

# **Caught In The Loop:**

## **The Effects of The Addictive Nature Of Short-form Videos On Users' Perceived Attention Span And Mood**

Bachelor Thesis

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## Abstract

**Background:** Short-form videos, characterised by their brevity, have become immensely popular on social media platforms, captivating users with engaging content in a short amount of time.

However, their addictive nature and impact on attention span can lead to frustration and difficulty concentrating on longer tasks.

**Aim:** This study makes use of qualitative data to investigate how people report on perceived short-form video effects on attention span and mood.

**Method:** The research design consisted out of 15 semi-structured interviews. Young people, ranging from 19 to 24 years old, living either in the Netherlands or Germany have participated within the study. The study was split into three parts: First participants had to watch short-form videos for a duration of 7 minutes, which was followed by a Stroop test which measured the attention of participants. After that, interviews have been held in which the participants discussed own social media behaviour, short-form video consumption behaviour and potential effects of short-form videos on attention span and mood in a personal and societal scope.

**Results:** The study found that participants spent about an hour per day watching short-form videos and acknowledged their addictive nature. While immediate effects on attention span were not apparent, participants reported feeling less focused in their daily lives and recognised a connection between short-form video consumption and attention span. Mood was negatively affected when participants struggled to concentrate, but overall, the reported impact on mood was not significant. The participants mainly observed a link between short-form videos, attention span, and mood in others.

**Conclusion:** The study revealed that short-form videos can affect attention span and mood.

Immediate effects on attention span were not observed but participants reported feeling less concentrated in their daily lives. The cycle of disappointment presents how mood and attention span of the participants are affected by short-form videos, however they were not able to recognise a significant effect on their mood in their day-to-day life. Participants experienced difficulties in reporting about their own perceived effects, therefore further research is needed to explore the interconnected nature of mood and attention span in relation to short-form video consumption.

**Implications:** Individuals should be more aware of their social media usage and engage in self-regulation, while schools and policymakers can implement awareness programs and regulations on social media platforms. Additionally, providing mental health support and resources is crucial for those experiencing negative effects from excessive social media usage.

*Keywords:* social media, short-form videos, qualitative study, addictive nature, attention span, mood

## 1. Introduction

Social media has become an integral component of many peoples live, especially for younger generations. It is used to connect people around the globe, to share funny videos or interesting stories, as a news platform, to create videos and even so far that people are able to make millions of money by sharing their day to day activities, cooking recipes and etc. Nowadays, social media is used by approximately 4.9 billion users in the world, which is 85% of the world's 5.27 billion mobile phone users (DemandSage, 2023).

With the rise of traditional social media platforms like Facebook, YouTube and Instagram, people are able to be entertained by various forms of media from all over the world. However, a new trend of social media consumption aroused in recent years. In 2018, the video platform musical.ly was transformed into TikTok, a video platform where people record, lip-sync or share short-form videos, a type of video consumption where the attention of the user needs to be attracted in the first few seconds to keep them from scrolling towards the next video. This type of video production became increasingly popular, that the direct traditional social media competitors like YouTube, Instagram and Facebook started to adopt this type of video consumption. It became one of the most popular video formats in a short amount of time, people using social media are almost unable to miss this type of video platform. According to the 2019 internet trends, short-form videos make users spent more time on social media than ever before (Dai et al., 2021) and have been labeled as the undisputed rising star of social media in 2020 (Rach & Peter, 2021).

According to Statista, 90% of people between the age of 18 and 29 years use social media, followed by 82% of people between the age of 30 and 49 years, 69% of people aged between 50 and 64 years old and only 40% of people being 65 years or older in the United States (2019). Young people are growing up with the constant use of social media and most can not think of a world without it. There are advantages that smartphones and social media can offer, however the problematic use of social media and smartphones is heavily discussed by scientists around the world (Montag et al., 2019).

According to Schiller (2023), there has been a decrease in our attention span from 12 to 8.25 seconds in recent years. In addition to that, the concept of attention span is suddenly gaining popularity on social media, with memes portraying individuals referred to as "iPad kids" (etc.), who constantly seek entertainment through videos, games and by other means. This constant exposure to short-form entertainment videos does not only entertain but also provides people the opportunity to constantly compare themselves to others. Especially in the social media world, this can lead to detrimental effects about users mood if they constantly compare themselves to others who are "better people" than themselves. A study conducted by Thorisdottir et al. (2019), already implied that time spent on social media correlates with greater symptoms of anxiety but also increased symptoms of a depressed mood.

Most studies (similar to the one of Thorisdottir et al.) already focussed on the effects on mental health, consumption behaviour and body image but there is no real connection drawn between attention span and mood. A quantitative study by Chen et al. in 2022 investigated the effects of short-form videos on users attention. The study revealed that users who feel addicted towards short-form videos exhibit lower interest, reduced concentration, and increased distractions while watching short-form videos and experience difficulties in maintaining (a general) attention.

This study is aimed to explore the effects of short-form videos on attention and mood and investigate not only if, but especially how people are affected by the addictive nature of short-form videos. The study aims at participants making sense of their behaviour and explaining why certain effects occur. Participants reflect on their own attention span and mood in relation to short-form videos. In addition to investigating how the attention span of young people is affected by short-form videos and short-form applications, a closer look will also be taken towards the relation of decreasing attention span and mood. This leads to the following research question:

## **How does the addictive nature of short-form videos impact the attention span and mood of young people living in Germany and the Netherlands?**

Hence, this study aims to explore why and how people are affected by the addictive nature of short-form videos and provides reason of why it is important to control or even limit ones' own social media use.

## **2. Theoretical Framework**

In this theoretical framework, a closer look will be taken at the three important terms which are relevant for this study and need more elaboration to define the field of interest. These terms are the addictive nature of social media, attention span and mood of people using social media.

### **2.1 ADDICTIVE BEHAVIOUR OF SHORT FORM VIDEOS**

The addictive nature of social media can be explained by the concept of reward-based learning. A person using social media is often rewarded with either likes, comments or other forms of social validation, which offer the ability to activate the pleasure centres of the brain (Montag et al., 2019). However, it can be argued that this explanation does not really refer to typical social media users, who are the so-called "lurkers". These are a group of people who regularly log onto social media apps or communities but do not post anything nor do they interact with other social media users. This group of people are also called the "silent groups" which make up about 90% of all social media users (Sun, Rau & Ma, 2014). Montag et al. argue that app and platform technologies are designed to be immersive for users. These apps produce a certain flow for the user that is using the app or platform. This flow refers to a positive state of mind which offers the ability to promote high productivity. (Montag et al., 2019). This term refers to the productivity in social media, which can be fatal in the case of apps or platforms on a smartphone or computer, when the



attention of the user should actually be focused onto something else (such as work). So instead of being rewarded by likes or comments, the typical social media user (people part of the “silent groups”) is drawn to the screen following a flow to keep using social media.

On the other hand, researchers argue that the phenomenon of the addictive nature of social media shares common features with the “Internet Gaming Disorder”. Which means that the individual is overly concerned about their social media activities. They uncontrollably spend time on social media and put so much effort into it, that it interferes with other important activities and aspects in life (Turel, Brevers & Bechara, 2018). The outcome of these two perspectives (flow and “Internet Gaming Disorder”) is the same. Because of social media, people get distracted from the “important aspects” of life or at least of aspects that they want to focus on. Soper and Miller (1983) describe technological addictions as: “like any other behavioural addiction, consisting of a compulsive behavioural involvement, a lack of interest in other activities and physical and mental symptoms when attempting to stop the behaviour” (p.40).

This study not only aims towards the addictive nature of social media as a whole, but especially at the addictive nature of short-form videos. This algorithm based personal recommendation format became the dominating growth driver of social media platforms (Rach & Peter, 2021). It is a rather new type of video consumption and production, and provides the users with fast-paced lifestyles of other people and present lots of content in a short amount of time. “With short duration, rich content, personalised recommendations, and immersive experience, short-form videos make users more easier to be addicted.” (Chen et al., 2022, p.1) According to Whiting and Williams (2013), escapism is the most prominent motivational driver for short-form videos. Escapism can be interpreted as the seeking of joy, fun and entertainment to be distracted from our busy day to day life in combination with key motivators of self-expression and communication (Rach & Peter, 2021). This means that short-form videos make use of the previously mentioned activities to present even more content than “traditional” types of social

media. That correlates with the idea of flow implied by Montag et al. (2019), because this flow is important for short-form videos.

