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CAN ESCAPIST USE OF FACEBOOK BE TRIGGERED BY FACEBOOK PUSH NOTIFICATION?

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Abstract In this paper, the unplanned and spontaneous use of Facebook (FB) triggered by FB push notification (FPN) is explored. The concept of triggered FB use was introduced as a new type of FB use that is provoked intentionally by FB via personalized FPN. The results presented in the paper show that FPN are powerful instruments to get users back to FB. Even though FPN typically trigger users with one specific announcement, most users that react on them get immersed by the broad and persuasive offerings of FB and stay longer on the platform than it is necessary to act upon the activities promoted by the FPN. These longer stays often show escapist characteristics. Thus, FPN provide users an opportunity to escape spontaneously from the current activities and psychological states when FPN arrive. Positive gratification resulting from such spontaneous visits lays the ground for future positive reaction on FPN as users try to repeat the rewarding experience.

Keywords:

facebook,
push
notification,
escapism,
social
media.

1 Introduction

Social media platforms such as Facebook (FB) offer users a rich experience through various possibilities for communication and networking as well as for consuming information from other users or numerous information sources (Young et al., 2017). These rich experiences offer a wide range of gratifications that emerged as a »... *powerful source for the satisfaction of basic psychological and social needs*« (Meier, Meltzer & Reinecke, 2018, p. 167), but also result in problematic FB addiction and overuse. One motivation for FB use that is often related to addiction is escapism (Meier, Meltzer & Reinecke, 2018; Ryan et al., 2014; Masur et al., 2014; Papacharissi & Mendelson, 2011). Escapism is in general defined as an escape from unpleasant realities via media usage (Zeuge, 2020). It is associated with avoidance oriented coping mechanism (Meier, Meltzer & Reinecke, 2018; Hoffmann et al., 2017; Ryan et al., 2014) and several authors have identified escapism as a major motivation for repetitive and addictive FB use (Meier, Meltzer & Reinecke, 2018; Young et al.; 2017; Masur et al.; 2014; Ryan, et al., 2014). Escapist FB use can furthermore negatively impact user reactions to other FB activities such as brand communication (Triantafyllidou & Siomkos, 2018) or online political participation (Hoffmann et al., 2017).

Most of existing studies dedicated to the analysis of escapist use of FB consider a general use of FB as a homogeneous environment (Meier, Meltzer & Reinecke, 2018; Tang et al., 2016, Ryan et al., 2014; Masur et al., 2014). Only few studies differentiate among different types of FB usage pursued by specific groups of users or resulting from using specific FB features (Young et al., 2017; Hoffmann et al., 2017; Smock et al., 2011) Furthermore, in all studies FB use is assumed to be intentional, planned, habitual and self-initiated by users. However, FB also tries to provoke additional, unplanned use by proactively triggering users back to the platform with FB push notification (FPN) (Turel & Qahr-Saremi, 2018). While Turel & Qahr-Saremi, (2018) try to explain unplanned use of social media in general by referring to the dual system theory, triggered FB use by FPN has not been considered as a specific unplanned use in FB escapism research yet. The aim of this study is to further investigate this specific type of unplanned FB usage, focusing thereby on the following research questions:

1. Which users' personality traits are predictors of active use of FPNs?
2. Does reaction on FPNs result in triggered escapist use of FB?
3. What are the consequences of triggered escapist use of FB?

