

**“Sharing is caring” – a  
quantitative study on how  
highly visual social media use  
can influence emerging  
adults’ mental health  
attitudes and help-seeking  
behaviour in the Netherlands**

Bachelor Thesis

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## Abstract

**Background:** Social media has become a crucial part of the lives of billions of people all over the world recently. It is especially true for the young, emerging adults who are between the ages of 18-29. Since these young adults are the most susceptible to social influence because of their young age and changing lifestyles, the world of social media has a tremendous impact on them. Highly visual social media sites such as Instagram and TikTok are some of the most popular applications these days which offer numerous opportunities for young adults to compare themselves to others. Previous research shows that social comparison can have both negative and positive effects on emerging adults' mental health, their general attitudes toward mental health and their help-seeking tendencies. For that reason, there has been a growing interest in exploring different social media platforms and their possible effects on individuals, however, still little is known about how HVSM sites, especially Instagram and TikTok.

**Objective:** Hence, the current study is focused on opinion-based social comparison on highly visual social media sites Instagram and TikTok regarding young, emerging adults' mental health attitudes and help-seeking behaviour with moderations such as feelings of inspiration and time spent on the social media sites. **Method:** The study was done by using an online questionnaire conducted with 156 young, emerging adults ( $M_{age}=22.1$ ; 62.8% female). They were asked questions about their social media use habits, whether they compare opinions online and questions regarding their general mental health attitude and help-seeking tendencies. For the statistical analysis, the computer program SPSS Statistics was used. **Results:** The results of the study show non-significant effects in relation to opinion-based social comparison on HVSM sites and the mental health attitudes or help-seeking behaviour of young, emerging adults. Although, there were significant results found between opinion-based social comparison online and feelings of inspiration. There were no significant differences between males and females or the time they spent on highly visual social media. **Conclusion:** These findings conclude that opinion-based social comparison online can also influence positively, but are not yet able to directly connect it to mental health attitudes or help-seeking behaviour. **Recommendations:** The current insights can help in the further investigation of the positive effects of Instagram and TikTok and how to make sure these platforms enhance rather than diminish young, emerging adults' mental health.

*Keywords:* social comparison, mental health, help-seeking, emerging adulthood, Instagram, TikTok, social media, inspiration

## 1 Introduction

Human beings are generally considered social creatures that require the companionship of others in order to progress in life. Thus instinctively, being socially connected to others has multiple health benefits for humans, such as the relief of stress, anxiety and sadness and the enhancement of happiness, creativity, inspiration and self-efficacy. Since the emergence of web 2.0, the way how people interact and communicate with each other today has significantly changed. Web 2.0 can be defined as the current 21st-century state of the Internet including user-created content and the use of social media (Hosch, 2017). According to statistics, at the beginning of 2021, there were 4.66 billion active Internet users worldwide (Statista, 2021). Furthermore, one of the most common online activities is the use of social media websites, which have 11.77 million users in the Netherlands. This translates to approximately 88% of the Dutch population (Statista, 2022). There is a countless number of social networking sites and applications available for the public, but the most popular sites today include highly visual social media (HVSM), such as Instagram, Snapchat and TikTok (Highfield & Leaver, 2016). These platforms allow their users to share their messages or lives through pictures and videos, even live videos or vlogs rather than solely relying on words. HVSM sites encourage people to be artists with their creative pictures and videos. Online posts can be modified and altered which creates the idea of an idealised life and paints a perfect picture of someone even if it is really far from reality. People embrace these social networking sites as tools for information seeking, communication, and a way of expressing themselves as well as their experiences and beliefs. Moreover, it allows one to create and maintain online relationships with others or just observe others' lives through the shared contents (Vogel et al., 2014). Because of the freedom of self-expression offered on HVSM sites by shared content, HVSM platforms can act as powerful tools when it comes to influencing users' attitudes, opinions, behaviour, and physical and mental health.