Another important technique, the one that especially short-form videos make use of, is the endless scrolling and streaming feature in combination with its high-performing algorithm. This algorithm outperforms other algorithmic content creation in various aspects (Rach & Peter, 2021), by continuously recommending videos to users with similar interests or attributes as the video bloggers or creators, allowing high-quality and fitting content for the users interests in a short amount of time (Zhang & Liu, 2021). This algorithm is able to identify users interests, humour and attributes in such a way that it almost feels like a “time black hole” which zips the people in and distracts them from the important features of life, with almost no possibility of escaping this “time black hole” (Chen et al., 2022).

This part explored different concepts of reward-based learning, flow, and escapism which highlight how personalised recommendations and immersive experiences contribute to users becoming addicted and distracted from other aspects of their lives. In combination with the concept of the “time black hole” presented by Chen et al. (2022), various features of social media can contribute to significant changes in the attention span of a user if they are constantly exposed to the fast-paced nature of short-form video platforms.

## **2.2 ATTENTION SPAN**

Attention span (or attentional concentration) involves the cognitive capacity to manipulate specific information and encompasses the processes of selecting, maintaining alertness, and carrying out tasks (Ocasio, 2011). It helps us to coordinate and maintain attentional resources, which are important in learning, working and life (Chen et al., 2022). Attention span plays a crucial role in our ability to learn, to process information and to make decisions.

However, today's rise of social media consumption, caused by features such as reward-based learning, flow, escapism and the ability to be entertained by various forms of media at the same time, led to rising reports of social media users and scientists about decreasing attention span. Some people already recognise it for themselves, as for example an anonymous reddit user commented: *"I was never really interested in TikTok because it just never appealed to me. (...) But somehow, last March, the app became much more suited to so many audiences. (...) Now I'm in a deep hole of watching TikToks hours on end. (...) my dopamine addiction is so bad that I can't focus for a second."* (Comment made by unknown (2021), source of the reddit comment can be found in the references). Wilmer et al. (2017) argue that the heavy use of social media is associated with a shorter attention span. Results have shown that heavy social media users scored lower on self-regulated learning and the ability to create a certain flow that is needed to keep attention towards a certain task (Wilmer et al., 2017). An excessive use of social media affects the development of the brain of users and impacts the attention span and its development which also includes attention and memory (Chen et al., 2022).

Because of the ability to provide users with fast-paced lifestyles and the presentation of a high amount of content in a short amount of time, short-form videos offer the ability to enhance the previously mentioned effects on attention span. The fragmentation pattern of short-form videos, characterised by informative, brief, varied, and uncorrelated features enhances the rapid dissemination of information and allows users to quickly explore their desired content (Chen et al., 2022). The fragmentation pattern of short-form videos can trigger intense stimulation of the brain's pleasure centre, resulting in a substantial release of dopamine within a brief timeframe (Di Chiara, 2000; Wise & Robble 2020). According to Chen et al., (2022) this substantial release of dopamine in a short amount of time is the driver of addictive behaviour and impacts the attention span during a longer period of addiction or excessive use.

Even though it seems like the effects of the addictive behaviour of social media on attention span might increase, research is still limited on how exactly the effects of short-form videos differ from the effects of regular social media. Still, research made by Ye et al. (2022), who surveyed 521 college students, show that the addiction to short-form videos reduces intrinsic and extrinsic motivation to complete tasks, as well as their own subjective happiness or mood.

In conclusion, the rise of short-form consumption, driven by features of the addictive nature of short-form videos (like reward-based learning and flow), has been associated with a decrease in attention span. Short-form videos, with their fast-paced and fragmented nature, intensify the stimulation of the brain's pleasure centre and contribute to a high dopamine release, which can not only enhance effects on attention span but also on subjective happiness and mood, as reported by Ye et al. (2022).

### **2.3 MOOD**

The term mood refers to an emotional state of mind or feeling of a person (Merriam-Webster.com), after the consumption of short-form videos.

The use of social media can “be a helpful coping mechanism to facilitate self-expression and communication with others with similar experiences and to access motivational content” (Berry et al., 2018, p.1). However, the overuse of this coping mechanism can backfire and lead to harmful effects for the wellbeing or mood of individuals (Berry et al., 2018). According to Thorisdottir et al. (2019), time spent on social media is related to poor psychological well-being, symptoms of depression and anxiety. In addition, research has shown that even a brief exposure to for example image-centring apps (like TikTok or Instagram), can negatively impact a persons well-being, including mood (Seekis & Kennedy, 2023). In a study by Fardouly et al. (2015), it was found that even after a brief exposure to Facebook, women reported being in a more negative mood than by for instance browsing on the internet. These phenomena can be explained using the "social

comparison theory”, which proposes that people engage in evaluating and comparing their own lives to others, in order to assess their current position and progress in life (Fardouly et al., 2015). Social media, and especially image-centring apps like TikTok or Instagram, offer users the possibility to constantly compare themselves to others, which does not always lead to positive effects like motivation or inclusion. Because of the addictive nature of short-form videos and the possibility to consume various types of content in a brief amount of time, the possibility to compare oneself to others increases. This might lead to an enhancement of the effects created by traditional social media consumption. Therefore, the term social media mood modification, which implies that people use social media to change their individual mood state in a reliable and consistent way, becomes especially important for this study (Maria Chiara et al., 2019).

In sum, due to the addictive nature of short-form videos, users spent more time consuming social media than ever before, which means that possible effects like the decreased attention span and negative mood might increase.

## **2.4 CONCLUSION OF THEORETICAL FRAMEWORK AND FORMULATING THE RESEARCH QUESTION**

In conclusion, social media addiction is explained by reward-based learning, where users are rewarded with likes, comments, or social validation that activate the brains pleasure centre (Montag et al., 2019). The immersive nature of social media platforms and the concept of flow also contribute towards developing an addiction or addictive behaviour. Short-form videos, with their personalised recommendations and immersive experience, have been identified as making use of these features in a more enhanced way, which can lead to particularly addictive behaviour (Chen et al., 2022). This enhanced addictive behaviour offers more possibility to draw the user to the screen, which can then lead to impacts on the attentional concentration of short-form video consumers. Meaning that the excessive use of social media, especially with its ability to provide fast-paced

content and entertainment, has been linked to shorter attention spans of short-form video users (Chen et al., 2022). It is argued that especially younger people are affected by the addictive nature of short form videos, as for example 41% of all TikTok users are people between the age of 16 and 24 (Weimann & Masri, 2020).

The hypothesis of this study focusses on these aspects, implying that the addictive nature of short-form videos negatively impacts the attention span of the user, which then correlates with increased symptoms of a depressive or negative mood (Ye et al., 2022). Based on research made by Seekis and Kennedy (2023), even brief exposure to image centring apps like TikTok and Instagram can influence the mood of a person, due to the addictive nature of short form videos, this behaviour (or these effects) might increase.

The aim of this study is to find out how the addictive nature of short-form videos impacts the attention span and mood of young people living in Germany and the Netherlands and whether the participants believe that there is a connection between attention span and mood. This means that this study does not seek to explain if these effects exist or not (for example like the study of Chen et al., 2022) but rather how people experience these effects and try to make sense of their behaviour. Therefore, a qualitative research approach has been chosen to explore how people experience their usage of short form videos and how they make sense of effects, behaviour and usage of social media. This approach helps to understand how users experience the addictiveness of short form videos, how they explain or question possible effects on attention span and how their own personal mood is affected by short-form videos and its characteristics. Therefore it is important to capture thoughts and explanations of behaviour, to make sense of how short-form videos affect peoples attention span and mood.

## 3. Methods

### 3.1 RESEARCH DESIGN

The topic focusses on experiences of users and their feelings in connection to the exposure of short-form videos, therefore this study will make use of a qualitative interview study which is combined with the exposure of short-form videos.

According to Silverman (2015), qualitative interviews offer the possibility to describe phenomena, interpret processes or meanings and seek “understanding” of the occurrence, effects and etc. The topic involves that participants report about their experiences with short-form videos, for example how much time they spent consuming these videos, what they are trying to reach during the consumption and how they feel after the exposure. The aim of the study is to find out how attention and mood are affected by short-form videos and how people experience and think about the cause of these effects.

First, the participants described their usage and how they experienced related effects (describe phenomena), interpreted why and how people are consuming short-form videos (interpret processes) explain how they felt after the exposure (understanding of the occurrence) and reported on how they thought that the society is affected by the addictive nature of short-form videos. The interviews were semi-structured interviews, which allowed the researchers to hold a conversation with the participant (meaning that the researcher was able to ask follow-up questions to certain answers) but at the same time it was still possible to keep a certain structure which was later used for analytical purposes to offer comparability.

