

EMOTIONAL DESIGN IN TRANSFORMING EXCESSIVE SOCIAL MEDIA USE: A CASE STUDY ON YOUNG ADULTS' OVERUSE OF SHORT-FORM VIDEO PRODUCTS

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ABSTRACT

Growing concerns have been raised about excessive social media usage among young adults and its adverse effects on mental health. Challenges persist in designing effective strategies to help young adults manage the overuse of social media, especially in the context of short-form video (SFV) products, where the issue is more pronounced. This study explores and discusses design strategies grounded in emotional design principles to assist young adults in managing the excessive use of SFV products, aiming to transform their relationship with social media into a more sustainable one. The study focuses on two main questions: 1) What factors influence young adults' excessive usage of SFV applications? 2) What emotional design-based strategies can effectively regulate this usage? An online ethnography was conducted to understand user motivations, behaviours, and the effectiveness of existing methods for managing overuse. The findings indicate that boredom is a significant factor driving the excessive use of SFV products, with users exhibiting varying levels of awareness and ability to control their usage. Integrating emotional and behavioural design principles, the study presents 'Sustainable Design for User Emotion' recommendations, highlighting key factors for developing effective design strategies to manage users' excessive use of digital products and promote healthier usage patterns. A broad survey was conducted with young adults aged between 18 and 35, further investigating the real-world usage patterns of SFV products and assessing the effectiveness of the proposed design strategies. The results offer insights and actionable recommendations for research and practice in responsible product design.

Keywords: Emotional design, user behaviours, design strategies, social media, short-form video use

1 INTRODUCTION

Social media has become an integral component of digital interaction, particularly among young adults. Research suggests that this demographic constitutes the primary user base of the internet and social media platforms, marking a unique phase of life [1]. Recently, Short-Form Video (SFV) products, such as TikTok and YouTube Shorts, have emerged as the fastest-growing segment within social media [2]. Although short videos are a popular form of digital entertainment and enjoyment, their prolonged use is frequently considered excessive and potentially detrimental. There is growing concern over the negative consequences of such usage patterns, including adverse effects on physical and mental health, the emergence of negative emotions, and a decrease in academic and professional performance [3]. The attractive usability and entertainment value of these SFV products further challenge users' ability to regulate their behaviours [4]. Despite awareness of these adverse effects, young people devote significant time to these platforms. It is crucial to address healthy engagement with SFV applications among young adults. While existing studies have delved into the motivations behind and consequences of excessive SFV use in this demographic, there is an ongoing challenge in helping users manage their consumption. The concept of emotional design is vital in strengthening the connection between users and products by creating positive emotional experiences and resonance [5]. Applications built on emotional design principles are likely better suited to concentrate on emotional well-being, providing support and guidance to help young adults manage their SFV usage.

The study employs online ethnography and a questionnaire survey as research methods to investigate the factors leading to the excessive use of SFV applications among young adults and how strategies based on emotional design may help regulate this use. By integrating emotional design principles, the

research proposes ‘Sustainable Design for User Emotion’ recommendations to moderate excessive use of digital products, offering insights for creating responsible digital products.

2 BACKGROUNDS

This section presents existing studies on young adults’ use of SFV products, analysing the potential role of emotional design in guiding user behaviours and reducing excessive usage patterns.

2.1 Excessive consumption of SFV products among young adults

Young adults, typically aged 18-35, navigate a pivotal transitional phase, moving from dependence on family and various resources to establishing independence [1]. Given their newfound autonomy, young adults are particularly inclined towards self-expression, identity exploration, and forging or maintaining relationships. This propensity significantly contributes to their pronounced daily engagement with social media, surpassing other activities, thereby making social media a defining aspect of emerging adulthood and the excessive use of social media among young people also becomes a growing concern [6]. Excessive social media usage is characterised by an overwhelming preoccupation with these platforms at the expense of neglecting vital tasks, coupled with an inability to control usage, adversely affecting individuals’ lives, mental health, and well-being [7].

SFV content, typically ranging from 15 to 60 seconds, caters effectively to young adults’ fast-paced and fragmented lifestyles [8]. The personalised recommendation algorithms and the “anytime, anywhere,” “continuous” nature of these videos further accentuate the immersive experience, compelling young adults to devote more time to SFV products [9]. Studies indicate that such excessive use of SFV products can lead to dependency, characterised by an inability to moderate usage behaviours, and potentially result in more severe long-term mental and physical health issues [3]. Therefore, acknowledging young adults’ critical developmental stage and the considerable adverse impacts of excessive SFV consumption, it is paramount to assist them in managing their SFV product usage. By understanding the unique vulnerabilities and needs of young adults and the immersive nature of SFV products, we can leverage emotional design principles to develop targeted interventions that guide this demographic group towards more sustainable engagement with SFV.