The main user group of HVSM platforms are emerging young adults. The emerging adulthood period ranges between 18-29 years which is a transition period for most people from teenager to adulthood. The influence that HVSM sites can have on these young adults' perception of the world and on others tremendously impacts their lives and psychological health. Furthermore, their main motive when using social media is to look at other people's posts and compare them either conscientiously or unconscientiously. Subjectively, young users always try to reach and adhere to the most desirable status quo they experience online by social comparison (Sebre & Miltuze, 2021). This is purely because in the emerging adulthood stage

individuals explore their identity and creativity in crucial tasks and life events where any social impact can create a considerable change in this exploration process (Arnett, Zukauskienė & Sugimura, 2014). For example, committing to a long-term, sexual relationship with another emerging adult or leaving the “nest” of the parental house and living alone or with other young people are changes which shape these adults’ identities (Arnett, 2007). Thus, being exposed to looking at the online presentations of other people’s lives gives the opportunity for each user to compare themselves to others as well as to attempt to reach the same level of status quo presented online by others. That is the reason why many scholars investigate the effects of social networking sites on emerging adults, who are possibly the most vulnerable to such influences (Rasmussen et al., 2020). Most of the research conducted is divided in a debate on the influences posed by HVSM platforms on young, emerging adults.

There is a thorough and comprehensive overview of the negative effects of social networking platforms. As an example, a number of studies identify a connection between social media use and negative mental health outcomes such as anxiety, loneliness, narcissism, depression (Siddiqui & Singh, 2016; Vogel et al., 2014; Frost & Rickwood, 2017). On the other hand, research on the positive effects of social media networking, in general, is rather shallow. The existing literature clarifies that there are some benefits associated with social media use, such as the facilitation of communication and social relationships, and collaboration with others (Russo et al., 2008; Allen et al., 2014; Akram & Kumar, 2017). Furthermore, social media platforms can bring together and unite people to achieve a certain goal and bring positive change in society without geographical boundaries (Siddiqui & Singh, 2016).

The already mentioned general positive effects of social media use give beneficial insights, but when it comes to the direct influence of HVSM sites on mental health from a positive perspective, research is limited. One of the few existing scientific pieces of research on the positive effects was carried out by Meier and Schäfer (2018) where they used social comparison theory to explain how comparing to other users can evoke positive influences in one’s life. While social comparison normally takes place in real life, HVSM sites created a new platform for people to fulfil their fundamental desire to evaluate and compare their abilities and opinions to others in order to seek accurate appraisals of themselves. Social comparison theory was first introduced by Festinger (1954), but in the online context it first appeared in the research by Meier and Schäfer (2018). They concluded that online (social) comparison can also elicit a beneficial, upward assimilative emotion in the users, such as motivation and inspiration. These feelings can directly and positively influence the mental well-being of the

individuals and turn competition into a role-model-like view (Meier & Schäfer, 2018). A role-model-like view refers to the role model influence theory as it was determined by Bandura (1977), when he regarded a group of people as influential enough to leave an impact on an individual and the behaviours of that individual. Role models can be direct such as peers, parents or relatives, but also vicarious as celebrities and online influences (Bandura, 1977; Bush and Martin, 2000). Additionally, social impact theory assumes that when something is promoted by a large number of people, it increases the influence on an individual's behaviour and attitude towards a certain issue (Latane & Wolf, 1981). Conclusively, if something is talked about enough and shared by a number of users, it can increase the impact on other social media users and their thoughts and attitudes towards that certain topic (Latane & Wolf, 1981).

In conclusion, there is a clear research gap between highly visual social media platforms' influence on young, emerging adults which this research paper is aiming to bridge. Understanding how social media can positively influence the mental well-being of young adults can help not only educational and mental health institutions but also parents. Furthermore, it can advise how the social media sites could improve in order to effectively support the users on the internet. This way facilitating positive health advances and reducing the negative risks associated with HVSM sites. Moreover, various studies have discussed that males and females engage in very different social media activities and are affected differently by divergent sources (Guimond et al., 2007). Similarly, it is assumed that the amount of time spent on social media could also influence its effects on users. However, gender or exposure to HVSM sites in a relationship between social comparison and mental health outcomes have not yet been studied in any form. Thus, the current research can contribute to bridging the research gaps posed and address whether the previously mentioned effects have different influences on emerging, young adult users or not. That is why this paper is aiming to answer the following research question:

*“To what extent can opinion-based social comparison on HVSM sites influence emerging adult users' attitude towards mental health and their tendency to seek professional help with moderating factors of gender, time spent on HVSM sites and feelings of inspiration in the Netherlands?”*

Before continuing along in the research and its details, the already mentioned theories and key concepts connected to it are going to be further elaborated on together with the introduction of the proposed hypotheses. This is going to be followed by the method section of

the study where the cross-sectional online survey and its participants are detailed followed by the results section. At the end of the paper, a discussion section is going to sum up all the most important findings of the study and provide further recommendations for future research together with pointing out the limitations and critical reflection of the current inquiry. Lastly, a conclusion section is going to finalize and answer the research question.

## **2 Theoretical framework**

This chapter is focusing on manifesting a theoretical background by proposing significant concepts and theories which are fundamental for the already introduced research aim that is being examined. This research problem is whether online social comparison can influence emerging adults' attitudes towards mental health issues and their professional help-seeking behaviour and whether these relationships are affected by gender, time spend on HVSM and feelings of inspiration. The following literature piece summarizes previous findings and key concepts in the context of social comparison in highly visual social media use and its impact on emerging, young adults' attitudes toward mental health and help-seeking behaviour. It also investigates how gender, time spent on HVSM and feelings of inspiration can play a moderating role in the suspected relationships. The purpose of this theoretical background is to explain and support the argumentation of this research and to introduce the proposed hypotheses which will be investigated at a later stage of the study. The overview of the relationships between variables and the proposed hypotheses can be seen in Figure 1 below.

### **2.1 General attitude toward mental health**

Investigating people's attitudes toward mental health and toward other individuals living with mental health issues is essential since mental health as a topic is still a "taboo" and often avoided. The reason behind this is that people suffering from mental health problems are stigmatized. Research regarding the public reveals that the general attitude towards mental illness and people living with mental illness are negative and have harmful effects on the lives of individuals (Phelan et al., 2000). It is suggested that the central problem of stereotyping and stigmatizing those who are affected by a mental illness is the perception of these people as being dangerous and unpredictable (Corrigan & Watson, 2002). According to Corrigan and Watson (2002), this can be attributed to the media and its sensational headlines about crimes committed by individuals who may be suffering from a mental illness. Furthermore, while only less than 3% of mentally ill patients can be categorized as dangerous, around 77% of mentally ill people are depicted in the media as dangerous (Corrigan & Watson, 2002).



General mental health attitude is a collection of beliefs an individual has about mental illnesses. These beliefs are formed and shaped by personal experiences and knowledge, cultural restrictions and stereotypes about mental health and media stories (Corrigan et al., 2004; Wahl, 2003). All these factors influence one's perception of mental illnesses, people living with mental illnesses and the tendency whether someone seeks professional help or not in case of facing mental problems. When an individual's attitude and beliefs about mental health are expressed positively, they result in inclusive and supportive behaviour patterns in ways such as willingness to date or be friends with someone with a mental illness. On the other hand, when the beliefs and attitudes of an individual are negative, they could result in discrimination, avoidance, exclusion or in extreme cases, exploitation (Corrigan et al., 2004). Additionally, negative beliefs about various disorders vary and are not always the same. For instance, people living with bipolar disorder or schizophrenia are usually viewed more negatively than those who live with depressive disorders or anxiety (Griffiths et al., 2006). This can be due to the characteristics and traits of patients connected to being dangerous and/or unpredictable. Furthermore, individuals living with mental health issues are often seen as hard to talk to, violent, different from others, incompetent in self-care and independent living, and usually seen as being responsible for their own disorders (Crisp et al., 2005; Corrigan et al., 2001; Okazaki, 2000). These stereotypes are rather difficult to eradicate and can weigh on someone's life for years, just as the labels connected to mental illnesses can persist even beyond the recovery of a patient (Millward et al., 2005).