This topic involved rather sensitive data, as people talked about the addictive behaviour towards social media and how potential effects affected their private and professional life. Because of that, it was important to capture the feelings and thoughts of the participants, which fitted better to the research design of a qualitative study than for example to quantitative studies (like surveys for instance), which usually generates data for a numerical analysis (Silverman, 2015).

It is easier to report on ones' own mood than to report on ones' attention span, therefore the decision was made to include a compilation of short-form videos (which the participants had to watch for 7 minutes) followed by a Stroop test, after the exposure to short-form videos, to measure the current attention of the participants. The duration of 7 minutes was chosen because it was necessary to make sure that people watch the short-form videos for a certain amount of time to get immersed and experience the "time black hole" phenomenon that was explained by Chen et al. (2022). After watching short-form videos for 7 minutes on the participants own device, a Stroop test followed. A Stroop test shows participants colour names (eg. green, red or yellow), displayed in a random colour, where the participants have to name the colour of the ink in which the words are displayed as. Over the time the test gets harder to perform because the fields of the colours will also start to be displayed in different colours (for example the word "red" will be displayed in a blue colour to confuse the participant which requires better attention to find the matching colour).

### **3.2 SAMPLE COMPOSITION**

In this study, use of purposive or judgemental sampling has been made, which is a method where specific types of people are chosen who deliver important information which other people are not able to give (Taherdoost, 2016). Based on the theoretical framework, it was determined that young people, who consume short-form videos at least once a week.

However, because of mainly choosing to interview people at the University of Twente or people from the researchers own personal environment, it can be argued that the type of sampling was a mixture of purposive (judgemental) and convenience sampling. Convenience sampling is a method that describes that people are chosen who are often readily and easily available (Taherdoost, 2016).

Therefore, the study was being limited to young people living either in Germany or the Netherlands. Important was, that the participants use short-form applications at least once (or twice) a week, more was also appreciated. However, it did not matter what kind of short-form video



application or platform they used but it needed to be short-form videos. In addition to that, mainly young people (age 18-35) are affected and using this type of video consumption method, as noted by Chen et al. (2022): “The highly educated students aged 20 ~ 29 years old composed 89.7% of users of Chinese online video platforms.” (p.1). Chen et al. (2022) also note that young people mainly choose to consume videos that are short and contain lots of information put together in a short amount of time.

The term "highly educated students" is important for this study, as many participants were either from the University of Twente or other German universities. They were recruited through face-to-face communication or mobile phone contacts (WhatsApp or calls). No compensation was available as Sona credits couldn't be used for a bachelor thesis.

### *3.2.1 Sample Characteristics*

In total, fifteen experiments and interviews have been conducted. Of these fifteen interviews, four have been conducted at a private home of either the researcher (in two cases) or the private home of the participant (also in two cases). The other eleven interviews have been conducted at booked project rooms at the University of Twente. The environment of the interviews has always been calm and quiet, so that the participant and researcher are able to focus properly. The table 1 below shows the description of the participants.

Out of the fifteen respondents, ten identified as male and five identified as female. The youngest participant was 19 years old and the oldest participant was 24 years old. On average the age of the participants was 21-years old. Eight of the fifteen participants are from Germany, six are from the Netherlands and one participant is from Austria, however he has been living in the Netherlands for about 3 years now. Therefore, this study mainly focussed on people living either in Germany or the Netherlands.

Thirteen out of the fifteen participants are full-time students at either the University of Twente or other Universities in Germany. Two participants however, are full-time workers in Germany.

**Table 1**

*Description of the participants*

Participant	Age	Gender	Nationality	Profession	Type of consumer
1	21	Male	German	Student	Active
2	19	Male	Dutch	Student	Passive
3	21	Male	German	Full-time spaceworker	Passive
4	21	Male	German	Full-time spaceworker	Passive
5	20	Male	Austrian	Student	Active
6	21	Male	German	Student	Active
7	20	Female	Dutch	Student	Passive
8	23	Female	Dutch	Student	Active
9	21	Female	Dutch	Student	Active
10	22	Male	Dutch	Student	Passive
11	21	Male	German	Student	Passive
12	21	Male	German	Student	Passive
13	24	Male	German	Student	Passive
14	21	Female	Dutch	Student	Passive
15	23	Female	German	Student	Active

### 3.3 RESEARCH INSTRUMENT

Before the actual interview and experiment started, a structure for the experiment had to be created. In addition to that it was also important to decide what questions are being asked and what

kind of information to give to the participants. It was decided to start with the exposure of short-form videos which is followed by a short Stroop test to test the attention of participants. Afterwards, the interview started and questions about previous behaviour and the test were asked. Previously, it was mentioned that the interviews were semi-structured to offer the possibility of creating a conversation, while still keeping a structure offering the ability to compare outputs with each other. Therefore, a script used by the researcher has been created, which stated the questions of the interviews and suggestions for possible follow-up questions. If possible, participants were provided with this script to prepare them for possible questions asked in the interview and information about the experiment being done.

The questions were divided into four different topics. First, the background information about the participants have been asked. These involved common questions about age, gender and start of short-form video consumption. The background information questions were then followed by general questions regarding online activities of the participant (without taking short-form videos into consideration). These questions focussed about passive vs active online behaviour, addictive behaviour towards general online activities (as for example online gaming or longer video consumption etc.) and type of videos that have been watched during the seven minutes of short-form video consumption. After the questions about online activities, the questions regarding the research question have been addressed. These questions considered the use, consumption and effects of short-form videos as for example the number of hours watched per day, feeling compelled to watching short-form videos, differences about participants attention span and general attention, questions about mood towards recognising not being able to concentrate anymore and the limitation of social media consumption. The interview was then rounded off by two or three general questions that have been asked towards the participant, mainly focussing on own behaviour in comparison to the society and general thoughts about effects of short-form videos not only on oneself, but again also on the society.

Below, in table 2, an overview of the research instrument is displayed, the exact interview guideline can be found in the appendix (A).

**Table 2**

*Overview of Research Instrument*

Topic	Explanation of questions asked
Introduction and Background	<ul style="list-style-type: none"> <li>- Participants age, gender and place of birth</li> <li>- Start of consumption of short-form videos and platform that introduced participant to short-form videos</li> </ul>
Online Activities	<ul style="list-style-type: none"> <li>- Active vs passive consumer</li> <li>- Previous experiences with addictive behaviour in online activities (excluding short-form videos)</li> <li>- Type of videos watched in the Stroop test and platform used</li> </ul>
Short-form Video Consumption	<ul style="list-style-type: none"> <li>- Frequency and duration of watching short form videos</li> <li>- Changes in behaviour over time</li> <li>- Compelled feelings to watching short-form videos and difficulty in stopping</li> <li>- Occurrences of difficulty in concentration after watching short-form video</li> </ul>
Effects on Attention Span and Mood	<ul style="list-style-type: none"> <li>- Perceived effects of short-form videos on the ability to focus on tasks</li> <li>- Emotions and feelings experienced when unable to concentrate</li> <li>- Effects of short-form videos on mood, such as feeling pressure or being inspired</li> </ul>
Comparison with Other Media	<ul style="list-style-type: none"> <li>- Comparison of the impact of short-form videos with other types of media (longer YouTube videos, films, books, etc.)</li> </ul>
Limiting Consumption	<ul style="list-style-type: none"> <li>- Attempts to limit short-form video consumption and its impact on mood and attention span</li> <li>- Other changes noticed due to limiting short-form video consumption</li> </ul>
Additional Questions (Optional)	<ul style="list-style-type: none"> <li>- Correlation between short-form video consumption and mental health disorders (e.g., depression, anxiety)</li> <li>- Consideration of other habits or behaviours that might contribute to changes in attention span or mood.</li> </ul>

### 3.4 PROCEDURE

Before the experiment and interview started, participants were always informed about the purpose of the study, their right of withdrawal, usage and handling of data and that the interviews were treated confidentially.

Experiments and interviews lasted for 25-50 minutes with an average time of 30 minutes (17 minutes interview and 13 minutes experiment and setup of the experiment). The experiments and interviews were always conducted individually. Usually, the interviews took place at the University of Twente (open places or booked project rooms). However, because the experiment and interview do not need much preparation beforehand, it was also possible to conduct interviews at private locations (home of the researcher/participant etc.). Experiments and interviews were always conducted in person and face to face.

First, the participant was given seven minutes to scroll through several short-form videos on the preferred platform of the research participant. Most of the participants were using their phones to scroll on their preferred platform, however some also made use of tablets. Following, the participants were instructed to complete a Stroop test. This test was used to test the attention of the participants after their exposure, by showing the participants different words written in certain colours, where the participant has to click as fast as possible on fields that indicate what colour the word is written in. This test is getting harder over time, forcing the participant to focus on the task. This Stroop test was usually performed using the laptop of the researcher (mainly using a trackpad) or a computer available in the booked project rooms (with a mouse).