2 Theoretical Background and Hypotheses Development

2.1 Facebook Escapism

According to (Meier, Meltzer & Reinecke, 2018) escapist use of media is one of the oldest media uses and effects research that goes back to the 1950s. Escapism in general denotes an escape through media use from unpleasant realities by distracting attention from problems (Zeuge, 2020), dissatisfying life circumstances and the troubles of everyday life (Meier, Meltzer & Reinecke, 2018). It is furthermore associated with avoidance oriented coping mechanism (Meier, Meltzer & Reinecke, 2018; Hoffmann et al., 2017). For example, (Triantafillidou & Siomkos, 2018) regard escapism as part of users' FB experience resulting from brand communication and consider it to entail consumer's fantasies and imagination of living in a different world and playing alternative roles through consumption. Because of all these rewarding gratifications of escapist FB use, several authors have identified escapism as a major motivation for FB use that negatively affects users' well-being by resulting in FB addiction and overuse (Meier, Meltzer & Reinecke, 2018; Young et al.; 2017; Masur et al.; 2014; Ryan, et al., 2014). Escapist use of FB impacts also other reactions of users. For example, according to (Triantafillidou & Siomkos, 2018) escapist use of FB diminishes the reaction of users on brand communication. According to (Triantafillidou and Siomkos, 2018) *»....consumers might not be inclined to interact even in simple ways with a brand page that causes them to imagine being in a different time and place or playing an alternative role.»* Hoffman et al., 2017 discovered that consumptive FB use in escapist way, strengthens the already negative effect of consumptive FB use on online political participation.

While most of the studies consider a general use of FB, only a few studies explore different types of FB usage separately: For example, Smock et al. (2011) found differences between motivations for both general FB use and use of its specific features. Young et al., (2017) differentiate among active and passive FB use and discovered that passive FB use is a less effective method to escape than active FB use. (Meier, Meltzer & Reinecke, 2018) compare FB escapism and procrastination

and point out their similarities and differences. However, despite of the differences both escapist and procrastinators are prone to turn to media activities that promise a pleasurable distraction, at least in the short term (Meier, Meltzer & Reinecke, 2018). Hoffman et al., (2017) distinguish among consumptive, participatory and productive use of FB and discovered that escapist FB use can moderate negatively online political participation.

Despite of the differences related to the FB usage types, all these studies have one common characteristic: FB use is assumed to be intentional, habitual and self-initiated by users. Triggered, i.e. unplanned FB use and its consequences on user's behaviour and well-being have not been explored in literature yet.

2.2 Facebook Push Notification (FPN)

Push notifications are short messages that are send from an application installed on a device and appear on the device's screen, when the app they originate from is not active. The goal of push notification is to proactively inform and activate users and to re-establish the connection to the originating app or companies and their offerings by triggering them back to them. To achieve this, push notification are addressing the psychological phenomenon »Fear of Missing Out (FoMO)« (Fahlman, Mejtøft & Cripps, 2018) and provke an endogeneous impulse to check the information announced by the notification immediately (Iyer & Zhing, 2022). FPN try to achieve this effect by informing users about new contributions from their friends, likes to their contributions, information or other new developments on FB that are of high personal interest to the adressed users. FPN are therefore important persuasive and motivational instruments to proactively contact users and to trigger them back to FB (see also Fogg & Iizawa, 2008). As FPN point to and request a concrete action from users the question is, if users once triggered back to the platform perform only the activity promoted by the FPN or get immersed into the offered services and use FB beyond this activity.

FPNs typically reach users while they are performing activities and everyday routines outside FB (Xu & Ding, 2014). Thus, they are often considered as interruptive and disturbing (Pielot, Church & Oliveira, 2014; Xu & Ding, 2014; Westermann, 2017) and lead to triggered, i.e., unplanned and unintended FB use. To prevent negative consequences from FPN, over recent years, FPN are provided per default in an opt-

out form and must be allowed by users explicitly. Despite of this opportunity to switch of FPN, according to Statista (2021) about 40% of users in the USA agree to receive push notification from social media and messenger even several times a day. This high interest in receiving FPN illustrates that FPN are still powerful persuasive instruments that have high potential to trigger user reactions. Of interest is who are the users that accept FPN and which personality traits result in an active use of FPN. Furthermore, as FPN are short and very focused, the question is if they can trigger escapist use of FB that goes beyond the activity announced in the notification.

2.3 Predictors of Facebook Push Notification Use and Triggered Escapism

As FPN are initiators of FB usage, it is assumed that personal predictors of FB use identified by existing research might be also predictors of active reactions on FPN. Based on existing literature the following personal trait predictors were identified as potential predictors of FB usage: need for cognition, self control, loneliness and life satisfaction (Meier, Meltzer & Reinecke, 2018; Turel & Qahri-Saremi, 2018; Ryan, et al., 2014,). Furthermore, research on push notification has also identified »usability«, i.e. the design and usefulness of push notification as predictors of their use (Iyer & Zhong, 2022; Fahlman, Mejttoft & Cripps, 2018).

