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**THE EFFECTS OF DIGITAL MEDIA CONSUMPTION  
ON PERCEIVED WELL-BEING**



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# TIIVISTELMÄ

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Digitaalisen median kuluttamisen vaikutukset koettuun hyvinvointiin

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Tämä pro gradu -tutkielma tarkastelee digitaalisen median käyttötottumuksia, keskittyen digitaalisen median käyttömotivaatioihin, vaikutuksiin arjessa sekä riippuvuutta aiheuttaviin tekijöihin. Digitaalinen media on olennainen osa nykypäivää, tarjoten tietoa, viihdettä ja sosiaalista kanssakäymistä. Suositut sosiaalisen median alustat kuten TikTok, Instagram ja YouTube hyödyntävät algoritmeja maksimoidakseen käyttäjien sitoutumisen, mikä on herättänyt huolta pakonomaisesta käytöksestä ja sen vaikutuksista hyvinvointiin. Tutkimus hyödyntää monimenetelmäistä lähestymistapaa, yhdistäen laadullista aineistoa päiväkirjamerkinnöistä, haastatteluista, sekä tutkijan omista autoetnografisista havainnoista. Tutkimusta varten toteutettiin kahden viikon mittainen aineistonkeräysjakso, jonka aikana tutkimukseen osallistuvat henkilöt, sekä tutkija itse, kirjasivat päivittäin ylös tunteuksiaan digitaalisen median käyttöön liittyen samalla, kun heidän digitaalisen median käyttötottumuksia kohtaan lisättiin ärsykeitä notifikaatioita ja sovelluksia poistamalla. Tutkimukseen osallistui kuusi henkilöä, jotka kertoivat digitaalisen median käyttömotiiveistaan ja käytön vaikutuksista koettuun hyvinvointiin. Tutkimustulokset osoittavat, että osallistujat käyttivät digitaalista mediaa stressin lievittämiseen, viihteeseen, viestintään sekä käytännön asioiden hoitamiseen, kuten esimerkiksi navigointiin. Tutkimukseen osallistuneet henkilöt tunnistivat digitaalisen median käytön negatiiviset vaikutukset, kuten unihäiriöt, heikentyneen keskittymiskyvyn ja lisääntyneen ahdistuksen. Liiallinen sosiaalisen median käyttö aiheutti vertailua muihin ihmisiin ja tästä johtuen myös riittämättömyyden tunteita. Tutkimuksen perusteella digitaalisen median riippuvuutta aiheuttavat tekijät ovat personoitu sisältö, lyhytvideot, tavan muodostuminen sekä häiritsevät sovellusilmoitukset, jotka vaikeuttivat irrottautumista ja johtivat riippuvuuteen verrattavan käyttäytymismallin. Tutkimukseen osallistuneiden vähentynyt digitaalisen median käyttö paransi hetkellisesti koettua hyvinvointia, unen laatua sekä keskittymiskykyä, mikä viittaa digitaalisen median rajoittamisen hyötyihin. Tutkimustulokset korostavat tarvetta kehittää terveellisempiä digitaalisen median käytäntöjä sekä eettistä alustasuunnittelua, jossa käyttäjien hyvinvointi on etusijalla.

Asiasanat: digitaalinen media, digitaalinen addiktio, digitaalinen hyvinvointi, digitaalinen detox, doomscrollaus, lyhytvideot, notifikaatiot

## ABSTRACT

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The effects of digital media consumption on perceived well-being

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This Master's thesis examines digital media usage patterns, focusing on motivations for using digital media, its effects on daily life, and the factors contributing to addiction. Digital media is an essential part of modern life, providing information, entertainment, and social interaction. Popular social media platforms such as TikTok, Instagram, and YouTube use algorithms to maximise user engagement, raising concerns about compulsive behaviour and its impact on well-being. The study employs a mixed-methods approach, combining qualitative data from diary entries, interviews, and the researcher's own autoethnographic observations. A two-week data collection period was carried out for the study, during which the participants, as well as the researcher, documented their daily experiences related to digital media use while being exposed to stimuli such as removing notifications and apps. The study involved six participants, who discussed their motivations for using digital media and its impact on their perceived well-being. The findings indicate that participants used digital media for stress relief, entertainment, communication, and practical purposes such as navigation for example. Participants recognised the negative effects of digital media use, including sleep disturbances, reduced concentration, and increased anxiety. Excessive social media use led to comparison with others, which in turn caused feelings of inadequacy. The study identifies the factors contributing to digital media addiction as personalised content, short videos, habit formation, and disruptive app notifications, all of which made disengagement difficult and led to addiction-like behaviour patterns. Participants who reduced their digital media use experienced temporary improvements in perceived well-being, sleep quality, and concentration, suggesting the benefits of limiting digital media use. The findings highlight the need to develop healthier digital media practices and ethical platform design that prioritises user well-being.

Keywords: digital media, digital addiction, digital well-being, digital detox, doomscrolling, short videos, notifications

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# 1 INTRODUCTION

In today's world, digital media has a central role when we search for information, entertain ourselves or connect with friends. According to Statista (2024a), approximately 5,35 billion people had access to internet in January 2024, and this number is expected to grow significantly by the end of 2029, reaching up to 7,9 billion (Pelchen, 2024; Statista, 2024b). Popular social media platforms such as TikTok, Instagram, Facebook, Reddit and YouTube have created algorithm-driven environments that encourage users to consume content continuously, leading to potential addictive behaviours. This phenomenon raises important questions regarding the effects of prolonged digital media use on mental health, productivity, and overall well-being.

The phenomenon of digital media usage is constantly on the news, with digital media's highly addictive and brain stimulating features being compared to hard drugs like cocaine (Laaninen, 2024). Algorithm-driven, unrealistic, political and harmful content seen in TikTok and Instagram has also gained its share of attention as people who are conscious of their digital media usage want to get rid of it in the hopes of healthier digital media usage habits and the movement is gaining momentum all over the world (Karhu & Kursi, 2024; Varila & Vesannummi, 2024). Politicians in the US and Europe have started to require a ban for TikTok due to espionage allegations (Milmo, 2024) and US Congress as well as European Commission have already suspended the use of the application due to cybersecurity reasons on their representatives' devices (*Commission Strengthens Cybersecurity*, 2023; *Text - S.1143 - 117th Congress (2021-2022)*, 2022). The pervasive effects towards young people and their developing brains have also been noted in the media (Haura & Jaskari, 2023), as well as possible negative implications of excessive digital media usage towards the building of new relationships and even fertility (Hyytinen, 2024).

Digital media has fundamentally altered how we communicate, consume information, and entertain ourselves. However, as the use of digital media becomes more common, also growing concerns about its impact on mental health, well-being, and social behaviour emerge. Recent research highlights the



cognitive effects of digital media, including its role in fostering addictive behaviours like doomscrolling, where individuals become overwhelmed by negative news or content due to prolonged exposure towards them (Hughes et al., 2024). The COVID-19 pandemic intensified these concerns, as people increasingly turned to digital platforms during isolation, leading to escalated rates of digital addiction (Meng et al., 2022).

One of the central problems associated with digital media is its ability to foster habitual use that can become addictive. Users may rationalise their behaviour by citing the benefits of social interaction or entertainment, but the constant interaction with digital media has been shown to disrupt sleep, attention spans, and emotional regulation (Korte, 2020). Furthermore, digital media features such as notifications which are designed to capture attention and bring users back to platforms, have been identified as a major cause of compulsive checking behaviour, leading to fragmented focus and reduced productivity (Kushlev et al., 2016; Pielot et al., 2018).

The concept of digital addiction has gained prominence as digital platforms increasingly influence users' daily lives, with compulsive use leading to consequences similar to substance addictions. In 2018 The World Health Organization (WHO) has formally recognised addiction to digital technology, as a global issue that can interfere with personal and social functioning (ICD-11 for Mortality and Morbidity Statistics, 2018). In this context, digital addiction is characterised by symptoms like withdrawal, increased tolerance, and continued use despite negative consequences (Diagnostic and Statistical Manual of Mental Disorders, 2013). The addictive nature of digital media is not accidental, as platforms use personalised algorithms, short video formats, and endless scroll features to sustain user engagement (Bhargava & Velasquez, 2021). These design elements can foster compulsive use and have parallels to mechanisms seen in gambling disorders.

The purpose of this study is to explore the reasons behind digital media use, the addictive properties of digital media platforms, and the consequences of excessive use on well-being. While previous research has established the potential harms of excessive digital media use, there is still a need to understand how individuals rationalise their behaviour, particularly in light of growing public and political concerns about the pervasive impact of digital media. Understanding the psychological mechanisms that drive digital addiction and how these impact in daily life is key to developing interventions and promoting healthier digital media usage habits.

This study is also timely given the rise in digital detox movements, where individuals consciously attempt to limit their use of digital media to regain control over their time and well-being as discussed in recent studies (Schmuck, 2020) and media (Karhu & Kursi, 2024). As governments and institutions begin to acknowledge the risks of excessive digital media use, whether through restrictions on platforms like TikTok or through public health campaigns, there is a growing societal need to address the balance between digital connectivity and mental health.

Given the complex dynamics between digital media use, addiction, and well-being, this study aims to explore the motivations behind digital media usage, the psychological mechanisms driving addiction, and the perceived impacts on users' lives. This study aims to answer to the following three primary research questions:

- How do users explain the use of the digital media to themselves?
- In what ways does the use of digital media affect users' lives?
- According to the users, what causes addictiveness towards digital media?

To answer these questions, the study adopts a mixed-methods approach, combining qualitative data from daily journals, interviews with participants, and autoethnographic observations from the author of the study. The qualitative data offers rich insights into participants' lived experiences with digital media, revealing how they perceive and interact with it on a daily basis. The autoethnographic component adds depth to the analysis by providing a reflexive account of the researcher's own experiences and behaviours regarding digital media usage.

The results of this study will contribute to a deeper understanding of the psychological and emotional dimensions of digital media use. By identifying the reasons for compulsive behaviour, the impacts on well-being, and the addictive design elements of platforms, this study seeks to provide valuable insights especially for individuals, but also to policymakers and companies developing digital media platforms. The findings will inform ongoing discussions about how to balance digital media use with maintaining mental health and productivity, as well as providing practical recommendations for promoting healthier digital media engagement. The study aims to bridge the gap between the perceived benefits and the potential harms of digital media, offering strategies to mitigate the negative impacts of this pervasive phenomenon, while offering valuable insights on how to enjoy the use of digital media in a healthier way.

## 2 THEORETICAL BACKGROUND

### 2.1 Literature search methods

For this literature review, Google Scholar, JYKDOK and ChatGPT plugin Consensus were used to find the relevant literature. Foremost JYKDOK was used because most articles are behind a paywall and JYKDOK has a free proxy access for the University of Jyväskylä. Same JYKDOK search queries were then used in Google Scholar in order to make sure if there were some articles missing from the JYKDOK database. If Google Scholar would find new articles, then these would be retrieved from JYKDOK database based on the article name.

Literature search was conducted using search queries related to the topic to be addressed. First, articles related to the topic were searched from JYKDOK using a query that contains just the topic to be addressed, for example “doomscrolling”. Then, the first 20 search results were scanned based on the title of the article and those that seemed relevant were opened and the description was read. The JUFO-rating of the articles would also be checked in this phase, as only articles with a rating above 1 in the 0 to 3 scale would be accepted as study material. This method assures, that all of the articles used in this literature review have been peer reviewed and published in prestigious conferences and journals of the field.

If the description of the article seemed relevant after assuring the JUFO-rating of the article, it would then be downloaded and uploaded to the AI Drive cloud storage for further processing. If the first 20 search results seemed to be lacking hits for the search query, then the next 20 results would be addressed in the same manner. The same query would then be used in Google Scholar to see if JYKDOK is missing some articles, and the relevant ones not found earlier would be uploaded to AI Drive as well. After this, the articles that were moved to AI Drive would be quickly analysed using ChatGPT tool PDF AI PDF. After the brief analysis of the articles retrieved this way, the relevant ones would then be sorted in folders by topic within AI Drive based on their relevance waiting for

further processing and deeper analysis. If the article seemed irrelevant after the brief analysis, they would then be moved to a dump folder instead.

Next step would be to review and read the retrieved and sorted articles. If the amount of chosen articles inside the sorted folder was less than five, then further search queries would need to be done. This was done after some writing and review of the articles to get deeper understanding of the topic. Base queries used to gather the literature for this review are: “digital media”, “doomscrolling”, “notifications”, “digital addiction”, “digital addiction notifications”, “social media addiction”, “internet addiction”, “gaming addiction”, “internet gaming disorder”, “internet gaming addiction”, “cybersex addiction”, “smartphone addiction”, “online and video game addiction”, “digital detox”. Follow up queries would contain the main keyword, e.g. “doomscrolling” and a follow up sentence to narrow it down. An example of a such search query would be “doomscrolling OR digital addiction”. If queries executed this way would not achieve the wanted results, then ChatGPT Consensus plugin would be utilised to fill the gaps.

Consensus ChatGPT plugin was used as it allows to find research articles with the help of an artificial intelligence (AI). According to the plugin information, the Semantic Scholar database, from where Consensus fetches its papers, has over 200 million academic papers fetched across the internet, making it one of the largest academic information databases (Consensus, 2022). Consensus ChatGPT plugin differs from more traditional search engines as it allows to find articles with the help of an AI. Therefore, Consensus allowed to fill some search gaps as in most cases it would retrieve the same articles already found earlier from Google Scholar or JYKDOK, but in addition Consensus would have its own database to search the information. In addition to finding a broader array of articles, Consensus allowed to search articles using AI prompts instead of using search queries. This allowed it to find some articles that did not have the search query defined words or phrases in the title or description of the article. Here is an example prompt used in this research with the Consensus ChatGPT plugin, which would return ten most relevant articles related to the topic of digital addiction, based on the heading and the description of the article:

*Find 10 scientific articles, which address the topic of digital addiction.*

## **2.2 Literature review methods**

Literature review was conducted utilising AI-powered tools to efficiently go through vast amounts of literature. ChatGPT 4.0 and 4o with PDF Ai PDF plugin was used to cross analyse multiple articles simultaneously. AI Drive cloud storage was used to organise and store the research articles. These tools were chosen because they work seamlessly together and allow the researcher to focus on the research and its cognitive processes, saving time from the article comparison and data storage while leading to a more reliable and valid study results.

The PDF AI plugin significantly sped up the analysis phase of the study, as it saved time that would have been spent reading documents to find relevant information, allowing more time for writing and analysing the data. This plugin was used with AI Drive cloud storage to store and organise the research articles. This cloud storage service was chosen because it works seamlessly with the PDF AI PDF plugin.

Same ChatGPT prompts were used for multiple articles when finding information with the PDF AI PDF plugin. The plugin would then connect to the AI Drive cloud and retrieve the articles defined within the prompt along with the research questions. ChatGPT would then execute the tasks defined in the prompt and find the requested information from the articles. After this, the answer provided by ChatGPT could be reviewed, as a reference to where the information could be found in the articles was also given. This method allowed the confirmation of the information's accuracy and facilitated independent research, as the documents could be reviewed from AI Drive. The same prompts were used for multiple articles related to the topic being addressed, allowing for a quick identification of which articles contained relevant information related to the question at hand. An example prompt from ChatGPT used while conducting the study:

*<https://myaidrive.com/3fdomwvopTJmHXwqCx2dKQh/Who-is-respo.pdf>  
<https://myaidrive.com/3E93L6mdFqVHYFejTPoKug/haselswerdt-.pdf>*

*What do the articles say about 2016 US presidential elections and echo chambers?*

In the example above two articles addressing the same topic were being compared with PDF AI PDF ChatGPT plugin. The plugin would fetch the two documents stored in AI Drive and then try to find answer to the question defined in the prompt.

In addition to the AI-powered methods described above, also manual literature review methods were being used. The main purpose of the AI was to find the relevant data from the articles and to reduce the required time spent towards reading and comparing the articles, while trying to find relevant information. The biggest work was verifying the presumably relevant information AI managed to extract, which meant reading through the sections of the articles which AI highlighted manually and finally writing the relevant findings down to implement the literature review of this study.

## 2.3 Digital media

To understand what digital media is, we must first take a look into the technology behind it, which is based on digital signals. In essence, digital signals are binary code consisting of 1s and 0s sent from one place to another. Because the signal is sent as code there is no loss of information through the process. Compared to analogue signals of different wave lengths used in radio or analogue TV for

example, the digital signals can be transferred endless times without quality loss (Irwin & Ihde, 2016, pp. 17-18). Another essential difference between digital technology and analogue technology is the two-way communication between the recipient and sender found in the digital technology (Ha, 2021). This difference of the signal quality and interactivity is the key element when it comes to the definition of digital media, which we all know and use daily, as it allows for more complex implementations compared to analogue media. Korte (2020) simplifies the definition of digital media to mean different forms of media available on digital devices that can be used to convey information, such as online content accessed through smartphones, tablets, and computers. It encompasses various forms such as social media, online games, and digitally delivered content like text, audio, and video. Therefore, digital media, in an essence, is two-way information exchange between a recipient and a sender. The interactive features, without any essential quality loss, are the reasons why the use of digital media has become so popular in modern society. Its usage is becoming increasingly accessible every day as infrastructure continues to develop across the globe.

To use digital media, one must have a digital device, tools and infrastructure capable of doing so. Devices are computers, smartphones, tablets, gaming consoles, TVs, wearable technologies like smart watches, and other digital devices that can receive and send digital signals and which the user uses to use the tools needed to create and use the digital content. Tools are therefore software and applications that are being used to create the digital content that is then being sent to the infrastructure, which consists of internet routers, cables, and other network devices creating a complex network connected to each other. This technology therefore can provide different kinds of connections between humans, between humans and devices and only between devices. (Irwin & Ihde, 2016, pp. 18-20, 22)

In this research context the interesting aspect of the digital media are the tools being used to create and spread the digital content across the network to other users. Today, these tools can vary from software, like games and applications to websites and social media platforms. All of the abovementioned can have some kind of social aspect built within, and in the context of digital media this is called social media (Bateman, 2021). Social media is essentially a digital media platform used to create and receive digital content to and from other users of the platform. However, Bateman (2021) and Beverungen et al. (2019) underline the far-reaching effects of social media that expand far beyond the platform where the content is being published. Social media has revolutionised how we interact with each other, though it also has its downsides, such as social media addiction and other negative side effects which will be discussed in-depth in the following chapters. On the other hand, it has also opened new doors to companies who are constantly competing of the consumers' attention.

Along with handy digital devices like smartphones and wearable smart devices, social media is playing a central role in a phenomenon of datafication of everyday activities, which is bringing a new data revolution. The new data revolution essentially means that every second, and every beat of our heart recorded

by our smart watch is being made to an object of calculation and commercialisation (Beverungen et al., 2019). As all digital media users know, this new data revolution is already in full force: we get targeted ads in our Instagram feed based on our points of interest, we might get ads on our favourite news site related to our past behaviour in digital media, such as latest web shops we have visited (Chen et al., 2023), or our smart watch connected personal trainer is telling us to take a rest day tomorrow based on our previous training record – and all of this is possible due to the features of digital media: binary codes sent from one place to another. The phenomenon of new data revolution has also raised questions due to privacy concerns and questionable methods companies use in marketing, such as data mining of users' information to personalise the ads (Clemons & Wilson, 2015).

Overall, digital media has not only expanded the possibilities for interactive communication but also fundamentally altered our understanding and experience of space as we know it. By integrating digital media into various aspects of life, from daily social interactions to ways of spending free time, corporate communications to architecture, a new paradigm of interactive, dynamic, and flexible spaces is emerging, reshaping human experience in the digital age. This development of digital media technologies has opened doors for new forms of social interaction and community building that transcend traditional physical and temporal limitations. As all things though, the emergence of digital media has its potential subjective downsides, which we will address in the following chapters. (Ha, 2021)

## 2.4 Digital addiction

In 2018 The World Health Organization (WHO) formally recognised addiction to digital technology, specifically digital gaming and / or gambling, as a global problem, highlighting the excessive online activity and internet use that leads to disturbed sleep patterns or insomnia, among other issues (ICD-11 for Mortality and Morbidity Statistics, 2018). According to Meng et al. (2022), the exacerbation of digital addiction can be largely attributed by the COVID-19 pandemic due to the drastic changes this global event brought to our daily lives. It forced individuals to isolate into their homes and work and study remotely, which significantly increased screen time and habitual usage of digital media. Additionally, the psychological stress and uncertainty induced by the pandemic led many to seek refuge in the digital world, exacerbating tendencies towards digital addiction as individuals struggled to cope with the new normal. Even though the pandemic has ended, the new norms it has brought to our work and leisure habits are here to stay, and so are the increasing negative effects of digital addiction. (Meng et al., 2022)

### 2.4.1 The definition of digital addiction

Digital addiction can be defined as an addiction caused by the use of digital devices or technologies, which leads to behavioural symptoms similar to any other addictive substance. The definition of digital addiction includes different subtypes of digital addiction, such as internet addiction, social media addiction, smartphone addiction, online and video game addiction, or cybersex addiction, all of which embody the core criteria of addiction (Karakose et al., 2023). These subtypes all have similarities when it comes to the definition, as all of them embody the core criteria of an addiction. They might have some activity specific nuance differences, such as the subject of the addiction, but the core criterion of an addiction has to be there in order to classify the activity as an addiction.

Digital addiction therefore means any type of behavioural addiction that results from the interaction between man and machine and can be characterised with the applied Diagnostic and Statistical Manual of Mental Disorders (DSM-V) core criteria based on the internet gaming disorder, or video gaming addiction, which is classified as official behavioural addiction (Diagnostic and Statistical Manual of Mental Disorders, 2013; ICD-11 for Mortality and Morbidity Statistics, 2024). The core criteria of internet gaming disorder can be arguably applied to other digital addiction subtypes because they share similar features and the digital addiction related activities are somewhat similar, happening in the digital realm (Paakkari et al., 2021). The core criteria of internet gaming disorder, and arguably digital addiction subtypes, according to DSM-V are as follows:

1. **Preoccupation** as the activity becomes a dominant activity of daily life.
2. **Withdrawal symptoms**, which can be typically described as anxiety, depression, sadness or irritability.
3. **Tolerance** – the need to spend more time engaged towards the activity.
4. **Loss of control.**
5. **Loss of interest to other hobbies.**
6. **Continued and excessive use** despite the knowledge of negative effects.
7. **Deception** towards family members, therapists or others regarding the activity.
8. **Escapism** to relieve negative mood.
9. **Jeopardization or loss** of a relationship, job, or educational or career opportunity

Five or more of these criteria must be met during a 12-month period for addiction to be diagnosed (Diagnostic and Statistical Manual of Mental Disorders, 2013). Therefore, digital media usage habits should be distinguished from digital media addiction, even though they may have similarities. The difference between the two lies in the strict criteria for addiction, while habitual digital media usage refers to the use of digital media that is routine but does not meet the required criteria for addictive use.



### 2.4.2 The negative effects of digital addiction on the brain

Ophir et al. (2009) highlight that digital media devices can integrate seamlessly with human cognition, potentially offering improvements to our memory, decision making and learning. However, as we become dependent on these devices, we might hinder our brain's natural ability to retain and process information. While digital media devices can reduce cognitive load by providing easier access to new information, at the same time they might also lead to cognitive overload if not managed properly. This cognitive overload in return might affect negatively to the ability to focus and process information effectively. Korte (2020) also adds that one might develop such a dependence on digital media devices, such as smartphones, that simply seeing them physically in our visual range causes cognitive load on our brain's working memory, thus hindering the ability to process new information.

The findings from Korte (2020) are quite interesting as only a visual cue can hinder the ability for demanding cognitive tasks. The same study investigates the digital media consumption effects on human brain, and it shows alarming evidence that excessive consumption of digital media has similar effects to brain functions as drug abuse. Especially social media usage is highlighted within the study, indicating that heavy social media use causes similar negative changes in our brain's grey-matter compared to other addictive substances or behaviours (Korte, 2020).

Grey-matter is important for our daily brain activity, and it is responsible for functions like control of movement, memory, and emotions. The amount of grey-matter in our brains does not increase after around eight years of age, but instead it densifies, leading to higher cognitive skills, and begins to slowly decrease from there. Therefore, grey-matter altering activities, such as heavy social media use mentioned in the study by Korte (2020), or drug abuse for example, are troublesome as they contribute to the decrease in cognitive and motor functions and in the long run can contribute to the development of brain function related diseases like Alzheimers disease and Parkinson disease, among others (Mercadante & Tadi, 2024).

