looking at a possibly modified Instagram picture). In particular, the beauty function of TikTok combined with its video modality is likely to motivate users to present themselves in exchange for social reward. TikTok's agency affordance is somewhat represented by the ability to presenting and expressing oneself to others through filming and posting videos (instead of sending out a brief Twitter tweet). Interactivity is reflected by how the platform allows posting and sharing videos with others in order to enhance interactions with them (e.g., downloading and directly sharing a video instead of forwarding a Facebook link only accessible by members). Interactivity may as well be reflected by TikTok's algorithm that supports the emergence of trendy content which in turn may boost the numbers of 'likes' and 'forwards.' For example, TikTok uses a 'full-y-played rate' indicator (i.e., how many people have finished watching an entire video instead of skipping it halfway through) in order to define platform popularity and trendiness. The navigability affordance is, e.g., reflected by TikTok's 'for you' feature that easily provides new content (without having to follow others to see their content). And relatedly, TikTok's 'browsing gratification' might have shifted into a 'swiping gratification' with swiping up on the screen being the predominant navigation in order to access an algorithmically determined, virtually endless stream of content facilitating the users' motive for escapism.

In line with gratification niche theory, TikTok should nevertheless have an overlap with the broader motives across platforms, but also tap into specific gratifications where TikTok is superior to other social media in the market. Taken together, they define how the platform will be used in general, and specifically in temporal niches throughout the day. We now turn to TikTok specific use motives.

2.2. Motives for TikTok use

Following Ellison and boyd (2013), we define TikTok as a social media app that allows users to have unique profiles garnished with user-supplied content, and/or algorithmically curated content provided by other users (i.e., the feed). Moreover, TikTok users can publicly articulate wanting to have connections with other users (i.e., follow other users' profiles and publicly share these connections), and share their subjective ratings of platform content (i.e., likes), which, in turn, feeds into the algorithms that decide about the content in a user's individual profile feed.

Viewing TikTok as another social media platform, it begs the question of whether we should use an existing list of gratifications obtained from other social media platforms to assess TikTok or to extent. Many studies follow the uses and gratifications approach, which helps understanding why users remain involved in using new social media apps (Dolan et al., 2016), and thus conceptualize social media as goal-directed in order to achieve gratifications and in order to fulfill need satisfaction. However, assessing social media's uses and gratifications is contingent upon the technological environment, the unique features, and the content that drives user engagement with an app (Papacharissi & Mendelson, 2011; Sundar & Limperos, 2013). Therefore, in line with gratification niches, the uses and gratifications of social media may shift over time due to the popularity of new apps specializing in the satisfaction of motives with new features, as well as due to their users, who grew up and changed. For example, Facebook was broadly used for relationship management, social surveillance, photo-related activities, gaming, or event organization (see Tosun, 2012), but also fulfilled needs for self-presentation and receiving social support (Nadkarni & Hofmann, 2012). Over time, Instagram became more popular for sharing user-generated, predominantly visual content for impression management, expressing creativity, and as a social surveillance tool (Sheldon & Bryant, 2016). Twitter use is driven by informational needs (Park, 2013), and Facebook use might have become more relevant for participating in closed thematic groups (see Pruchniewska, 2019). In other words, today's motives for using one social media app might be the motives to use another one tomorrow, while the entire catalogue of use motives might change as well. The informative value of using the same catalogue of use motives for all social media apps is therefore limited.

Despite its tremendous worldwide success, the motives for using TikTok are still largely unknown. To the best of our knowledge, only one that has examined the motives specifically for using TikTok in conjunction with personality traits within an availability sample of $N =$

385 TikTok users in China. Although primarily focusing on the role of personality traits for TikTok use, Omar and Dequan (2020) used an adapted Instagram use measure (Lee et al., 2015) to assess motives for TikTok use. The 28-item measure yielded five motives driving the use of TikTok, namely, *social interaction*, *archiving*, *self-expression*, *peeking*, and *escapism*. However, the items showcase the previously mentioned issues of conceptualizing the uses and gratifications of a newer app/technology inspired by older or even outdated media without adjusting them to the newer use experience (see Sundar & Limperos, 2013). For example, Omar and Dequan (2020) asked TikTok users about their agreement with motives for TikTok use—including "to browse photos related to my interests," "to browse a variety of fancy photos," or "to record my traces (e.g., trip) via photomap"—taken from an Instagram use measure by Lee et al. (2015). Although Omar and Dequan (2020) acknowledge having ignored many other influential factors for TikTok use, including TikTok's specific app characteristics or its content appeals, these research shortcomings have not yet been addressed, and therefore our first research question was:

RQ1: What are the primary motives for using the social media app TikTok?