Need for cognition is a personality trait reflecting the extent to which individuals are inclined towards effortful cognitive activities (Cacioppo, Petty, & Morris 1983). Individuals looking for mood regulation are attracted to an entertaining, absorbing and escapist media experience that facilitates a heuristic way of cognitive processing (Bartsch & Schneider, 2014). As FPN aim to trigger users into FB with short and easy to understand messages, it is expected that a lower need for cognition leads to a positive reaction of FPN and higher levels of triggered FB escapism. Therefore, we have formulated the following hypothesis:

H1. Need for cognition is negatively related to triggered FB escapism.

Self-control has been defined as “*the ability to override or change one’s inner responses, as well as to interrupt undesired behavioral tendencies and refrain from acting on them*” (Tangney, Baumeister, & Boone, 2004, p. 275). It is seen as a cognitive behavior that tolerates short-time discomfort in order to achieve long-term goals (Myrseth & Fishbach,

2009). Individuals that can resist immediate pleasure by postponing gratifications have high self-control (Hofmann et al., 2014). Therefore, it is expected that individuals with low self-control are more prone to actively react on FPN more often even in situations when they have other things to do. Thus, it is assumed that self-control has a negative effect on a positive reaction of FPN and respectively on triggered FB escapism. Accordingly, we propose the following hypothesis:

H2. Self-control is negatively related to triggered FB escapism.

Loneliness occurs when “a person’s network of social relationships is smaller or less satisfying than the person’s desires” (Peplau & Perlman, 1979, p. 101). Previous studies have demonstrated that loneliness is a predictor of FB use (see for example the meta-analysis of Song et al., 2014). Based on the presented findings, the assumption is made that lonely individuals react upon FPN more often and might be more prone to triggered FB escapism than non-lonely individuals. According to these assumptions, the following hypothesis is proposed:

H3. Loneliness is positively related to triggered FB escapism.

Life satisfaction has been defined as the global judgment of a person’s life (Pavot & Diener, 1993). Several studies confirm a negative relationship between life satisfaction as well as FB addiction and escapism (see for example Blachnio, Przepiorka & Pantic, 2016). Combining these results, we argue that escapist use of FB is used to balance real life discontent. Thus, the following is predicted:

H4. Life satisfaction is negatively related to triggered FB escapism.

Usability of FPN is considered an important success factor for an active reaction of users (Fahlman, Mejtoft & Cripps, 2018; Lyer & Zhong). FPN are sent proactively to users and usually reach them, when they are occupied with other activities. The notification must tear users away from their activities and can only be successful if it is easy to comprehend, perceived as relevant, useful, and easy to react on it (see also Pilot, Church & de Oliveira, 2014; Westermann, 2017). Thus, perceived high usability and usefulness are expected to be positively related to active reaction on FPN and triggered FB escapism and result in the following hypothesis:

H5. Usability and usefulness are positively related to triggered FB escapism.

2.3 Descendants of Triggered FB Escapism

While early research on escapism contains a negative discourse about it, recent literature demonstrates that escapism also provides a way for mental relaxation and thus can release stress and improve mood (Zeuge, 2020). In fact, positive experiences and gratification resulting from escapist use of FB are a necessary prerequisite for a repetitive positive reaction of FPN. In accordance with published effects of escapist FB use (i.e., Masur et al., 2014), the following implications were explored for triggered FB escapism: feeling of guilt and enjoyment as well as intrinsic need satisfaction as autonomy, competence, and relatedness (Ryan et al., 2014).

Feeling of Guilt and Enjoyment: Particularly triggered FB use might result in the feeling of guilt as it provokes unplanned FB use on the expense of other activities. Guilt operates through multiple psychological mechanisms and influences one's motivation to even stop reacting on FPN and using FB (Turel, 2015). Based on these findings, the following hypotheses are proposed:

H6. Triggered FB escapism is negatively related to feeling of guilt resulting from FB usage.