As our brain develops until around 20 years of age, it is important to pay attention on how children and adolescents use digital media. Excessive screen time is linked to poorer language development and weaker comprehension skills in children. Also, excessive digital media use, especially digital media multitasking and switching between different applications has effect on higher cognitive tasks, leading to shorter memory span and increased distractibility, which in return may lead to poorer academic performance. Due to these findings and recent studies mentioned in the article by Korte (2020), the state of California in USA has announced a law in 2019, which restricts the use of smartphones at school (Bill Text - AB-272 Pupils: Use of Smartphones., 2019). In adolescents, the excessive use of digital media can effect on the way how adolescents interact socially. Even though social media can help to build and maintain social connections, it can also reduce face-to-face interactions and therefore potentially hinder the development of deeper social skills. (Korte, 2020)

As already discussed, the development of a digital addiction is fundamentally linked to dysfunction of brain reward circuits just like any other addiction (Karakose et al., 2023). Development of a digital addiction therefore leads to significant metabolic changes within the brain. Key players in this function are dopamine and serotonin, which are two monoamine neurotransmitters found in the brain. Dopamine is associated with the brain's pleasure and reward system and one of its core functions is rewarding one from activity which brings pleasure. In digital addiction, just like addictions in general, the dopamine pathways in the brain have been altered and the brain rewards one from repeating the addictive behaviour. This altering of the reward pathways leads to excessive repetition of the addictive behaviour as the perceived reward from the activity decreases, leading the brain to release less and less dopamine and wanting more of the addictive behaviour. This decrease in perceived pleasure from activity is generally known as building a tolerance, wanting more and more of the addictive behaviour. (Dresp-Langley & Hutt, 2022)

Serotonin is the other monoamine neurotransmitter present in the brain, which plays a crucial role in the development of digital addiction symptoms. Digital addiction alters the serotonin availability in the brain which contributes towards a disturbed circadian rhythm, which can lead to sleep disturbances. This is due to excessive artificial light exposure from digital devices during the night-time and lack of natural light during daytime. The condition is called asynchronisation, a disturbance of biological rhythms due to decreased activity of the serotonergic system. Asynchronisation is significantly correlated with varying degrees of medical conditions like depression, anxiety, and fatigue. (Dresp-Langley & Hutt, 2022)

### **2.4.3 Digital addiction and individual characteristics**

As discussed by Hawi & Samaha (2019), individual characteristics and traits play a role when it comes to tendency of developing a digital addiction. The Big Five Personality traits Extraversion, Neuroticism, Conscientiousness, Agreeableness and Openness to experience seem to predict digital addiction. Especially individuals with high Agreeableness or Openness traits seem to be more prone towards developing a digital addiction due to individuals with these traits typically being more open towards new experiences. On the contrary, low Conscientiousness trait might lead to digital addiction because of low self-discipline and proneness towards impulsiveness. Neurotic individuals have a tendency to experience negative emotions, which might lead to excessive use of digital platforms as an escape mechanism for emotional distress. According to Hawi & Samaha (2019) the high Extraversion trait only links explicitly towards a digital addiction subtype, internet addiction.

Men and women have different kind of tendencies towards digital addiction. Studies by Hawi & Samaha (2019) and Darvesh et al. (2020) suggest that men are more susceptible to develop a video gaming addiction whereas women seemed to be more prone towards social media addiction. This gender difference can be explained by typical character differences between men and

women: men are typically more competitive and achievement-oriented while women have a tendency for social interaction and relationship maintenance. (Darvesh et al., 2020; Hawi & Samaha, 2019)

Age is also a significant factor when it comes to the incidence of digital addiction. Younger individuals are more prone towards developing a digital addiction compared to older generations who haven't spent their whole lives with a digital device and aren't that used to using them (Meng et al., 2022). This indicates that the heavier use of digital media and digital devices by adolescents and young adults is directly linked towards the prevalence of digital addiction.

#### **2.4.4 Regional differences in prevalence of digital addiction**

In addition to the individual characteristics and traits mentioned the previous chapter, Meng et al. (2022) highlight the connection of socioeconomic and cultural status to digital addiction. Eastern Mediterranean region indicate culture and infrastructure related factors that contribute to higher engagement with digital media. Conversely, European and American regions indicate lower prevalence rates towards digital addiction, except for game addiction, which suggests that these areas have different digital media consumption patterns. Also, the access to digital health resources or alternative (offline) entertainment options these areas have can affect the differences in these observations.

The study by Meng et al. (2022) highlights that individuals from countries with low to mid-low income levels exhibit a higher burden of digital addiction. These findings point toward a conclusion, that digital media can be perceived as a form of escapism in lower income regions due to lack of alternative entertainment or social engagement options. Thus, socioeconomic status appears to affect the prevalence of digital addiction especially amongst those of the lower income class. Therefore, it can be argued whether this is the case in country specific macro-regions as well, as people with higher wealth and income have access to broader range of entertainment options compared to lower income citizens.

Fortunati et al. (2015) point out that macro-regions within European countries have a significant, albeit varied, influence on smartphone usage. This reflects the economic, social, and cultural differences at the macro-regional level affecting smartphone use patterns. With these findings, combined with the ones by Meng et al. (2022), it seems that smartphone usage patterns and digital addiction prevalence are related to the socio-economical background more widespread across the globe, not only in low to mid-low income level countries.

## **2.5 Types of digital addiction**

### **2.5.1 Internet addiction**

Internet addiction refers to compulsive and excessive use of internet, which significantly interferes with daily life. As the world becomes more and more

dependent on the usage of internet, also the relevance of internet addiction increases, and it has already become a major public health problem. The definition of internet addiction can overlap with other digital addiction subtypes if the activity of the addiction happens in the internet. For the behaviour to be classified as an addiction, it must fulfil the addiction specific characteristics listed in chapter 2.4.1. (Alimoradi et al., 2019; Karakose et al., 2023)

There are several causes for the development of internet addiction. As already mentioned, neurobiological factors, personality traits and psychological factors as well as environmental and situational factors may affect the development of an addiction. Internet can be seen as a way of escapism from real world problems or negative feelings. Also lack of social support network outside of internet can be the root problem of the internet addiction. These factors combined contribute to the development of internet addiction. (Alimoradi et al., 2019)

Internet addiction influences negatively with sleep patterns, as the prolonged usage especially in the nighttime interferes with the serotonin circuits of the brain. Therefore, the development and upkeep of healthy sleep patterns, such as not using smartphone in bed or during nighttime before going to sleep, should be prioritised in order to cope with the negative symptoms. The importance of this is even further highlighted with younger adults, as the brains are still within their development phase as discussed in chapter 2.4.2.

According to Alimoradi et al (2019), the prevalence of internet addiction in populations ranges from 0.3% to 30.1% depending on geographical and social factors. In Europe, the prevalence of internet addiction in general populations ranges roughly between 2% and 18.3% (Alimoradi et al., 2019). Even though the estimates are broad, the prevalence of internet addiction should not be taken lightly, as it is likely to become even more common as the world continues to develop digitally.

### **2.5.2 Smartphone addiction and nomophobia**

Smartphone addiction refers to an addiction where the use of a smartphone becomes excessive and compulsive, affecting negatively upon other aspects of life. The definition share similarities to other digital addiction subtypes already described, but it is also linked to a physical object: the smartphone. The ease of access of a smartphone is just what makes them so addictive, as the phone is in our pocket or at least within our grasp at all times. Just realising that the phone is not where one thought it to be can cause anxiety and compulsive behaviour to find it at all costs. This is called nomophobia, or no mobile phone phobia (Bhattacharya et al., 2019). These symptoms can be the early signs of an incipient addiction. As smartphones are physical objects that allow the use of digital applications, they can also act as a bridge towards developing other digital media addictions. (Yu & Sussman, 2020)

As mentioned in chapter 2.4.2, just the visual cue of a smartphone can lower our cognitive capabilities, impairing academic or work performance for example. Also, mental health issues such as stress, anxiety and depression are commonly addressed with the excessive smartphone usage. In addition, social relations can

suffer from smartphone addiction as the overuse may lead to isolation and reduced face-to-face interaction. Since smartphones are physical objects, they can also cause physical health issues, such as neck, shoulder and / or wrist pain, blurred vision and sleep disturbances and the excessive use might even lead to dangerous situations if used while in traffic. Due to this, it is generally forbidden to use smartphones whilst driving. (Yu & Sussman, 2020)

A study by Wilcockson et al. (2019) suggests that the excessive smartphone use may not meet the criteria to be classified as an addiction similar to substance abuse. The study investigated the effects of 24-hour smartphone abstinence on mood, anxiety, and craving. It found that while craving levels significantly increased during the abstinence period, mood and anxiety were largely unaffected. These findings suggest that although people develop a craving for their smartphones when deprived, this behaviour does not mirror the same mood and anxiety changes typically seen in substance withdrawal. (Wilcockson et al., 2019)

While smartphone addiction shares many similarities with other digital addiction subtypes, it can be distinguished with the physical object and portability, along with the connectivity of the smartphone, which makes it so addictive and prone to overuse. Despite its unique characteristics, it is still argued whether smartphone addiction is a distinct condition or a manifestation of other digital addictions, such as internet addiction or social media addiction. This is since a smartphone itself is not that addictive – it is the applications that cause the addiction. (Yu & Sussman, 2020)

### 2.5.3 Social media addiction

Social media addiction refers to a behavioural addiction where social media platform usage becomes excessive and compulsive. It shares the same core criteria of an addiction mentioned in chapter 2.4.1. Typical to social media addiction is that the addiction interferes significantly with daily life as the virtual reality of the social media platform becomes more important compared to real life responsibilities and social engagements. Just like other behavioural addictions, also social media addiction can lead to various psychological and social problems such as depression, anxiety, low self-esteem, social isolation, and poor academic or work performance. (Bhargava & Velasquez, 2021; Paakkari et al., 2021)

Social media platforms are typically designed to be as addictive as possible by engaging with the users of the platform as much as possible. Bhargava & Velasquez (2021) introduce several features and design elements, which are being used to increase user engagement and to make the platforms more addictive, thus leading to inconspicuous operant conditioning where voluntary behaviours are being modified with the addition or removal of stimuli. Key features that most social media platform utilise today are:

1. **Unpredictable and intermitted reward system**, similar to slot machines. This feature employs random rewards to users, which makes the user experience more engaging and addictive.

2. **Reciprocity and social validity** with features like likes, comments and shares allows to leverage users' desires for social validation. This encourages the platform users to engage more and more with the platform in order to achieve even more validation.
3. **Lack of natural stopping cues**, such as pagination. Modern social media platforms are built to utilise endless scroll feature, eliminating natural stopping cues. This feature allows the platform to keep users engaged continuously for even longer periods of time.
4. **Adaptive algorithms**, that are tailoring the content based on the individual user feedback, which is being gathered by the usage of the platform. The main goal of these algorithms is to tailor the content based on the individual feedback for the user to spend more and more time on the platform.
5. **Exploitation of psychological vulnerabilities**. As mentioned in chapter 2.4.3, particularly individuals with low self-control or higher levels of neuroticism are vulnerable towards becoming addicted. Social media companies exploit these vulnerabilities because modern society relies heavily on the internet. (Bhargava & Velasquez, 2021)

#### 2.5.4 Gaming and gambling disorder and video gaming addiction

Online or offline gaming and gambling addictions are internationally recognised non-substance related disorders, which have their own disease classifications in the International Classification of Diseases (ICD-11). They are the only two formally recognised addictive behaviour related disorders with disease classification. Both gaming disorder and gambling disorder have two subtypes of addictions which are related to the nature of the addiction: Online and offline. The nature of the action (predominantly online or offline) is the only differentiating factor in the disorder - online and offline disorders don't differ in any other way. In everyday language, the gaming disorder may also be called video gaming addiction. ICD-11 (ICD-11 for Mortality and Morbidity Statistics, 2024) describes addictive behaviour related disorders as follows:

Disorders due to addictive behaviours are recognizable and clinically significant syndromes associated with distress or interference with personal functions that develop as a result of repetitive rewarding behaviours other than the use of dependence-producing substances. Disorders due to addictive behaviours include gambling disorder and gaming disorder, which may involve both online and offline behaviour. (ICD-11 for Mortality and Morbidity Statistics, 2024)

Central to both gaming and gambling disorders is their significant interference with personal functions, as they take precedence over other important interests and activities in daily life. The diagnosis of the disorders also includes an impaired control over the gaming or gambling behaviour, and that the repetitive behaviour typically has had to continue over 12 months for it to be clinically diagnosed. (Darvesh et al., 2020; ICD-11 for Mortality and Morbidity Statistics, 2024)

A rapid scoping review towards the prevalence of gaming disorder (GD) and internet gaming disorder (IGD) by Darvesh et al. (2020) highlights three age groups which have a differentiating prevalence of the GD. The study divides population as follows: children aged 0-19, adolescents aged 10-19, and adults aged 18 and above. The study found out that GD prevalence amongst the two younger age groups was between 0.26 and 38.00 percent. In adult population the prevalence was even higher ranging between 0.21 and 55.77 percent. The findings are somewhat surprising as adults seem to have the highest prevalence of GD. These findings have to be interpreted critically however, as the authors of the study emphasise that the study methods used in the studies that were analysed differ drastically. (Darvesh et al., 2020)

Gao et al. (2022) studied the prevalence of IGD amongst adolescents aged between 8 and 18 years, and young adults aged between 18 and 28 years. The findings were similar to those of Darvesh et al. (2020). Adolescents had IGD prevalence of 8.8% whereas adults the prevalence was 10.4%. These findings indicate that the slightly higher prevalence of IGD in younger adults compared to adolescents might be related to the increased autonomy that typically comes with adulthood. Thus, it can be argued that IGD and similar disorders and addictions are influenced by one's access to digital environments alongside with other developmental and social factors, as already discussed in previous chapters. (Gao et al., 2022)

### **2.5.5 Cybersex addiction**

Cybersex addiction refers to a broad range of online sexual activities, not only limited to pornography consumption. In addition to pornography consumption, other activities related to cybersex addiction include the usage of online sex shops, engagement in sexual education or information sites, search for sexual contacts and utilisation of sex work related services. The core criteria of digital addiction discussed in chapter 2.4.1 also apply to cybersex addiction. (Snagowski & Brand, 2015)

According to Snagowski & Brand (2015), individuals with cybersex addiction seem to display tendencies to either avoid or approach pornographic stimuli. This indicates that individual sensitivity towards sexual excitation is related to the likelihood of developing a cybersex addiction, as the heightened arousal reinforces the addictive behaviour. The combination of high sexual excitation and problematic sexual behaviour therefore creates an accumulating effect, which in return increases the risk of developing the addiction. These factors driven by the neural reward mechanisms introduced in chapter 2.4.2 amplify the progression of cybersex addiction. (Snagowski & Brand, 2015)

## 2.6 Digital detox

Digital detox refers to conscious disconnection from digital media for a defined period (Schmuck, 2020; Wilcockson et al., 2019). This timeframe of disconnection can vary depending on individual preference or goal, which can be designed to monitor and limit the usage of digital media. Digital detox can be implemented with the help of specific applications, which monitor and limit the application usage on the user's device. These types of tools are in-built to modern smartphone operating systems as well. (Schmuck, 2020)

The study by Schmuck (2020) found out that conscious efforts to reduce digital media usage are correlated to higher levels of well-being compared to users who do not make efforts to control their excessive use of digital media. The participants of the study included young adults aged between 18-35, as this group has high usage rates of digital media, especially social media, they are susceptible to problematic digital media usage and the young age of individuals means that they are still in developmental stage when it comes to self-regulative mechanisms. The study indicates that excessive use of social media is correlated with smartphone addiction, which in turn is negatively correlated with well-being of the individuals. The research applied a concept of self-regulation, which posits that behaviours are controlled and moderated through self-awareness and goal setting. (Schmuck, 2020)

The findings by Schmuck (2020) clearly highlight the facts that digital media can have highly pervasive effects upon variable aspects of life, including well-being. However, conscious digital detox attempts seem to be effective when it comes to declining the negative effect of excessive digital media usage, leading to more responsible and conscious usage of digital media. Thus, it can be concluded that digital detox efforts and digital detox applications are valuable tools to prevent problematic digital media usage and maintain well-being by enhancing self-regulation and awareness. (Schmuck, 2020)

## 2.7 Doomscrolling

Doomscrolling can be described as a behaviour especially related to social media or other similar news feeds, where users constantly focus on negative things related to crises, disasters, and tragedies in their news stream (Hughes et al., 2024; Satici et al., 2023; Shabahang et al., 2023; Sharma et al., 2022; Taskin et al., 2024). This behaviour received an increased public attention due to the outbreak of the COVID-19 pandemic, even though doomscrolling has been a phenomenon as long as there have been social media that allows for the scanning of negative news (Hughes et al., 2024). By nature, doomscrolling is an engaging, compulsive browsing of social media, where the user focuses specifically on current news with negative connotations. This behaviour may start with the user's tendency to focus on negative news. These tendencies include vigilance, uncertainty, and



anxiety (Sharma et al., 2022). The tendencies can be strengthened by individual factors discussed in chapter 2.4.3, as well as technological factors, such as algorithmic recommendations and endless news streams. In addition, social contexts, such as natural disasters or political turmoil, can positively influence the emergence of the phenomenon. (Hughes et al., 2024; Sharma et al., 2022)

Typically, social media users start doomscrolling because they want to keep up to date with current, mostly negative affairs, which can be related to crises or other similar big things appearing in the media. However, the use of social media develops into compulsive and excessive browsing of news feeds, which often starts unintentionally, and therefore doomscrolling can be linked to a social media addiction. People with lower self-discipline and anxiety are prone to the phenomenon. Even if information is sought to alleviate anxiety, the behaviour affects anxiety negatively. (Hughes et al., 2024; Sharma et al., 2022)

A study by Olmstead (2016) found out that taking a mental break from work is the most common reason to use social media during a workday. This suggests that doomscrolling may be something employees engage during a workday. Because doomscrolling affects the mood negatively, it causes additional cognitive load to the brain, which likely contributes to the loss of cognitive as well as emotional resources which could be used at work (Hughes et al., 2024). Therefore, engaging doomscrolling during a workday can be highly exhausting, which can affect negatively upon perceived energy levels, resilience, and pride to one's work, leading to worse work engagement. Low work engagement on the other hand leads to worse performance at work and lower levels of general well-being. According to Hughes et al. (2024), work engagement can be described as a key workplace resource, which can be drained by doomscrolling due to the negative effects on cognitive processes. Thus, it can be concluded that doomscrolling has negative effect on the cognitive functions also outside the workplace. For example, students taking mental breaks during their studies to scroll through negative news in their social media feeds predispose their brain to this excessive cognitive load, thus hindering the ability to solve complex academic problems.

Doomscrolling should be distinguished from non-problematic or "normal" social media news feed consumption, even though the normal usage can become problematic too, as described in chapter 2.4.1. The key factor to differentiate doomscrolling from the normal usage is the tone of the news one is being exposed to. The news which user is focusing are mostly negative in the context of doomscrolling and this is the key difference. Recent study by Buchanan (2021) found out, that even a slight exposure to negative news on news feeds can have negative emotional consequences and lead to feelings of anxiety and depression. These findings highlight the fact that the consumption of digital media news feeds alone is not necessarily problematic. It can, however, become a problem when one starts to excessively focus on negative news, or when the time spent on the activity spirals out of control.

Ultimately, the best way to avoid the negative consequences of excessive consumption of negatively toned news and the development of a doomscrolling habit is to be aware of one's news consumption patterns and try not to expose

towards this kind of content (Buchanan, 2021). This does not mean that the news one should read should be only positive, but it instead highlights the fact that the algorithms of these popular social media platforms seem to favour content, which is the most engaging or the most appealing to the user creating so called “echo chambers” where users engage in content similar to their point of view (Guo et al., 2020; Haselswerdt & Fine, 2024). In the context of doomscrolling the echo chambers can build a snowball effect as the algorithm keeps proposing similar negative news to the user with similar audience as well. Therefore, by blocking such algorithm proposed negative content from the social media news feeds one can minimise the unwanted content shown, thus leading to less negative emotional consequences. For example, in Instagram there is an option to manually hide unwanted content from one’s news feed and the algorithm should not propose similar content, as long as the user does not start consuming it once again.

Studies by Guo et al. (2020) and Haselswerdt & Fine (2024) both mention echo chambers playing a significant role during the 2016 US presidential election discussion development in Twitter, where algorithms created filter bubbles showing the platform users only content which was related to their own political beliefs. These findings underline the fact that especially social media platforms and their algorithmic recommendation of content can emphasise the development of discussion environments which are twisted or detached from reality. If these kinds of algorithmic recommendations are then added to the context of doomscrolling, the news feed can quickly fill up with extreme and narrow-minded misinformation, which can contribute towards the negative cognitive effects discussed in chapter 2.4.

## 2.8 Notifications

Notifications are visual cues, sound signals or haptic alerts, utilising the sense of touch, which are generated by an application or service, and which convey information to the user outside of the current object of attention (Leiva et al., 2012; Sahami Shirazi et al., 2014; Upshaw et al., 2022). Notifications are an essential part of smartphones, and they inform the device user about various system functions, such as the arrival of a message, phone calls, application updates, or remind them of upcoming events. Notifications can vary from silent alerts to those that actively capture the user’s attention with visual, audio and/or haptic signals. (Sahami Shirazi et al., 2014)

Notifications are important for the smartphone’s application functions and user experience, and they have been a staple feature in modern smartphones since they were first introduced by Apple in 2007. However, they also possess a negative effect on our cognitive abilities (Upshaw et al., 2022) and exacerbate symptoms of inattention and hyperactivity, even with individuals not clinically diagnosed with attention deficit hyperactivity disorder (ADHD) (Kushlev et al., 2016). The constant interruptions by notifications negatively impact on productivity, as they break the current flow state and focus of work or thought,

requiring time to regain that focus. Application notifications can also disrupt our focus in such a way that we switch from one app to another and discard what we were doing (Leiva et al., 2012).

A study by Pielot et al., (2018) found out that the amount of smartphone notifications has not drastically increased during the last few years. The study sampled 794,525 notifications from 278 smartphone users who were drafted from the Spanish population to reflect the gender and age distribution of this European country. The main findings of the study were that the communications related notifications like individual chat messages or group chat messages were found to be most important amongst respondents and these notifications got the quickest response time. Related to the study by Pielot et al. (2018), Fortunati et al. (2015) and Lopez-Fernandez et al. (2017) found that cultural factors of different countries play a significant role when it comes to the usage patterns of smartphones. Lopez-Fernandez et al. (2017) studied usage patterns across Europe and chose Spain and Italy to represent Southern Europe, where as Finland and UK represented the Northern Europe. Main differences between the regions were the usage patterns: Southern European countries used smartphones more on maintaining interpersonal communication whereas the chosen Northern European countries, especially Finland, had more widespread usage patterns consisting of professional and academic purposes and leisure time. Cultural differences of different countries therefore play a central role when it comes to smartphone usage patterns. However, in all countries participating in the study, the communication aspect was the most important feature of smartphone usage. Therefore, the notification related findings of Pielot et al. (2018) can be generalised to affect European smartphone users: communication related notifications have a quick response time and high priority.

Especially communications related notifications can boost smartphone related compulsive behaviour, because these notifications seem to distract the smartphone user from other activities more frequently compared to other notification types (Pielot et al., 2018). This compulsion to react towards communication related notifications seems to be connected to fear of missing out (FOMO), which can be caused by a habitual tendency to react to these types of notifications (Kushlev et al., 2016). As addressed in chapter 2.4.1, the formation of a habit is not far away from an addiction. Even though one might have FOMO related reasons to check their phone for updates, it can also trigger feelings of depression and anxiety due to interruptions on whatever other activity one was focused on before receiving the notification. (Pielot et al., 2018)

Upshaw et al. (2022) & Kushlev et al. (2016) suggest that all notification types have an impact to the brain, as all notifications have pervasive influence on brain activity patterns associated with attention and cognitive control even when not actively interacting with the device. These findings, paired with the brain function-related findings by Korte (2020) mentioned in chapter 2.4.2, it can be suggested that the smartphone as a whole is highly influential towards the brain functions: only the visual influence of a smartphone alone lowers the cognitive capability of the brain and so do notifications that associate with it.