2.3. Gender, age, and time of day differences of TikTok use

Males use the Internet more for entertainment, leisure, and functional purposes, whereas females use the Internet more for communication and interaction (Weiser, 2000). Integrating gender as a constraint factor for online activities therefore seems plausible. Moreover, the uses and gratifications of social media apps also vary with age. For example, Kuss and Griffiths (2012) found that, at younger ages, users seem to max out on the different functions of a platform compared to older users. Younger users also seem to appreciate the entertainment and enjoyment gratifications offered by social media apps more than older users do. Such motivations might therefore shift over time and change with age. As TikTok is one of the most newly trendy social media, we believe the motivatives are now diverse and still senstitive to age. To explore the gender and age constraints of motives for TikTok use in more detail, we asked:

RQ2: Do the motives for TikTok use differ depending on the gender and age of its users?

Finally, there is early anecdotal evidence that TikTok impacts sleep behavior and the platform itself recently warned its users not to overuse the app, especially at night (TikTok, 2020b). This oddly specific warning hints at different use motives for TikTok throughout the day, with possibly higher use at night. Interestingly enough, this observation sheds light on a very specific, yet new perspective on the gratification niches of social media. Although niche theory primarily focuses on the competitive displacement between different media with newer media pushing older ones off into insignificance (i.e., a very small niche), the juggle with different social media, each fulfilling a specific function (e.g., Boczkowski et al., 2018), leaves room for the notion that multiple social media find "time-of-day-specific" niches for themselves and co-exist. This notion would also abet calls for improving the measurement of social media use. Social media use is mostly assessed in terms of the amount (i.e., the number of minutes or hours per time unit) and/or the use frequency (i.e., number of app logins per time unit). More recently, Den Hamer et al. (2017) have, for example, criticized the assessment of media use along these lines and used more fine-grained measurements instead. In the case of TikTok, anecdotal evidence hints at yet another perspective: "time-of-the-day" specific use of social media, particularly for apps that reportedly found a gratification niche at night (to the extent that the app itself warned its users about nighttime over-use; see TikTok, 2020b). And finally, given that social media use is predominantly passive (e.g., Pempek et al., 2009), while the most beneficial effects of social media use reportedly come from its active use (Verduyn et al., 2021), we also explored how gratifications help to anticipate the active posting of content on TikTok. Taken together, we asked:

RQ3: To what degree are the motives for using TikTok related to general and specific (daytime, nighttime, and active) TikTok use?

To answer these research questions, we conducted a survey among TikTok users in China, in which we assessed both the motives for using TikTok together with general and specific TikTok use. We describe the details about the study and the findings from China in the following paragraphs in the most transparent manner to encourage others to replicate our findings in other samples and across cultures.

3. Method

3.1. Participants

A sample of $N = 1051$ TikTok users was recruited and interviewed by the Chinese survey sample provider Wenjuanxing in November 2019. From their total pool of 2.6 million preregistered users, Wenjuanxing recruited TikTok users from all regions of mainland China. Individuals had to be over 18 years old and familiar with TikTok in order to receive an email invitation to the survey. In the invitation, the purpose of the study was introduced as a survey about "TikTok use and daily life experience" that would take between 15 and 20 min. In order to further improve the response quality, an attention check item was included in the survey. Individuals had to answer the item ("Please choose '*strongly disagree*' for this item") correctly in order to ultimately be included in the data analysis. Survey pool members who met the inclusion criteria and who agreed to participate in the survey received monetary compensation for their participation, independent of whether they correctly answered the attention check item or not. The heterogeneous, however, non-representative sample was, on average, 30 years old ($M = 29.7$, $SD = 7.8$; $Mdn = 29.00$), with 576 of the individuals identifying themselves as women (54.8%).

3.2. Materials and procedure

The survey itself started with informed consent before individuals were asked about their TikTok use. A particular focus was placed on the time of the day as well as on the day of the week when TikTok was usually accessed, together with the app login frequency. We also assessed whether the app was primarily used to consume content provided by others or to produce one's own content and share it on the app with other users. Finally, a list of statements (see Appendix) captured the different motives for using TikTok.

3.3. Measures

3.3.1. Demographics

Participants self-reported their gender as male or female and indicated their age (in years).

3.3.2. TikTok use

The use of TikTok was captured separately as an average for workdays and for weekends on a scale ranging from 1 = *less than* 10 min, 2 = *11*–20 min, 3 = *21*–30 min, 4 = 31 min–*1h*, 5 = *1–1.5h*, 6 = *1.5–2h*, 7 = *2.5–3h*, 8 = *3–4h*, 9 = *4–5h*, to 10 = *more than 5h*.

3.3.3. TikTok day-/nighttime use

To differentiate the time of the day when TikTok was mostly used, TikTok use was captured for multiple timeslots (in military time), where individuals could choose during which timeslot/s they used TikTok most frequently (multiple answers were possible). The timeslots were 1 = *7:00–9:00*, 2 = *9:00–11:00*, 3 = *11:00–13:00*, 4 = *13:00–15:00*,

5 = *15:00–17:00*, 6 = *17:00–19:00*, 7 = *19:00–21:00*, 8 = *21:00–23:00*, 9 = *23:00–01:00*, 10 = *01:00–03:00*, 11 = *03:00–05:00*, and 12 = *05:00–07:00*. We then defined daytime use as ranging from 7 a.m. to 7 p.m. (i.e., 7:00 until 19:00) and nighttime use as ranging from 7 p.m. until 7 a.m. (i.e., 19:00 until 7:00).