H7. Triggered FB escapism is positively related to FB enjoyment.

Eudaimonic need satisfaction: According to existing literature FB can stimulate not only hedonic experiences but also rewarding social and cognitive experiences (Zeuge, 2020). Self-determination theory (Ryan & Deci, 2000) – which is a well-established approach within the eudaimonic research perspective – suggests that individuals strive for the fulfillment of the following intrinsic needs: 1) the need for autonomy, described as a feeling of volition and freedom of choice (Ryan & Deci, 2006). An individual senses autonomy when he/she can think and act freely from external constraints. 2) The need for competence, referring to feelings of efficiency and capability satisfied through ideal challenges and positive feedback (Ryan, 1995). 3) The need for relatedness and close social relationships. This need is shaped by the desire of belonging, closeness and intimacy with others (Ryan & Deci, 2000). The fulfillment of these three needs can positively influence psychological well-being (Reis et al., 2000; Reinecke, 2012). Regarding the abovementioned considerations, the following hypothesis is proposed:

H8. Triggered FB escapism is positively related to autonomy.

H9. Triggered FB escapism is positively related to competence.

H10. Triggered FB escapism is positively related to relatedness.

Duration of Stay: As mentioned above, we hypothesize that FPN can initiate longer stays, if the user reacting on a notification gets immersed onto the platform and consumes available content and services in an escapist way.

H11. Triggered FB escapism is positively related to a duration of stay of 0 – 10 minutes.

H12. Triggered FB escapism is positively related to a duration of stay of 10 – 20 minutes.

H13. Triggered FB escapism is positively related to a duration of stay of 20 – 30 minutes.

The resulting research model is summarized in Figure 1:

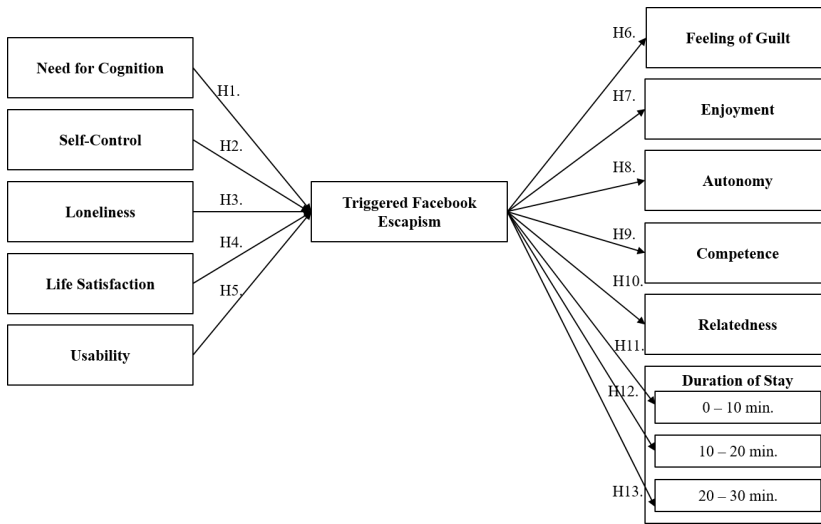


Figure 1: Research Model

3 Method

In order to test the developed hypotheses and answer the research questions, 442 undergraduate and graduate students from a large university in the USA participated in an online questionnaire. Students enrolled in business school courses participated in the survey as part of a research lab-seminar (respondent rate = 100%). Both genders were equally represented in the study group (54% females). Participants were between 18 and 35 years old. A majority of the participants (36%) were 20 years old. Only 3% of participants held a Master's or Doctoral degree, while undergraduate students represented 69% of those surveyed. Overall, 85% of respondents indicated themselves as students. 403 participants (93.3%) have a FB profile. 106 (26.8%) participants use FB daily and 145 (36.6%) several times a day. Most of the participants, 305 (69%) stay on FB up to one hour and 237 (59.1%) allow FPN.