Regardless of the stigmas connected to mental health issues, it is a more and more appearing topic in recent years. Especially since the Covid-19 pandemic, there is a rise in research studies which investigate the attitude of people toward mental health issues. Since the pandemic forced the whole world to self-isolation without real social contact for almost two years straight, it took a heavy toll on many people's mental well-being and their attitudes toward mental health (Kumar & Nayar, 2021). It also changed the lives of many from offline interactions to fully online ones with the rise of available online platforms addressing mental health issues. That is why it is essential to assess now, after the pandemic, how young, emerging adults interpret mental health and what needs to be taken into consideration or changed in the future when it comes to highly visual social aids in influencing positive mental health attitudes. Thus, this study is going to aim for trying to find a connection between positive interactions on HVSM and their influence on the mental health attitudes of emerging adults.

## **2.2 Highly visual social media (HVSM)**

In order to be able to understand why highly visual social media was chosen in the present study, it is important to clarify what HVSM are and in what ways they differ from less visual social media. Thus, contrary to less visual social media where the focus is on text-based interactions and posts, highly visual social media sites are those which prioritize users to upload visual content and interact via visual aids such as pictures, videos, reels or live vlogs (McCrory et al., 2020). Additionally, users are also invited to edit the mentioned visual content before its uploaded to their profile with the help of an array of embedded filters and settings (Marengo et al., 2018). The main point of these social networking sites is that the content creators are the users themselves including celebrities, influencers and normal, everyday people. Once the visual content is created and shared on the chosen online platform, all users can react to that content, like it, share it, comment on it or even recreate it. HVSM platforms are in constant competition with each other for the utmost user attention and popularity (Manikonda & De Choudhury, 2017). Currently, the most widely used of these sites are TikTok and Instagram. Both are free, highly visual social media platforms enabling everyone to connect from all over the world through shared visual content (Haenlein et al., 2020). Instagram was launched in October 2010, and now it has over 1000 million monthly active users. On the other hand, TikTok was launched in August 2018 and it already has 800 million monthly active users (Montag et al., 2021). Most users are between the ages of 10-29 and their main motivation when using these specific HVSM sites is to kill time when they are bored, see what others, friends and family are up to and keep in touch with the aforementioned (Statista, 2022).

As the visual form of online interaction and communication is fairly new to the public and research field, it has lagged behind somewhat regarding the analysis, especially compared to the predominantly text-driven social media platforms and use. At the same time, since online social media usage is at an all-time high now, many researchers brought up the question of how engagement in these online social activities can influence people, especially young people's mental health and their attitude toward mental health (Battsby, 2019). At this point, the connection and relationship concerning HVSM and mental well-being are not fully understood or comprehensive which leaves enough room for further exploration in the future. Most of the available research in the field which explores emotional and psychological factors of the impact of social media found predominantly negative links such as loneliness, depression, fear of missing out, cyberbullying, suicidal thoughts and de-prioritizing self-care (e.g. sleep, exercise, academic performance). Most of these studies which connected social media use to negative

influences also included high exposure to online interaction as a predictor element within the relationship (Jelenchick et al., 2013; McCord et al., 2014). On the other hand, there is a limited number of available research which suggest positive connections regarding the topic. It is worthy to mention though, that all studies which include positive effects also mention a number of negative connections, but this could be attributed to the fact that the available research regarding positive links is deficient. Positive impacts which have been linked to social media use in previous research include higher feelings or connectedness with others, consequently, this can enhance users' perceived social support by linking them to a supportive social network (Barry et al., 2017; Fang et al., 2020). Furthermore, social media use can act as a motivating factor in one's life to get inspired by others and this could also result in greater self-esteem (Valkenburg et al., 2006). All in all, with the inherent features of highly visual social media sites, it will be interesting to explore how the current research can contribute to the further analysis of the relationship between young emerging adults' HVSM use and its influence on their mental health attitudes and behaviour.