### 3 METHODOLOGY

This study deploys a mixed-method strategy, utilising both qualitative and quantitative research techniques (Bryman, 2006). Qualitative research methods are used, because the extraction of relevant data related to research questions requires interviewing and observation of the participants of this study. Generally, qualitative research methods enable researchers to study social and cultural phenomena within its natural setting (Myers, 1997). Therefore, the research setting of this research dictates the use of qualitative research methods. Quantitative methods are used in conjunction with the qualitative methods as this allows for method triangulation to ensure a richer and more credible analysis of the data (Carter et al., 2014). Mixed methods approach also allows to complement the results obtained from the research methods, enhancing validity of the study (Bryman, 2006). As this study has a small sample size of  $N=6$ , the usage of quantitative techniques alone would not provide credible and generalisable results. Thus, the qualitative methods used in the study play a central role in the data collection, while quantitative methods are used to complement and develop the findings in order to refine and adjust the analysis of the qualitative data (Bryman, 2006).

The research methods of this study consist of self-observation by the author during a two-week research period using an autoethnographical approach, as well as interviews and daily diary entries submitted by the participants of the study to gather both qualitative and quantitative data. While autoethnography alone relies heavily on the researcher's perspective, the inclusion of participant diaries adds depth to the study by providing complementary perspectives on digital media usage through mixed-method approach. Autoethnographical research method was chosen, because it allows the researcher to immerse themselves into the studied phenomenon, leading to more richer and nuanced insights of the phenomena (Ellis et al., 2011), whereas daily diary method is a flexible tool for collecting rich data from the participants of the study related to personal events, feelings, beliefs and motives in a relatively unnoticed manner (Bartlett & Milligan 2020). The study's data collection method was structured into two key components:

1. **Participant diaries and interviews:** The study incorporates daily diary entries and semi-structured interviews with participants. The participants recorded their own reflections on their digital media usage during the research period, resulting to both qualitative and quantitative data. Interviews were conducted before and after the observation period to provide additional context and insights into their experiences.
2. **The researcher's autoethnographic self-observation:** The researcher's own digital media habits were closely monitored and recorded, focusing on their personal reflections on the changes and behaviours observed over the two-week period. This aligns with the autoethnographic tradition of using personal experience as a primary data source to gather qualitative data.

The semi-structured interviews provide flexibility, allowing participants to share their views and experiences through open-ended questions that could be adapted based on their individual responses. These interviews were conducted both before and after the two-week research period. The semi-structured format was chosen for its adaptability, enabling the interviewer to modify questions in response to the interviewees' answers, ensuring a more tailored and insightful conversation. (Myers & Newman, 2007)

The two-week research period consisted of two one-week periods, during which the participants and the author of the study would self-observe their usage of digital media in a natural usage setting, filling a daily diary of their feelings related to digital media usage. Two variables were introduced to the participants' natural usage settings, which were monitored over the two one-week periods. The variables were turning off notifications for certain applications and the deletion of certain applications. Notifications were turned off during the first week of the research period, and applications were deleted in the second week. These variables were added to align with the research goals of the study and to observe how the participants responded towards the stimuli through the daily diary entries.

Data of this study was analysed using a theory driven deductive thematic analysis. This method was chosen, because it offers proven and tried tools for conducting an in-depth analysis upon a phenomenon which consists of multiple perspectives and data from different participants (Nowell et al., 2017). A theory driven approach was chosen, because the research interest was to draw the themes for the analysis from the existing theory of this study. Before analysing any of the research data it was anonymised so that the participants can't be recognised from the answers. If there were still some recognisable elements left, for example a quote citing certain application only one participant had used, the name of the application was changed to a neutral, non-recognisable term. For the data analysis phase, a four-phase theme development process by Vaismoradi et al. (2016) was implemented in order to develop the four main themes and their respective subthemes of this study.

### 3.1 Autoethnography

Autoethnography is a qualitative research method that seeks to understand cultural experiences by systematically analysing and describing the researcher's personal experiences within a broader cultural context. It merges elements of autobiography, where the focus is on the self, and ethnography, where the cultural experiences of a group are explored. In autoethnography, the researcher's own lived experiences serve as the primary data source, enabling a reflective engagement with cultural practices, behaviours, and meanings. (Adams et al., 2014 pp. 1-2; Ellis et al., 2011)

One of the key features of autoethnography is its dual nature—it is both a product, in the form of the research output, and a process due to the reflective and interactive engagement with data collection and analysis. The researcher actively immerses themselves in the phenomenon being studied, not just as an observer but as an integral part of the cultural experience they seek to understand. This allows for a deeper, more nuanced insight into the phenomenon because the researcher's own emotional and social responses to the experience become part of the narrative. (Ellis et al., 2011)

In this study, autoethnography is one of the primary methods used to explore digital media usage. The researcher's personal reflections serve as a data source, allowing for an in-depth examination of their digital media habits over a two-week period. During this time, the researcher engaged in self-observation, documenting their own interactions with digital platforms and technologies using the same daily journal templates as the other participants of the study. This reflective process provided insight into how digital media is integrated into daily life and its broader cultural implications.

Autoethnography was chosen for this study because it allows the researcher to fully immerse themselves in the phenomenon under investigation. By reflecting on their own digital media habits, the researcher is able to generate more personal and emotionally resonant insights, while still connecting these experiences to broader cultural phenomena (Ellis et al., 2011). This method is particularly well-suited for capturing the nuances of personal experience and providing a deeper understanding of the researcher's relationship with digital media.

The method is flexible and adaptable, with the researcher's lived experience central to the data collection process (Adams et al., 2014 pp. 15-16). Through the autoethnographic approach, the researcher's self-reflection on their own digital media usage allows for the exploration of both individual and cultural dimensions of the phenomenon. While other methods, such as participant diaries and interviews, are also utilised in the study, autoethnography remains central to the exploration of personal experiences of the researcher. By focusing on the researcher's immersive engagement with the subject matter, this approach offers valuable insights into how individual experiences can reflect broader cultural patterns and norms.

### 3.2 Diary study

A diary study method is a flexible tool for collecting rich data from personal events, feelings, beliefs and motives in a relatively unnoticed way over a period of time. According to Bartlett & Milligan (2020, pp. 2-3) there are two types of diaries: solicited and unsolicited. Unsolicited diary refers to diaries, which are being kept voluntarily and no one is asking the diarist to keep one, whereas a solicited diary refers to diaries which are being kept for a particular reason, typically for research purposes. For this research, participants were asked to keep a solicited diary, particularly a time diary, related to their usage of digital media. In this research setting, the diary involves participants recording events related to digital media usage habits during a specified timeframe and at a certain time of the day, hence this diary type of this study can be classified as a solicited time diary (Bartlett & Milligan, 2020, pp. 2-6).

According to Janssens et al. (2018), a diary study allows to acquire valuable insights about psychological dynamics, which can't be obtained using single-administered questionnaires. The design of a diary study needs to be chosen according to the research needs. Jansen et al. (2018) list six items which need to be considered in the design phase of a diary study:

- **Research questions have to be specified**
- **Decision on the sampling design needs to be made:** e.g. the duration of the study and the measurement frequency
- **The number of items included in the diary have to be chosen**
- **A choice needs be made if participants answer the questionnaire in predefined or random time-points**
- **The assessment type has to be chosen:** momentary or retrospective
- **The amount of time participants are allowed to take to respond to the prompt and complete the questionnaire.**

The abovementioned six items by Janssen et al. (2018) were applied in the design of this study. Firstly, the research questions were specified at the very beginning of the study. Secondly, the duration of the diary study phase was decided to be two consecutive weeks with differentiating objectives and with daily diary entries. Thirdly, the number of items in the diary were carefully selected and evaluated with the help of random people filling out the diary. This was done in order to see that the diary answers to the wanted questions and to gather feedback related to the diary template prior to the actual data collection. Fourthly, it was chosen that participants answer the questionnaire at the same time of the day in order to build a habit for the answering of the questionnaire. Fifth step was to choose the assessment type and for this research a momentary type was chosen as we wanted to gather data from the same day the participants fill the diary. Lastly, participants were given instructions to fill the diary daily or if need be, they could fill it in a later time but were instructed to put an extra note of such to the diary entry.

### 3.3 Ethical considerations of the study

Research ethics are fundamental to the integrity of qualitative research, ensuring the protection of participants while maintaining trust and accountability. According to Fujii (2012) the ethical considerations in qualitative studies revolve around informed consent, confidentiality, minimising harm, and ensuring justice:

- **Informed consent:** A key ethical principle is respect for persons, which mandates informed and voluntary consent. Researchers must ensure participants understand the nature of the study, including any potential risks.
- **Confidentiality:** Confidentiality is crucial in qualitative research, where participants often share deeply personal information. Researchers must anonymise data and protect participant identities to prevent harm. In cases where revealing sensitive information could lead to risks, researchers must make careful ethical decisions about data publication.
- **Minimising harm:** Minimising harm is another core principle in qualitative research ethics. This includes preventing emotional or psychological harm, which can arise when participants discuss sensitive topics. Wiles (2012) emphasises the need for researchers to assess and mitigate risks throughout the research process, from data collection to dissemination.
- **Justice in participant selection:** The principle of justice ensures that participants are selected fairly, based on criteria relevant to the study rather than convenience.

This study aims for ethical execution throughout the research process, from data collection to the publication of the study. The participants of the study are being informed of the nature of the study as well as the potential risks associated with participating in it. Confidentiality is being taken care of as potential distinguishing factors of the participants and the data of the research is anonymised. Finally, the participants of the study are selected fairly based on the relevant criteria of this study. The participant selection criteria and the confidentiality aspect are further discussed in the following chapter.

### 3.4 Data collection methods

Data collection was carried out during a three-week data collection period in mid-July 2024. This data collection period consisted of two one-week research periods and half of a week prior and after the research period when the interviews were held. Seven individuals were initially interviewed to identify suitable candidates for this study. For the research period, six people were selected to participate in a practical research setting, in which they would use



digital media in a natural setting with differentiating variables for each research period week, while reporting their daily feelings related to digital media usage via daily journal. Five out of these six people completed the whole two-part research period and were finally interviewed when the research period had ended. In addition to the six selected original participants, also the author participated to the research period and answered same questions as the participants in an autoethnographical manner prior and after the research period.

The six participants of the research period represented students from Finnish universities, universities of applied sciences and office workers working in the fields of IT and digital marketing. All of the participants were Finnish citizens with Finnish as their native language and aged around 30 years old. This pool of participants was chosen because the goal of the study was to gather information about the usage habits of digital media in Finnish population aged between 25-35. This age group was chosen due to it being the typical timeframe where people transition from students to the working life in Finnish society. Also, this group uses a lot of digital media due to work or study related reasons in addition to their free time usage. Also, as the recent findings by Schmuck (2020) suggest, they are susceptible to problematic digital media usage and the young age of individuals means that they are still in developmental stage when it comes to self-regulative mechanisms. The number of participants was limited to six in order to keep the scope and timeframe of the study manageable.

Semi-structured interviews regarding digital media usage habits took place at the beginning of the research period. The body of the interview can be found in Appendix 1. The goal of these interviews was to map digital media usage habits and experiences towards digital media prior to the actual research period. Participant specific applications to be restricted during the research period were also chosen according to these interviews. The chosen applications were those which interviewees saw the most problematic, which sent the most notifications, and which had the most screen time. Typically, up to five applications were chosen to be monitored.

Participants to the research period kept a daily journal, of their daily experiences when they use digital media. The journal to be filled daily was a Google Forms query, which took about five minutes to fill each day. The research period was split into two one-week periods which had their own daily journals with differentiating questions related to the research period. These queries had a few simple "yes" and "no" questions, a scale from 1-10 regarding to the perceived happiness as well as multiple open ended questions requiring user to input their thoughts in text format in order to gather qualitative data. The queries also had automations in place where questions were revealed or discarded according to the user's input. The quantitative data gathered from 'yes' and 'no' questions was primarily used to guide participants towards appropriate qualitative questions in the daily journal. Later, during the data analysis phase, this quantitative data could also be used as filters to identify cause-and-effect relationships within the dataset. The numerical data related to perceived happiness was used to determine whether participants' and the author's perceived happiness correlated with

digital media usage. The primary focus and goal of these daily journals was to gather qualitative data on the participants' daily digital media usage and their feelings. Journal templates can be found in Appendix 2 and Appendix 3.

During the first week of the research period certain notifications of the six participants' and the author's smartphones were being turned off. Notifications to be turned off were chosen according to the interviews, which took place prior to the research period. The chosen applications were the ones participants of the study used the most, and which sent the most notifications. Up to five applications were chosen for this test. The goal of this research period was to find out how notifications affect to the lives of the participants, does this affect the usage habits of digital media and how they perceive their life quality when it comes to the digital media usage.

After the first week of the research period, a second one-week period took place. During this second phase, the applications of which the notifications had been previously turned off were removed from the five remaining participants' and the author's device. The goal of the second research period was to see if the subjects develop digital media withdrawal symptoms, how they replace the time slot which was earlier occupied by the usage of digital media and how the participants perceive their perceived life quality now when their favourite applications are no longer accessible.

Semi-structured interviews were also conducted at the end of the second research period to summarise and wrap up the research periods with the participants and to find out if the period had an impact towards their usage habits of digital media. Even though this qualitative information was also gathered during the research period in the form of daily journal entries, the interviews were deemed necessary in order to improve the validity of the study and to make sure that the participants did not forget to mention something during their daily journal entries. The interview body of the end survey can be found in Appendix 4, while the whole process of the study is described in Table 1.

Table 1 Phases of the data collection

Phase of the study	What was done in the phase
Initial interviews	Participants of the study were interviewed related to their digital media usage habits in a semi-structured manner. Based on these interviews, the applications which will be monitored were chosen. All six participants and the author completed this phase.
Research period 1	During the first week of the research period certain notifications of the six participants' and the author's smartphones were being turned off. Notifications to be turned off were chosen according to the initial interviews. Data related to participants' feelings was collected using Google Forms surveys which the participants and author independently filled daily, resulting to both qualitative and quantitative data. All six participants and the author completed this phase. Participant 6 indicated that they do not wish to continue for the second week of the research period.
Research period 2	The applications of which the notifications had been previously turned off were removed from the five remaining participants' and the author's device. Data related to participants' feelings was collected using Google Forms surveys which the participants and author independently filled daily, resulting to both qualitative and quantitative data. The remaining five participants and the author completed this phase.
End interviews	Semi-structured interviews were conducted at the end of the second research period to summarise and wrap up the research periods with the participants and to find out if the period had an impact towards their usage habits of digital media. Five participants and the author completed this phase.

## 4 EMPIRICAL FINDINGS

This chapter will discuss the empirical findings of the study, organised into five sub-chapters. The first sub-chapter discusses the data analysis methods used, followed by four sub-chapters that present the empirical findings from different data collection phases of the study. Firstly, the initial interviews, which took place prior to the two-week research period, are examined. After this, the findings from research periods 1 and 2 are presented. Finally, the findings of the end interview, which took place after the two-week research period, are presented. All original interview quotes have been translated to English, with the original Finnish versions available in Appendix 5. The research results are presented thematically, using four themes and their respective sub-themes developed for this study. The goal of this analysis is to find answers to the research questions:

- How do users explain the use of the digital media to themselves?
- In what ways does the use of digital media affect users' lives?
- According to the users, what causes addictiveness towards digital media?

### 4.1 Data analysis methods

The qualitative data of this research was analysed using a theory driven deductive thematic analysis, which is well suitable method for research involving large data sets consisting of multiple perspectives of different participants and it enables an in-depth interpretation of a complex phenomenon (Nowell et al., 2017). Deductive thematic analysis is driven by researcher's theoretical or analytical interests and the approach uses existing theories to guide the coding and theme development process (Nowell et al., 2017). The goal of the thematic analysis is to highlight key themes or issues within the data set revolving around the research questions and existing theory of the topic in order to provide explanation to the social reality through elucidation of a theme (Vaismoradi et al., 2016).

Themes for the thematic analysis were deductively created based on the theory and research questions of this study. According to Nowell et al. (2017), this approach is well suited for studies that are driven by the researcher's analytical and theoretical interests. In this study, the theory is closely related to the research questions, thus it is natural for the theme development process also revolve around the research questions and theoretical framework in order to provide more detailed analysis on the specific aspects of the data. (Nowell et al., 2017)

The process of creating a theme includes sets of techniques used to analyse textual data. To achieve this in this research, a four-phase theme development process by Vaismoradi et al. (2016) was applied (Table 2). The four phases of the theme development process by Vaismoradi et al. (2016) are: initialisation, construction, rectification and finalisation.

Table 2 Four phases of theme development in thematic analysis according to Vaismoradi et al. (2016)

Phase	Stages
<b>Initialisation</b>	Reading of transcripts and highlighting of meaning units; Coding and looking for abstractions in participants' accounts; Writing reflective notes.
<b>Construction</b>	Classifying; Comparing; Labelling; Translating & transliterating; Defining & describing.
<b>Rectification</b>	Immersion and distancing; Relating themes to established knowledge; Stabilizing.
<b>Finalisation</b>	Developing the story line.

In this study, the data of the interviews as well as the diary entries was first open coded and broken down into discrete parts which generated initial codes of the data. In Vaismoradi et al. (2016) four-phase model this would be the initialisation phase. After the initialisation phase, the theory of the study was revised, and the themes with their related sub-themes were developed based on the existing theory and the research questions of this study. After the development of the main themes, the initial codes were grouped firstly to six recognised main themes and the sub-themes were then created in conjunction with the initial codes and the existing theory. This was the construction phase of the four-phase theme development process. (Vaismoradi et al., 2016)

After distancing from the research, the third phase, rectification, led to a realisation that the developed themes had a lot of overarching similarities. This reflection led to combining two similar pairs of themes from the original six themes with their sub-themes resulting in four main themes and their now combined sub-themes. Finally, the codes of the themes were placed into relevant sub-themes. In the end, this rigorous process led to four main themes and their sub-themes. (Vaismoradi et al., 2016)

Finally, after developing the themes with their related sub-themes and placing the relevant codes into these sub-themes, the representation of the data was finalised. According to Vaismoradi et al. (2016) four-phase theme development process of thematic analysis, finalisation is the final phase of the process. In this phase, the research results were written, and the data was visualised in order to develop a storyline, which can be interpreted by the reader. The themes and their relative sub-themes which are utilised through the study to represent the findings are shown in Table 3.

Table 3 The four main themes and their sub-themes of this study

Main theme	Sub-themes and descriptions
Excessive use and self-perception	<ul style="list-style-type: none"> <li>- <b>Rationalisation of excessive use:</b> How users justify their prolonged engagement with digital media.</li> <li>- <b>Psychological mechanisms:</b> Cognitive and emotional strategies users employ to manage or ignore the negative impacts of their usage.</li> <li>- <b>Impact on self-identity:</b> The influence of digital media use on self-perception and identity.</li> </ul>
Digital addiction and addictiveness of applications	<ul style="list-style-type: none"> <li>- <b>Design features contributing to addictiveness:</b> Exploration of how specific features like infinite scroll, notifications, and personalised content algorithms contribute to addictive behaviours.</li> <li>- <b>Psychological and behavioural dependence:</b> How these design features foster psychological dependence and lead to observable addictive behaviours in users.</li> <li>- <b>Impact on daily life and habits:</b> How addiction to digital applications is reflected in users' daily routines, sleep patterns, social interactions, and overall perceived well-being.</li> </ul>
Digital media's influence on daily life and well-being	<ul style="list-style-type: none"> <li>- <b>Daily routines and behavioural changes:</b> How digital media disrupts or shapes users' daily tasks, routines, sleep patterns, and behaviours, including multitasking, reduced attention span, and altered communication styles.</li> <li>- <b>Emotional and psychological impact:</b> The emotional consequences of digital media usage, including the effects of doom-scrolling, exposure to negative content, and the broader psychological impact on perceived well-being.</li> <li>- <b>Blurring of online and offline communication:</b> The integration of digital media into users' physical and social environments, leading to a merger of online and offline experiences, and its impact on real-life presence and interactions.</li> </ul>
Effects of notifications	<ul style="list-style-type: none"> <li>- <b>Impact on attention and focus:</b> How notifications interrupt cognitive processes and lead to diminished attention spans.</li> <li>- <b>Behavioural responses to notifications:</b> Users' compulsive phone checking behaviour and the fear of missing out (FOMO) triggered by notifications.</li> <li>- <b>Notifications and usage patterns:</b> The role of notifications in reinforcing addictive behaviours and their impact on users' daily habits. Exploration of how notifications influence the daily lives of users.</li> </ul>

## 4.2 Initial interviews

Data discussed in this section was gathered before the two-week research period. This data was obtained from the semi-structured interviews. The author's autoethnographical data was obtained through introspection and perceptions of the digital media usage. Data is being analysed through the four themes developed for this research.

### 4.2.1 Average usage times and amount of notifications

Participants had varying estimates of their daily screen time. These estimates ranged between 1,5 hours up to 10 hours per day. However, the screen time estimates were highly related to free time spent at home as activities outside of home tended to decrease the screen time estimates. Users' smartphone usage by screen time data as well as the total amount of notifications and screen unlocks are being presented in the Table 4. These numbers were calculated using weekly averages obtained from the users' devices and represent data for one day.

Table 4 Participants' screen time, notification and screen unlock data prior to research period.

Participant	Estimate of screen time (h/d)	Actual screen time (h/d)	Amount of notifications per day	Amount of screen unlocks per day
P1	6-7	5,28	92	72
P2	4 - 4,5	4,09	163	191
P3	2	2,83	41	55
P4	1,5	2,04	203	65
P5	6 - 10	7,64	246	81
P6	2 - 2,5	2,99	31	38
A1	6	5,42	216	60

Participants reported varying levels of perceived happiness on the scale of one to ten, where one was equivalent to "unhappy" and ten was equivalent to "really happy". These estimates of perceived happiness ranged from between 6 to 10. The median value of the perceived happiness was 8 with an average score of 8 as well.

### 4.2.2 Rationalisation of excessive use

Four participants of the initial interview out of the six reported using digital media as a form of escapism. Two participants reported using digital media in order to relieve negative mood but felt quilt from the usage at the same time. These respondents also reported self-justification for the problematic use of digital media. Participant 2 justified digital media usage at the workplace as a way of resetting current mindset and to wind down. At the same time though, they felt quilt

for using digital media during the working hours. Participant 5 had similar experience with Participant 2, but in studies.

Yes, I have had that too, where even when I'm normally at work, I still end up scrolling the same way and getting stuck. (...) I want a kind of reset from everything else. (P2, 1)

A small escape from everyday life. I don't have a need to do any schoolwork or other obligations. It's easy to get stuck in it. (P5, 1)

Peer-influence and useful content like raffles in Instagram were also reported as justifying factors for digital media usage, though with these responses, the usage of digital media wasn't strictly seen as problematic by the respondents.

Probably Instagram in its own way. If I think about it, I only go there to look for giveaways, and that's the main thing. (P6, 1)

Participant 2 valued unstructured time spent on the phone:

Sometimes you really should do nothing, which is why this is a bit of a double-edged sword. (P2, 2)

All of the participants realised that there are negative effects in the usage of digital media. On the other hand, the positive effects of digital media outweighed the negative aspects in all of the interviews. However, participants had noted, that certain applications have mostly negative aspect upon their lives and had already started questioning the usage or taken measures to limit it. For example Participant 2 told, that they have set application screen-time limiter for Instagram. However, the time previously spent to Instagram had switched towards YouTube.

I've made a conscious decision to try to reduce my use of Instagram, but then that time has shifted to YouTube. (P2, 3)

Participants 4 and 5 had TikTok application installed, but both of them had inner struggle for the justification of this application. Participant 3 had TikTok previously installed but had since removed the application due to it being too addictive. Participant 3 also noted that they can never download the application again, due to it being too addictive. Participant 5 described digital media and especially the short videos being an easy way to get a "dopamine boost for their brain", referencing to a feeling of pleasure and joy these type of videos bring to them. This was also one of the major reasons they said to be using digital media.

I deleted TikTok back in the day because I got so badly hooked on it that I noticed that, (...) yeah, two hours just went by. (...) Even after I deleted it, I noticed that I had withdrawal symptoms, like I really wanted to watch TikTok. (P3, 1)

Well, I could definitely say about TikTok that I can never download it again. And I haven't downloaded it either. (P3, 2)



The brain needs dopamine, and TikTok gives it in small doses. But at the same time, the brain is rotting. I really can't justify using it in any way. (P5, 2)

All of the participants had difficulty defining happiness and saw digital media being one part of a larger set of things that contribute towards the perceived overall happiness. However, not all of the participants could describe how digital media contributes towards their perceived overall happiness. Participants 4 and 5 said that the usage of digital media doesn't make them happy or unhappy and that happiness builds from the other aspects of life. Participants 2 and 8 however highlighted the positive aspects of digital media, such as the ease of communication with friends, which contributes towards the perceived happiness.