After this Stroop test, the interview started. The semi-structured interview focussed on different aspects of short-form videos and its addictive nature. Participants talked about their previous online behaviour, about potential effects on attention span and mood caused by short-form video consumption and how they perceived these effects, limitation of consumption and thoughts

about societal effects. After, this the participants were thanked for their participation and usually a short discussion about the experiment and interview was held.

### **3.5 DATA ANALYSIS**

The last step of conducting research in this study involved the analysis of the data provided by the participants.

To analyse the outcomes of the experimental part of this study, a table with all answers provided by the Stroop test has been created. After that followed the analysis of the interviews. All of the interviews have been conducted using the semi-structured approach, which was supposed to help during the analysis (because of offering the ability to compare results with each other).

Because of this study using a qualitative data collection and analysis approach, transcripts of the interviews have been created and coded in two different ways: open and axial coding. However, before the actual analysis could begin, the interviews needed to be transcribed, which was taking about 60% of the time invested into data analysis.

After finishing the transcripts, the open coding process began, which means that data is fractured into different parts, which are then closely examined to identify concepts out of the raw data provided by the transcripts (Scott & Medaugh, 2017). Based on that, interviews have been read and certain codes (or topic names) have been created based on the content of the transcripts. An overview of the first codes being created can be found in table 3 below.

**Table 3***Codebook**General Cohen's Kappa: .52*

Code	Definition
1. Demographics	- Refers to demographics of the participant (age, gender, etc.)
2. Social Media Use	- Refers to anything that the participant said about social media usage
3. Addictive behaviour	- Refers to addictive behaviour addressed by the participants (general social media use or short-form videos)
4. Type of consumer	- Refers to participant either classifying themselves as passive or active consumers
5. Attention span	- Refers to statements made about attention span affected by short form videos
6. Positively Influenced by SM	- Refers to statements made about positive outcomes of social media usage
7. Negatively influenced by SM	- Refers to statements made about negative outcomes of social media usage
8. Mood	- Refers to statements made about mood affected by short-form videos
9. Sensemaking of behaviour	- Refers to explanations of the participants made about own behaviour
10. Impact of short-form videos	- Refers to statements made about impact of short-form videos on general public
11. Other habits in relation to attention span	- Refers to statements made about habits that might affect attention span (besides short-form videos)
12. Device used	- Refers to device used for watching short-form videos
13. Explanation of effects	- Refers to participants making explanations about effects
14. Limitation of SM Use	- Refers to statements made about the limitation of social media usage
15. Time spent on SM	- Refers to statements being made about hours spent on social media

These codes were sometimes quite broad (for example the code called “sense making of behaviour”) but sometimes also quite specific (for example the code called “type of consumer”), which was a bit counterproductive because it made the understanding of the codes more difficult. In total, about fifteen codes have been created which were then assigned to the text brackets. However, in order to test the understanding of the codes, a quick intercoder-reliability test was made. This was only a test to see whether other coders use the same codes for the same brackets as the main coder. In this example, one other coder coded two interviews which also have been coded by the main coder. Already during the coding process, the other coder realised that it was sometimes hard to understand the differences between certain codes. The broad result of the intercoder-reliability test showed that there was only a 52% agreement between the two coders (cohens kappa of .52), which already implied that the codebook was not understandable for everyone. After that, the axial coding process began, which involved a greater degree of theoretical inference and analytic induction (Scott & Medaugh, 2017).

Based on the previous test, a new codebook had to be created because the first codebook was too messy to be understood properly. Therefore, the final codebook was created together with the second coder and consisted mainly out of merging or relating codes created by the previously mentioned open coding process. The decision was made to create codes which are based on the main topics evoked by the questions asked towards the participant. Table 4 below provides an overview of the final codebook, the complete codebook can be found in the appendix(B).



**Table 4***Overview of final codebook**General Cohen's Kappa: .73*

Code	Definition
1. Time Spent On Social Media	- Refers to hours (or minutes) spent on social media and times when participant use social media (such as in the evening/morning etc.
2. Addictive Behaviour (Besides SFV)	- Refers to prior addictive behaviour towards online activities (without taking short-form videos into
3. Attention Span	- Refers to perceived attention span directly after the consumption of short-form videos
4. Attention (general)	- Refers to the attention span in participants day-to-day life
5. Mood	- Refers to statements made about the perceived mood affected by short-form videos
6. Societal Aspect	- Refers to the times that participants talked about not themselves but observed behaviour of others
7. Limitation Of Consumption	- Refers to whether or not participants limited the consumption of short-form videos and about experiences with the limitation
8. Addictive SM Behaviour	- Refers to any type of addictive behaviour towards and of short-form videos

This codebook now involved only eight codes, to provide an easier understanding and division between the text brackets and segments. To test this codebook, another (but more detailed) intercoder-reliability test has been conducted, to test whether other researchers understand the codebook in the same way. The formula (and excel sheet) used for the analysis can be found in the appendix (C). This time, the calculated cohens kappa was a score of .73, meaning that both coders agreed to an extent of (about) 73%.

Finally, results had to be compared to the outcomes of the Stroop test, which was done through simple comparison of what participants talked about in the interviews and the outcomes provided by the Stroop test.

## 4. Results

This results section will be divided into two parts. The first part will focus on the outputs of the Stroop test, which participants had to conduct before the interview started. It will be shortly addressed because this test is used as an additional variable, which helped to quickly test the awareness and attention of the participant directly after a 7 minute exposure to short-form videos.

After that, the second part will focus on the results of the qualitative data collected. It will be based on the coding process of the data analysis, meaning that for every code topic (some codes have been merged for a better understanding and similar results), answers and insights of the participants will be presented.

### 1. STROOP TEST RESPONSES

**Table 5**

*Outcomes of the stroop task*

	Total number of responses	Number of correct answers	Number of errors	Average reaction time for correct answer (msec)
Min	29	28	0	1,053
Max	57	57	2	2,143
Mean	40.2	39.7	0.47	1,581.6
Standard deviation	9.31	9.09	0.64	341.97

Table 5 presents the outcomes of fifteen Stroop tests conducted within a 60-second time frame, showing response counts ranging from 29 to 57, with an average of 40.2. The number of correct answers varied between 28 and 57, averaging at 39.7. While the majority of respondents completed the task without errors (9 respondents), 6 participants made 1 to 2 errors. The reaction time for correct answers ranged from 1,053 milliseconds to 2,143 milliseconds, with an average of 1,581.1 milliseconds. In comparison to Chen et al.'s (2022) study on attention span affected by short-form videos, which compared addicted and non-addicted users and found significant differences, this study did not show significant differences in scores between users with different levels of short-form video consumption.

## **2. RESULTS QUALITATIVE DATA COLLECTION**

The structure of this part will be based on the topics that have been addressed in the interview questions, the document of the questions can be found in the appendix (A). Overall, 12 questions, followed by subquestions have been asked, which have been translated to 8 different codes used for the analysis. Out of these 8 codes, 10 topics have been created: *Type of consumer*, *Addictive behaviour towards online activities*, *Types of videos watched*, *Time spent on social media*, *Addictive behaviour of and towards short form videos*, *Effects of short form videos on users attention span*, *Mood in relation to attention span*, *General mood affected by short-form videos*, *Limitation of social media use* and *Societal effects of short-form videos*.

However, the topics *Type of consumer*, *Addictive behaviour towards online activities* and *Type of videos watched* serve rather as additional information instead of directly addressing the research question, therefore the topics will be divided into two parts: General online activities and topics addressing the research question.

## **2.1 General online activities**

### *2.1.1 Type of consumer*

One part of the interview focussed on what type of consumer the participants would classify themselves as. Active consumers are people actively participating in the social media world, meaning they actively engage in discussions, post online content and interact with people. Passive social media consumers (or so called online lurkers) are mere consumers of social media, meaning that they do not really interact with the social media world, they mainly consume content.

In this study, nine of the fifteen participants described themselves as passive social media users, while the remaining six participants classify themselves as active users. This might play an importance of how social media consumers perceive social media and its effects.

### *2.1.2 Addictive Behaviour towards online activities*

The majority of participants denied ever experiencing addictive behaviour in relation to online activities. For instance, participant 1 explicitly stated, "*I never felt addicted in any way,*" while participant 4 mentioned that their friends had mentioned addiction concerns, but he personally did not consider it addictive.