3.3.4. TikTok video posting

We also captured whether individuals had ever recorded and posted a TikTok video themselves (coded as 1) or not (coded as 0).

3.3.5. Motives for TikTok use

Finally, a list of 36 items was drafted to capture the different motives for TikTok use among users in China. Items were either adapted from other social media use measures (e.g., Papacharissi & Mendelson, 2011; Sumter et al., 2017) or were self-created in order to reflect a broad spectrum of possible motives for using the platform. An English translation of the full list of items, as they were asked in the survey, can be found in the Appendix to this paper. The final shortened list of TikTok use motive statements used in this paper (including their descriptive statistics) is depicted in Table 1. For all items, agreement with the statements was assessed on a Likert-type scale ranging from 1 = *totally disagree* to 5 = *totally agree*.

4. Results

4.1. Descriptive statistics of TikTok use in China

In November 2019, TikTok users in China reported that they had been using TikTok for between 1 and 2 years (44.3%). The sample thus represents a rather experienced group of users, which does not come as a surprise given that the app had its origins in China and eventually gained popularity and spread across the globe. Most users in China also reported using the app in the late evening. When asked to indicate a timeslot during which they mostly used TikTok, 61.3% indicated having used the app during the day between 7 a.m. (7:00) and 7 p.m. (19:00), whereas 91.3% indicated having used TikTok mostly between 7 p.m. (19:00) and 7 a.m. (7:00), with peak use (67.9%) between 9 p.m. (21:00) and 11 p.m. (23:00). With regard to user activity, 58.8% reported having produced and uploaded a video onto the platform.

4.2. Motives for TikTok use (RQ1)

First, we inspected the Kaiser–Meyer–Olkin (KMO) criterion, which was satisfactory (KMO = 0.955), and Bartlett's test of sphericity was also significant, $p < .001$. The full list of all 36 items used in the study can be found as an online supplement. We performed principal axis factoring with orthogonal rotation (varimax) and listwise deletion of the missing values on all items. An inspection of the residuals furthermore allows us to assess how the correlations between all items, based on the factor model, deviate from the observed data; only 4% deviated by more than 0.05, which is acceptable. Kaiser's criterion suggests a 6-factor solution based on their eigenvalues being larger than 1. However, Kaiser's criterion tends to overestimate the number of factors to retain if the number of variables is less than 30, but it tends to be more accurate with larger samples (i.e., $N > 200$; see Field, 2013), thus not clearly guiding us in how many factors should be retained. We therefore visually inspected the scree plot, and it showed two inflection points, suggesting either a 4- or 6-factor solution. Given that the eigenvalues of the last two factors (1.076 and 1.070, respectively) did not explain much additional variance (4-factor solution: 40.3%; 6-factor solution: 43.4% of the explained variance), we ran a *parallel analysis* to identify the optimal number of factors. Based on a maximum likelihood estimation, a parallel analysis compares random data (with the same number of observations and variables) with the collected data. The parallel analysis supported a 4-factor solution based on the χ^2 distribution relative to alternative factor models (i.e., elbow criterion) and based on model fit (χ^2 = 1553.036, $df = 492$, $p < .001$, RMSEA = 0.045, 95% CI [0.043, 0.048]). The final 4-factor model explained 40.3% of the variance. Table 1 shows the descriptive statistics for all items and the respective factors, together with their psychometric properties. The factor loadings of the retained items ranged between 0.47 and 0.68. The reliabilities (standardized Cronbach's α and McDonald's ω) of the multiple-item factors were all satisfactory (all > 0.7).

We labeled the first TikTok use motivation *socially rewarding self-*

Table 1
Motives for using TikTok based on principal axis factoring including factor loadings, means (M), standard deviations (SD), medians (Mdn), and scale consistencies.