2.2 Emotional design and user behaviours

Emotional design prioritises individual emotional needs in product and service design and development, aiming to foster positive experiences through elements such as aesthetics, functionality, and usability. Research shows that design focused on emotional impact profoundly influences user experience and evokes desired responses, as emotions affect users’ attention, memory, and decision-making [10]. By emphasising users’ emotional and psychological responses, designers can create products that generate positive reactions, integrating emotional design deeply with user experience [11]. Emotional design principles are applicable for enhancing the user experience by understanding and addressing user emotions and leveraging emotions to forge connections between humans and products and influence user behaviours [12]. Humans tend to engage in passive information and activities that require less reflective thinking [13], leading many young adults to rely on habitual usage patterns when interacting with SFV products. For example, SFV products enable users to enter a state of heightened positive emotions through features like “infinite scrolling” and “entertainment,” making it difficult for users to detach. Some even feel dismayed when they stop using them [14]. By employing emotional design principles, sustainable digital products can support young adults’ well-being in coping with emotional fluctuations and in shaping or reshaping their digital daily routines and habits [12]. This can be achieved by leveraging cognitive biases and using nudges to motivate and engage users towards healthier usage of SFV products. Specifically, user experience designers sometimes exploit behavioural models and cognitive biases to encourage habit formation, utilising reward mechanisms and incentive systems to boost intrinsic and extrinsic motivation [15]. Thus, this study aims to further explore emotional design principles to effectively support young adults in managing excessive SFV consumption, aiding them in curtailing their use of SFV products.

3 METHODS

3.1 Internet ethnography

Building upon the existing literature review, we first utilised internet ethnography to observe the SFV

consumers via online forums, aiming to acquire broader and more timely insights into their attitudes, needs, and frustrations regarding their usage of SFV products.

From November to December 2023, we conducted online searches on social forums such as Quora, Douban, and Zhihu for comments and discussions regarding the use of popular SFV products (e.g., TikTok, YouTube Shorts, and Kuaishou). Searches featured keywords in both English and Mandarin, including but not limited to: “[Name of SFV Product] usage/addiction/excessive use”, “short video application usage/addiction/excessive use”, “manage/control/stop use of short video application”, and “manage/control /stop use of [Name of SFV Product]”. Approximately 150 comments on this topic, shared between 2020 and 2023, were viewed and selected based on their relevance to the study. We then analysed these comments to understand individuals’ challenges and strategies to manage their SFV consumption. Insights gathered were incorporated into the design of subsequent survey questions and response options.

3.2 Survey design and participants

To gain a more direct and comprehensive understanding of their usage patterns, needs, and perceptions of SFV products, an online survey was distributed on social media platforms (e.g., Facebook and WeChat) targeting young adult SFV product users aged between 18 and 35 years old. The survey incorporated two screening questions: one regarding the usage of any SFV products and another concerning age. Respondents indicating they do not use SFV products or those outside the target age range were automatically excluded from the survey. A total of 144 valid survey responses were collected. Among these participants, at the time they completed the survey, 51% were employed, including those freelancing; 44% were students; and 5% were unemployed. To commence the survey, we introduced the project's scope, objectives, and data handling procedures, ensuring participants were well-informed and consenting to participate voluntarily. The survey started with two background questions to assess participants' overall usage of SFV products. After this, seven questions aimed to further understand young adults' specific usage behaviours, focusing on their motivations, needs, and challenges in managing SFV product usage. The third section, integrating both emotional and perceptual inquiries, featured four questions on young adults' feelings and views towards SFV products and the quality of SFV content, alongside their self-reflections and encountered obstacles in usage management. This approach corroborated findings from our internet ethnography study and served as a foundation for formulating effective design strategies tailored to their needs. The concluding section comprised two questions to gather insights on required and favoured intervention strategies among young adults.

4 RESULTS AND DISCUSSION

During the internet ethnographic investigation, the study focused on the reasons behind the excessive use of specific SFV products, measures for managing such usage, and the difficulties people encountered in trying to manage their SFV use; several insights emerged. “Feeling down” and “bored,” along with the perception of the “ubiquitous presence” of SFV products and content, were frequently cited as reasons for users’ continued use and excessive use of these products.