However, some participants did admit to having somewhat addictive behaviour towards social media in general. Participant 6, for example, acknowledged that due to their job involving a significant amount of social media usage, they sometimes felt like they were spending excessive time on social media. Similarly, others, like Participant 5, mentioned experiencing past addiction to social media during late stages of high school, driven by a fear of missing out on conversations and updates. He mentioned, "*During late stages of high school, I would stay on social media for way too long, all day, even late into night, due to the fear of missing out conversations and things that people were sending.*" Apart from social media, Participant 3 identified online gaming as a factor

that had once been important and potentially addictive for him, which could explain current social media behaviour as online gaming consumption is associated with social media consumption.

In general, most participants did not report significant addictive behaviour in other activities. Nonetheless, some reflected on their past behaviour and recalled instances where they might have been addicted, primarily relating to social media use or online gaming.

### 2.1.3 Type of videos watched

In addition to exploring the participants past addictive online behaviours, it was essential to understand the types of videos watched during the seven minute exposure to short-form videos. The responses were generally quite similar.

Most participants reported watching compilations of funny videos, often referred to as memes, tailored to their individual interests. For instance, participant 4 mentioned enjoying memes and videos featuring animals. Some participants elaborated on their consumption patterns, for example participant 8, who noted that while using various social media platforms, they primarily watched funny videos and sketches. He observed that the algorithm recognised his interests and consistently recommended similar content across different platforms, *“But I feel like it's kind of all in the same algorithm. And on Instagram now, what I mostly watched was like some funny videos like sketches”* Another participant, participant 2, shared a similar experience, stating that they encountered random videos recommended by the algorithm. They mentioned examples like Andrew Tate, a controversial figure prominent on social media, and an Australian wildlife filmmaker. Interestingly, despite having no interest in Andrew Tate's content, the algorithm still recommended it to them, indicating that recommendations are not solely based on user preferences but may also consider popular figures and trending content to create interaction.

In conclusion, participants received different video recommendations based on their interests, but overall, they tended to consume similar content, particularly humorous and meme-like

videos. The algorithm played a significant role in tailoring the video suggestions, often showcasing content relevant to individual interests of the participants, but occasionally also highlighting prominent figures or trending topics.

## ***2.2 Topics addressing the research question:***

### *2.2.1 Time spent on social media*

In the beginning of the main questions, the intention was to find out not only what type of videos the user is watching but also how much time the participant spends on a day consuming short-form videos, as this might have severe effects on the users attention span and mood. Participants did not know the exact amount of time, therefore they had to guess how much time they usually spend consuming short-form videos.

The responses from most participants were quite similar, with nearly all reporting that they typically spent around an hour each day watching short-form videos. For instance, participant 14 mentioned, "*I think an hour a day,*" and participant 1 stated, "*Around an hour per day, on my phone.*" However, a few participants did report spending up to 2 hours daily on short-form videos. For example, Participant 15 recalled, "*On average, I would say two hours per day.*"

Some participants mentioned that they do not watch short-form videos all at once but rather in shorter intervals throughout the day. Participant 14 said, "*Usually, I watch a few short films each day, in between moments, not for hours in one go.*"

On the other hand, some participants reported reduced usage of short-form videos, with participant 13 mentioning, "*I don't watch them regularly, maybe two times a week for half an hour.*"

Additionally, participant 3 noted that his consumption patterns differ between weekdays and weekends, with more usage observed during weekends.

When asked the question of behaviour changes, many participants stated that their consumption during COVID was much higher due to having more free time and boredom, leading them to scroll

through their phones more frequently and forgetting time. During that time, most participants mentioned that they did not care about “wasting” their time because they had nothing better to do. For instance, one participant said, “(..) *during COVID and maybe half a year ago, it was much more because I was a bit less busy with other stuff.*”

In summary, the participants, on average, spent approximately one hour each day watching short-form videos, but they engage with them in various ways, such as consuming them before bedtime, in multiple intervals, or during leisure time after work. The COVID pandemic appeared to have increased consumption among some participants due to reduced daily activities.

### *2.2.2 Addictive behaviour of and towards short-form videos*

The responses to this inquiry were diverse. Some participants admitted to feeling drawn to continue watching short-form videos, even when they had other tasks to complete. Participant 11, for example, mentioned instances where they would start watching a long video but end up getting distracted and spending more time consuming, realising they had wasted valuable time, “*Yes, oftentimes. Often I also want to watch a long video, but then I get distracted and then I watch short videos for I don't know, 50 minutes or something. I realise, oh my God, I'm wasting my time.*”

Similarly, participant 3 shared situations where they intended to watch only a few videos but ended up scrolling for half an hour, unable to stop themselves. When asked about the reasons for this behaviour, participants mentioned factors like anticipating the next exciting video, procrastination, and the dopamine rush they experienced while consuming these videos. Some participants, like participant 8, expressed that the algorithm played a significant role in keeping them engaged by offering fresh and interesting content that matched their preferences.

On the other hand, some participants recognised their own addictive tendencies and took measures to address them. Participant 10 acknowledged the efficacy of the algorithm but decided to delete TikTok to curb excessive consumption, “*It's actually the main reason for why I stopped using*

*TikTok, because they have that algorithm down to a T, it's perfect. (...) I spent way too much time on TikTok, so I deleted it because I just have to stop.*” Participant 5 stated that he regained control and managed to break free from the urge to keep watching videos, especially by engaging directly with people instead.

There were also participants who felt that they were somewhat in the middle – being drawn to short-form videos but still able to control their usage to a certain extent. Participant 1, for instance, mentioned not finding it difficult to stop but admitted that due to the highly-developed algorithm of short form videos, it was easy to get caught up in watching videos when they should be doing something else.

However, not all participants reported difficulties with addictive behaviour related to short-form videos. Some, like Participant 13, stated that he primarily consumes these videos as a nighttime activity but could easily stop if he recognised it was not beneficial. Participant 11, although acknowledging occasional forgetfulness about stopping, also mentioned not finding it overly difficult to stop when needed.

In conclusion, this part highlighted the addictive nature of short-form videos, with most participants reporting difficulties in stopping their consumption, even when it interferes with other tasks. In almost all cases, the participants recognised the addictiveness of the algorithm but only some were able to cope with these effects. Although some individuals claimed to have control over their behaviour, they still admitted to occasional distractions caused by these videos.

### *2.2.3 Effects of short-form videos on users attention span*

To examine the impact of short-form videos on the attention span of participants, two types of questions have been asked: one focusing on the immediate effect after short-form video



consumption and the other addressing the general perceived attention span and how it has been influenced by short-form videos.

Most of the participants did not believe to have a shorter attention span directly after consuming these videos as for example mentioned by participant 1, *“I don't know if there are any differences directly after watching a video, but definitely, I feel that as a younger person it was easier to focus, for example, on just consuming one type of media, for example watching television.”*. Participant 7 mentioned that during video consumption, she could become easily distracted and lose focus because short-form videos offered more immediate gratification. However, she believed that the impact on attention span occurred gradually over time, not instantly after watching the videos.

While most participants did not observe a direct link between short-form videos and their immediate attention span, they still acknowledged that overall they feel less concentrated and relate the effects to the consumption of short form videos. For example, Participant 4 explains that, *“From myself, I must say, I don't really think that I have problems afterwards. But all in all, I think the attention span of me has decreased over the years. But not directly after consuming”*. Similar is reported by participant 7 who mentions, *“I think it occurs over time, so not immediately. I think in the beginning, it's perfectly fine (...) but over time it gets worse, which might also be the reason why you continue longer than intended”*. He implied that our attention span adapts to the brief nature of short form videos, causing us to feel more drawn to the consumption of short-form videos rather than “traditional” or longer videos or movies etc.

On the contrary, a few participants claimed that their attention span was not affected by short-form videos. Participant 12, for instance, experienced occasional headaches and difficulty focusing on other tasks after prolonged phone use, but was not able to directly relate it to short-form videos. Participant 3 also asserted that his day-to-day concentration remained intact. Nonetheless,

he admitted to occasionally being distracted while watching movies alone and finding himself opening Instagram during dull movie moments.

In conclusion, the direct effect of short-form videos on attention span is not entirely clear, as most participants were unsure of immediate changes. However, many did notice a general decline in their attention span over time, attributing it to the consumption of short-form videos. Participants reported difficulty maintaining focus during other types of content, such as movies or lectures, which they associated with their engagement in short-form video consumption. Nonetheless, some participants asserted that their attention span remained unaffected by short-form videos, though they might still experience distractions during other activities.

#### *2.2.4 Mood in relation to attention span*

The investigation of the effects of short-form videos on the mood of participants explored was explored in 2 different ways. First, questions have been asked regarding their emotions after realising that they are not able to concentrate properly.