I use TikTok (because) …	Factor loading	M (SD)
Socially Rewarding Self-Presentation — $M = 3.64$, $SD = 0.67$, $Mdn = 3.67$, $\alpha = .876$, $\omega = .876$		
Filming and posting TikTok videos can get attention from others. (Q11)	.684	3.35 (1.06)
I enjoy filming videos on TikTok. (Q30)	.637	3.56 (1.01)
To get to know new people. (Q31)	.622	3.74 (0.93)
Filming and posting TikTok videos can show others that I am doing well. (Q12)	.613	3.00 (1.10)
I can get "likes" from others by filming and posting TikTok videos. (Q10)	.585	3.47 (0.95)
Posting and sharing TikTok videos enhances interactions with families and friends. (Q19)	.582	3.95 (0.84)
I can present myself to others through filming and posting TikTok videos. (Q14)	.581	3.92 (0.78)
It feels like an accomplishment to receive "likes" on my posted videos. (Q36)	.554	3.91 (0.92)
I look great using TikTok's "beautify" feature function. (Q27)	.536	3.84 (0.88)
Trendiness — $M = 3.45$, $SD = 0.72$, $Mdn = 3.50$, $\alpha = .759$, $\omega = .762$		
It is cool. (Q5)	.584	3.37 (0.95)
It can be exciting. (Q8)	.550	3.58 (0.92)
It is exhilarating. (Q29)	.546	3.38 (0.98)
Everybody else is using it. (Q4)	.471	3.48 (0.93)
Escapist Addiction — $M = 3.58$, $SD = 0.75$, $Mdn = 3.80$, $\alpha = .747$, $\omega = .749$		
So that I can get a break from what I am doing. (Q34)	.642	3.10 (1.16)
When I don't want to work or study. (Q17)	.603	3.64 (1.05)
To forget unpleasant things from work, school, or life. (Q16)	.503	3.84 (1.02)
I can't stop using it. (Q22)	.479	3.70 (1.14)
It gives me something to do to occupy my time with. (Q15)	.471	3.61 (0.98)
Novelty — $M = 4.38$, $SD = 0.64$, $Mdn = 4.00$		
There are many new things on TikTok. (Q20)	.515	4.38 (0.64)

Note. Shortened list of all items depicted; the full list of items is included as an appendix. Original survey item numbers in brackets. Scale ranging from 1 = *totally disagree* to 5 = *totally agree*.
Only items with factor loadings higher than 0.40 and without double loadings differing more than 0.20 from the primary loading were retained.
Standardized Cronbach's α and McDonald's' α were reported. Estimates of ω are based on a forced, single-factor maximum likelihood factor analysis (Hayes & Coutts, 2020).

presentation, which taps into TikTok's feature of self-generating and uploading content that might grab the attention of other users and evoke reactions (e.g., comments, "likes")—a socially rewarding and valued gratification for TikTok users. TikTok's social rewards also include strengthening connections with friends and family as well as getting to know new people through the platform. The second motivation, *trendiness*, is reflective of the fact that TikTok is seen as a cool new app that is not only exciting to use, but is also used by many others, thus motivating users also to use TikTok. The third, *escapist addiction* motivation, taps into cognitive restoration and captures how TikTok users use the app to get a break from their everyday life and to forget about the unpleasant things around them. TikTok use seems to be an activity that occupies the users' time, but also reflects the fact that using TikTok cannot easily be put on hold. Finally, a fourth factor called *novelty* emerged, reflective of the new and innovative character of the TikTok content that motivates its users to use the platform. The zero-order correlations among the four motives for TikTok use, the amount of TikTok use, the place, as well as day-/nighttime TikTok use, together with having posted a TikTok video themselves, and age are depicted above the diagonal in Table 2 (covariances are below the diagonal).

Finally, paired-sample *t*-tests with Bonferroni corrections showed that the four motives for TikTok use all differed significantly from each other, $p < .01$. Thus, we can conclude by looking at the motive factor means in Table 1 that novelty is the most relevant use motive for TikTok among Chinese users ($M = 4.38$, $SD = 0.64$, $Mdn = 4.00$), followed by socially rewarding self-presentation ($M = 3.64$, $SD = 0.67$, $Mdn = 3.67$), then escapist addiction ($M = 3.58$, $SD = 0.75$, $Mdn = 3.80$), and finally, trendiness ($M = 3.45$, $SD = 0.72$, $Mdn = 3.50$).

4.3. Gender and age differences of TikTok use (RQ2)

The zero-order correlations (see Table 2) show that, with age, the subjective relevance of trendiness increased, while the relevance of escapism decreased; socially rewarding self-presentations and novelty seemed to be important independent of age. Moreover, multivariate tests revealed that there were gender differences for the four motives for TikTok use in the Chinese sample, Wilks's $\Delta = 0.97$, $F(4, 1046) = 7.083$, $p < .001$, $\eta^2 = 0.03$. However, the only significant gender difference could be observed for escapist addiction, which was more relevant for women ($M = 3.66$, $SD = 0.71$) than for men ($M = 3.47$, $SD = 0.79$).

4.4. Assessing the predictive value of the TikTok use scale (RQ3)

4.4.1. Anticipating general TikTok use

The zero-order correlations in Table 2 showed that all four motives for TikTok use show positive, medium-to large-sized correlations with TikTok use ($0.21 \leq r \leq 0.36$). Follow-up correlation equivalence tests (Weber & Popova, 2012) showed that only if one assumes small-to medium-sized effects of motives for TikTok use on TikTok use (i.e., $0.10 \leq d \leq 0.30$; Cohen, 1988) is there actually no conclusive evidence for the hypothesis that the motives for TikTok use of socially rewarding self-presentation, trendiness, and escapist addiction are unrelated to TikTok use. Regarding the novelty motive, however, this is only true if small effects (i.e., $d \leq 0.10$) are assumed; assuming medium- or large-sized effects, the novelty motive and TikTok use are likely to be unrelated. Given our relatively large sample size (i.e., $n > 500$), it can be assumed that our study has enough power to actually show equivalence (or the lack thereof).