Specifically, some reported experiencing pleasure from the “mental stimulation” provided by watching SFV, which led to “unconscious overconsumption.” Additionally, some mentioned that their initial intention to use SFV products for educational and productive purposes often resulted in involuntary consumption of unrelated SFV content. Among the sampled comments, various strategies were discussed to manage SFV consumption, including “uninstalling the application,” “finding other hobbies,” and regularly conducting “self-reflection” on SFV usage. The comments also reveal some common challenges users face when attempting to implement measures to manage their use of SFV products. For example, some expressed that reducing or stopping SFV consumption was exceptionally “mentally challenging,” often leading to feelings of “restlessness” or anxiety. Others mentioned that using SFV products had become a very “effortless activity” and had already become “part of their daily routine,” making it “difficult to develop interest in other activities” or shift focus. Furthermore, some commented that SFVs were “ubiquitous” in their daily lives, causing them to be “re-attracted” and “resume” using SFV products after attempting to stop.

4.1 Overview of young adults’ SFV consumption

The survey results reveal distinct usage patterns among young adult SFV product users. Approximately 47% of participants are frequent users (more than 3 times a day), 35% are regular users (1-3 times a

day), and the remaining 18% occasionally (3-6 times a week) or rarely use SFV applications (less than 3 times a week). As shown in Figure 1, among frequent users, 95% are current users, whereas only 5% have ceased using these products. Of regular users, 85% continue to use SFV applications, compared to 58% of occasional users still engaged with these products.

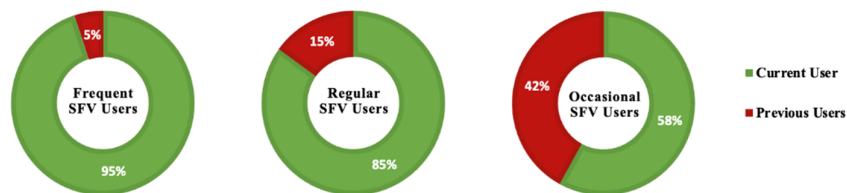


Figure 1. SFV User Categories and Composition

Frequent users predominantly watch SFV anytime and anywhere (70%), with around 12% preferring the evening or late night. Over 80% use SFV applications for relaxation or leisure, and about half for learning or socialisation. Most (83%) turn to these applications when bored, with significant numbers using them before sleep, during commutes, meals, or while waiting in queues. Regular users exhibit similar patterns, with nearly half watching SFV anytime and about one-third in the evening. Around 73% use SFV applications for relaxation and leisure, and 34% for learning or socialisation. Being bored prompts 64% of regular users towards SFV applications, and 57% use them before sleeping. Occasional users share these habits to some extent, with nearly half watching SFV anytime. Around half cite relaxation, socialisation, or leisure as their main motivations, and 58% use these applications when bored.

Regarding usage duration, nearly half of the frequent users spend over 60 minutes per session, while regular users mostly spend 10 to 30 minutes. On weekdays, about one-third of frequent users spend over 2 hours daily on SFV applications, increasing to 58% during weekends. Regular users generally spend 30 to 60 minutes daily on weekdays, with a slight increase in longer usage during weekends. Occasional users typically spend 10 to 30 minutes per session, with a minority exceeding one hour, especially on weekends. The results illustrate diverse usage patterns among young adults, highlighting the need for targeted strategies to assist them in managing excessive use of SFV applications effectively.

4.2 Young adults' attempts and reflections on SFV consumption

The attempts to manage SFV usage and perceptions of these products vary among young adult users. The survey results on these aspects are analysed based on participants' different usage frequency categories, as previously identified. Among frequent users, the majority (41%) have not attempted to manage their SFV application usage and express no desire to do so. The predominant rationale is the perception of SFV products as mere entertainment, denying the need for management. Other reasons include a lack of awareness about the impact of SFV products and content, confidence in self-regulating usage, and the absence of alternative entertainment or relaxation options.

Conversely, less than half of the frequent users have tried to manage their SFV application usage, encountering challenges such as resuming usage when bored or feeling down, difficulty resisting temptation, and a dearth of alternative activities. Some users also cited reasons like entrenched daily habits of watching short videos, social engagement, and a lack of motivation to reduce viewing time.

In contrast, only 26% of regular users have not tried to manage their usage, preferring to do so, with 58% making such attempts. Among occasional users, a mere 8% have not attempted management, with 79% trying to moderate their usage. The motivations and challenges faced by regular and occasional users align closely with those identified by frequent users, indicating a trend where individuals with lesser SFV usage are more inclined to attempt managing their excessive use.

Evaluations of SFV products and content and users' attitudes towards their usage were conducted on a scale from -10 to 10, spanning from "extremely negative" to "extremely positive." Frequent users rated SFV products as high as 10 and as low as -8, with an average rating of 4.22. Regular users provided ratings ranging from 7 to -7, averaging 2.49, while occasional users' ratings varied from 9 to -7, with an average of 1.35. Results suggest that the frequent users of SFV products also tend to have a more positive evaluation of SFV products (see Figure 2).