Participants generally expressed feelings of annoyance and frustration with themselves when faced with this situation. They acknowledged a sense of wasted time and un-productivity, as exemplified by participant 8, who expressed the desire to be able to focus on more useful activities, *“I feel annoyed of myself because I want to be able to focus and maybe read or do something in my terms, like more useful stuff”*. This sentiment was further echoed by participant 3, who associated the lack of focus with a feeling of time being squandered on unproductive endeavours.

Participant 2 revealed a similar sentiment, stating that they felt like they had not accomplished anything worthwhile, leading to a sense of wasted time, *“I don't feel I have done something good. I feel like I've wasted my time. So it's not directly because of the content itself, but more that you feel like, okay, I didn't really do anything.”*. Participant 6 experienced a lack of satisfaction when trying

to read something but struggling to comprehend it, leading to negative feelings about their inability to concentrate effectively.

The "time black hole" effect (Chen et al., 2022), a concept mentioned in the theoretical framework, resonated with the participants. They agreed that it aptly described their behaviour and emotions while consuming short form videos.

In conclusion, the answers of the participants showed mood was indeed affected when the participants realised they could not concentrate properly after watching short-form videos. The connection between attention span and mood becomes evident in this context. Mood suffered when participants perceived their concentration slipping away. This negative mood, in turn, contributed to difficulties in regaining focus, creating a self-perpetuating cycle of reduced attention and worsening emotions, the cycle of disappointment.

#### *2.2.5 General mood affected by short-form videos*

The second question focussed on the effects explained by the “social comparison theory”. Participants were asked how their mood is affected if they watch content of other people and whether or not the participants compare themselves to others. Responses varied among the participants, revealing differing impacts on their emotions.

Some participants reported that their mood remained largely unaffected by the content they consumed. Participant 1 expressed, *“So just on the mood itself, no(...)I’m not really affected by it, I don’t actively pursue anything like that so I don’t try to get myself amped up by watching positive or negative videos .”* Participant 3 mentioned that his mood depended on the time of day when the videos were watched, indicating a mild influence on his emotions. However, this participant also mentioned feeling inspired by certain videos, suggesting a positive impact in specific cases. Similarly, participant 2 stated that while there might be some temporary fluctuations in their mood, the effects were not long-lasting, and they could easily overcome any negative feelings.

On the other hand, some participants believed that short-form videos did affect their mood.

Participant 2 attributed this effect to the overstimulation caused by the videos, leading to heightened emotions and excitement towards certain topics, *“I think for the mood that is certainly the case because of the overstimulation of shorts. So it's a lot of images, a lot of new sounds.”* For participant 12, short-form videos seemed to exacerbate negative emotions, as they reported feeling happy while watching but confronted with loneliness and health-related concerns afterwards.

Additionally, some participants described experiencing positive effects on their mood after watching short-form videos, indicating that social comparison does not only trigger feelings of jealousy or dislike. Participant 3, for example, mentioned feeling happier and stimulated after watching the videos, especially in the late evening, *“When I watch it in the evening, I just feel like it makes me laugh and stimulate really for the time being, (...) my mood just gets better, happier.”*

In conclusion, the effects of short-form videos on mood were not consistent, with some participants experiencing positive or negative emotions, while others felt little to no impact. The relationship between attention span and mood appears to be complex, influenced by the stimulation level of the content and individual differences among participants.

### 2.2.6 Limitation of social media use

Questions regarding limitation focussed on whether or not people have limited their social media consumption and whether or not this limitation had a useful effect.

Some participants felt that limiting their usage was unnecessary or had not actively attempted to do so. They did not perceive it as a problem or considered it a priority. However, they acknowledged that if they were to limit their screen time, they would do it for all social media platforms, not just short-form videos.

On the other hand, the majority of participants reported actively trying to limit their consumption of short-form videos, and they found this limitation to have a positive impact on their

online and offline behavior. For example, Participant 11 stopped using TikTok and noticed that it became easier for him to focus on studying without the distraction of certain videos, *“Yeah, I stopped using TikTok and then it was way easier for me to study and get into that mindset of studying because there wasn't this thing where you could watch these funny videos.”*

Similarly, Participant 8 felt a sense of calmness on her phone after limiting short-form video consumption, as they no longer had to deal with numerous notifications and distractions. She reported that *“When you have a lecture, for example, and then afterwards you have these million notifications. I didn't have that. So that was pretty nice and it also made me a bit calmer in not having to see everything.”* Participant 5 underlined these aspects and experienced improvements in his work and concentration after limiting his short-form video consumption. He no longer felt the constant urge to check their phone and found the absence of random and draining content to be refreshing.

Still, not everyone was successful in adhering to their self-imposed limitations. Some participants tried setting timers to restrict their usage but found themselves overriding them and continuing to watch videos. This lack of control sometimes left them feeling addicted and contributed to a worse mood.

In sum, the majority of participants acknowledged the value of limiting their short-form video consumption. They found that doing so positively influenced their focus, reduced distractions, and created a calmer mindset for studying or working. On the other hand, some participants struggled to adhere to their limitations, and for a few, this led to negative emotions and a sense of being drawn to the screen despite their efforts to control their behaviour.

### 2.2.7 Societal effects of short-form videos

The final questions of the interviews revolved around the idea of participants reporting not only on behaviour that they recognise for themselves, but rather report about behaviour of other people or occurrences. Interestingly, every participant agreed that such effects do exist, and their responses shed light on various aspects of this phenomenon. To be able to provide a better overview of answers regarding either mood or attention span, this part will be split into two parts.

#### Mood:

Some participants initially seemed unsure about the impact of short-form videos on the emotions of other people, but upon further reflection, they acknowledged the existence of such effects. They pointed out that the immediate rush of endorphins from consuming short-form videos could lead to addiction, and without such instant gratification, individuals might feel worse overall.

This was suggested by participant 1, who pointed out:

*“Because in short-form videos there's like this immediate rush of endorphins. And then you actively become addicted to this short-form exposure to these hormones. So that, in general, if you don't have this immediate exposure, you maybe feel worse all the time”*

Participants suggested that comparisons made on social media, especially regarding appearance, could worsen mood, particularly among young women, in line with the ideas of the social comparison theory.

#### Attention Span:

As for attention span, all participants unanimously believed that short-form videos negatively affect the attention span of others. They observed that the prevalence of brief and attention-grabbing content has altered the way people consume media, particularly in younger generations. According to the beliefs of the participants, this shift may lead to shorter attention spans, as individuals become accustomed to quick and constantly-refreshed videos rather than engaging with longer forms of media.

Moreover, one participant raised an interesting point about the potential societal implications of short-form videos. They mentioned that constant exposure to specific content, such as LGBTQ-related content, might influence individuals to question their identity or mental health. This observation underscores the ideas of the social comparison theory and shows the power of short-form videos in shaping perceptions and self-identifications, especially in impressionable minds.

In summary, this section indicates that participants generally believe in the existence of effects on mood and attention span caused by short-form videos in other people. While some participants experienced difficulty in recognising and reporting on their own behaviour, they were more willing to discuss the impact they perceived in others.

## **5. Discussion**

### **5.1 MAIN FINDINGS**

The goal of this study was to investigate the effects of short-form videos on attention span and mood of the participants, answering the following research question: *“How does the addictive nature of short-form videos impact the attention span and mood of young people living in Germany and the Netherlands?”*. Based on results offered by Chen et al. (2022), this study aimed to explore how people use social media and how they experience the consumption and possible emerging effects regarding attention span and mood, offering insights for further investigations on policies regarding social media usage and limitations.

Most participants classified themselves as passive social media users and did not report significant previous addictive behaviour in other online activities. They spent about one hour daily consuming short-form videos, with TikTok users generally engaging in higher levels of consumption. Participants recognised the addictive nature of short-form videos, finding it difficult

to control their usage even when they should focus on other tasks and losing track of time. Although immediate effects on attention span after watching short-form videos were not always noticeable to participants, they reported feeling less focused in their daily lives, suggesting a potential negative impact on attention span over time. Additionally, the interplay between attention span and mood was evident, as participants did report about their mood worsening when they struggled to concentrate, creating a cycle of disappointment. Interestingly, participants did not report significant negative mood effects related to short-form videos. Many recognised the artificial nature of social media content, avoiding feelings of jealousy or dissatisfaction.

Lastly, some participants actively limited their short-form video consumption and reported positive outcomes. They felt less drawn to using social media and had improved focus and reduced distractions. According to the participants, limiting own behaviour may be a potential solution to address the negative effects of short-form video consumption, such as the cycle of disappointment and attention span difficulties.