To further investigate the relationship between motives for TikTok use and TikTok use, we ran a hierarchical ordinary least squares regression. Given the gender and age differences found from the previous analyses, we included the two variables as covariates in the model. The regression analysis showed that age and gender, in conjunction with the four motives for TikTok use, significantly predicted TikTok use, $R^2 = 0.181$, adjusted $R^2 = 0.176$, $F(6, 1049) = 38.304$, $p < .001$. All four motives were related to higher TikTok use (reward: $\beta = 0.099$, $b = 0.217$, $SE = 0.079$, $p = .006$; trendiness: $\beta = 0.148$, $b = 0.301$, $SE = 0.080$, $p < .001$; escape: $\beta = 0.205$, $b = 0.397$, $SE = 0.067$, $p < .001$; novelty: $\beta = 0.094$, $b = 0.216$, $SE = 0.068$, $p = .002$).

4.4.2. Anticipating daytime, nighttime, and active use of TikTok

All four motives for TikTok use showed small-sized, positive correlations with using TikTok during the day (from 7 a.m. to 7 p.m.), during the nighttime (from 7 p.m. to 7 a.m.), as well as with having produced and posted a TikTok video (see Table 2). Notably, the motivation behind using TikTok for socially rewarding self-presentation was, in fact, strongly correlated with the production and upload of TikTok videos ($r = 0.40$). To further explore the relationships between motives for TikTok use and the consequences regarding how and when TikTok is used, we performed four independent logistic regressions that were all controlled for the covariates of age and gender, given their previously determined impact on motivations behind TikTok use (see Table 3). Interestingly, three of the four motives exerted particularly strong impact on a different TikTok use modality: Trendiness was positively associated only with using TikTok during the day ($B = 0.309$, $SE = 0.13$, $p = .014$, $OR = 1.362$), whereas novelty was the one motive that was associated with more nighttime use ($B = 0.460$, $SE = 0.17$, $p = .007$, $OR = 1.584$). We also found a higher likelihood of having posted a TikTok video if the app was used for its rewarding self-presentations ($B = 1.746$, $SE = 0.16$, $p = .001$, $OR = 5.734$). Only TikTok's escapist addiction

Table 2
Zero-order Correlations (above diagonal) and Covariances (below) Between Motives for Using TikTok, TikTok Use, and Age Among Chinese TikTok Users.

	1	2	3	4	5	7	8	9	10
1 Socially Rewarding Self-Presentation	–	.62	.43	.27	.30	.12	.10	.40	.05
2 Trendiness	.30	–	.54	.30	.35	.15	.12	.18	.07
3 Escapist Addiction	.22	.29	–	.25	.36	.11	.10	.10	−.10
4 Novelty	.11	.14	.12	–	.21	.09	.14	.07	.03
5 TikTok Use	.29	.36	.39	.20	–	.11	.17	.21	−.08
7 TikTok Daytime Use (0 = no, 1 = yes)	.04	.05	.04	.03	.08	–	−.24	.03	−.03
8 TikTok Nighttime Use (0 = no, 1 = yes)	.02	.02	.02	.02	.07	−.03	–	.09	.04
9 Posted a Video (0 = no, 1 = yes)	.13	.06	.04	.02	.15	.01	.01	–	.02
10 Age	.26	.40	−.59	.15	−.90	−.12	.09	.06	–

Note. $N = 1050$ (listwise). Non-significant correlations grayed out.
Motives for TikTok use as described in Table 1.
TikTok Use was captured separately for workdays/weekends on a scale from 1 = *less than* 10 min, 2 = *11*–20 min, 3 = *21*–30 min, 4 = 31 min–*1h*, 5 = *1–1.5h*, 6 = *1.5–2h*, 7 = *2.5–3h*, 8 = *3–4h*, 9 = *4–5h*, to 10 = *more than 5h*.
TikTok Day-/Nighttime use was captured as multiple timeslots (in military time), in which TikTok was most frequently used (multiple choice) on a scale from 1 = *7:00–9:00*, 2 = *9:00–11:00*, 3 = *11:00–13:00*, 4 = *13:00–15:00*, 5 = *15:00–17:00*, 6 = *17:00–19:00*, 7 = *19:00–21:00*, 8 = *21:00–23:00*, 9 = *23:00–01:00*, 10 = *01:00–03:00*, 11 = *03:00–05:00*, to 12 = *05:00–07:00*. Daytime use was defined as from 7 a.m. to 7 p.m. (i.e., 7:00 until 19:00); nighttime use was defined as from 7 p.m. until 7 a.m. (i.e., 19:00 until 7:00).
Posting a TikTok video was captured if individuals had recorded and posted a TikTok video for which answers were coded as 0 = *no*, 1 = *yes*.