Participant 5 justified the excessive usage with learning outcomes from digital media during free time. Especially short videos in Instagram and TikTok were named to offer this kind of entertaining yet somewhat educational content. On the other hand, though, they said that during working hours or when studying, they still use too much digital media, and time could be spent better. Therefore, the justification of excessive digital media usage to pursue learning outcomes falls short.

When I'm at work or studying, I spend less time on it because I have to do something else. Still, it feels like I spend too much time. I think it would make studying easier if I used it less. (P5, 3)

It's nice to know different things, a little bit about everything. TikTok and Instagram offer that. I have a thirst for knowledge; I constantly need to learn new, irrelevant information. (P5, 4)

### **Autoethnographical observations**

Author had similar experiences with many of the participants of the study. Especially the "dopamine boost" related to short videos, which Participant 5 described, is a familiar feeling, often associated with things that bring joy and these things are often also outside of digital media, such as eating something sweet, succeeding in sports or hugging a friend. Short videos do indeed offer these short bursts of joy, but they can also cause negative feelings if the videos have a negative tone to them. The negative feelings related to short videos are often associated with doomscrolling, when the continuous feed of videos no longer brings joy, but rather makes the mood worse and feelings of anxiety and stress surface. Also, the justification of certain applications, especially Snapchat, got the author wondering the causes behind the prolonged usage of the applications. These findings indicate that the autoethnographical observations made by the author are similar as the ones pointed out by the participants during the interviews. Therefore, the preliminary self-observations and the original motivation for starting this study, the wish to learn more about digital media usage and its effects on perceived well-being in oneself and others, point towards a clear conclusion: The

phenomenon of excessive digital media usage, where it is hard to justify both the excessive usage and the underlying causes behind it, appear to be quite common.

Snapchat... I can't really say why I use it. Maybe there's a desire to show my friends what I'm doing. (A1, 1)

### 4.2.3 Digital addiction and addictiveness of applications

Five out of the six participants of the interviews had negative thoughts when it comes to short videos and the endless scroll feature of the applications that favour this format. Instagram, TikTok and YouTube applications were noted having this type of endless video feed available. These participants reported this type of design feature being highly addictive and influencing upon multiple aspects of life. Participants 3 and 4 highlighted the algorithm of TikTok being highly addictive and highlighting content which the user engages the most. Participant 2 reported withdrawal symptoms from Instagram Reels usage that were being compensated with the usage of YouTube Shorts. They felt that they need breaks from their everyday routines and wanted to give their brain time to rest.

I've accepted and allowed it for myself (watching YouTube Shorts), because then I don't watch them (Instagram Reels) as much. I've also spent a ton of time watching other people's Instagram stories, so that's kind of dropped off completely, and when I watch short videos, they're there (on YouTube). (P2, 4)

Participants 1 and 2 mentioned digital gaming on their mobile devices being a current activity they spend time on. The games they played, however, were different. Both participants had a similar experience with mobile games: They had been playing the same game for many years and placed value upon their current achievements within the games. These participants justified the repeated usage of mobile games with said achievements, already invested time and games being a good way to spend time when they are bored. On the other hand, they also shared identical view of the games being mostly a waste of time, taking a considerable chunk of their daily free time.

The mobile game doesn't take much time, but after playing it for so long, it has become a compulsive routine. There's a difficulty in letting it go. Initially, it was fun entertainment with a group of fellow students, but since then, friends have quit, and I've been left with the habit. (P4, 1)

Participants 1 and 3 mentioned gaming on consoles or computer being a fun activity, which no other digital media can achieve. Participant 3 mentioned, that digital gaming is a periodical activity which is highly related to the release schedules of interesting games. Even though being a periodical and fun activity, they mentioned it being problematic as it would take control over their life for that time. Participant 1 justified gaming by the interactive aspects, that no other digital media can achieve. These observations indicate the highly addictive nature of gaming in overall, as the activity seems to displace free time from other important

hobbies. This is due to the unique interactive characteristics of the games, as Participants 1 and 3 describe.

Somehow, you just think about the usage of time differently. Exploring the game world is somehow fun in a different way. Playing is just a kind of a nice moment. (P1, 1)

### **Autoethnographical observations**

Author reported frustration with Instagram algorithm due to the algorithm recommended content, only wanting to engage with the content of the people they know. However, this feature led to situations where user would refresh the page in hopes of revealing content from the people they know. However, the algorithm would show content which it deemed engaging, thus eventually leading to aimless usage of short videos. Even though the application was different compared to one mentioned by participants 3 and 4 (TikTok), the algorithmic recommendation feature seems to be similar in both applications, offering users content which they engage the most.

The observation with Participant 2 regarding the shift from Instagram Reels towards YouTube Shorts was also similar with author. Author noted that the strive to reduce Instagram usage indeed led to increased time spent on YouTube Shorts, indicating that these two short video services have similar addictive features, such as algorithmic recommendations, endless scroll and the feeling of joy associated with the consumption of short videos.

Author observed similar reasons for mobile gaming as participants 1 and 4. Most importantly the time invested in the game caused the addictiveness in the behaviour as past achievements and the habit of gaming being a fun moment to spend time would positively impact towards the continuation of the behaviour. On the other hand, also in game rewards were important causes of addiction, as one would pursue these and the hope of getting new rewards the gaming session would continue longer than anticipated.

It feels like, since I've played that game for so long, I can't stop. It's maybe too easily accessible on the phone, and it feels like you can just have a quick gaming session anytime. It's a kind of a break, but you get so immersed in the game that more time passes than you originally thought. One game can last 30 minutes, and you might play several in a row, which makes the usage problematic. When time for other activities starts to run out, you just keep on playing because it feels like you don't have time to do anything else. (A1, 2)

#### **4.2.4 Digital media's influence on daily life and well-being**

All of the participants reported that digital media takes too much of their free time and takes time away from things that really matter in life. Participants said that instead of using digital media, the time could be spent more productively. However, when describing how the time could be spent better, the participants

could not describe what would be a better way to spend their spare time. For example, Participant 5 thought they could study more effectively, while Participant 4 said that they could restart their guitar playing hobby.

I feel guilty when too much time is wasted on something completely pointless. (P2, 5)

Participants 1, 2, 3 and 5 reported disrupted sleep schedules due to digital media usage and especially short videos. Short videos were seen as a nice way to calm down before going to bed, but they ended disrupting sleep, rather than aiding in falling to sleep. Participant 3 also highlighted that modern day digital media is fast paced and due to this it also affects to the ability to concentrate when used to a greater extent.

It makes the sleep worse if you fiddle with your phone too late; sleep doesn't come because your brain is too active. That's also a bad thing. Overall, concentration has probably gotten worse these days because everything is so fast-paced, and that's also a bad thing. (P3, 3)

YouTube shorts are bad because I end up watching way too many of them, especially before bed. (P1, 2)

Participants used digital media before going to bed even though they realised the negative effects the usage has when it comes to sleep quality and ability to fall asleep. Participant 2 mentioned that they prefer not to use their phone when going to bed, but instead they preferred reading books. Nevertheless, if there were important communications related things to do, they would still proceed to use their phone, despite the fact that they were aware of the negative impacts of the smartphone usage before going to sleep.

I'm not so strict about it that if I need to send a couple more messages or take care of something, then I will. (P2, 6)

Participants 4 and 5 said that they are frequently exposing to negative content in digital media and have a doomscrolling habit. Participant 5 reported exposure to disturbing content like gore videos in Instagram Reels and extreme right propaganda in TikTok. According to Participant 5, this exposure was due to the algorithmic recommendations of said applications. However, as mentioned earlier, the algorithm of Instagram and TikTok is highly adaptable to the user's methods of usage and they learn from prolonged engagement with content. Thus, the usage pattern of Participant 5 points towards doomscrolling behaviour, as this would emphasise the negative aspects of the applications, displaying more and more negative content due to the user already being prone to such.

You come across disturbing media, like gore videos related to the war in Ukraine. These come up regularly in IG reels but not in TikTok. In TikTok, you come across far-right media. This is doomscrolling. (P5, 5)

Participant 4 mentioned constant exposure to negative content but actually described their use of digital media as doomscrolling, meaning that they aimlessly browse through endless video feeds and occasionally encounter negative content. They felt that doomscrolling has a negative impact on their current mood, but nevertheless continued doing it. Participant 4 described doomscrolling being a moment of rest for them, even though they realised that doomscrolling is not an effective way to take a rest, but rather might cause cognitive overload.

I know how TikTok's algorithm works, and its purpose is to be highly addictive. The problem is that once you open TikTok, you get absorbed into it, and it quickly gets out of hand, leading to doomscrolling for a while. (P4, 2)

### **Autoethnographical observations**

Author said that they could do more sports, if there was more free time and also said that they suffer from disrupted sleep schedules due to digital media usage and especially short videos. They highlighted that modern day digital media is fast paced and due to this it also affects to the ability to concentrate when used to a greater extent. This perception of fast paced content which causes cognitive overload and difficulties when concentrating would also cause the sleep schedule disruptions, as brains would work overtime processing all the videos consumed prior to going to bed and during the evening.

It feels like my sleep rhythm also suffers. Sometimes I end up staring at the screen too late, and because of that, my brain is overactive, and I can't sleep. (A1, 3)

When it comes to doomscrolling behaviour and exposure towards negative content in digital media, there were similar observations with participants 4 and 5. Constant exposure to negative content in Instagram reels indeed seems to be related towards the algorithmic recommendations of the application, but this behaviour is mostly driven by curiosity. The doomscrolling, fixation towards only negative content in social media, is not true in the author's case, as they would refer to this behaviour when using short videos, be they positive or negative, excessively. These findings align with those of Participant 4, as doomscrolling serves as a moment of rest, despite the likelihood of further cognitive overload, which can result in an even greater feeling of exhaustion compared to the moments before the video consumption session.

#### **4.2.5 Effects of notifications**

All of the participants said that the type of the notification matters when it comes to the reaction time and manner. Communications related notifications were placed more value and received faster response and attention compared to ones sent by applications. The latter were often just ignored or discarded without any further action.

If a friend sends a message, I read it and respond almost immediately. I clear all other notifications from the screen. (P5, 6)

Participant 4 mentioned that notifications during working hours disrupt the flow of the work. On the other hand, during free time work related notifications were also seen disturbing as they would trigger unwanted work-related thoughts. The thoughts by Participant 4 further highlight the dual-edge of notifications – they can inform users with important updates, but when received at the wrong time, they can cause distress and, in this example, cut down the flow of work.

Notifications related to communication are distracting during work hours, and maybe the other way around outside of work hours. (P4, 3)

### **Autoethnographical observations**

Author thought that constant notifications cause disruptions to focus and cognitive processes when studying or working. They also reported that notifications can trigger a compulsive need to see what the notification was about, eventually leading to a situation where the current task was discarded, and attention was being shifted towards the smartphone. This kind of action could sometimes lead to excessive usage of social media and especially short videos, even though the eventual need to take a look at the phone was not related to this type of media, as it was reported being mostly communications related. Participant 4 had similar observations as the author related to the disruptiveness of notifications.

Concentration weakens because you keep glancing at your phone. Notifications break the flow. Sometimes there's a compulsive need to check the phone to see if someone has sent a message. (A1, 4)

## **4.3 Research period 1**

Data in this section was obtained during the first week of the two-week research period. Data was obtained from the participants and the author directly from their daily journal entries. During this period, a total of 44 daily journal entries were collected from the participants. For this first research period, the application notifications for certain predefined applications were being turned off from the participant's devices. The applications from which the notifications were turned off were chosen with the participants individually by analysing the preliminary interview data which was gathered prior to the research period. Data is being analysed through the four themes developed for this research.

### **4.3.1 Rationalisation of excessive use**

The overall screen time decreased during the first week of the research period. Participants reported decrease in the screen time data compared to previous day

for total of 27 days, which represents 61% of the total answers collected. There was an increase in screen time data compared to previous day for 17 days, which represents 39% of the total answers (Figure 1). One of the major reasons contributing to the increase in screen time, especially in the beginning of the research period was the research period design where the notifications were turned off from the certain applications.

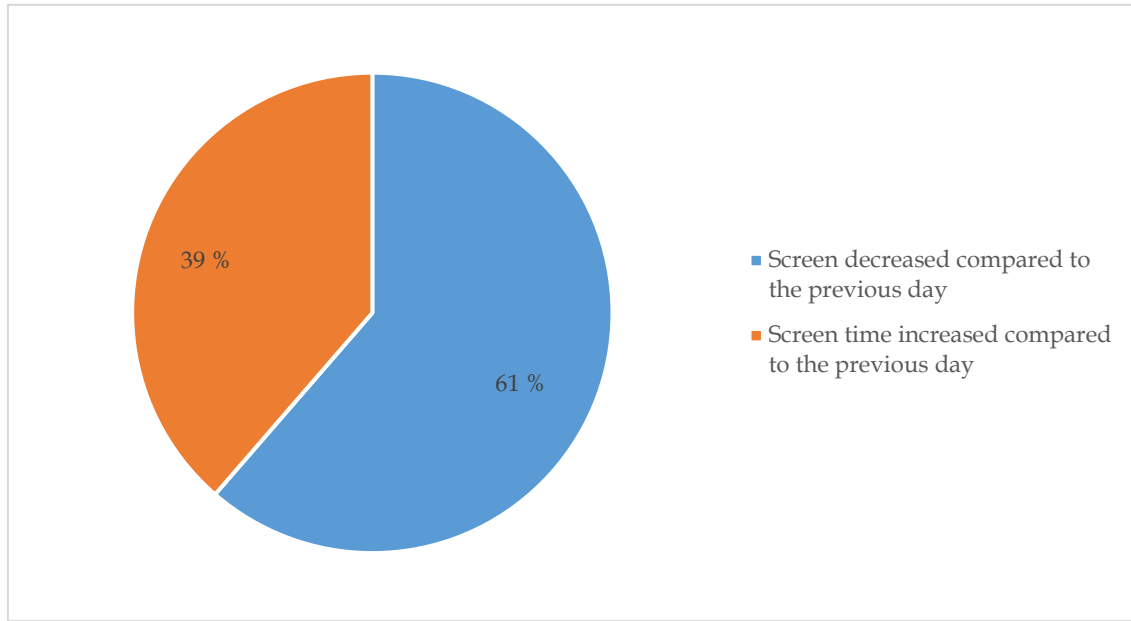


Figure 1 Screen time statistics from the first research period

In some cases, the design of the research period led to increased screen time, as the participants had to frequently check their devices and applications if they have received new messages or other important information, which would have triggered an application notification earlier. The participants told that constant checking of the phone was due to a habit, which had formed from constant flow of notifications. It would disrupt which ever activity was going on and users would proceed to check for their phones for the notification. This finding highlights that applications' design features such as notifications can create habitual behaviours that persist even when such features are disabled.

It was annoying to wait for a message from a friend when you have to keep opening the WhatsApp app. You wouldn't have to do this if notifications appeared on the locking screen. (P2, 7)

On the other hand, participants reported that eventually they would only reach for their phone when they really had something to check from it. For example, Participant 2 reported that they would reach their phone when they really had to check for something, rather than just taking it to their hand out of habit without any real goal in mind. Thus, it can be argued that turning off notifications can briefly increase the screen time as we are used to quickly checking our phone for updates. When we get used to less frequent notifications schedule, we stop

constantly checking our phone, eventually leading to decreased screen time and increased attention span. Therefore, notifications play a dual role in the increasing or decreasing screen time – when disabled the phone checking behaviour increases, leading to increased screen time. On the other hand, when notifications are enabled, the flow of notifications turns the users' focus towards the phone, increasing screen time, but if there are no notifications present, the stimulus to grab the phone is not present either, which in return decreases screen time.

It feels good when notifications (the ones that were turned off) aren't always on the lock screen whenever you need to unlock the phone "for a real purpose," like opening Google Maps. This way, it doesn't distract from the reason you picked up the phone in the first place. (P2, 8)

Participants reported equal amount of "yes" and "no" answers towards the statement "Did you use too much digital media during the day?", both statements gathering total of 22 answers. Participants 2 and 4 reported more "yes" answers than "no". These participants also reported that they left something relevant undone due to excessive digital media usage. Only 3 out of 44 answers for the statement "Did you miss out on something important because you spent too much time on digital media today?" were "yes". These came from participants 2 and 4 as well and were from days they had reported more digital media usage than anticipated. This leads to an empirical conclusion: In the case of this study, excessive digital media usage takes time away from other planned activities.

During the first week of the research period Participant 1 started to wonder whether a certain mobile game is worth having in their device. They had previously rationalised the usage by it being a nice way to spend some spare time. During the first test week, however, they started to question this rationalisation. After five days without notifications, they decided to remove this application from their device. They also scored higher perceived happiness points for that day compared to previous days of the research period and said the digital media usage to correlate this number positively. Before deleting the application, they had written negative thoughts related to the usage of the game for multiple consecutive days.

I played too much again, and I'm starting to think that maybe I should just delete this game and do something more productive. Well, I'll see how it feels next week if I remove it for a while. (P1, 3)

I deleted the mobile game, so I didn't waste time on it. (P1, 4)

The observations from Participant 1 lead us to an empirical conclusion: when digital media users put effort towards the rationalisation of an application usage, they start to weigh the pros and cons of the usage. In the case of Participant 1, the rationalisation of the usage was it being a fun way to spend some spare time. However, after giving more thought to this rationalisation they realised that instead of being fun and a nice way to spend some spare time, the gaming behaviour actually takes away from their free time. This led to the deletion of the application.



### **Autoethnographical observations**

The biggest observations by the author were related to the habitual phone checking behaviour due to notifications. Since the notifications had been disabled, they would reach their phone when they really had to check for something, rather than just taking it to their hand out of habit without any real goal in mind. On the other hand, the lack of notifications would also cause phone checking behaviour due to a “gut feeling” of missing out something important leading to behaviour where they would open applications in hopes of new messages from friends. These findings align with the previous ones related to the dual-edged nature of notifications and eventually lead to a conclusion that notifications are not a primary cause for increased screen time, since they have a multidimensional purpose towards it. However, the attention span, which notifications disrupt, significantly increased due to not having to check the phone constantly.

I might have opened apps (like Snapchat) just to check if there are any messages since there are no notifications. On the other hand, I've noticed that I can focus better and more continuously when there are no notifications. (A1, 5)

#### **4.3.2 Digital addiction and addictiveness of applications**

Participant 5 felt distress and anxiety during some days of the research period due to not being able to use as much digital media as they had gotten used to. This was not because of the research period, but rather related to their personal life situation. Instead of using digital media, they would do activities with friends outside of the digital realm. This suggests a high psychological dependence towards digital media usage, as it checks several of the DSM-V criteria, especially the development of withdrawal symptoms.

It's a bit distressing when I can't access social media. (P5, 7)

Participant 5 also started showing signs of getting used to not receiving as many notifications as they had previously. This finding suggests that the participant had developed a strong habitual response to notifications, and now that they are disabled on the device, the participant is starting to adapt to the new normal. When evaluated against the DSM-V criteria, the tolerance towards smartphone usage appears to be decreasing, and as a result, the time they spend engaged with the phone is also decreasing. This claim is supported by the participant's reported screen time, which shows a trend of decreased usage compared to the previous day towards the end of research period 1.

I'm starting to get used to the phone not beeping, but I still end up glancing at the screen. (P5, 8)

### 4.3.3 Digital media's influence on daily life and well-being

The perceived happiness score ranged everywhere between 3 to 10 during the first week of the research period. The median value for the first week of the research period was 8 while the average score of perceived happiness was 7.43 (Figure 2).

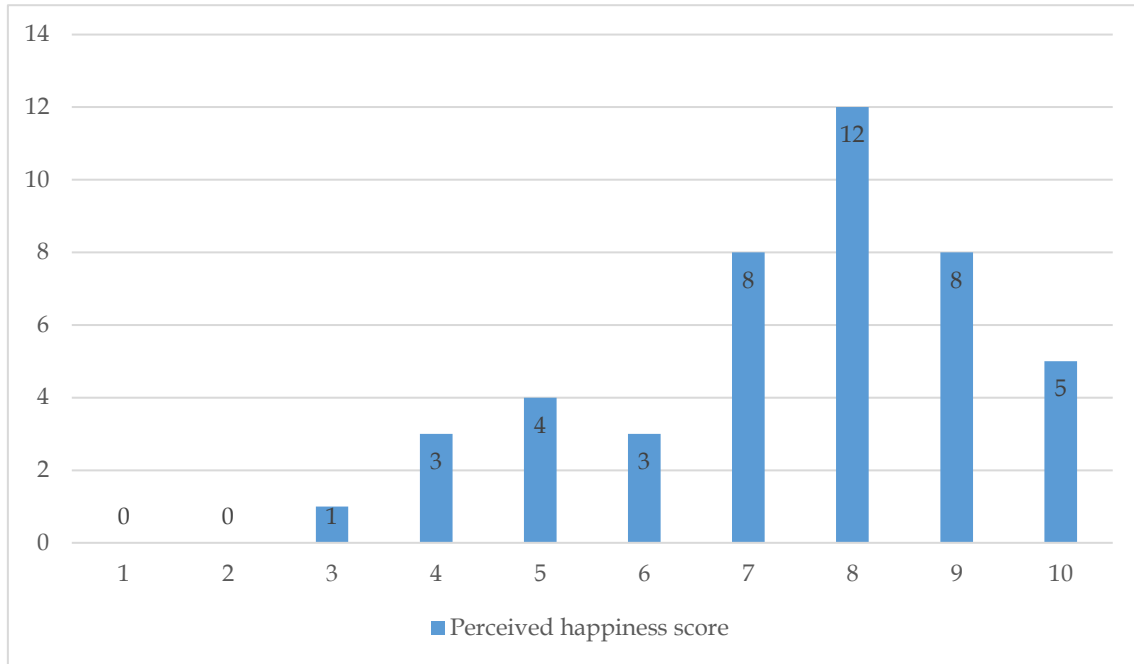


Figure 2 Perceived happiness score from the first week of the research period

Participants 1, 2, 3, 4 and 5 reported digital media usage related reasons correlating towards their overall perceived happiness. These responses had both positive and negative reasons behind them, positive ones being more common with five total answers, whereas digital media had negative impact on the perceived happiness score in three responses. The average perceived happiness score for this digital media related group of responses was 8,38 while the median score was 8,5. This finding is in line with positive feedback being more common than negative, thus leading to overall average perceived happiness score than all of the answers.

Participants 1, 3 and 5 reported positive feedback related to digital media usage with an average perceived happiness score of 8,80 from these days. Participant 1 felt positive impact on happiness when deleting an application and using less time on mobile apps. This indicates that being in control of one's digital media consumption patterns correlates towards perceived happiness. Thus, it can be argued whether active reduction of digital media usage correlates towards a positive emotional shift leading to a feeling of control over digital media usage, boosting overall well-being. This aligns with the broader theme of digital detox and its positive effects on emotional health, as the study by Schmuck (2020) points out.

Participant 3 also reported similar usage regulation related positive impact from digital media usage as Participant 1. In addition, they highlighted the social aspect of digital media, as it would allow them to see people online, which was not possible otherwise. They also argued if the usage has a negative impact when one has a bad day, as it would lead to excessive usage of digital media and to comparisons towards other people and their lives seen in social media. Participant 3 also underscores the importance of being present in the moment, indicating that they highly value the time that they spend with their loved ones. These considerations further highlight the importance of healthy digital media usage habits and self-regulation of the usage, as these allow for one to be present in the moment, focusing on what is important in the moment and discarding digital media for that. The following quote is from the daily journal question “How does the use of digital media affect your mental well-being?” and it is from a day when Participant 3 reported digital media affecting their perceived well-being positively.

Positively, when used in moderation and it doesn't take attention away from other things or people, but instead brings inspiration and/or helps maintain social relationships with people you don't see often. Negatively, when it takes too much time away from other things/people, takes focus away from more important things, causes feelings of envy/dissatisfaction/inadequacy (comparing oneself, one's actions, appearance, etc.). It's noticeable that if you're having a bad day or something, it's easy to turn to using social media, and that only fuels those bad/negative feelings. Conversely, in moments when you're truly happy or having a great time, you're rarely using any digital media, but rather being present in the moment. (P3, 4)

Responses from Participant 5 align with the ones from Participants 1 and 3 when it comes to the usage habits. This is due to Participant 5 reporting that the usage of digital media has a positive impact upon their perceived happiness, but the exact nature of this positive association is not detailed from the daily journal answer from the day they report a positive association. When the spectrum of the analysis is broadened to cover the whole first research period, it can be interpreted that Person 5 spent time with their friends implying that the usage of digital media is enhancing the perceived total well-being as a part of a broader spectrum of activities for that one day. The specific usage for digital media being “browsing of kitten memes” live instead of just scrolling them through the feed. Like in the case of Participants 1 and 3, Participant 5 managed to maintain a positive balance between their digital media usage and overall emotional state.