Regarding measures for managing SFV consumption, all three user groups identified "real-life rewards" as the most effective strategy, followed by "virtual rewards," "suggesting alternative activities," and implementing "usage restrictions." Occasional users also valued "reminders to take breaks" or "limit

excessive use.” Interestingly, a significant portion of participants across all usage frequencies expressed a preference for these measures to foster healthy SFV usage and consumption. “Emotional support and advice” were notably favoured among over 50% of occasional users, with about half of the frequent and regular users also acknowledging their value. The least popular measure across all groups was “distract me from watching short videos.”

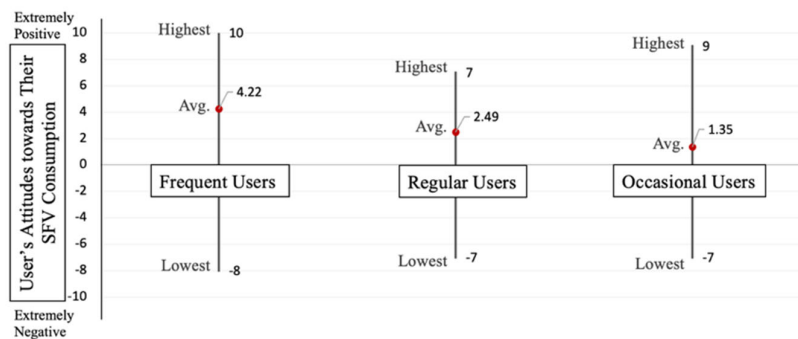


Figure 2. Categorising Young Adults' Personal Attitudes Towards SFV Consumption

4.3 Discussion: Sustainable digital product design

The study highlights the intricate social and emotional dynamics underlying excessive SFV consumption among young adults. Findings shed light on the practical factors that contribute to this behaviour. Results suggest that boredom is the primary reason young adults excessively use SFV products. Most young adults frequently use SFV products more than three times a day without fixed schedules, alongside more extended usage on weekends. For young adults, using SFV products is the most accessible way to relax and unwind, providing continuous stimulation. However, this habitual engagement with SFV may lead to unaware overconsumption and difficult-to-regulate usage behaviours. Based on the survey results, young adults who use SFV products more frequently tend to have a more positive evaluation of both the applications and their usage behaviours. As a result, they may need more motivation to manage and reduce their unhealthy usage of these products. Many young adults face the challenge of resisting the temptation of excessive SFV consumption despite receiving advice to manage their usage through strategies such as uninstalling the applications or finding alternative activities. Those who indulge in excessive SFV usage often have difficulty controlling their habitual viewing habits effectively, leading to a fragmented attention span and further complicating their situation.

The study also assesses users' preferences and evaluates the perceived effectiveness of existing strategies for managing the use of SFV products. The aim is to identify practical and effective design interventions that can moderate excessive usage. Research indicates that products designed according to emotional design principles, such as creating a positive user experience, incorporating user-friendly interfaces, and designing for user satisfaction, tend to create positive emotional experiences for users, thus influencing their behaviour. In managing excessive SFV consumption, there is an opportunity to further apply these emotional design principles to support young adults emotionally and practically.

The ‘Design for Sustainable User Emotions’ recommendations are proposed to mitigate the negative impacts of undesirable digital product usage and user behaviours. This approach advocates for a responsible design ethos that prioritises users' emotions, mental health, and overall well-being, extending beyond mere usability and attractiveness.

Drawing on insights from literature and findings from this study, promising strategies identified for motivating different categories of users to regulate their SFV consumption include offering tangible and virtual rewards for progress and positive user behaviours [15], providing personalised emotional and behavioural support [12], and implementing intervention measures that offer usage analysis and feedback, and enable guided and effortless self-reflections [11,13]. These strategies could include in-app notifications that congratulate users on reduced screen time, personalised messages that encourage healthier usage habits, and features that allow users to track their usage and set limits. Furthermore, by designing interventions and products that acknowledge and address users' emotional challenges and by establishing support mechanisms, users are empowered to make more informed decisions regarding their SFV consumption.

5 CONCLUSIONS

This study employed online ethnography and surveys to explore the causes of excessive SFV consumption among young adults, finding a need for support in managing usage. Analysis revealed a connection between the frequency of SFV use and users' attitudes and perceptions towards SFV products and content, as well as the various needs and challenges they face in managing their SFV consumption. Highlighting the importance of differentiated design strategies, the research suggests employing targeted emotion-driven approaches—such as personalised reward systems, guided and effortless self-reflection exercises, and usage analytics—to help young adults manage their SFV consumption based on their current usage and user habits. It advocates for applying emotional design principles tailored to the varied needs and perspectives of different SFV user groups, aiming to foster healthier engagement and a balanced lifestyle for young adults. Plans for developing and testing a prototype application that incorporates these design strategies are underway to assess their effectiveness.

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