Table 3
Logistic regressions predicting TikTok daytime and nighttime use as well as having posted a TikTok video among Chinese TikTok users.

	TikTok Daytime Use				TikTok Nighttime Use				Posted a TikTok Video			
	B	*SE*	*p*	OR	*B*	*SE*	*p*	OR	*B*	*SE*	*p*	OR
Constant	−1.37	.61	.024	.254	−2.54	.95	.007	.079	−4.77	.70	.000	.009
Covariates												
Age	−.012	.01	.168	.988	.022	.02	.155	1.022	.002	.01	.847	1.002
Gender	−.061	.13	.645	.941	.392	.24	.098	1.480	.543	.14	.000	1.721
Motives for TikTok Use												
Socially Rewarding Self-Presentation	.104	.12	.400	1.110	.129	.21	.545	1.138	**1.746**	**.16**	**.001**	**5.734**
Trendiness	**.309**	**.13**	**.014**	**1.362**	.273	.22	.214	1.314	−.239	.14	.083	.787
Escapist Addiction	.077	.10	.461	1.080	.119	.18	.507	1.127	−.259	.12	.025	.772
Novelty	.128	.11	.231	1.136	**.460**	**.17**	**.007**	**1.584**	−.076	.12	.517	.926

Note. $N = 1050$ (listwise). OR = odds ratio.
Motives for TikTok use as described in Table 1.
TikTok Day-/Nighttime use was captured as multiple timeslots (in military time), in which TikTok was most frequently used (multiple choice) on a scale from 1 = *7:00–9:00*, 2 = *9:00–11:00*, 3 = *11:00–13:00*, 4 = *13:00–15:00*, 5 = *15:00–17:00*, 6 = *17:00–19:00*, 7 = *19:00–21:00*, 8 = *21:00–23:00*, 9 = *23:00–01:00*, 10 = *01:00–03:00*, 11 = *03:00–05:00*, to 12 = *05:00–07:00*. Daytime use was defined as from 7 a.m. to 7 p.m. (i.e., 7:00 until 19:00); nighttime use was defined as from 7 p.m. until 7 a.m. (i.e., 19:00 until 7:00).
Posting a TikTok video was captured if individuals had recorded and posted a TikTok video for which answers were coded as 0 = *no*, 1 = *yes*.

motive was not associated with any of the TikTok use modalities.

5. Discussion

While officially "TikTok's mission is to inspire creativity and bring joy […] build[ing] a global community […] create and share authentically, discover the world, and connect with others," (TikTok, 2020b) there is no empirical research tapping into the actual use motivations among TikTok users in China, the country where the app had its origin in 2016. The present study had three aims, with the identification of the primary motives for using TikTok (RQ1) being the first. The study found four motives for TikTok use: *socially rewarding self-presentation*, *trendiness*, *escapist addiction*, and *novelty*. The findings will be discussed by focusing particularly on each of the four use motives (RQ1), the gender and age differences (RQ2), specifically for users in China, as well as on how each motive is related to general and specific TikTok use (RQ3).

5.1. Socially rewarding self-presentation

The first motivation for TikTok use is *socially rewarding self-presentation*. On the one hand, users value how TikTok provides them with the chance to post and share self-produced content with friends and family as a form of self-expression, and, on the other hand, they value how the app is a source of "likes" from others, which users interpret as an accomplishment. Thus, the motive integrates creativity, self-expression, and social rewards, which have been shown to motivate the use of other platforms, such as Instagram, YouTube, or WeChat (Khan, 2017; Sheldon & Bryant, 2016; Wang et al., 2018). In the case of TikTok, posting and sharing videos, presenting oneself to others, and receiving "likes" for such activity (an accomplishment) were equally strong motivations behind app use. This holds equally true across genders but yielded significant age differences, with younger TikTok users (i.e., one standard deviation below the mean age) using the app less for socially rewarding self-presentations than older users did (i.e., one standard deviation above the mean). Thus, gender differences found for other social media use, such as Facebook (see Kowal et al., 2020; McAndrew & Jeong, 2012), do not necessarily hold true for the use of TikTok in China, whereas age seems to be relevant for TikTok use differences. The age differences in socially rewarding self-presentation motive seem to contradict previous research, which showed that younger users are typically more self-expressive on social media, longing for positive feedback (Dhir et al., 2016) whereas less caring about the possible consequences of posts (Weiser, 2015). These findings are usually explained by a combination of "ego-inflation," with typically more narcissistic younger generations (Twenge et al., 2008) being more self-expressive than older ones.