Well, I watched less kittens in Snapchat. (P5, 9)

Participants 2 and 4 had more negative impact from digital media usage with average perceived happiness rating being 7,70 across the three answers. Participant 2 reported digital media causing feelings of inadequacy and procrastination leading to situations where they would delay the execution of important tasks or

compare themselves to others in social media. They also mentioned that the usage of social media led to negative self-perception as they would compare themselves to others while using the platform. These factors would contribute to emotional strain leading to negative influence from digital media towards their well-being.

The use of digital media caused feelings of inadequacy and led to postponing other important daily tasks. (P2, 9)

The reasons behind Participant 4's negative feelings were also related to time management. Participant 4 reported the lowest perceived happiness score (8) of the week for the day they reported digital media having negative impact upon their perceived happiness. Their well-being was negatively influenced by their inability to manage media use effectively for the day, leading to frustration and guilt. This shows that even participants with high average happiness scores, averaging at 9,28 for the week, can experience conflict over their digital media usage habits.

It feels like I honestly wasted valuable study time. (P4, 4)

## **4.4 Research period 2**

Data in this section was obtained during the second week of the two-week research period. Data was obtained from the participants directly from their daily journal entries. A total of 41 answers were collected from the participants during the second week of the research period. The applications which had had notifications snoozed for the first week of the research period were deleted from the participant's devices for the second week of the research period. Data is being analysed through the four themes developed for this research.

### **4.4.1 Rationalisation of excessive use**

The overall screen time continued to decrease during the second week of the research period. Participants reported a decrease in screen time compared to the previous day on 29 occasions, representing 71% of the total responses collected. This marks a 10% increase in the number of days with decreased screen time compared to the 61% observed during the first week of the research period. Screen time increased on 12 occasions, accounting for 29% of the total responses, compared to 39% in the first week (see Figure 3).

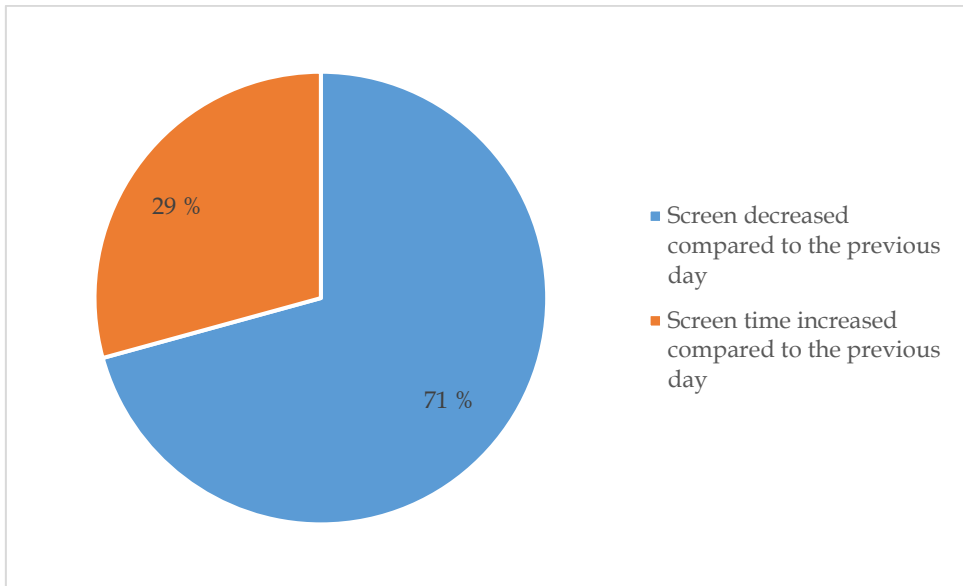


Figure 3 Screen time statistics from the second research period

The dataset question, “How have you made use of the extra time since removing the apps?” was analysed to understand how participants utilised the extra time gained from deleting the applications. Search query containing following digital media related keywords was created to extract the results: ‘katsoin’, ‘pelasin’, ‘some’, ‘YouTube’, ‘tietokone’, ‘sarjoja’, ‘Disney+’, ‘netissä’, ‘selasin’, ‘televisio’, ‘kuunnella’, ‘äänikirja’, ‘Netflix’. If these keywords would appear in the query results, they would count towards digital media related activities shown in Figure 4. All other query hits would go into non-digital media related activities. All of the results were verified manually after the extraction to make sure the results are valid.

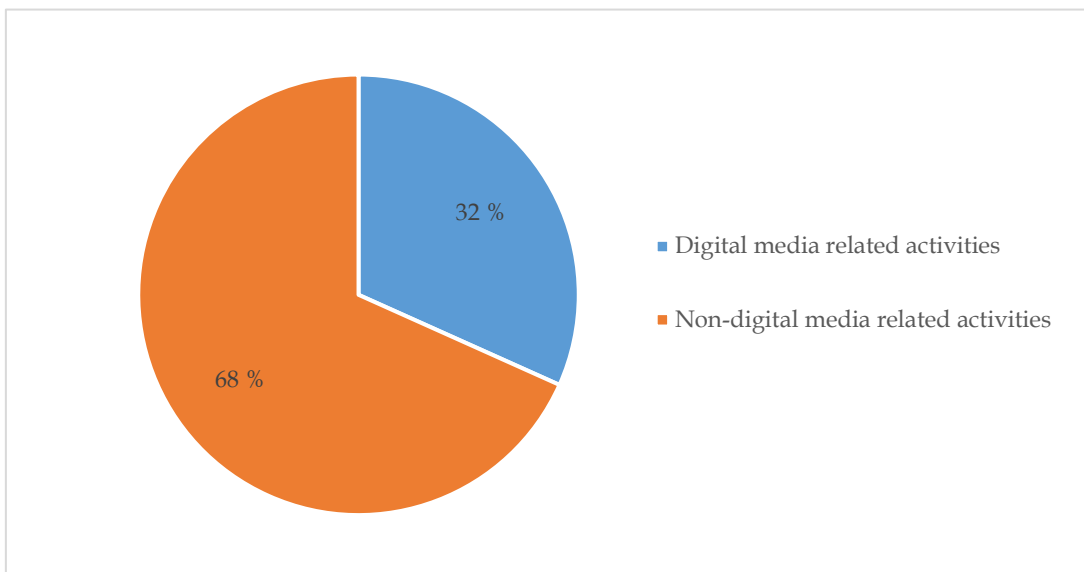


Figure 4 Activities that replaced digital media usage during research period 2

In some cases, the increase in screen time compared to the previous day can be attributed to practical reasons for using digital media, such as managing financial matters or using Google Maps. However, also non-practical reasons for using digital media due to not having anything else to do were being noted. Beyond that, no definitive conclusion about the overall increase in screen time can be drawn from the dataset. Since the percentage of days with increased screen time is lower than those with decreased screen time, it can be concluded that the research period was successful. The removal of the most frequently used applications should lead to results like these, unless the participants replaced the accustomed apps with excessive use of other applications. This suggests that participants adapted to the research period conditions and engaged in other activities instead of using digital media, as can be seen from Figure 4.

I had to use a car rental app and Google Maps, which increased my total screen time from the previous day. (P3, 5)

To begin with, I didn't use social media, etc. but when it was boring at work, I ended up reading a lot of news and such. When it is quiet at work, one should be able to be off from work so they could do gardening, for example. (P4, 5)

As already mentioned, the research period design choice of deletion of the pre-defined applications mostly explains the decrease in screen time compared to previous day. In some instances, also digital media usage due to work, different hobbies or going to parties affected towards the decrease in screen time. Besides these factors, the research period design and having meaningful things to do contribute towards the decrease in screen time.

So much going on that I haven't had time to use my phone. (P4, 6)

However, some of the participants started to adapt to the situation by spending the time they previously spent using their applications of choice towards other digital media. This did not, however, lead to increase in screen time compared to previous day, indicating that the participants showed restraint towards the usage of digital media. What is interesting in these cases is that it was digital media that would replace the previously used apps instead of some other things to do outside of digital media. This would indicate that digital media is used mainly at home as a form of relaxation amongst the participants, thus finding other things to do instead of it proved to be problematic. Participant 2 also reported spending a fraction of their freed time towards reflection.

At least I've been listening to an audiobook. (P3, 6)

I stared at the wall :D and browsed other social media. (P2, 10)

I have watched some shows. (P5, 10)

Participant 3 mentioned that they have reduced multitasking due to the removal of applications. They mention that they did not use digital media in social

situations where they might have previously engaged with the activity, leading to a more “in the moment” feelings.

I can't really specify if I've done anything special, maybe just the same things but without using, for example, my phone at the same time. (P3, 7)

Besides digital media, several participants replaced their usage with non-digital social activities, like spending time with friends, family or other people in person. Physical activities such as doing sports or gardening, or relaxing outdoor were also mentioned. In addition, creative or manual tasks such as cooking, playing guitar and doing handicrafts were also amongst the things participants opted to do instead of using digital media.

I fried chicken, haha. (P5, 11)

Yesterday, I made juice from berry stems. You come up with all sorts of things when you have time. (P4, 7)

This time, sleeping. And I also played a bit of guitar. (P4, 8)

#### 4.4.2 Digital addiction and addictiveness of applications

During the second week of the research period, participants were asked about withdrawal symptoms related to digital media usage, which are, as discussed in chapter 2.4, one of the symptoms of digital addiction. A total of 12 out of 41 responses mentioned experiencing some form of withdrawal symptoms due to the removal of the applications. All participants, except for Participant 4, reported experiencing withdrawal symptoms that meet the DSM-V criteria, such as anxiety, depression, sadness, or irritability.

Participants reported both physical and emotional withdrawal symptoms. Particularly social media withdrawal symptoms arose as these applications were a way of communication for the participants. Participants 2 and 5 reported feelings of anxiety and distress due to the feeling of not being connected to friends now that the way of communication had been taken away from them.

Sadness /feeling down due to losing connection with friends through Snapchat. (P2, 11)

I've had this kind of nervous anticipation today, wondering if I've gotten any messages on Snapchat while I've been away. (P5, 12)

On the other hand, Participant 5 felt a strange relief at the same time due to not having to check their phone for new comments in social media.

It feels strange not having to check who has sent a message in each different app. (P5, 13)

Participants 1 and 3 reported symptoms of automatic, habitual phone-checking behaviour. This behaviour suggests that frequent app usage had become reflexive, indicating a strong connection between digital media use and unconscious

habits. When reflected against the DSM-V criteria, this type of behavioural dependence can be considered a built tolerance to the stimuli provided by smartphones and applications. Since the applications are no longer available, participants are trying to cope with the situation and adapt to the new circumstances.

At first, my fingers instinctively searched for Snapchat and Instagram for the usual pointless scrolling, but I quickly forgot about it, so I got through today fairly easily. (P1, 5)

I've opened my phone several times, searching for those apps. I've also had feelings of missing out on something. (P3, 8)

Participants displayed classic signs of both emotional and physical withdrawal when separated from their digital media apps, particularly social media. The habitual nature of phone-checking, the emotional tension from disconnection, and the attempts to replace lost stimulation with other activities are all indicative of a dependency on digital apps. This dependency can manifest in both physical habits and emotional responses, underscoring the pervasive influence of digital media on well-being and daily routines.

#### 4.4.3 Digital media's influence on daily life and well-being

The perceived happiness score ranged everywhere between 3 to 10 during the second week of the research period. The median value for the second week of the research period was 8 while the average value improved a bit, now being 7.73 compared to 7.43 of the first week of the research period (Figure 5).

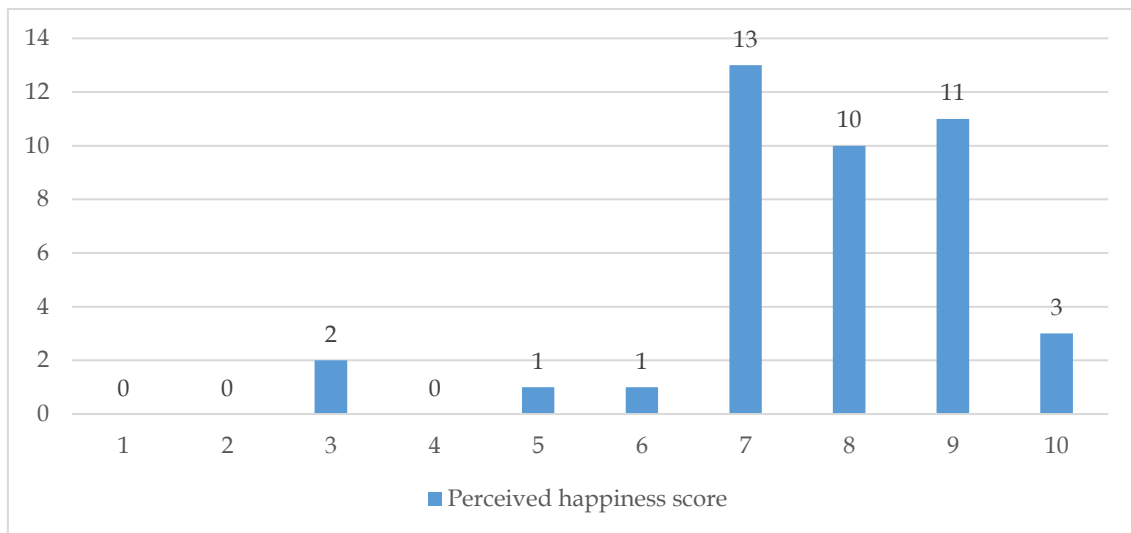


Figure 5 Perceived happiness score from the second week of the research period

Participants 2, 4 and 5 reported digital media usage related reasons correlating towards their overall perceived happiness. These responses had both positive and negative reasons behind them, positive ones being more common with eight



total answers, whereas digital media had negative impact on the perceived happiness score in two responses. The average perceived happiness score for this digital media related group of responses was 7,25 while the median score was 7,0. This finding indicates that even though digital media had more positive than negative impact upon the perceived happiness score, the averages and median still fell behind of the relative values when compared to all of the answers of the question at hand. Therefore, it can be concluded that happiness is a relative and subjective experience, which is challenging to quantify numerically.

The positive impact of reduced digital media usage on well-being was linked to several factors. Participants 2, 4 and 5 reported that they felt relief of not having to constantly check and use their phone. This indicates that reducing the usage of digital media has potential to significantly improve well-being on the long run. Participants also reported excitement towards the research period, indicating that they can concretely see their well-being improving during the research period.

I guess my mood will only improve from here. (P5, 14)

Participant 2 highlighted that their mental well-being would have been even worse on multiple days if they had excessively used digital media. The research period design prevented them from using the applications, mainly social media, which had a negative impact towards their self-image and well-being. On the other hand, they also reported missing the social aspect of connecting with friends in these platforms. Overall, it can be interpreted from the responses of Participant 2, that abstaining from using digital media had mostly positive impact towards their well-being as they reported mainly positive effects from the reduced usage.

I feel that my mental well-being would have been even worse today if I had, for example, scrolled through Instagram and compared myself to others. On the other hand, the absence of the apps had a negative impact, as I couldn't share nice things with others. (P2, 12)

Participant 2 and 5 noticed, that the "brain fog" from digital media usage started to lift, allowing them to think and focus more clearly. These findings align with the ones of Korte (2020) and Dresch-Langley & Hutt (2022), as the brain fog lifted, and the cognitive functions started showing signs of replenishing.

(Digital media use) increases brain fog and guilt for not focusing on what's happening around (kind of FOMO). (P2, 13)

My thoughts are clearer. (P5, 15)

In conclusion, while most participants found clear benefits in removing digital media apps, such as improved focus, better mental clarity, and reduced screen time, there were also social and psychological challenges, such as FOMO and feeling disconnected from friends. Managing these downsides is crucial for sustaining the positive effects of reduced digital media usage.

### Autoethnographical observations

Author was the only participant that reported negative impact from digital media usage towards their perceived happiness score for two days during the second week of the research period. The average perceived happiness score for these days was 7,0. Author reported missing sports and school assignments due to using too much digital media, which caused feelings of anxiety and distress. These feelings were then reflected towards the perceived happiness score for that those days. These findings indicate that the excessive digital media usage does affect negatively to overall perceived happiness, leading to feelings of inadequacy and anxiety.

I didn't have time to exercise due to spending too much time on the computer. (A1, 6)

Although the two reported days of the week felt like a waste due to excessive digital media usage, the other days evoked the opposite feelings, as there was less digital media consumption. This would back the hypothesis that digital media usage related reasons correlate towards overall perceived happiness. Also, author reported that they felt relief of not having to constantly check and use their phone. This indicates that reducing the usage of digital media has potential to significantly improve well-being on the long run.

In the long run, I'll probably start to rediscover other aspects of life, but right now it still feels like I'm too hooked on using my phone. (A1, 7)

Author did the same observation as Participants 2 and 5 regarding the "brain fog" due to digital media usage. When the "brain fog" started to lift, it allowed to think and focus better and mind itself felt clearer. At the same time, symptoms of automatic, habitual phone-checking behaviour started to ease, and author started spending a fraction of their freed time towards self-reflection. Author also noted that their perceived "dopamine addiction" from digital media usage began to ease during this time. In this instance, "dopamine addiction" refers to addiction towards quick hits of things that bring joy, namely short videos in the context of digital media. These reflections would suggest that frequent app and smartphone usage had become reflexive and habitual, indicating a strong connection between digital media use and unconscious habits. Thus, the reduced usage of digital media led to the breaking of the habits, revealing the negative effects they had had on the well-being.

Still reaching for the phone and craving for the stimuli that the apps used to provide. (A1, 8)

My brain doesn't feel as foggy as before, and my thoughts stay more organised. On the other hand, sometimes I feel bored, but maybe my brain is learning to overcome its dependence on dopamine. (A1, 9)

I played on the computer and watched some shows. I spent some time reflecting. (A1, 10)

## 4.5 End of the research period

Data in this section was obtained after the two-week research period from semi-structured interviews, which took place after the research period. All the participants participating to the second week of the research period were interviewed to collect the data. Total of five interview transcripts and interview notes as well as the self-reflecting notes from the author were analysed. Data is being analysed through the four themes developed for this research.

### 4.5.1 Average usage times

Most participants reduced their total screen time during the research period, with the largest reduction seen by Participant 5, from 8 hours of the first week of the research period down to 2 hours at the end of the second week of the research period. Even though there is a huge 6 hour drop in the daily screen time, Participant 5 also said they have watched more series from streaming services, thus the actual reduction of digital media is most likely not 6 hours. Participant 2 and author were the only participants whose screen time increased compared to the first week of the research period. For Participant 2 there is no clear reason for the increase in screen time. In the author's case the reason for increased screen time can be found in increased usage of YouTube and few days that they took care of financial matters during the second week of the research period (Table 5).

Table 5 Screen time data at the end of the first and the second week of the research period

Participant	Actual screen time at the end of the first week of the research period (h/d)	Actual screen time at the end of the second week of the research period (h/d)
P1	6,81	5,58
P2	3,48	4,07
P3	3,83	2,17
P4	1,79	1,54
P5	8,00	2,00
A 1	1,72	2,97

The perceived happiness score improved substantially during the two-week research period. The average perceived happiness score improved from the initial 8 to 8.33 after the research period. It is to be noted, that values given prior and after the research period only describe score for the day the interview was given and the current mindset of the interviewee as well as recent events prior the interview can highly contrast to this. Thus, these perceived happiness scores prior and after the research period are not to be interpreted blindly. However, as can

be seen from the perceived happiness score averages obtained during the research period, we can already see a substantial increase in the perceived happiness score, which improved from the score of 7.43 of the first week of the research period up to 7.73 of the second week of the research period and finally up to 8.33 after the whole research period (Figure 6).

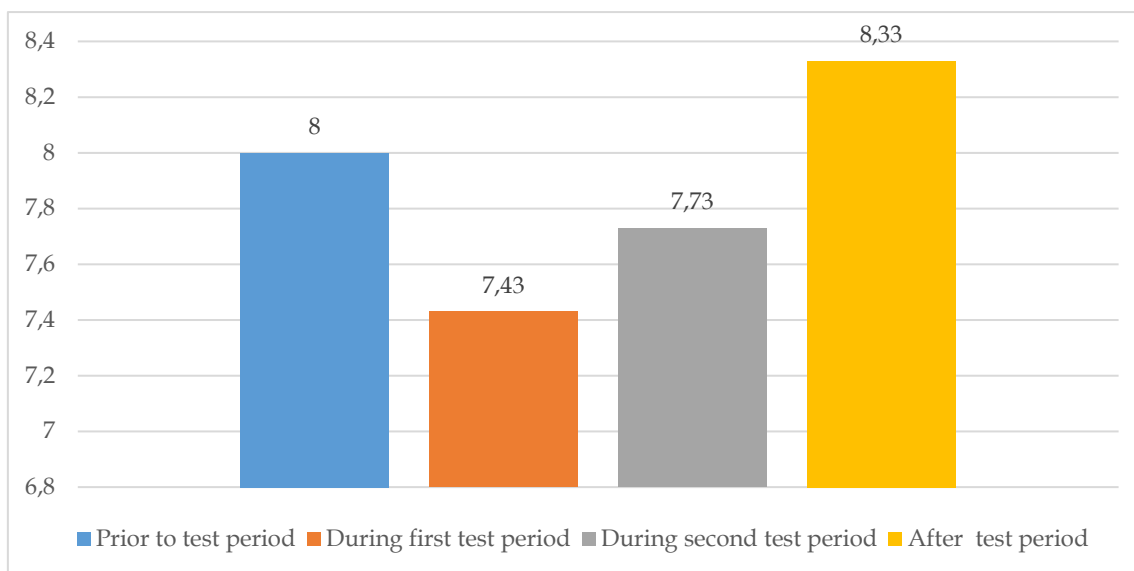


Figure 6 Perceived happiness score after the two-week research period

With this small of a pool of participants, it is to be noted that Participant 6's scoring does distort the score prior to the research period, as well as the first research period as they perceived to be very happy with scores of 10 before the research period and average of 9 during the first research period. Therefore, if Participant 6's scores are to be ignored, as they dropped out of the research period during week one, the average happiness score prior to the research period is 7,67 and the average for the first week of the research period is 7,32. This doesn't drastically change the final outcome of the research, but we can see even higher rise in the perceived happiness score, underlining the impact of digital media usage towards the participant's perceived happiness.

Users opted to turn off notifications from their favourite applications and ultimately delete the apps from their devices altogether during the two-week research period. These applications were the ones users valued highly as they had the most screen time, thus the participants had rationalised the usage. Yet still, in the end, the application usage and the screen time affected negatively towards their perceived happiness, indicating how reduction of digital media usage leads to increased perceived happiness and well-being.

The screen time of participants decreased during the two-week research period, except for Participant 1 and 2, whose screen time increased slightly. The most drastic drop in screen time was with Participant 5, who had previously spent seven to eight hours daily on digital media on their smartphone alone. These findings would indicate that digital media detox attempts can indeed lead to reduced digital media usage. However, as most participants managed to

reduce their usage during the test period, to some the usage increased a bit (Figure 7). A longitudinal study of the topic is therefore needed to confirm these findings in larger populations.