Measurement model: Triggered FB escapism was measured with six items that were developed in close reference to existing operationalizations (e.g. Katz et al., 1973; Meier et al., 2016; Papacharissi & Mendelson, 2011): forgetting worries and problems of everyday life, escaping from reality, distraction and mood management such as relaxation and unwind. The duration of the triggered visit was measured as being 0 – 10, 10 – 20, and 20 – 30 minutes. The predictor and descendants of triggered FB escapism were measured based on scales proposed by literature mentioned in the theoretical section. The complete measurement model contains 11 latent constructs and 46 items.

Before testing the structural model, we exploited the measurement model, as suggested by Gerbing and Anderson (1988). Hence, a confirmatory factor analysis was implemented to test for uni-dimensionality and scale reliability on the construct level. Cronbach's alpha (α), composite reliability (C.R.) and average variance extracted (AVE) were calculated. This approach caused the removal of one item from the need of cognition scale, due to the induced decrease of the reliability coefficients. After this regulation, the Cronbach's alpha values ranged from 0.726 to 0.976, exceeding the recommended 0.7 threshold (Blanz, 2015) and indicating acceptable internal and composite reliability. Assessing convergent and discriminant validity provided acceptable evidence for construct validity (Fornell & Larcker, 1981). CR values ranged from 0.752 to 0.972, exceeding the recommended 0.7 threshold (Raykov, 1997) and indicating good construct reliability (Fornell &

Larcker, 1981). AVE values for all scales exceeded the recommend threshold of 0.5 (Hair et al., 1998) indicating acceptable convergent validity. The means ranged from 1.38 and 4.27 and the standard deviation amounts to 0.72 and 1.18. Regarding discriminant validity, the AVE value for each pair of constructs was compared with the square of the correlation between the two constructs (Fornell & Larcker, 1981). The Fornell-Larcker-Criterion fulfills the necessary requirements and shows the discriminant validity of the model (Fornell & Larcker, 1981).

Results: The overall model shows strong confirmation for most of the hypotheses as ten of thirteen hypothesized and estimated paths are significant ($p \leq 0.05$) (see Table 1). Usability has the strongest effect on FPN and triggered FB escapism ($\beta=0.29$, $p < 0.001$), followed by self-control ($\beta = -0.19$, $p < 0.01$). Thus, users are more likely to respond to FPN when the usability of the notification is high, and their self-control is low. There is no significant direct impact from the remaining three independent variables. Regarding the effects of triggered FB escapism on user experience, the results show that all relationships are (highly) significant (see Table 1). This confirms the results of existing research (i.e., Shi et al. (2010) or Langrial (2015)). Moreover, triggered FB escapism is strongly negatively linked to the feeling of guilt ($\beta=-0.46$, $p<0.001$). Thus, FPNs can initiate positive entertainment feelings without causing a negative feeling afterwards.

Another interesting finding for the impact of triggered FB escapism is that a shorter time of stay (0–10 minutes) is strongly negatively linked ($\beta=-0.31$, $p<0.001$) in contrast to a longer duration of stay such as 10–20 minutes ($\beta=0.26$, $p<0.001$) and 20–30 minutes ($\beta=0.12$, $p<0.05$).

Table 1:– Parameter Estimates and Hypothesis Testing

Relationship	Std. Estimate (t-value)	Result
H1. Need for cognition is negatively related to PN and Triggered Escapism	0.018 (0.300)	not supported
H2. Self-control is negatively related to PN and Triggered Escapism	-0.192 (-2.610)**	supported
H3. Loneliness is positively related to PN and triggered Escapism	0.070 (0.831)	not supported
H4. Life satisfaction is negatively related to PN and Triggered Escapism	-0.002 (-0.020)	not supported

H5. Usability is positively related to PN and Triggered Escapism	0.288 (3.818)***	supported
H6. Triggered Escapism is negatively related to Feeling of Guilt	-0.457 (-9.704)***	supported
H7. Triggered Escapism is positively related to Enjoyment	0.266 (4.414)***	supported
H8. Triggered Escapism is positively related to Autonomy	0.237 (2.993)**	supported
H9. Triggered Escapism is positively related to Competence	0.345 (5.328)***	supported
H10. Triggered Escapism is positively related to Relatedness	0.393 (7.014)***	supported
H11. Triggered Escapism is positively related to Duration of Stay (0-10 min.)	-0.314 (-5.687)***	supported
H12. Triggered Escapism is positively related to Duration of Stay (10-20 min.)	0.259 (4.356)***	supported
H13. Triggered Escapism is positively related to Duration of Stay (20-30 min.)	0.125 (2.233)*	supported