However, there is also the notion that self-expression and the exchange of visuals on social media fulfill the function of authentic (rather than carefully curated) yet playful conversations with others and help develop social relationships (see e.g., Katz & Crocker, 2015). Interestingly, in their study, the authors observed that individuals in China preferred animations rather than selfies as their preferred form of visually driven communication. The video platform TikTok might therefore spark the creativity in its users and offers them a place to share their creativity with others through self-expression. It can be interpreted as particularly rewarding if other users use your video visuals and integrate them into their own creative expression, which could be a cultural explanation for the observed tendency to use TikTok as a form of socially rewarding self-presentation. Future studies could explore this in more depth and position TikTok use in conjunction with other self-expressive forms of social media use, such as taking selfies in order to receive positive feedback from others (as well as deleting selfies that are likely to receive negative feedback), and what role age plays for this particular use motive (Dhir et al., 2016). There might as well be other factors that come into play here (e.g., deleting selfies that are likely to receive negative feedback) with a yet unknown impact on the use of TikTok.

5.2. Trendiness

The *trendy* motivation behind TikTok use reflects how the app itself is cool, new, and exciting to use, but also how many other users use the app for that reason. Trendiness was most strongly correlated with escapism and using TikTok during the daytime. Conceptually, trendiness and excitement can be interpreted as a type of platform gratification similar to other visually driven apps such as Instagram (see Sheldon & Bryant, 2016); coolness was found to be a motive for using Instagram, which might explain TikTok being used for its trendiness. In order to move forward conceptually, it seems worthwhile to ask how using TikTok for its trendiness would align with the personal behavior theories that have been used to explain social media use more broadly (Ngai et al., 2015). Personality traits, such as openness to new and exciting experiences, seem to be a plausible explanatory framework to connect trendiness and excitement with the use of TikTok, which would go above and beyond uses and gratifications studies. Similar to Sheldon and Bryant's (2016) study, narcissistic personality traits might resonate with TikTok's trendiness, similar to Instagram's coolness.

Trendiness was positively correlated with age, but there were no gender differences. While gender is one of the strongest predictors for Instagram use, TikTok seems to be equally attractive to both men and

women. However, given that TikTok is still relatively new, we expect its *trendiness* to change over time. In particular, as time goes by, the perceived coolness and popularity of the app are prone to change. Recently, TikTok even became politically charged in the USA, with discussions about banning the app from popular app stores. Changes to the app or its availability can spark, for example, "forbidden fruit" effects, increasing users' reactance, and thereby mobilizing young political TikTok users to use the app for the thrill and excitement of restoring their freedom (see e.g., Ratcliff, 2019). Future studies should keep looking into TikTok's evolvement over time.

5.3. Escapist addiction

The uncontrolled, problematic use of social media applications has often been compared to addiction (Ryan et al., 2014). We also observed how TikTok users in China used the app for its addictiveness and how they were unable to stop using it. This motive for TikTok use was rather strong, especially among younger users and female users, which is in line with earlier findings about social networking addiction being higher among women and especially high in China (see e.g., Tang et al., 2017). There might be cultural factors at play that explain the gender-specific importance of addictive escapism that TikTok fulfills among young females in China. Conceptually, it is important to note that the addictive character of using TikTok, as indicated by our Chinese sample, was not negatively connotated. This is important to note, given the conceptual blurriness between *escapist addiction* and *hedonist addiction*.

On the one hand, using TikTok to suppress negative or unpleasant elements in life might be similar to a substance addiction driven by the goal of forgetting about one's problems. Accordingly, our sample indicated using TikTok to escape or forget about work, school, or boredom. However, these reference-point events probably exert a softer impact than the more severe, life-changing incidents driving substance addictions. On the other hand, however, "hedonistic addiction" might well drive the use of TikTok with users chasing after the positive emotions elicited by the app. Our item pool did not allow us to explore this aspect further, but future studies might want to focus on this aspect. Finally, escapist-addictive use of TikTok was unrelated to the three specific use modalities under investigation. Both addictions and routines have a certain degree of automaticity in common but differ in their obtained rewards (or gratifications). So far, this rather new perspective (see e.g., Seo & Ray, 2019) has been used to explain goal-congruent social media use (such as staying informed by routinely logging into social media) but has not been used to explain to what degree *incongruent behaviors* may as well be promoted by escapist-addictive use patterns. Escapist-addictive TikTok use could cannibalize on time budgets available for other activities, including sleep, by delaying the moment of actually falling asleep after going to bed.

5.4. Novelty

This motive was the single most relevant motive for TikTok use in our study. Having the chance to experience new things has driven social media use ever since its inception (see Papacharissi & Mendelson, 2011; Smock et al., 2011). Therefore it is not surprising that this general use motive was similarly relevant across a broad age range in our sample (i.e., a small correlation coefficient with age). However, our analyses also showed that the novelty motive for TikTok use was most strongly correlated with the nighttime use of TikTok and was moderately correlated with the other three previously discussed motives. Novelty could therefore be the driving force behind TikTok being a late-use app.