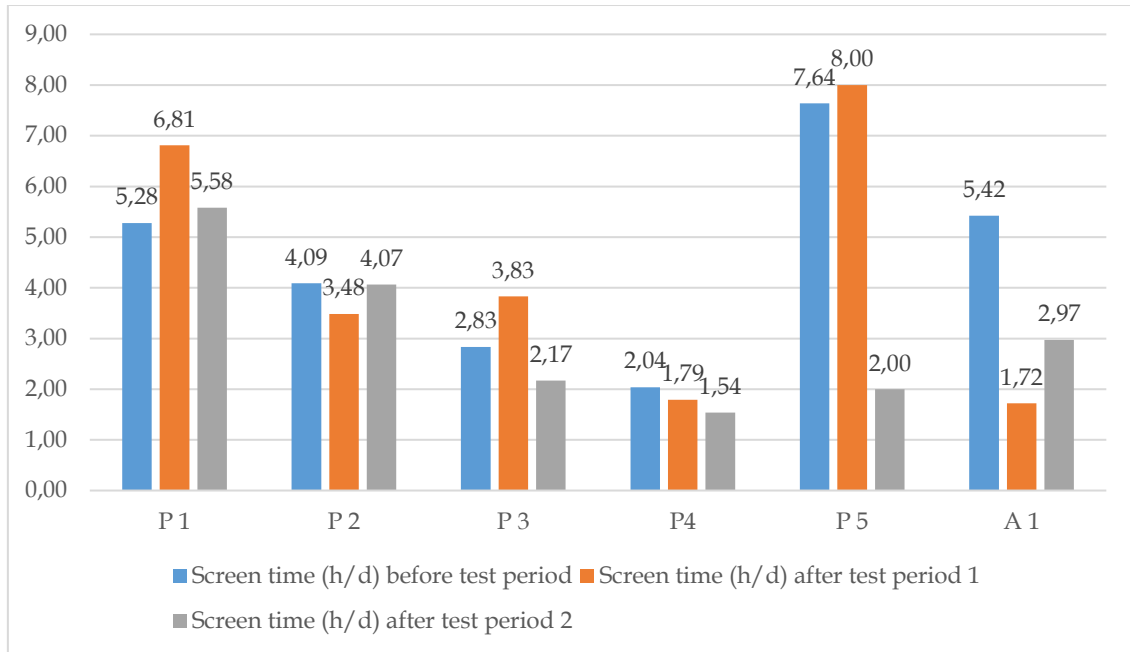


Figure 7 Screen time prior, during and after the research period

The screen unlocks did not see much of a change during the two-week research period. However, Participants 2 and 3 had anomalies in their phone checking behaviour, as in Participant 2's case the screen unlock amount dropped for the first week of the research period but returned to higher levels by the end of the second week. This indicates change in the phone checking behaviour, as they also stated in their daily diary observations – they would proceed to check their phone less often when the notifications were being turned off but returned to old habit later on due to FOMO. There was no unambiguous reason for Participant 3's phone checking behaviour (Figure 8).

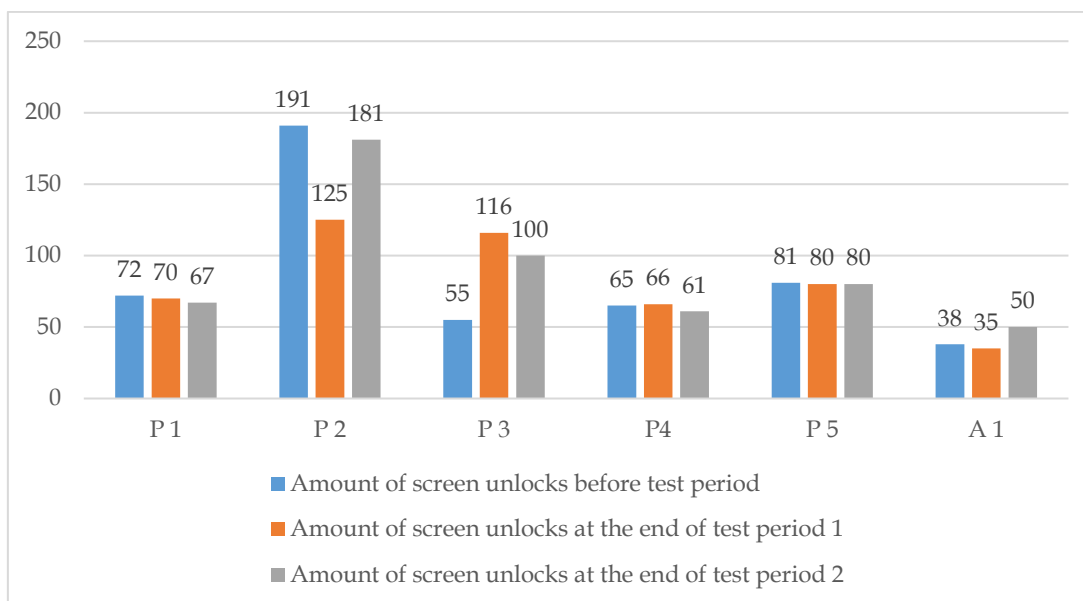


Figure 8 Amount of screen unlocks per day before, during and after the research period

#### 4.5.2 Rationalisation of excessive use

Participants 1, 2, 4 and 5 minimised unnecessary phone use, suggesting increased control over media consumption. Participants 1 and 2 felt a sense of ease when apps were not available, which helped them recognise their reliance on digital tools, whereas participant 4 noted a significant reduction in phone usage and uninstalled several distracting apps, showing an effort to minimise excessive usage.

I no longer found myself needlessly pulling my phone out of my pocket in anticipation of notifications. (P1, 6)

When I didn't have the apps, I somehow felt clearer in my mind. (P2, 14)

Participant 4 and 5 highlighted the importance of using the phone as a practical, digital tool rather than for non-productive activities, showing a shift towards more intentional digital media usage habits. These participants emphasised that they have learned to use their phone more purposefully, focusing on its benefits rather than on excessive, mindless use.

My phone usage has significantly decreased, and I've managed to quit TikTok. During the past week, I've watched a lot of series and films that I previously left unfinished. (P5, 16)

Participant 3 believed that two weeks might not be enough to break habits, indicating an understanding of their attachment to media but feeling that more time was needed for meaningful change. Thus, this participant didn't see much of a difference in their digital media consumption habits after the two-week research period.

Two weeks may not necessarily be enough to break a habit. (P3, 9)

## Autoethnographical observations

As Participants 1, 2, 4 and 5, also author minimised unnecessary smartphone usage, which shows increased control over digital media consumption. This highlights the importance of using the phone as a productive digital tool, emphasising a shift towards more intentional digital media use that focuses on its benefits for productivity rather than solely for entertainment.

I've learned to make use of my phone's digital wellbeing settings and have set usage limits for apps. I've realised that not all app notifications are beneficial, and apps often send them to encourage users to engage as much as possible. (A1, 11)

### 4.5.3 Digital addiction and addictiveness of applications

Individual participants noted varying specific reasons for the addictiveness of digital media, such as media specific content exclusive to certain digital media, self-comparison to other people in digital media and design features of digital media applications. However, there were three main reasons were identified as the primary causes for the addictiveness of applications by multiple participants across the study period: algorithm, short videos and habit.

All of the participants except for participant 1 addressed algorithm being one of the main reasons of the addictiveness of digital media. The main thing that was perceived to make algorithm, so addictive was user specific content recommendation. The perceived main reason for this was that the algorithm learns from the user input and starts to feed them content which receives the most feedback, for example clicks, comments, shares and viewing time.

Second big addictive feature of digital media was the short video concept adopted for example by Instagram, TikTok and YouTube. This feature means videos mainly in social media, that are short, maximum one minute long and especially designed to be consumed at smartphone. When paired with the algorithmic recommendation and endless scroll design features, we have a highly addictive form of digital media, as the videos were perceived to give "quick dopamine boosts", elevating mood briefly and leading users to a state of wanting more, not wanting to quit the usage. When compared to physical addictive products, such as potato chips for example, we can see a pattern here: the addictiveness of short videos can be arguably compared to the addictive attributes of chips - they both offer a quick "high" to the user, a tolerance is being built for them and the user is quickly craving for more and more to achieve the same result as before - it is close to impossible to eat just one chip or to watch just one short video.

Maybe short videos, because they give people a quick thrill. Fast-paced, brain-stimulating content that easily hooks you. (P2, 15)

Short videos - they're just so addictive. In a few decades, there will probably be a similar debate about them as there was about smoking. (P5, 17)

Third, but not least reason for the addictiveness of digital media was the building of a habit. This was something related to a longitudinal use of certain digital media applications, especially Snapchat and mobile games. Snapchat has a key design feature of so called “Snap Streaks”, to which users get hooked, as the upkeep of a streak requires their daily usage of the application, and it requires them to send a snap to the person to whom they have the streak with. To upkeep the streak, they both have to send snaps to each other almost daily to not lose the streak, though this timeframe may vary between users due to unknown design reasons. Participants 1 reported this feature being one of the main reasons they use Snapchat daily.

I guarded that Snap Streak like it was my firstborn child. (P1, 7)

Another aspect observed regarding habitual usage was the difficulty in stopping the activity over time. Participants 1, and 4 reported this particularly with mobile games, explaining that they have been playing for so long that they feel too invested to quit. However, when these applications were deleted from the user’s devices, they didn’t install them back, indicating that the usage was indeed due to prolonged habit and a forced sudden deletion of the applications led to the breaking of the habit.

The mobile game is gone, and it’s not coming back. I deleted it as soon as I turned off the notifications because I started noticing that I was playing it for no real reason. I realised it was just a way to pass the time, time that could be spent doing something more productive. (P1, 8)

I haven’t reinstalled TikTok or the mobile game after the research period. (P4, 9)

None of the participants reported that they missed something important due to not using digital media, though participants 2, 3 and 4 said that they had FOMO at the beginning of the second week of the research period. All of these FOMO cases were related to social relationships and the inability to communicate with friends in the usual way. Thus, it can be concluded that abstaining from the usage of digital media primarily leads to feelings of missing out and the other aspects of the digital media are replaceable. This finding underscores the importance and role of digital media in modern-day communication, where face-to-face meeting of people is becoming less important and is being replaced by digital communication channels.

When it comes to the feeling of being addicted to digital media, we have two kinds of answers within the data. Participants 2 and 3 didn’t feel like they had become less addicted to digital media, but rather being more aware of their own digital media usage and habits related to it. This finding indicates that abstaining from the usage of digital media can lead to rationalisation towards the reasons behind the usage.



Now I'm more aware of what I'm doing. When I open my phone, I think about why I'm doing it. I consume digital media more consciously now. (P2, 16)

I'm probably not less dependent, but I'm more aware of my behaviour. The feeling of being rushed has eased, and now I can choose whether I check Instagram while watching TV shows. (P3, 10)

Participants 1, 4 and 5 on the other hand, noticed a clear shift towards being less addicted to digital media compared to before the research period. The primary reason for this was breaking the habit of mobile gaming in the cases of Participants 1 and 4. Additionally, the research period's design, which required the deletion of apps, forced these participants, including Participant 5, to rationalise their usage, leading to healthier and more sustainable digital media habits.

Yes. For example, on Snapchat, it's not necessary to send a snap every day just to maintain a streak, and the messages that come through aren't life changing. (P1, 9)

(Less dependent) simply because I use it less. It naturally leads to doing something else. (P4, 10)

I'd say I'm less dependent. I just don't use it as much anymore and find myself doing other things. (P5, 18)

### **Autoethnographical observations**

The self-observations by the author came to same conclusion as the participants regarding the key addictive features: algorithm, short videos and habit. The building of the habit was especially true with mobile games, as author felt so invested into a game that it feels difficult to quit, thus the behaviour feels more like habitual thing to do frequently rather than a fun activity it used to be. Also short algorithm driven short video recommendations deemed to be extremely addictive, as already mentioned. Quitting of short video consumption paired with the breaking of the mobile gaming habit quickly led to a clear shift towards being less addicted to digital media compared to before the research period.

I've realised that sharing and comparing life on Instagram and Snapchat isn't that important. What matters is the interactive communication with friends. (A1, 12)

Unlike other participants, author did not have much FOMO during the research period, but these feelings started to surface towards the end of the second week of the research period. As with other participants, also authors' feelings were related to communication with friends. When the favourite ways of communication are being stripped, it is hard to make everyone shift from the commonly used platform to other. Even though one could have made a phone call or send a message, it is not the same as it used to be – the design features, such as the iconic image chats of Snapchat or funny memes of Instagram are not there. On the other

hand, it felt relieving to not have to send pictures daily, and one could focus on other aspects of life, sharing only the most important bits.

I've come to understand the toxicity of digital media in relation to life. There's a lot of unnecessary and negative content. Of course, there are also good things, particularly staying in touch with friends and keeping up with current events through memes. (A1, 13)

#### 4.5.4 Digital media's influence on daily life and well-being

The perceived happiness score improved substantially after the two-week research period, now ranging between 8 to 10. The median value for the second week of the research period was 8 while the average value improved from the initial 8 to 8.33 after the research period (Figure 9). Compared to the time before the research period, with median score and average of 8, we can see a slight increase in perceived happiness and less dispersion with the scoring. This finding would indicate that digital media usage habits are somewhat correlated towards perceived happiness.

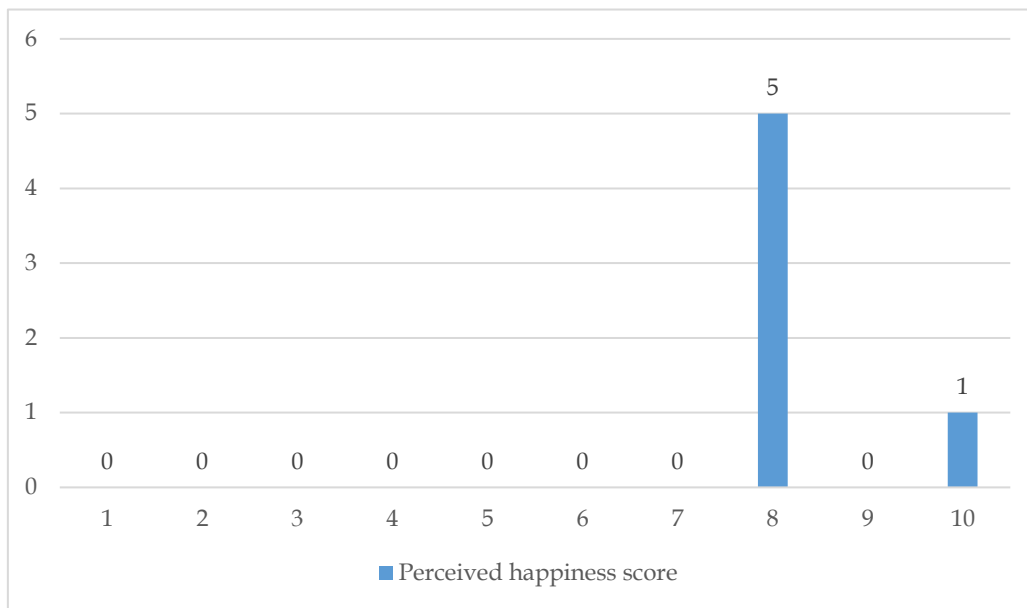


Figure 9 Perceived happiness score after the two-week research period

All of the participants, including author, noticed that the reduced digital media usage reflects upon their mood and perceived happiness positively, though Participants 2, 3 and 5 had lesser perceived impact from the reduced usage. These two participants felt that their overall happiness was not heavily influenced by digital media usage, although they acknowledged other benefits such as increased time for other activities or better awareness of their usage patterns. Even though the perceived impact upon happiness wasn't that clear during the research period with these participants, they both commented that in the long run they believe they might start to see more concrete positive benefits from the reduced usage.

Happiness, at least for me, is such a big concept that it doesn't fluctuate in a way where one day I'm at a level one of happiness and another day I'm at a level ten. It's more like a solid eight, and then it's the bigger things that happen over a longer period that affect that experience of happiness. Right now, it's a bit difficult to think about it with a relatively short time frame, like whether my life is significantly better than it was two weeks ago. But if I were to continue this (life without certain apps) for maybe two more months, or even six months, I think that's the interesting point. And I do believe that it could certainly have a positive impact. (P3, 11)

In addition, participant 2 reported having better self-esteem and mood due to not having to compare themselves to other in social media. On the other hand, Participant 2 also commented that the social aspect of digital media is something they miss, underlining the two-edge aspect social media has – a key role in building and maintaining social relationships, but on the other hand a negative impact towards self-esteem.

If I think about how I feel now (compared to before the research period), I'd say it's slightly better. It may not directly improve happiness, but it has positively impacted my general mood, energy levels, and ability to concentrate. Additionally, I've learned to recognise the aspects of digital media platforms that create negative feelings, so I can now avoid them. (P2, 17)

Participants 1 and 4 on the other hand noticed a clear effect upon the perceived happiness from reducing the digital media usage. These participants highlighted the increased ability to focus on non-digital activities due to having more free time and less digital media induced stress as a key benefit of reducing screen time. This often contributed to a feeling of greater productivity and accomplishment, which indirectly boosted happiness.

Reducing the use of digital media has raised my overall satisfaction. I realised that, in reality, there's no real benefit from it (the use of digital media). I noticed that a lot of my digital media usage consists of unnecessary things that no longer bring me any joy. (P1, 10)

### **Autoethnographical observations**

The author observed a significant improvement in sleep quality due to reduced exposure to the blue light from smartphone screen and hyperactive social media content. Author also reported an increased ability to focus on non-digital activities, citing more free time and less stress from digital media as key benefits of reducing screen time. This shift has led to greater productivity and a sense of accomplishment, which indirectly enhances overall happiness. These findings and the overall reduction of digital media usage have a clear effect upon the perceived happiness as well as the ability to focus better on more demanding cognitive tasks.

Improved concentration is probably the biggest factor. Through this, self-discipline has also improved. These days, I don't find myself glancing at reels before going to bed, which has also led to better sleep quality. (A1, 14)

#### 4.5.5 Effects of notifications

The role and effects of notifications continue to divide participants' opinions after the research period. While Participant 1 noticed a clear change in their attitude towards notifications and their purpose, Participants 2 and 4 had more moderate take on the matter. Participants 3 and 5 however didn't see much of a change in their attitude towards notifications. Participant 3 said that they have become 'immune' to notifications even before the research period whereas Participant 5 said that they will go through the used applications either way, be there notifications or not. However, Participant 5 did mention that during the first week of the research period they did focus their replies to new messages to a few moments during the day, indicating that notifications do indeed disrupt attention spans and shift the phone user's focus towards the source of the notification.

It doesn't really affect me much (the notifications). I go through the apps regardless. When I didn't have notifications on, I checked Snapchat less and focused on replying during a couple of specific moments in the day. (P5, 19)

Participant 1 realised that not all of the notifications from communications related applications are needed. For example, Participant 1 commented Snapchat being one of those applications where communications aren't that important that it needs to have notifications on. They also commented that they are looking at the phone less since there are less notifications and that they would rather have a few moments during the day when they give their time to reply to received messages. This finding is in line with the notes from Participant 5 stating that less notifications may lead to decreased phone checking behaviour.

I decided to turn off notifications, at least for Snapchat. I plan to keep them off even after the research period, so I don't have to constantly check my phone, hoping for notifications. Now, I set aside a moment to check everything at once when I have the time. (P1, 11)

In the case of Participant 2 and 4, the observations of notifications were related towards the social aspect of the applications. Both participants commented that they know by the end of the research period why the notifications of their communications applications have been on: messages received from these applications come from people they care the most and not receiving notifications from important people led to feelings of distress. Other than that, these participants didn't notice much of a difference with notifications from other applications, which underscores the observation that they don't find notifications as disruptive as participants 1, and 5.

I've realised why they were on in the first place. Initially, it was great when I opened my phone for some reason. My focus wasn't disrupted because

there were no notifications. Later, it started to annoy me, especially when I was waiting for a message, as I had to deliberately open the app to check if I'd received a notification. Now, I appreciate it in a different way. (P2, 18)

### **Autoethnographical observations**

The autoethnographical observations by the author regarding notifications largely align with those of Participant 1. Like Participant 1, the author also noticed a significant change in their attitude towards notifications and their purpose, leading to the realisation that not all notifications, particularly from Snapchat and Instagram, are necessary. Reducing the number of notifications resulted in less frequent phone-checking behaviour.

Not every message needs a notification. For example, Snapchat and Instagram notifications are secondary. If people really need to reach me, they can message me on WhatsApp or give me a call. (A1, 15)

## 5 DISCUSSION

This chapter discusses the findings of the study utilising the four developed themes presented in Table 3 to present the data. Firstly, the findings of the diary studies are being presented, followed by autoethnographical considerations. Finally, theoretical and practical implications are presented. To summarise, the four themes developed during this study are:

- Excessive use and self-perception
- Digital addiction and addictiveness of applications
- Effects of notifications
- Digital media's influence on daily life and well-being

### 5.1 Excessive use and self-perception

The findings indicate that users often rationalise their excessive use of digital media through mechanisms such as escapism and a desire for momentary pleasure, as reported by participants (P2, P5). This aligns with the notion of digital addiction described by Korte (2020), where prolonged usage is justified by users as either stress relief or as a harmless pastime. Such rationalisations highlight how psychological mechanisms, such as cognitive dissonance, play a role in maintaining their digital habits. Users recognised the negative effects of excessive digital media use, including disrupted sleep and procrastination, but continued to engage due to the perceived short-term gains of pleasure and social connectivity (P2, P3).

The influence of digital media on self-identity was profound, as users reported fluctuating perceptions of self-worth and adequacy based on their interactions with social media. Participants frequently compared themselves to others, leading to feelings of inadequacy (P2, P3). The need for social validation through likes, shares and comments, as highlighted by Bhargava and Velasquez (2021) further exemplifies how social media platforms exploit psychological

vulnerabilities, reinforcing the perceived need for constant engagement. This reflects the dynamic interplay between self-perception and digital media, where identity is often shaped and reshaped through user interactions with online content.

### 5.1.1 Autoethnographical findings

The author reported a substantial improvement in self-discipline and focus when certain notifications and applications were disabled or deleted, which reflects a similar experience shared by other participants. The realisation that not all notifications, particularly from platforms like Snapchat and Instagram, were necessary, led the author to adopt a more selective approach to app usage. This shift resulted in fewer distractions and an improved ability to focus on non-digital activities, which indirectly boosted their sense of accomplishment and overall happiness.

Furthermore, the author's reflections on digital media usage revealed a struggle with the rationalisation of usage. While digital platforms often provided momentary pleasure, the author came to question whether such usage was genuinely beneficial. This struggle to rationalise prolonged engagement, despite being aware of its detrimental effects on productivity and sleep, resonates with the broader findings from the participant interviews, highlighting the common cognitive dissonance in users when it comes to digital media consumption.

## 5.2 Digital addiction and addictiveness of applications

The study provides significant insights into the design features contributing to the addictiveness of digital media. Participants noted that algorithms play a critical role in keeping them hooked by continually offering personalised content that aligns with their preferences. This finding confirms Bhargava and Velasquez's (2021) observations that social media algorithms exploit users' psychological tendencies to foster dependence. The endless scroll feature, particularly for short videos, was identified as one of the primary addictive elements due to its ability to provide users with "quick dopamine boosts" (P2, P3, P4, P5), referring to the small amounts of joy these digital media formats bring.

Psychological and behavioural dependence on digital media was also evident through the reported withdrawal symptoms participants experienced during the study. Feelings of anxiety, restlessness, and a compulsion to check devices were common when certain applications were deleted (P5). These symptoms align with the criteria for digital addiction mentioned in the DSM-V criteria (Diagnostic and Statistical Manual of Mental Disorders 2013), which lists withdrawal, loss of control, and the persistence of behaviour despite its negative impact as core characteristics of addiction. These findings suggest that digital applications are designed to foster habitual use, with participants struggling to disengage even when aware of the negative consequences.

The impact of digital addiction on daily life was evident in the participants' routines and habits. Participants reported disrupted sleep patterns due to late-night social media use, aligning with the findings of Dresch-Langley & Hutt (2022), who noted that the artificial light from screens impacts circadian rhythms. The study further demonstrates that digital addiction extends beyond mere screen time, affecting users' relationships and overall well-being, as evidenced by participants who admitted neglecting hobbies and face-to-face interactions.

### 5.2.1 Autoethnographical findings

The author experienced the addictive qualities of digital platforms firsthand, particularly the algorithm-driven content recommendations of Instagram. The pull of short video content, offering feelings of joy was evident in their reflections, which align with the experiences of other participants. The author described instances where the content algorithms drew them into prolonged scrolling sessions, despite their intentions to limit usage. This experience highlights the role of platform design in fostering addictive behaviours and points to a broader issue of algorithm-driven engagement that perpetuates dependency.

Moreover, the author identified a sense of psychological dependence, noting withdrawal-like behaviours when notifications were turned off or applications were deleted. These observations mirror Participant 5's experience of distress during the research period when unable to use digital media as usual. The author's account, coupled with the participant findings, underlines the strong psychological hold that digital media can have on users and the challenge of breaking free from habitual use.

## 5.3 Effects of notifications

Notifications were found to be a significant factor in influencing attention and focus. Participants reported that notifications disrupted their cognitive processes, leading to reduced productivity and a fragmented attention span (P2, P4, P5). This aligns with Kushlev et al.'s (2016) findings that frequent notifications contribute to symptoms of inattention, even in individuals without neurological abnormalities. The compulsive checking of notifications, described by several participants, highlights how the unpredictability of notifications reinforces checking behaviours in the hopes of small rewards, similar to the intermittent reward systems found in slot machines (Bhargava & Velasquez, 2021).