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

4 Discussion

In this paper, the unplanned and spontaneous use of FB triggered by FPN is explored. The concept of triggered FB use was introduced as a new type of FB usage that is provoked intentionally by FB with personal FPN. The findings resulting from the research presented in the paper show that FPN are powerful instruments to get users back to the platform. Even though FPN typically trigger users with one specific announcement (i.e., *you have a new like to your post*), most users that react on them get immersed by the broad and persuasive offerings of FB and stay longer on the platform than it is necessary to act upon the activities promoted by the FPN. These longer stays often have escapist characteristics. Thus, FPN provide users an opportunity to escape spontaneously from the current activities and psychological states when FPN arrive. With other words, on many occasions FPN might be a welcomed destruction of ongoing activities. Positive gratification resulting from such spontaneous visits lays the ground for future positive reactions on FPN as users try to repeat the rewarding experience.

With respect to the first research question the research results revealed that antecedents with significant positive impact on FPN reaction and initiation of triggered FB escapism are low self-control and high-perceived usability of the notification. This are typically also users that do not take advantage of the opportunity to switch FPN of. The fact that 59.1% of the survey participants and according to Statista (2021) 40% of USA users allow FPN shows that the opportunity to self-regulate FPN does not protect users in sufficient manner yet. Further measures are necessary to increase the protection for users. The finding points also to the importance of the appropriate design of FPN. The high proportion of users that react on FPN shows that platforms have learned how to design push notification in highly persuasive way.

Second, we analyzed the potential triggering of FB escapism through FPN (2nd research question). Our empirical results show that FPN can result in triggered FB escapism. Users do not consume only the specific service promoted by the FPN, but once they enter the platform, they stay among 10 – 20 minutes and even longer. Thus, FPN favor and provoke addictive overuse of FB.

Finally, the consequences of triggered FB escapism were assessed. The most surprising results are the positive user gratification and experiences resulting from triggered FB escapism. Even though FPN reach users unexpectedly, when they might be busy with other obligations, reacting on them seems not to provoke feeling of guilt. This might be explained with the compensation from the rewarding experiences in terms of autonomy, competence and relatedness.

Overall, it can be concluded that FPN are successful trigger, or in terms of (Eyal, 2014) hooks that can initiate a persuasive “Hooked” cycle.

4 Conclusion, Limitations and Further Research

With the above results, the study presented in this paper provides the following scientific contributions:

- Analysis of ascendant and descendant of unplanned FB use provoked by FPN, that have not been considered in research yet. This study goes beyond

studies that consider unplanned social media use in general (see for example Turel & Qahr-Saremi, 2018)

- Introduction of the concept of triggered FB escapism. Compared to escapism in classical media, the ability of FB to trigger escapism is a unique feature of interactive media. Classical media have no interactive connection to their audiences and cannot proactively trigger media use.

The major practical contribution of the study is the insight that current practices that allows users to explicitly opt-in for FPN are not sufficiently protective. Further, ethical designs of FPN are required. One option might be to providing a summary of FPNs only at specific timepoints and frequencies defined by the users.

Despite of the scientific and practical contribution, the study has also several limitations: The survey participants were students and are therefore representing only a subgroup of the general user population of FB. Since other factors, e.g., flexibility in daily time schedule (students are more flexible than employees) or familiarity with media usage (older vs. younger populations) can influence the responsiveness to FPN other target groups should be investigated. Also push notifications differ between different platforms, making it necessary to investigate the influence of push notifications for different platforms individually. The survey also concentrated on US students. Due to cultural differences, results in other countries might be different. Since excessive media use has a negative impact on individuals additional research is needed on how FPN could be created in a more ethical way.

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