Although users can share content that they like with other users, the app is geared toward topical interests, and the algorithm learns from typed-in search terms and makes suggestions accordingly. TikTok apparently does a good job of delivering new content to its users. One reason for this observation might be that, in contrast to social networking sites where the "likes" of close friends make content more likely to appear in someone's content feed. There might also be a higher chance of repeatedly coming across the same (or similar) content that may bore users. In contrast, TikTok's principle of following other users, combined with indicated topical interests and a content-producing user base that makes its content permanently accessible for others, might distinguish TikTok from other current social media platforms. The novelty use motive might therefore be reflective of how the algorithm recognizes the topical interests of its users and the extent to which new content is constantly produced, uploaded, and shared by users (vs. the same content that is liked, forwarded, or retweeted). However, follow-up studies would have to dig deeper into this motive that was uncovered herein.

6. Limitations

As with all studies, some important aspects must be kept in mind when interpreting the findings. First, our study is the first to explore the motives for the use of TikTok within a large, heterogeneous sample of users in China. Thus, our findings might not fully translate to TikTok use in other countries, as well as cultural differences regarding the use, the content quality, or the meaning of the app for its users between China and other countries. Although this is the first study to explore the motives behind using TikTok in China, future studies should explore the technological and cultural differences in further detail. This study, for example, did not tie specific use motives to popular app contents such as dance, travel, or fail videos. Culture-specific, popular content may help better understand the app's subjective relevance for its users and may be useful for extending the catalogue of use motives presented here. Second, although we have a large, heterogeneous sample of TikTok users in China and have applied parallel analysis strategies in order to compare our findings against random data, it would be ideal to cross-validate and re-test the factors of our TikTok use scale with an independent sample. We cannot therefore speak to the measurement invariance of our scale, and the cross-sectional character of our data does not allow us to draw conclusions about the temporal stability of the found motives both within and across different groups of users. In a similar vein, the validity, reliability, and stability of our scale would have to be re-evaluated using our TikTok scale in conjunction with other relevant measures, with independent samples both from China and from other countries, ideally with multiple measurements over time. Finally, we did not link TikTok use motives with specific content on the platform (see Den Hamer et al., 2017). This is an important omission that future studies could tackle by using, for example, similar strategies, as suggested by Den Hamer et al. (2017), in order to put more flesh on the bones of our scale, both for TikTok as a new social media platform, but also in conjunction with other social media.

7. Conclusion

TikTok is a unique example of a social media platform that originated outside the Western hemisphere and then became successful across the globe after being used extensively in China. Our findings might therefore be useful for studying the origins of user motives of a now globally successful app. Safety resources around TikTok might want to stress the addictive nature of the app as well as privacy-related aspects imposed by 'location tagging' or sharing videos recorded at home with a possibly large audience. Future studies in other countries can use the early findings from China presented here in order to compare and contrast the use motives of TikTok in other countries. *Socially rewarding self-presentation*, *trendiness*, *escapist addiction*, and *novelty* seem to align with the motives behind the use of other social media, but, at the same time, they make TikTok unique as an app that seems to be predominantly used at night.

Credit author statement

Sebastian Scherr: Conceptualization, Methodology, Formal analysis, Writing - Original Draft, Writing - Review & Editing, Visualization. **Kexin Wang:** Conceptualization, Methodology, Funding acquisition, Writing - Review & Editing.

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Declaration of competing interest

None.

Appendix

Original item pool for motives for TikTok use among Chinese users.
I use TikTok (because) …

To habitually pass time. (Q1)
When I have nobody else to talk to. (Q2)
It helps in passing time, particularly when I'm bored. (Q3)
Everybody else is using it. (Q4)
It is cool. (Q5)
It relaxes me. (Q6)
To make myself happy. (Q7)
It can be exciting. (Q8)
To see what other people's lives look like. (Q9)
I can get "likes" from others by filming and posting TikTok videos. (Q10)
Filming and posting TikTok videos can get attention from others. (Q11)
Filming and posting TikTok videos can show others that I am doing well. (Q12)
To share something interesting with others. (Q13)
I can present myself to others through filming and posting TikTok videos. (Q14)
It gives me something to do to occupy my time with. (Q15)
To forget unpleasant things from work, school, or life. (Q16)
When I don't want to work or study. (Q17)
It can keep me in a high mood. (Q18)
Posting and sharing TikTok videos enhances interactions with families and friends. (Q19)
There are many new things on TikTok. (Q20)
Of my expectation to see "what is next" on TikTok. (Q21)
I can't stop using it. (Q22)
It is a habit, just something I do. (Q23)
To cheer myself up when I am upset. (Q24)
Otherwise I would be "out." (Q25)
Filming a TikTok video is very easy. (Q26)
I look great using TikTok's "beautify" feature function. (Q27)
The "for you" feature always surprises me. (Q28)
It is exhilarating. (Q29)
I enjoy filming videos on TikTok. (Q30)
To get to know new people. (Q31)
To follow the celebrities I like. (Q32)
To get information. (Q33)
So that I can get a break from what I am doing. (Q34)
Because it makes me feel less lonely. (Q35)
It feels like an accomplishment to receive "likes" on my posted videos. (Q36)

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