The role of notifications in reinforcing addictive behaviours was further underscored by the participants' experiences during the research period, when disabling notifications led to a reduction in screen time and less frequent phone-checking (P1, P5). This suggests that the absence of constant stimuli allowed users to regain control over their digital habits, supporting the idea that notifications serve as a key driver of compulsive use.



In addition to the negative impacts of notifications, participants reported some positive effects related to them. Notifications for communication applications, such as messaging, were found to be helpful in maintaining important social relationships. Participants expressed that receiving notifications from people they cared about allowed them to stay in touch and respond quickly, which they valued. The promptness facilitated by these notifications supported their social connections, thereby enhancing their emotional well-being and reducing feelings of disconnection.

Moreover, the presence of notifications was perceived as useful for ensuring participants did not miss significant messages or events, especially when the content was important and related to close relationships. For instance, Participant 2 acknowledged the value of keeping communication notifications enabled, as it allowed them to remain informed about messages from important contacts without having to manually check applications constantly.

### 5.3.1 Autoethnographical findings

The author's autoethnographical findings largely align with those of other participants, particularly regarding the dual-edged nature of notifications. Similar to Participant 1, the author observed that reducing notifications led to less frequent phone-checking behaviour. This change allowed the author to better focus on tasks without the constant urge to glance at their phone, contributing to an overall improved attention span. Notifications, when disabled, led to a greater sense of control over their usage patterns, highlighting their role as significant contributors to habitual behaviours rather than inherently essential components of communication.

Interestingly, the author also experienced what can be described as a "phantom alert" behaviour, where they would check their phone due to a gut feeling that they might be missing something important, even in the absence of notifications. This finding underscores the deeply ingrained habit of phone-checking, a behaviour that persists even without external stimuli such as notifications. It suggests that habitual checking is not solely dependent on notifications but also on an internal sense of needing to stay updated, which was consistent with Participant 1's and 5's experience as well.

The autoethnographical insights reflect the dual nature of notifications in both increasing and reducing screen time. Initially, turning off notifications led to increased manual checking of applications, as the habit of receiving regular updates was ingrained. However, over time, as the author adapted to fewer notifications, the frequency of checking their phone decreased, ultimately reducing overall screen time. This observation aligns with the broader theme identified in the study that disabling notifications can both heighten and eventually lessen the impulse to check one's phone, depending on the adaptation period.

## 5.4 Digital media's influence on daily life and well-being

The influence of digital media on daily routines was evident in participants' experiences of disrupted schedules, especially sleep (P1, P3). Participants frequently reported staying up late due to the consumption of short videos, which Korte (2020) identified as a key factor affecting cognitive functions like focus and memory. The constant exposure to digital content not only affected sleep quality but also led to emotional exhaustion, as users struggled to disengage from negative content, a behaviour commonly referred to as doomsscrolling (Hughes et al., 2024).

The study also highlights the emotional and psychological impact of digital media use. Participants reported both positive and negative effects on their perceived well-being, depending on the content they consumed and the context of usage. While some participants mentioned that digital media provided an avenue for relaxation and social connection, others noted its role in exacerbating anxiety and feelings of inadequacy, especially during periods of doomsscrolling or prolonged social media use (P2, P5). The integration of digital media into users' lives has led to a blurring of boundaries between online and offline experiences, often diminishing real-life presence and interactions.

The findings also suggest that the removal or reduction of digital media use led to improved mood and perceived well-being. Participants reported feeling less stressed and more productive during the research period, which indicates the potential benefits of digital detox in fostering a healthier balance between online and offline activities. This finding aligns with Buchanan's (2021) and Schmuck's (2020) work, which suggests that limiting exposure to negative news content can have positive effects on emotional well-being.

### 5.4.1 Autoethnographical findings

The impact of reduced digital media usage on well-being was significant for the author, as evidenced by improved sleep quality and a greater sense of accomplishment. By eliminating notifications and limiting app usage, the author found themselves more engaged in non-digital activities, which led to enhanced productivity and a better mood. This positive shift aligns with the experiences of other participants who also reported increased happiness and improved focus when they were less exposed to digital media. It reinforces the broader theme of how digital detox can contribute to improved life satisfaction and well-being.

The author's reflections also highlighted the blurring of online and offline experiences. Before the research period, frequent notifications and constant digital engagement had merged their online presence with daily life, leading to a diminished focus on offline activities. The reduction in notifications and ultimately the removal of applications allowed for a clearer separation between online and offline experiences, which, helped restore a sense of balance and presence in real-world interactions. This finding aligns with Participant 1's realisation that fewer

notifications enabled more focused and intentional responses, rather than constantly being pulled towards their phone by trivial alerts.

## 5.5 Theoretical implications

The findings from this study contribute to the understanding of the psychological mechanisms underlying digital media usage, particularly in the context of digital addiction. The themes developed: excessive use and self-perception, digital addiction and addictiveness of applications, the effects of notifications, and digital media's influence on daily life and well-being, offer a nuanced perspective on how digital media shapes self-identity, habits, and well-being.

This study supports the concept of cognitive dissonance in digital behaviour, where users continue excessive usage despite recognising negative consequences, reflecting theories of addiction and behavioural dependency (Korte, 2020). Additionally, the role of social media in shaping self-identity aligns with Bhargava and Velasquez's (2021) findings on how platforms exploit psychological vulnerabilities. Study also adds value by demonstrating the impact of digital detox strategies, supporting Buchanan's (2021) and Schmuck's (2020) arguments for the benefits of reducing negative content exposure.

Furthermore, the study provides insight into the reinforcement mechanisms of digital addiction, particularly through notifications and algorithm-driven content. This aligns with the psychological theories of operant conditioning, where notifications act as intermittent rewards, similar to gambling stimuli (Bhargava & Velasquez, 2021). Such mechanisms help to reinforce compulsive behaviours, suggesting a need to critically evaluate the ethical aspects of platform design that contribute to addiction.

## 5.6 Practical implications

The practical implications of the study are significant for both individuals and digital platform developers. For individuals, the findings suggest that actively managing digital media usage by limiting notifications and disabling certain applications can lead to improvements in productivity, focus, and well-being. The study highlights the importance of adopting digital detox strategies, such as selective app use and limiting notifications, as these can reduce compulsive behaviours and foster a healthier relationship with technology.

For developers, the insights call for a reconsideration of app design features that promote addiction. Features like endless scrolling and personalised content recommendations are highlighted as major contributors to dependency. Ethical app design should therefore consider including features that encourage users to take breaks or limit usage, promoting a healthier engagement with technology. Platform developers should also consider creating more transparent user options

for controlling the frequency and type of notifications, thus giving users greater autonomy over their digital consumption.

From a policy perspective, these findings can inform guidelines for regulating digital media companies to limit exploitative design practices. Educational programs could also be developed to raise awareness of the psychological effects of digital media and to teach users strategies for mitigating these effects, leading to more responsible use of digital media and ultimately promoting digital well-being.

## 6 CONCLUSIONS

### 6.1 Answers to the research questions

The goal of this study was to provide answers to three research questions. The first one to be answered is *'How do users explain the use of the digital media to themselves?'*, to which multiple answers can be found from the data. Users explained their use of digital media in varying ways, which often involved rationalising their behaviour to reduce feelings of guilt associated with excessive use. One of the main justifications given by users was that digital media provided a convenient form of escapism – a way to unwind and take a mental break from their responsibilities or daily stressors. This was particularly evident during work or study breaks, where participants turned to social media or other forms of digital content to momentarily escape from demanding tasks. For instance, some participants noted that scrolling through social media gave them a way to “reset” their minds, providing a sense of relaxation that they could not easily find through other means.

Entertainment was another significant reason given for digital media use. Many users referred to engaging in mindless scrolling through platforms like TikTok, Instagram, or YouTube as a way to have fun or get a “dopamine boost” without investing significant effort. The desire for entertainment was often linked to the consumption of short videos, which provided instant gratification. This kind of activity was described as a quick and easy way to fill moments of boredom, offering a mix of enjoyable content that ranged from light-hearted memes to informational videos.

Social interaction was also a crucial aspect of digital media use. Users explained that they used platforms such as Snapchat, Instagram, and WhatsApp to maintain connections with friends and family, emphasising the importance of staying informed about the lives of those in their social circles. This kind of connectivity allowed participants to feel engaged with their communities, even

when physically apart. Users also rationalised the use of these applications by highlighting the fear of missing out (FOMO). The desire to stay updated about social events, group activities, or trending topics was strong enough to justify spending long hours on these platforms.

Another justification was the perceived utility of digital media. Some participants explained that certain applications were used for productive reasons, such as accessing news, raffles or simply navigation. This belief in the utility of digital media helped users justify their screen time, even when it was clear that not all of their time online was being spent productively.

Interestingly, participants also rationalised addictive behaviour by downplaying the negative aspects of digital media use. Even though they were aware of the detrimental effects, such as disrupted sleep, anxiety, and reduced productivity, they found ways to justify their habits. For example, users mentioned that while scrolling on social media could lead to procrastination, it also provided them with needed breaks from their responsibilities. They perceived this downtime as necessary for mental health, thus creating a paradox where the negative impacts of media use were acknowledged, but the behaviour continued due to perceived benefits.

The second research question to be answered is *'In what ways does the use of digital media affect users' lives?'*, as the use of digital media had a profound impact on multiple facets of users' lives, affecting their daily routines, emotional well-being, social interactions, and physical health. The study found that these effects could be both positive and negative, depending on the context and the extent of usage.

In terms of daily routines, digital media significantly influenced how users managed their time. Many participants reported that excessive use of digital media led to disrupted sleep schedules, primarily because they would engage with their phones late at night. Platforms like TikTok and Instagram, with their endless streams of content, made it easy for users to lose track of time, leading to later bedtimes and poorer sleep quality. This issue was especially problematic with short videos that offered a continuous feed of engaging content, resulting in users continuing the activity and staying up longer than intended. Poor sleep, in turn, affected their productivity and ability to focus during the day, suggesting a cyclical pattern where digital media use disrupted one aspect of life, which then cascaded into others.

The impact on perceived emotional well-being was complex and varied across participants. On one hand, digital media provided moments of joy and connection, which had positive effects on users' moods. Platforms like Snapchat and Instagram allowed users to stay connected with loved ones, offering a sense of belonging and support. However, on the other hand, participants also reported feelings of anxiety, inadequacy, and stress due to their digital media use. The tendency to compare oneself with others on social media often led to feelings of inadequacy, particularly when users saw the carefully curated and idealised lives of others.

Furthermore, the study highlighted the effect of doomscrolling, where users would engage in prolonged exposure to negative news or distressing content. This behaviour contributed to feelings of helplessness, anxiety, and stress, exacerbating negative emotions rather than alleviating them. This indicates that the emotional regulation aspect of digital media is complex, often leading to unintended consequences such as anxiety and information overload.

In terms of social interactions, digital media played a dual role. It was instrumental in maintaining relationships, enabling participants to stay in touch with friends and family. However, this form of interaction often led to a blurring of boundaries between online and offline communication. For some participants, constant engagement with online content meant that they were less present in face-to-face interactions. Notifications from messaging apps, for example, could interrupt in-person conversations, leading to a fragmented social experience where users were only partially engaged in their real-world environment.

Physically, the study found that excessive digital media use had health implications. Participants reported lack of physical activity due to extended sessions of digital media usage. Late-night use of smartphones and exposure to blue light also had negative effects on sleep quality, leading to possibly broader consequences for overall health and well-being. The participants acknowledged that excessive screen time kept them sedentary, reducing the time they spent on physical activities or outdoor pursuits, which could have benefited their physical health.

Interestingly, during the research period, when users willingly reduced and paid attention to their use of digital media, they reported improvements in well-being. Many participants experienced increased productivity, more meaningful real-world interactions, and a general sense of being more present and engaged in their surroundings. This suggests that while digital media has the potential to enhance certain aspects of life, excessive use often leads to unintended and negative consequences that outweigh these benefits.

For the third but not least research question '*According to the users, what causes addictiveness towards digital media?*' participants identified several features of digital media that contributed to its addictive nature, including algorithm-driven content, short video formats, notifications, and habit formation. One of the most significant causes of addictiveness was the algorithm-driven content used by platforms like TikTok, Instagram, and YouTube. The study found that algorithms played a critical role in ensuring that users were consistently presented with content that aligned with their interests and preferences. The individualised recommendations gave users the perception that the content was tailored specifically for them, making it harder to disengage.

Another addictive feature identified by users was the short video format. Platforms like TikTok, Instagram Reels, and YouTube Shorts were specifically designed to offer quick, bite-sized content that could be consumed in seconds. Participants noted that these short videos provided "a quick dopamine boost" – a term they used to describe the pleasurable sensation associated with engaging content. The rapid and continuous nature of short videos allowed users to

experience repeated cycles of gratification in a short amount of time, making it difficult for them to stop. The endless scrolling features combined with short videos created a powerful feedback loop, as users could quickly swipe to the next video, often without even realising how much time had passed. This format was noted to be particularly effective in triggering compulsive behaviour, as it required minimal effort but provided high levels of stimulation. The feature was especially obvious with TikTok, and it is to be noted that none of the participants who had this application prior to the research period wanted to re-install it back to their devices, highlighting the highly addictive nature of such algorithm-driven content formats. However, as we can see from the results, such negative habits or addictions can be broken with relatively little effort.

Notifications were also highlighted as a driver of addictiveness. Participants explained that the unpredictability and immediacy of notifications fostered a sense of urgency, compelling them to check their devices frequently. The fear of missing out (FOMO) played a significant role in this compulsion, particularly with notifications related to social interactions. Notifications acted as external cues that triggered users to engage with their devices, often interrupting other activities. Even when participants attempted to limit their use of digital media by turning off notifications, they reported experiencing phantom vibrations or feelings of anxiety, indicating the deep-seated habit of checking their phones. This behaviour is consistent with the concept of intermittent reinforcement, where unpredictable rewards (in this case, notifications) create a powerful habit-forming mechanism, similar to how slot machines operate.

The study also found that habit formation was a significant factor in digital media addiction. Participants explained that their long-term use of certain applications led to ingrained habits that were difficult to break. For example, the Snapchat "Snap Streaks" feature was mentioned as a strong motivator for daily engagement. Users felt compelled to maintain streaks with their friends, as breaking the streak would feel like a failure or a loss. This feature created a routine where users would open the app daily, even if they had no other reason to do so. Similarly, participants who played mobile games reported that they continued to play due to the time and effort they had already invested, even if the activity no longer brought them much enjoyment, justifying their past efforts.

Overall, the study demonstrated that the design features of digital media platforms, such as personalised algorithms, short video content, notifications, and features that encouraged routine use, were highly effective in fostering addictive behaviours. These elements, combined with psychological factors such as FOMO, the need for social validation, and the activity justification biases in mobile gaming behaviour, created a powerful environment that made disengagement challenging for users. The addictive qualities of digital media were not just a result of content but also the way the platforms were engineered to maximise engagement, often at the expense of users' well-being.



## 6.2 Limitations of the study

Some study limitations and speculations were recognised. This study relies heavily on self-reported data in the form of daily diary entries and interviews, which can lead to reliability related challenges, because the participants might want to display themselves in a more favourable light or exaggerate positive changes. This reduces the reproducibility and accuracy of the findings, as participants' reported experiences may not accurately reflect their real behaviour. Second, validity related challenge is associated with the autoethnographic data collection, as author's own experiences and expectations might influence how data is interpreted, and which observations are emphasised. While the autoethnographic approach enriches the data with a personal perspective, it may compromise the objectivity and accuracy of the study.

Thirdly, the study's findings are based on a small sample of only six participants, in addition to the researcher's autoethnographic data. This limited number of participants reduces the generalisability of the results, as the sample may not adequately represent the broader population. The participants were also all from a specific demographic: Finnish citizens aged around 30 years, primarily students or office workers. As such, the findings may not be applicable to other age groups, nationalities, or people with different professional backgrounds.

In addition, the research period was conducted over a two-week span, in addition to one week for the interviews, which is a relatively short time frame for studying behavioural changes and addiction patterns. Two weeks might not be sufficient for participants to fully adapt to changes in their digital media habits or to manifest the deeper impacts of reducing their digital media use. Habitual behaviours, especially those related to digital addiction, can take much longer to change, as also mentioned by Participant 3, and a longer study would have allowed for a more detailed understanding of whether the observed changes in screen time and well-being were sustained over time or if they were temporary adjustments.

Finally, while not necessarily a limitation of the study due to its nature and aims, the absence of a control group limits the study's ability to draw causal conclusions. Without a control group of participants who maintained their normal digital media usage patterns during the same period, it is difficult to determine whether the changes observed in screen time, perceived well-being, and behaviour were directly attributable to the experimental conditions (e.g. turning off notifications or deleting applications) or if they were influenced by other factors. A control group would have provided a baseline for comparison, allowing for more robust conclusions – but in this case, the analysis of the study would have been different, leading to different findings.

### 6.3 Further research topics

As the research period of this study was mere three weeks, the future research should explore the long-term impact of digital media usage and digital detox attempts on well-being, productivity, and behavioural patterns. A longitudinal study that extends over several months or even years would provide insights into how long-term reductions in screen time affect emotional health, social relationships, and productivity. This approach would also allow for an assessment of whether initial benefits observed during short-term detox are sustained over time or if old habits gradually return.

Future research could also examine the effectiveness of various digital detox strategies on reducing digital media dependency and improving well-being. Comparisons between different interventions such as turning off notifications, deleting specific applications, setting screen time limits, or using digital well-being apps could provide insights into which methods are most effective for different types of users. Additionally, the use of a control group in such studies would allow researchers to determine the specific impact of digital detox interventions compared to participants who maintain their usual digital habits.

Finally, a diverse demographic study with participants of different age groups, nationalities, socioeconomic statuses, and occupations could investigate how cultural differences influence digital media usage and the prevalence of digital addiction. This kind of study would provide a more holistic understanding of the phenomenon. Comparative cross-cultural studies could reveal how factors such as cultural norms, economic conditions, and technology accessibility shape digital media behaviour and its effects.

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## APPENDIX 1: INITIAL INTERVIEW

Nimi

Paljonko aikaa arvioisit käyttäväsi digitaalisen mediaan (älypuhelin, some, pelaaminen, internet) päivässä? Työajalla käytettäviä digitaalisen median sovelluksia ei huomioida.

Paljonko aikaa käytät keskimäärin älypuhelimella päivässä (screen time)? Tarkista lukema puhelimesi asetuksista ja laske kuluneen 7 päivän keskiarvo.

Montako ilmoitusta saat keskimäärin päivässä? Tarkista lukema puhelimesi asetuksista ja laske kuluneen 7 päivän keskiarvo.

Kun saat sovellusilmoituksen, niin miten toimit? Avaatko sovelluksen välittömästi vai myöhemmin? Reagoitko ilmoitukseen eri tavalla, riippuen ilmoituksen luonteesta?

Mitkä sovellukset ovat kuluttaneet eniten aikaa viimeisen 7 päivän aikana ja montako minuuttia nämä ovat vieneet aikaa keskimäärin päivässä?

Paljonko eniten aikaa vievät sovellukset ovat lähettäneet ilmoituksia kuluneen 7 päivän aikana?

Montako kertaa keskimäärin olet avannut puhelimesi lukituksen kuluneen 7 päivän aikana?

Millaisia tuntemuksia nämä luvut herättävät?

Minkä digitaalisen median (some, pelaaminen, internet, älypuhelin) käytön sanoisit olevan ongelmallista ja miksi?

Miten perustelet mainitsemiesi ongelmallisten sovellusten käytön itsellesi?

Mieti tämänhetkistä elämääsi. Kuinka onnelliseksi koet itsesi asteikolla 1-10? (1 = olen onneton, 10 = olen todella onnellinen)

Liittyykö digitaalisen median käyttö antamaasi arvioon ja miten?

Millaista elämänlaatua parantavaa hyötyä koet digitaalisen median käytöstä olevan sinulle?

Millaista elämänlaatua heikentäviä vaikutuksia koet digitaalisen median käytöllä olevan sinulle?

Muuta

## APPENDIX 2: DAILY JOURNAL OF DIGITAL MEDIA USAGE - FIRST RESEARCH PERIOD

Osio 1/4

### Päiväkirja digitaalisen median käytöstä ✕ ⋮

Täytä päiväkirjaa testijaksolla päivittäin ennen nukkumaanmenoa ja **mieti kuluneen päivän tapahtumia. Älä mieti työtehtäviesi hoitamiseen käyttämiäsi sovelluksia.** Pyri vastaamaan suunnilleen samaan aikaan vuorokaudesta, mikäli unirytmissä on vaihtelua. Mikäli unohdat vastata ennen nukkumaanmenoa, niin voit vastata myös seuraavana päivänä ja pohtia edellisen päivän tapahtumia.

Muista pohtia erityisesti sinulle itsellesi ongelmalliseksi koetun digitaalisen median sovellusten vaikutuksia. Nämä sovellukset on käyty läpi alkukartoituskyselyn avulla.

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Tämä lomake kerää automaattisesti kaikkien vastaajien sähköpostiosoitteet. [Muuta asetuksia](#)

Käytitkö mielestäsi liikaa digitaalista mediaa päivän aikana? \*

Kyllä

Ei

Jäikö jotain oleellista tekemättä, koska käytit liikaa digitaalista mediaa kuluneen päivän aikana? \*

Kyllä

Ei

Oletko vähentänyt vai lisännyt digitaalisen median käyttöä verrattuna edelliseen päivään? \*  
Tarkista ruutuajan tilanne puhelimesi asetuksista.

Käyttö on lisääntynyt

Käyttö on vähentynyt

Miten notifikaatioiden väheneminen seurattujen sovellusten osalta on vaikuttanut digitaalisen median käyttömäärään? \*

Pitkä vastausteksti

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Kirjaa yleiset tuntemuksesi kuluneen päivän ajalta digitaalisen median käyttöön liittyen. \*

Voit taustoittaa edellisten kysymysten vastauksia, kuten esimerkiksi: Miksi ruutu aika on lisääntynyt tai mitä jäi tekemättä? Käytitkö jotain sovellusta jostain syystä enemmän, kuin aikaisemmin?

Pitkä vastausteksti

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Osion 1 jälkeen [Jatka seuraavaan osioon](#) ▼

**Osio 2/4**

Henkinen hyvinvointi ✕ ⋮

Kuvaus (valinnainen)

Mieti henkistä hyvinvointiasi ja valitse päivän olotilaa parhaiten kuvaava luku. \*

1 2 3 4 5 6 7 8 9 10

En ole kovin onnellinen.           Olen todella onnellinen.

Liittyykö digitaalisen median käyttö antamaasi lukemaan? \*

Kyllä, positiivisesti

Kyllä, negatiivisesti

Ei liity, taustalla on joku muu syy

Osion 2 jälkeen [Jatka seuraavaan osioon](#) ▼

**Osio 3/4**

Henkinen hyvinvointi (jatkokysymys) ✕ ⋮

Kuvaus (valinnainen)

Kerro miten digitaalisen median käyttö vaikuttaa henkiseen hyvinvointiisi?

Pitkä vastausteksti

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Osion 3 jälkeen [Jatka seuraavaan osioon](#) ▼

**Osio 4/4**

Vapaa sana ✕ ⋮

Kuvaus (valinnainen)

Vapaa sana. Voit kirjoittaa tähän vapaamuotoisesti, jos on vielä jotain lisättävää päivän tapahtumiin.



Pitkä vastausteksti

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## APPENDIX 3: DAILY JOURNAL OF DIGITAL MEDIA USAGE - SECOND RESEARCH PERIOD

Osio 1/5

### Päiväkirja digitaalisen median käytöstä - jaks 2

**B** *I* U  

Tämän 2-jakson aikana edellisellä jaksolla seuratut sovellukset tulisi olla poistettuna laitteelta.

Täytä päiväkirjaa testijaksolla päivittäin ennen nukkumaanmenoa ja **mieti kuluneen päivän tapahtumia. Älä mieti työtehtäviesi hoitamiseen käyttämiäsi sovelluksia.** Pyri vastaamaan suunnilleen samaan aikaan vuorokaudesta, mikäli unirytmissä on vaihtelua. Mikäli unohdat vastata ennen nukkumaanmenoa, niin voit vastata myös seuraavana päivänä ja pohtia edellisen päivän tapahtumia.

Muista pohtia erityisesti sinulle itsellesi ongelmalliseksi koetun digitaalisen median sovellusten vaikutuksia. Nämä sovellukset on käyty läpi alkukartoituskyselyn avulla.