## **5.2 THEORETICAL CONTRIBUTIONS**

This part will discuss relations between findings made in the theoretical framework and outcomes presented by the participants of the study, to provide an overview of effects of short-form videos on attention span and mood.

Essentially, most participants of the study (nine out of fifteen) classified themselves as being passive social media users, meaning they regularly use social media apps but do not interact with other social media users. This outcome can be viewed as in line with the findings made by Sun, Rau and Ma (2014), suggesting that 90% of all social media users are “silent groups” or “lurkers”. Nine out of fifteen participants being passive social media users may not be a 90% representation but due to the sample not being a perfect representation of the population, it can be viewed as valid because



the majority in this study classified themselves as passive users. Furthermore, participants recognised the addictive nature of short-form videos and found it challenging to control their own usage, even when they should be focusing on other tasks. This outcome aligns with previous research made by Turel, Brevers & Bechara (2018), who argued that individuals become overly concerned about social media activities and uncontrollably spend time consuming social media so that it interferes with other important aspects in life, similar to the “Internet Gaming Disorder” which was also addressed by participants. Most participants spent about an hour a day consuming short-form videos but experienced troubles about recalling how many hours they spent, which correlates with the concept of the “time black hole” reported in the study by Chen et al. (2022), which suggests that social media users are drawn into a black hole, causing them to forget about time and content that they have watched.

Outcomes of the theoretical framework suggest that the excessive use of social media, especially short-form videos, can lead to a decrease in attention span (Wilmer et al., 2017). According to Chen et al. (2022), the excessive use of social media, caused by a substantial release of dopamine in a short amount of time, affects development of the brain and impacts the attention span. The outcomes highlighted by the participants are consistent with the statements made by Wilmer et al. (2017) and Chen et al. (2022). Participants reported feeling less focused in their daily lives, relating the effects to the consumption of short form videos. This indicates potential negative effects on attention span over time. While immediate effects on attention span were not always noticeable, the cumulative impact seemed to affect their focus.

According to Berry et al. (2018), social media can serve as a beneficial coping mechanism, allowing individuals to express themselves, communicate with others who share similar experiences, and access motivational content, which was underlined by the participants, stating that social media usage can also be fun and entertaining instead of only distracting them from other important aspects in life. However, Berry et al. (2018) argue that excessive reliance on this coping

mechanism can have detrimental effects on wellbeing and mood of individuals. Based on the answers in the results section, participants did not report on significant negative mood effects related to short-form videos. "Social media mood modification" suggested by Maria Chiara et al. (2019) did not play a significant role in this study as many participants recognised the artificial nature of social media content, resulting in participants avoiding to compare themselves to other people on social media, to dismiss feelings of jealousy or dissatisfaction. Therefore a direct connection between the addictive nature of short-form videos and mood only, based on results of this study, can not be drawn.

The hypothesis of this study posited a link between decreasing attention span and negative mood, which was substantiated by the responses of the participants. They reported experiencing a worsening mood when they noticed their inability to concentrate, leading to a cycle of disappointment. This cycle, characterised by declining attention span and negative mood caused by the addictive nature of short-form videos, hindered individuals from completing certain tasks effectively, this outcome can be viewed similar to the outcome made by the study of Ye et al. where the addiction to short-form videos reduces intrinsic and extrinsic motivation to complete tasks, as well as their own subjective happiness or mood.

Despite the agreement of the participants on recognising the addictive behaviour of short-form videos and its negative influence on attention span, as well as their acknowledgement of the connection between mood and attention span, their responses regarding the effects on the general society differed. Interestingly, every participant believed that effects such as the "time black hole" (Chen et al., 2020), decreased attention span (Wilmer et al., 2017), and worsening mood due to social comparison (Maria Chiara et al., 2019) exist, but they perceived these effects as applicable to other people, not themselves. This finding indicates that people can hold contradictory views and may not always accurately reflect on their own behaviours and experiences.

Finally, Chen et al. (2022) argued that individuals with attention deficits score lower on Stroop test results and are more likely to be distracted. In their study, it was visible that participants who reported being addicted towards short-form videos scored significantly lower than participants who reported not being addicted towards short-form videos. Unfortunately, this finding can not be underlined using the results of this study. Participants who consumed more short-form videos per day did not score significantly lower than those who spent less time consuming them. During the one-minute Stroop test, participants reported not feeling distracted, and any issues they experienced were attributed to being unfamiliar with the mouse or trackpad used during the test. Thus, it is suggested that other external factors, such as the equipment used or fatigue, may have had more influence on the results than the addictive nature of short-form videos.

## **5.2 LIMITATIONS**

Although this study is one of the first to address the relation between perceived attention span and mood affected by the addictive nature of short-form videos on young people, some limitations must be addressed to determine how reliable the outcome of this study is.

The used sampling methods were not a perfect representative of young people in general, as mainly highly educated university students with experience about social media have been interviewed, which caused that (especially for the term mood) people were aware of the problem. Meaning that the attitudes of the participants towards social media and their ability to maintain a healthy distance from it may vary based on their educational levels. Moreover, mainly younger people and especially minors are perceived to be affected by the addictive nature of short-form videos as many of them are growing up with the use of short-form videos (which was not the case for the participants in this study). However, especially for a bachelor thesis, it is critical to involve minors in a study because of ethical issues and the topic involving rather sensitive data.

Next, it is also important to take a critical look at the approach used to study this phenomenon. First of all, it might be useful to consider the timing and duration of the exposure towards short-form videos, as it might be possible that the effects of short-form videos on attention span and mood might vary depending on the length of exposure or the timing of video consumption during the day. This is also noted by the study of Chen et al. (2022), who propose that the content (Yang et al. 2021), recommendation algorithm (Zhang, Zheng & Wang, 2022) and background music (Lu & Lu, 2019) of the different short-form videos might play a role in how the participants attention is affected.

In addition to that, the Stroop test was a rather less helpful method of measuring the attention span of the participants, especially when the task only lasted for one minute and participants are surrounded in a study environment (which differs from the actual environment in which short-form videos are usually consumed). The outcomes are not a representative of the users general attention span and therefore the Stroop test was only added as additional variable of the study.

Based on the limited time frame for this bachelor thesis it was also not possible to get into much detail, it would have been useful to provide certain test interviews for further development of the research model. In addition to that, it is important to take a critical look towards the qualitative research design (or interviews) as people have to report on their own behaviour, which includes the possibility of bias in participants answers. Most of the participants already had critical views towards the topic of short-form videos before the interviews started, therefore it is not possible to exclude the probability of interviewees being biased towards the topic and their own behaviour, which influenced the answers made by the participants.

### 5.3 IMPLICATIONS

The study highlights the addictive nature of short-form videos and how they are able to have a potential negative impact on attention span and mood. To avoid these effects, users, platforms and governments should take specific actions.

First, individuals should be more aware of their own social media usage and its effects on their focus and emotional well-being. Engaging in self-regulation, such as setting time limits for social media consumption or taking regular breaks, could help mitigate the negative effects. In addition, it is important to increase awareness regarding possible effects and harms that can be caused by social media consumption, as many users are not aware of certain effects nor ever thought about them. This was also the case for participants in this study, as many of them reported never considering the downsides of social media consumption before but started to think more about it after being exposed to certain possible dangers of social media by this study.

Furthermore, it is important that schools or educational institutions are aware of problems considering social media consumption to offer implementations of programs to raise awareness about the potential impacts of excessive social media usage on attention span and mood. These programs could educate individuals, particularly young people, about the addictive nature of short-form videos and the importance of balancing screen time with other activities.

In addition, policymakers can use the findings of the study to inform regulations and guidelines for social media platforms. For example, implementing features that remind users to take breaks or setting time limits on video consumption could help users manage their usage more effectively.

Finally, mental health support and resources should be available for individuals who may experience negative effects from social media usage. Counselling services and mental health professionals can offer assistance to those who struggle with managing their online activities and its impact on their well-being.

## 5.4 SUGGESTIONS FOR FURTHER RESEARCH

While this study offered valuable findings, further research is needed to deepen the understanding of the effects caused by addictive nature of short-form videos on attention span and mood. The study conducted by Chen et al. (2022) demonstrates a significant association between short-form videos and attention span, and this current research expands upon this relationship by examining how users experience the addictive nature of short-form videos and its impact on their attention span and mood. Further research can be build upon these “research blocks”.

First, based on the sample used in this study, future studies should conduct validations on diverse age groups (Huang, Hu, & Chen, 2022) and consider individual differences in personal traits (Meng & Leung, 2021), as this would enhance the validity of the findings and offer a better understanding of the topic.

Future research should consider conducting longitudinal studies to track participants over an extended period and observe the long-term effects of short-form video consumption on attention span and mood. This might be combined with neuroscientific investigations to better understand the neural mechanisms underlying the addictive nature of short-form videos and their impact on attention span (such as making use of EEG devices). This approach would provide valuable insights into how prolonged exposure to short-form videos influences the attention span of individuals and emotional well-being, allowing for a more comprehensive understanding of the potential impacts on mental health and cognitive functioning over time. In addition to that, it might be useful to include a focus towards external factors which might influence the effects of short-form videos on participants attention span and mood. As visible in the interviews guideline in the appendix (A), a question revolved around the topic of external factors was included, however based on the difficulty of the question, participants were not able to come up with significant other external factors in a short amount of time.

Finally, in order to gain a clear overview of the impacts of social media addiction, it might be recommended to conduct studies employing control groups and experimental groups. By comparing individuals with different consumption behaviours, these research designs can provide valuable insights into the specific effects of social media addiction on attention span, mood, and overall well-being. Such studies would enable researchers to establish causal relationships between social media usage patterns and their consequences, helping to identify potential risk factors and inform targeted interventions or strategies for managing social media consumption effectively.

## **6. Conclusion**

In summary, the study highlighted the addictive nature of short-form videos and how users experience the potential negative impact on attention span and mood. Findings revealed that most participants acknowledged the addictive nature of short-form videos, experienced difficulty controlling their usage, and reported a potential negative impact on attention span over time, while also recognising the interplay between attention span and mood. According to the participants, limiting short-form video consumption yielded positive outcomes like improved focus and reduced distractions. Awareness towards the effects that excessive consumption can have on users and limiting own social media and short-form video usage is advised to prevent possible harmful effects on attention span and mood. However, it is essential to recognise the limitations, including limitations of the Stroop test in measuring attention span and potential bias in self-reporting of the participants. Further research is needed to explore the interplay between mood and attention span and the effects of short-form videos on concentration more comprehensively.

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# Appendix:

## APPENDIX A : INTERVIEW GUIDELINE

### Interview Questions for the Thesis

Private Consent (presented directly to the participant)

- Interview and experiment are estimated to take 45 minutes to 1 hour
- You always have the right to stop the experiment/interview if you do not feel comfortable
- If you would not like to answer a certain question you are always allowed to skip a question
- Any information that you provide will be kept strictly confidential and the data will be kept secure and only accessible to the research team

Tell me a bit about yourself...

- How old are you?
- Where are you from and what is your gender?
- Since when did you start the consumption of short-form videos? Do you remember what app introduced you to short-form videos?

#### *Online activities of the Participant*

Are you an active or passive social media consumer?

Did you ever had any addictive behaviour towards online activities before (except for short-form videos)

What type of videos did you watch in the previous test? What platform did you use and how do you regularly consume online content (phone, iPad, computer etc.)?

#### *Main questions*

How often do you typically watch short-form videos (as the ones you recently saw) and for how long do you typically watch these types of videos?

- Did this behaviour change over time?

Do you feel like you are compelled to watching short-form videos even when you are supposed to stop? Have you ever found it difficult to stop scrolling through the app?

- Why do you think this occurs?
- When does this typically happen? In the morning/afternoon/at work etc.?

Have you ever noticed any differences in your attention span directly after the consumption of short-form videos? Could you describe your experiences?

- Did this maybe occur over time?

How do you think that short-form videos affect your ability to focus on certain tasks like for example studying, reading or working? Is it harder for you to concentrate?

- How do you feel when you recognise that you are not able to concentrate?

How do you think short-form videos affect your mood? Do you feel like everybody is having a better life than you (pressure)? Or are you being inspired by other people posting about their lives?

- Do you feel differences before and after you consumed short-form videos?

Do you think that short-form videos have more impact/ a different impact on our attention span and mood as for example other types of media (longer YouTube videos, films, books etc.)?

- Explain why you think there is a difference/ not a difference s

Have you ever tried to limit your consumption of short-form videos? Did you notice any differences about your mood and attention span?

- Did you notice any other differences as well (being able to spend more time doing other things etc.)?

***Possible questions to ask in addition to the other ones***

Do you think there is a correlation between the consumption of short-form videos and mental health disorders (like for example depression, anxiety or else)?

Are there any other habits or behaviors that you engage in that you think could be contributing to changes in your attention span or mood, or do you believe that short-form videos are the primary factor?

**APPENDIX B: CODEBOOK**

**Table 3**

*Codebook*

*General Cohen's Kappa: .73*

Code	Definition	Example
1. Time Spent On Social Media	Refers to hours (or minutes) spent on social media and times when participant use social media (such as in the evening/morning etc	"Mostly in the evening. Like 1 hour before going to bed."
2. Addictive Behaviour (Besides SFV)	Refers to prior addictive behaviour towards online activities (without taking short-form videos into consideration)	"Probably, yeah. Basically just like scrolling a lot. I think being too addicted to just keep watching on new things. Okay, so general social media."
3. Attention Span	Refers to perceived attention span directly after the consumption of short-form videos	"I don't know if there are any differences directly after watching a video, but definitely I feel that as a younger person it was easier to focus, for example, on just consuming one type of type of media, for example watching television."

4. Attention (general)	Refers to the attention span in participants day-to-day life	“From myself, I must say, I don't really think that I have problems afterwards. But all in all, I think the attention span of me has decreased over the years. Okay, but not directly after consuming.”
5. Mood	Refers to statements made about the perceived mood affected by short-form videos	"Yeah, I think so. Because in short-form videos there's like this immediate rush of endorphins. Yeah. And that you actively become addicted to this short-form , short-form exposure to these hormones. So that, in general, if you don't have these immediate, immediate exposure, you maybe feel worse all the time.”
6. Societal Aspect	Refers to the times that participants talked about not themselves but observed behaviour of others	"I think we could look on both sides at this point. There are people that are healthy and happy and watch these videos and feel bad about themselves because they don't get the same life standard than those people in those videos. But on the other side there are people who are depressed, who are feeling low, who are unhappy and they watch those videos of people motivating or maybe seeing like in people in rich positions and they're thinking to themselves, oh, that could be me.”
7. Limitation Of Consumption	Refers to whether or not participants limited the consumption of short-form videos and about experiences with the limitation	"Yes, I actively limited my access to social media as a whole and to definitely improve my mood, my attention span.”
8. Addictive SM Behaviour	Refers to any type of addictive behaviour towards and of short-form videos	“I think it was less when I started and it became more after the algorithm maybe picked up on my humor and I just kept watching and I think it went

## APPENDIX C: EXCEL SHEET OF THE INTERCODER-RELIABILITY ANALYSIS

Noah (Second Coder)										
Codes	1	2	3	4	5	6	7	8		
Torben	1	4								4
	2		1							1
	3			2				1		3
	4			1	3		1			5
	5				1	5	1			7
	6				1		1			2
	7			1				4		5
	8	1							5	6
								0	0	0
								0	0	0
	5	1	4	5	5	3	4	6	0	33
Total codes:										33
Total agree:										25
Time										0,0183655
addictive SFV										0,0009183
Attention S										0,0110193
Attention G										0,0229568
Mood										0,0321396
Soecity										0,0055096
Limit										0,0183655
Addictive SM										0,0330579
										0
										0
										0,1239669

  

Codes	Constructs
1	Time spent on social media
2	Addictive behavior beside SFV
3	Attention Span
4	Attention General
5	Mood
6	Societal aspect
7	Limitation of consumption
8	Addictive SM behaviour

## Appendix D: Literature Search Overview

**Table 4**

*Literature Search Overview*

Date	Source	Search String	Total	Relevant
04-04-2023	Google Scholar	“Short-form videos” AND	4.2 million	4
04-04-2023	Google Scholar	“Short form videos” AND “Attention Span” AND “Mood”S	68.100	6
04-04-2023	Scopus	“Short form Videos” AND	1.504	1
04-04-2023	Scopus	“Short form videos” AND “Attention Span” AND “Mood”	0	0
20-04-2023	Scopus	“Attention Span*”	21.143	5
20-04-2023	Scopus	“Mood*”	172.305	3

26-04-2023	Scopus	(attention OR mood) AND (“short form	172	4
26-04-2023	Scopus	“Attention Span” AND “Mood”	36	1
26-04-2023	Google Scholar	“Attention Span” AND “Short-form videos”	85	1
26-04-2023	Google Scholar	“Attention Span” AND “Short-form videos” AND “Mood”	25	2

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