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Tämä lomake kerää automaattisesti kaikkien vastaajien sähköpostiosoitteet. [Muuta asetuksia](#)

Käyttikö mielestäsi liikaa digitaalista mediaa päivän aikana? \*

Kyllä

Ei

Jäikö jotain oleellista tekemättä, koska käytit liikaa digitaalista mediaa kuluneen päivän aikana? \*

Kyllä

Ei

Oletko vähentänyt vai lisännyt digitaalisen median käyttöä verrattuna edelliseen päivään? \*  
Tarkista ruutuajan tilanne puhelimesi asetuksista.

Käyttö on lisääntynyt

Käyttö on vähentynyt

Kirjaa yleiset tuntemuksesi kuluneen päivän ajalta digitaalisen median käyttöön liittyen. \*

Voit taustoitaa edellisten kysymysten vastauksia, kuten esimerkiksi: Miksi ruutu aika on lisääntynyt tai mitä jäi tekemättä? Käyttikö jotain sovellusta jostain syystä enemmän, kuin aikaisemmin?

Pitkä vastausteksti

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Osion 1 jälkeen [Jatka seuraavaan osioon](#)

## Osio 2/5

## Poistetut sovellukset



Tässä osiossa keskitytään laitteeltasi 2-testijaksoa varten poistettuihin sovelluksiin ja niiden vaikutuksiin.

Vieroitusoireilla tarkoitetaan tässä yhteydessä ahdistusta, masennusta, ärtyneisyyttä, levottomuutta, surua tai alakuloisuutta, joka johtuu digitaalisen median käytön lopettamisesta.

Koetko, että sinulle olisi tullut vieroitusoireita, kun laitteeltasi on poistettu paljon käyttämiäsi sovelluksia? \*

Kyllä

Ei

Mikäli vastasit edelliseen kysymyksen kyllä, niin millaisia vieroitusoireita?

Pitkä vastausteksti

Miten olet korvannut sovellusten poistamisen myötä vapautuneen ajan? \*

Pitkä vastausteksti

Koetko sovellusten poistamisesta olevan sinulle enemmän hyötyä vai haittaa? \*

Enemmän hyötyä

Enemmän haittaa

Millaista hyötyä tai haittaa koet digitaalisen median sovellusten poistamisesta olevan sinulle? \*

Pitkä vastausteksti



## Osio 3/5

Henkinen hyvinvointi



Kuvaus (valinnainen)

Mieti henkistä hyvinvointiasi ja valitse päivän olotilaa parhaiten kuvaava luku. \*

1 2 3 4 5 6 7 8 9 10

En ole kovin onnellinen.

Olen todella onnellinen.

Liittyykö digitaalisen median käyttö antamaasi lukemaan? \*

- Kyllä, positiivisesti
- Kyllä, negatiivisesti
- Ei liity, taustalla on joku muu syy

Osion 3 jälkeen Jatka seuraavaan osioon



## Osio 4/5

Henkinen hyvinvointi (jatkokysymys)



Kuvaus (valinnainen)

Kerro miten digitaalisen median käyttö vaikuttaa henkiseen hyvinvointiisi?

Pitkä vastausteksti

Osion 4 jälkeen Jatka seuraavaan osioon



## Osio 5/5

Vapaa sana



Kuvaus (valinnainen)

Vapaa sana. Voit kirjoittaa tähän vapaamuotoisesti, jos on vielä jotain lisättävää päivän tapahtumiin.

Pitkä vastausteksti

## APPENDIX 4: END INTERVIEW

Nimi

Oletko käyttänyt vähemmän digitaalista mediaa testijakson loppua kohti? Tarkista ruutuajan tilanne puhelimen asetuksista ja ilmoita ruutu aika ensimmäisen testijakson lopussa, sekä toisen testijakson lopussa.

Paljonko puhelimesi lukitusten avausmäärät vähentyneet testijakson loppua kohti? (Tarkista avausmäärien tilanne puhelimen asetuksista)

Miten suhtautumisesi sovellusilmoituksiin on muuttunut testijakson aikana?

Millaista hyötyä koet tästä testijaksosta olleen sinulle?

Koetko, että jäit jostain paitsi testijakson aikana? Mistä?

Minkä näkisit olevan koukuttava tekijä digitaalisessa mediassa, nyt kun olet pidättäytynyt käyttämästä tiettyjä sovelluksia?

Koetko, että olisit vähemmän riippuvainen digitaalisesta mediasta verrattuna aikaan ennen testijaksoa?

Miksi luulet ajautuneesi testijaksoa edeltäneeseen tilanteeseen digitaalisen median käyttötottumusten osalta?

Testijaksolla poistettiin sovelluksia puhelimestasi. Kuinka korvasit näistä vapautunutta aikaa?

Koetko pystyväsi keskittymään paremmin asioihin ja vaativampiin tehtäviin verrattuna testijaksoa edeltäneeseen tilanteeseen? Anna esimerkkejä, jos koet pystyväsi keskittymään paremmin.

Uskotko jatkavasi testijaksolta saamiasi oppeja myös tulevaisuudessa?

Kuinka koet digitaalisen median käytön heijastuvan elämääsi, nyt kun testijakso on päättynyt?

Koetko olevasi onnellisempi nyt testijakson päätyttyä, verrattuna tilanteeseen ennen sen alkamista?

Koetko olevasi onnellisempi nyt testijakson päätyttyä, verrattuna tilanteeseen ennen sen alkamista? Anna arvosana. (1 = olen onneton, 10 = olen todella onnellinen)



Miten digitaalisen median käyttö vaikuttaa antamaasi arvosanaan?

Koetko ylipäättään olevasi onnellisempi testijakson myötä, kun olet kiinnittänyt huomiota digitaalisen median käyttöön?

Muuta

## APPENDIX 5: ORIGINAL INTERVIEW QUOTES

**P1:**

Jotenkin sitä vaan mieltii eri tavalla sitä ajankäyttöä. Se pelimaailman tutkiminen on jotenkin eri tavalla hauskaa. Pelaaminen on vaan jotenkin sellainen kiva hetki. (P1, 1)

YouTube shortsit on pahoja, koska niitä tulee aivan liikaa katsottua ja erityisesti nukkumaan mennessä. (P1, 2)

Pelasin taas liikaa, alan jo harkitsemaan, että pitäskö tämä peli vaan poistaa ja tehdä jotain hyödyllisempää. No katsotaan sitten toisella seuranta viikolla miltä tuntuu, jos sen poistaa hetkeksi aikaa. (P1, 3)

Poistin sen pelin, niin ei mennyt aikaa siihen turhaan. (P1, 4)

Alkuun sormet haki Snapchattia ja Instagramia perinteiseen turhaan selailuun, mutta melko nopeasti sen unohti eli vähällä pääsin tämän päivän ainakin. (P1, 5)

Puhelinta ei tullut turhan takia enää kaivettua taskusta ilmoitusten toivossa. (P1, 6)

Sitä Snap Streakkia varjeli, kuin esikoislastaan. (P1, 7)

Se peli lähti ja ei tule takaisin. Poistin sen jo siinä vaiheessa kun ilmoitukset poistui, koska aloin kiinnittää huomiota siihen, että tulee pelattua aivan turhan takia. Tajusin, että se on ajan kulutusta, jolla voisi tehdä jotain järkeväkin. (P1, 8)

Kyllä. Esim. Snapchatissa ei ole pakko joka päivä laittaa snäppiä, että saa ylläpidettyä striikkiä tai viesteissä jotka tulee ei ole sellaista joka mullistaisi asioita. (P1, 9)

Digitaalisen median käytön väheneminen nostaa arvosanaa. Älysin, että siitä (digitaalisen median käytöstä) ei todellisuudessa saa mitään hyötyä. Huomasin, että digitaalisen median käytössäni on mukana paljon turhaa, jotka eivät tuota enää iloa. (P1, 10)

Päädyn siihen, että otin ilmoitukset ainakin Snapchatista pois. Aion pitää ne pois myös testijakson jälkeen, ettei tarvitse vahdata puhelinta ilmoitusten toivossa. Nyt varaa sellaisen hetken, että katsoo kerralla, mitä on tullut, sitten kun on aikaa. (P1, 11)

**P2:**

Kyllä mulla on ollut sitäkin, että kun on normisti töissä, niin sitten tulee kuitenkin selattua ihan samalla tavalla ja jää jumittamaan. (...) Haluan semmoisen nollauksen muusta. (P2, 1)

Välillä pitääkin olla tekemättä mitään, jonka takia tämä on hieman kaksi piippuinen juttu. (P2, 2)

Mä oon tehnyt semmoisen tietoisin päätöksen, että mä pyrin vähentämään mun Instagramin käyttöä, mutta sit käyttöön on siirtynyt YouTube. (P2, 3)

Oon hyväksynyt ja sallinut sen itselleni (YouTube Shortsien kulutuksen), koska sitten mä en katso niitä (Instagram Reelsejä) ihan sikana. Oon käyttänyt myös ihan sikana aikaa siihen muiden ihmisten Instagram storyjen katselemiseen, että sitten tavallaan se on jäänyt kokonaan pois, ja sitten kun lyhytvideoita katsoo, niin niitä on täällä (YouTubessa). (P2, 4)

Tulee huono omatunto, kun menee liikaa aikaa ihan turhaan. (P2, 5)

En ole sen kanssa niin ehdoton, että jos nyt täytyy joku pari viestiä vielä laittaa tai hoitaa joku juttu, niin sitten hoidan. (P2, 6)

Oli ärsyttävää odottaa viestiä kaverilta kun piti jatkuvasti avata WhatsApp-sovellus. tätä ei olisi tarvinnut tehdä jos ilmoitukset tulisivat lukitusnäytölle. (P2, 7)

Tuntuu hyvältä kun ilmoitukset (ne mitkä otettiin pois päältä) eivät ole lukitusnäytöllä aina kun puhelinta pitää avata "oikeaan tarkoitukseen", eli esim. avata Google Maps. Tämä ei häiritse keskittymistä siitä miksi otti puhelimen esille. (P2, 8)

Digitaalisen median käyttö aiheutti riittämättömyyden tunnetta ja sai lykäämään muita tärkeitä päivän tehtäviä. (P2, 9)

Tuijottelen seinää :D selaan muita someja. (P2, 10)

Surua/alakuloa siitä että yhteys kavereihin on poissa snapchatin kautta. (P2, 11)

Koen että henkinen hyvinvointi olisi ollut tänään vielä heikompi jos olisin selannut esim. Instagramia ja saanut vertailua muihin. Toisaalta nyt sovelluksien poissaolo vaikutti negatiivisesti, kun en voinut jakaa kivoja asioita yhdessä muiden kanssa. (P2, 12)

(Digitaalisen median käyttö) lisää aivosumua ja huonoa omatuntoa siitä että ei keskity ympärillä tapahtuviin asioihin (kinda fomo). (P2, 13)

Kun ei ollut sovelluksia, niin jotenkin oli selkeämpi olo. (P2, 14)

Ehkä lyhytvideot, koska niistä ihmiset saa kicksejä. Nopealla tahdilla aivoja koukuttava sisältö. (P2, 15)

Nyt tiedostan paremmin tekemiseni. Kun avaan puhelinta, niin mietin, että miksi sen teen. Kulutan digitaalista mediaa ehkä tietoisemmin. (P2, 16)

Jos miettii sitä fiilistä mikä on (nyt verrattuna ennen testijaksoa), niin sanon, että se on pikkuisen parempi. Ei ehkä suoraan paranna onnellisuutta, mutta semmoista yleistä mielialaa tai vireystilaa ja keskittymiskykyä. Lisäksi oppi tunnistamaan digitaalisen median alustojen tekijät, jotka aiheuttavat ikäviä fiiliksiä, niin osaa niitä välttää. (P2, 17)

Olen huomannut, että miksi ne on olleet päällä. Aluksi oli ihanaa, kun puhelimen avasi jostain syystä. Keskittyminen ei herpaantunut, kun ei ollut ilmoituksia. Myöhemmin se alkoi ärsyttää, jos vaikka odotti jotain viestiä, niin piti asioikseen avata ja katsoa onko tullut ilmoitus. Nyt arvostaa taas eri tavalla. (P2, 18)

### P3:

Mä poistin siis TikTokin aikoinaan, koska mä jäin oikeasti niin pahasti siihen koukkuun, että mä huomasin että, (...) jaa 2 tuntia meni vaan. (...) Sen jälkeenkin, kun mä olin poistanut sen niin mä huomasin että mulla tuli semmoisia vieroitusoireita, että tekee niin paljon mieli kattoo TikTokia. (P3, 1)

No vois kyllä siitä TikTokista sanoa, että mä en voi enää koskaan ladata sitä. Ja en ole kyllä ladannutkaan. (P3, 2)

Heikentää yöunia, jos räplää liian myöhään puhelinta, niin uni ei sitten tule, kun on liian aktiiviset aivot. Se on myös huono juttu. Keskittymiskyky ylipäätään on huonompi varmasti nykyään koska kaikki on vaan niin nopea-tempoista ja kaikkea niin se on myös huono juttu. (P3, 3)

Parantavasti silloin, kun sitä käyttää sopivissa määrin ja se ei vie huomiota muilta asioilta tai ihmisiltä, vaan tuo inspiraatiota ja/tai esim. mahdollistaa sosiaalisten suhteiden ylläpitämisen sellaisten ihmisten kanssa, joita ei usein näe. Heikentävästi silloin, kun se vie liikaa aikaa muulta/muilta, vie fokuksen tärkeämmistä asioista, aiheuttaa kateuden/tyytymättömyyden/riittämättömyyden tunteita (vertailee itseään, omia tekemisiään, ulkonäköään tms.). Huomaa, että jos on huono päivä tms. sitä helposti ajautuu käyttämään esim. somea, ja se vain ruokkii niitä huonoja/negatiivisia tuntemuksia. Vastaavasti niissä hetkissä, kun on oikeasti onnellinen tai on tosi mukavaa, harvemmin silloin käyttää mitään digitaalista mediaa, vaan on läsnä siinä hetkessä. (P3, 4)

Auton vuokra-appia piti käyttää ja mappia, joka nosti edellispäivästä kokonaisen ruutuajan määrää. (P3, 5)

Äänikirjaa ainakin tullut kuunneltua. (P3, 6)

En osaa oikein eritellä olenko mitenkään erityisesti, ehkä tehny samoja asioita mutta ilman, että käyttää esim. puhelinta samalla. (P3, 7)

Avannut useamman kerran puhelimen ja etsinyt niitä sovelluksia. Myös fiiliksiä, että jääkö jostain paitsi. (P3, 8)

2 viikkoa, ei välttämättä vielä riitä rikkomaan tapaa. (P3, 9)

En varmaan vähemmän riippuvainen. Olen tietoisempi omasta käytöstäni. Hektisyyden tunne on helpottanut, voi itse valita, että katsonko samalla instaa kun katson TV-sarjoja. (P3, 10)

Onnellisuus on ainakin itselle sanana niin iso, että se ei vaihtele mulla silleen, että joku päivä mä oon ykkösen onnellinen ja joku päivä mä oon kympin onnellinen, vaan se on silleen joku solid kasin onnellisuus, ja sitten ne on isompia asioita mitkä tapahtuu pidemmällä aikavälillä mitkä vaikuttaa siihen kokemukseen (onnellisuudesta). Nyt hankalaa jotenkin ajatella sitä kuitenkin kohtuu lyhyellä otannalla, että onko mun elämä jotenkin tosi merkittävästi parempaa, kuin kaksi viikkoa sitten, mutta sitten se, että jos mä jatkaisin tätä (elämää ilman tiettyjä sovelluksia) vaikka kaksi kuukautta vielä, tai vaikka puoli vuotta, niin se on ehkä mun mielestä se mielenkiintoinen pointti. Ja kyllä mä uskon siihen, että varmasti se voisi vaikuttaa vaan silleen positiivisesti. (P3, 11)

#### **P4:**

Mobiilipeli ei vie paljoa aikaa, mutta kun sitä on pitkään pelannut, niin se on pakonomainen rutiini. Siihen liittyy irti päästämisen vaikeus. Alkuun se oli hauskaa opiskelijaporukan viihdettä, mutta sittemmin kaverit on lopettaneet ja itsellä jäänyt rutiiniksi. (P4, 1)

Tiedän, miten TikTokin algoritmi toimii ja sen tarkoitus on olla hyvin koukuttava. Ongelma on siinä, että kun TikTokin avaa, niin siihen uppoutuu ja lähtee heti käsistä ja doom scrollaa aikansa. (P4, 2)

Viestintään liittyvät notifikaatiot häiritsee työajalla ja ehkä toisin päin työajan ulkopuolella. (P4, 3)

Tuntuu että hukkasin rehellisesti hyvää opiskeluaikaa. (P4, 4)

Lähtökohtaisesti en käyttänyt sosiaalista mediaa yms. Mutta ku töissä oli tylsää, tuli luettua paljon uutisia yms. Kun firmalla on hiljaista, pitäisi saada olla vapaalla että voisi olla pihatöissä vaikka. (P4, 5)

Niin paljon ohjelmaa ettei ole kerennyt puhelinta käyttämään. (P4, 6)

Eilen keitin mehua marjojen kannoista. Kaikkea sitä keksii kun on aikaa. (P4, 7)

Unella tällä kertaa. Ja soitin vähän kitaraa. (P4, 8)

En ole asentanut TikTokia ja sitä peliä takaisin testijakson jälkeen. (P4, 9)

(Vähemmän riippuvainen) ihan vain sillä, että tulee käytettyä vähemmän. Luontaisemmin siirtyy siihen, että tekee jotain muuta. (P4, 10)

**P5:**

Pieni pakohetki arjesta. Ei tarvitse tehdä mitään kouluhommia tai muita velvollisuuksia. Siihen jää helposti jumiin. (P5, 1)

Aivot tarvitsee dopamiinia ja TikTok antaa tätä pienissä annoksissa. Toisaalta samalla aivot mätänee. En kyllä pysty perustelemaan käyttöä mitenkään. (P5, 2)

Töissä ollessa tai opiskellessa menee vähemmän aikaa, koska on pakko tehdä jotain muuta. Silti tuntuu, että menee liikaa aikaa. Luulisin, että helpottaisi opiskelua, jos käyttäisi vähemmän. (P5, 3)

On mukavaa tietää erilaisia asioita, kaikesta kaikkea. TikTok ja Instagram tarjoaa tätä. Minulla on tiedon jano, jatkuvasti pitää oppia uutta ei-relevantia tietoa. (P5, 4)

Tulee vastaan ikävää mediaa, esim. Ukrainan sotaan liittyviä gore-videoita. Näitä tulee vastaan IG-reelseissä säännöllisesti, mutta TikToksissa ei. TikToksissa tulee vastaan äärioikeistomediaa. Tämä on doomsrollausta. (P5, 5)

Jos joku kaveri laittaa viestiä niin kyllä mä luen ja vastaan sen melkein heti. Muut ilmoitukset poistan näytöltä. (P5, 6)

Hieman ahdistaa kun ei pääse somettamaan. (P5, 7)

Vähä rupee jo tottumaan siihen että puhelin ei piippaa mutta silti tulee vilkaistua ruutua (P5, 8)

No, tuli katseltua vähemmän kissanpentuja Snapchatissa. (P5, 9)

Olen katsonut sarjoja. (P5, 10)

Paistoin kanaan xd. (P5, 11)

Semmonen jännitys ollu tämän päivän että onko snäppii tullu yhtään viestejä sillä välin ku ollu poissa. (P5, 12)

Semmonen outo olo, kun ei tarvitse kahtoo kuka on laittanu viestiä missäkin eri soveluksessa. (P5, 13)

Veikkaan että olo paranee vaan tästä. (P5, 14)

Pää toimii paremmin. (P5, 15)

Puhelimen käyttö on huomattavasti vähentynyt ja pääsin eroon TikTokista. Viimeisen viikon aikana tullut katsottua paljon sarjoja ja leffoja, joita aikaisemmin jäänyt kesken. (P5, 16)

Lyhyet videot. Ne on vaan niin koukuttavia. Varmaan muutaman kymmenen vuoden päästä siitä tulee samanlainen keskustelu kuin tupakasta. (P5, 17)

Sanoisin, että vähemmän riippuvainen. Ei vaan tule käytettyä enää niin paljon ja tulee tehtyä muitakin juttuja. (P5, 18)

Ei oikeastaan juuri mitenkään (vaikuta ilmoitukset). Sovellukset tulee käytettyä läpi joka tapauksessa. Silloin kun ilmoituksia ei ollut käytössä, niin tuli katsottua vähemmän Snapchatia ja keskitti vastaukset pariin hetkeen päivässä. (P5, 19)

#### **P6:**

Varmaan Instagram omalla tavallaan. Jos mietitään, että etsin sieltä vain arvontoja ja se on se pääjuttu. (P6, 1)

#### **A1:**

Snapchat... En osaa sanoa miksi käytän. Ehkä on halu näyttää kavereille mitä tekee. (A1, 1)

Tuntuu, että kun on pelannut niin kauan kyseistä peliä, niin ei voi lopettaa. Se on ehkä liian helposti saatavilla puhelimessa ja tuntuu, että milloin vaan voi ottaa nopean pelihetken. Se on eräänlainen taukohetki, mutta peliin uppoutuu ja aikaa menee enemmän, mitä oli alun perin kuvitellut. Yksi peli voi kestää 30min ja näitä saattaa pelata putkeen useampia, jolloin käytöstä tulee ongelmallista. Kun aika muulta tekemiseltä alkaa loppua, niin sitten jatkaa vaan pelaamista, kun tuntuu että ei kerkeä enää muuta tekemään. (A1, 2)

Tuntuu, että unirytmii kärsii myös. Tulee välillä tuijotettua ruutua liian myöhään ja tämän takia aivot käy ylikierroksilla, eikä saa unta. (A1, 3)

Keskittymiskyky heikkenee, koska tulee vilkuiltua puhelinta. Ilmoitukset katkaisee flown. Välillä tulee pakonomainen tarve katsoa puhelinta, että onko joku laittanut viestiä. (A1, 4)

Sovelluksia (Snapchat) on ehkä tullut avattua, jotta näkee onko tullut viestejä, kun ei tule ilmoituksia. Toisaalta olen huomannut, että pystyy keskittymään paremmin yhtäjaksoisesti, kun ilmoituksia ei tule. (A1, 5)

En kerennyt urheilla, koska vietin niin paljon aikaa tietokoneella. (A1, 6)

Pitkässä juoksussa varmaan alkaa löytää taas elämän muita osa-alueita, mutta nyt tuntuu että on edelleen liian koukussa puhelimen käyttöön. (A1, 7)

Puhelinta hamuaa edelleen ja kaipaa ärsykettä, joita sovellukset tarjosivat. (A1, 8)

Aivot ei ehkä enää niin sumussa mitä aiemmin, ajatukset pysyy paremmin kasassa. Toisaalta välillä meinaa tulla tylsää, mutta ehkä aivot oppii pois dopamiiniriippuvuudesta. (A1, 9)

Pelasin tietokoneella ja katsoin sarjoja. Mietiskelin. (A1, 10)

Olen oppinut hyödyntämään puhelimeni digitaalisen hyvin voinnin asetuksia ja asettanut käyttörajoituksia sovelluksille. Olen tajunnut, että kaikki sovellusilmoitukset eivät ole hyvästä ja sovellukset pyrkivät lähettämään niitä, jotta käyttäjä käyttäisi kyseistä sovellusta mahdollisimman paljon. (A1, 11)

Olen tajunnut, että elämän jakaminen ja vertaaminen IG:ssä ja Snäpissä ei ole kovin tärkeä asia. Tärkeää on se vuorovaikutteinen viestintä kavereitten kanssa. (A1, 12)

Olen ymmärtänyt digitaalisen median toksisuuden suhteessa elämään. Siellä on paljon turhaa ja negatiivista. Toki myös hyviä asioita on, erityisesti ystävien kanssa yhteydenpito ja ajankohtaisista asioissa kärryillä pysyminen meemien muodossa. (A1, 13)

Keskittymiskyvyn paraneminen on ehkä suurin tekijä. Tätä kautta myös itsekuri on parantunut. Nykyään ei tule vilkuiltua reelsejä kun menee nukkumaan ja siten myös unenlaatu on parempaa. (A1, 14)

Kaikista viesteistä ei tarvitse tulla ilmoitusta. Esim. Snapchatin ja Instagramin ilmoitukset ovat toissijaisia. Jos ihmisillä on oikeasti asiaa minulle, niin he voivat laittaa WhatsAppissa viestiä tai soittaa. (A1, 15)