### **2.3 Help-seeking tendencies**

There has been growing research and interest in people's tendency for seeking professional psychological help in recent years. A lot of this research focuses on young, emerging adults' attitudes toward mental health and their tendency of utilizing mental health services (Vanheusden et al., 2008; Hunt & Eisenberg, 2010; Kauer et al., 2014). This is mostly because young adults go through the most changes, transitions and new experiences in life during their college years and their twenties (Arnett, 2000). In this period of time, people frequently feel overwhelmed by the stressors they encounter. These include academic issues, financial and social concerns and everything which comes with transitioning from childhood to the more individualistic adulthood (Levine & Cureton, 1998). Moreover, the previously mentioned stressors could trigger young adults' concerns about depression, loneliness and further interpersonal issues (Benton et al., 2003). Despite the fact that these are all contributing factors to the confused and overwhelmed mental state of mind of these emerging young adults, less than one-third of distressed people seek and obtain help for mental health problems (Oliver et al., 1999). There are multiple factors which can contribute to the determination of whether someone is prone to seek professional help or not. According to the study carried out by Fisher and Turner (1970), there are four general factors which can affect help-seeking behaviour. These include the recognition of the personal need for professional help, tolerance of stigma associated with psychotherapy, interpersonal openness regarding one's problems and the

confidence in the ability of the psychological professional to be of assistance. According to these four categories, Fischer and Turner developed the most frequently used instrument to determine attitudes in seeking professional help, the Attitudes Toward Seeking Professional Psychological Help Scale (ATSPPHS) which is going to be used partially in the current study in assessing this trait later.

Since the development of the ATSPPHS scale by Fischer and Turner in 1970 a lot has changed. One of these changes is the excessive use of social media which not only reformed the way how people interact with each other, but also how they experience illnesses, and how or when they reach out for help from others or professionals. According to research, more and more young people between the ages of 18-29 seek information about mental health issues online (Pretorius et al., 2019). Moreover, another study conducted by Mitchell et al. (2017) states that at least 73% of young adults rely on social networks, websites, television or radio shows to get informed about mental health and self-harm. On the contrary, only 11% of the target group reported to sought information from healthcare professionals (Mitchell et al., 2017). Thus, there is a growing potential for a beneficial online mental help-seeking trend where anonymity and confidentiality are also included lowering the concerns regarding the associated stigma of mental health issues. One of the many other benefits of incorporating positive mental health prompts into the everyday social media life of young adults is that information is accessible 24 hours a day which could be empowering and helpful for many users, even on an unconscious level (Gowen, 2013). At the same time, this field of area is still to be discovered and regulated by mental health services and policymakers to ensure that the available information on different social media platforms and sites is regulated efficiently and only contains information that is of help to the users. That is why it is important to conduct research such as this in order to assess how young people are affected by any content available on social media and how it influences their help-seeking tendencies.

## **2.4 Online social comparison**

Social comparison in real life and in the real world frequently involves the individual and a few others who are in one's social network, but the digital world of social media presents individuals with limitless potential to compare themselves to others. Social comparison can be defined as the process of comparing oneself to others in order to gain insight into one's self-worth and abilities (Festinger, 1954). Psychologically it can be considered a crucial mechanism in one's life. Social comparison can serve essential functions such as getting inspiration,

regulating well-being and emotions, fulfilling affiliation needs, making decisions and evaluating oneself, one's judgements, experiences and behaviour (Garcia et al., 2013). According to research, comparing oneself to others who are fairly similar can offer the most desirable outcome and standard for the comparison regarding one's self-esteem and mental health (Kruglanski & Mayseless, 1990). Originally social comparison only took place in an offline setting during close real-life interactions with others, but nowadays the most common platform for social comparison is in the online world of social media and social networking sites. Users are constantly exposed to visual content which all offers opportunities for an online social comparison. There are two types of comparisons which can be distinguished. The first one is when individuals compare themselves with others who are thought to possess more positive characteristics than the individuals. This is called the upward comparison and engaging in this social comparison process can initiate negative, depressive symptoms and perceptions (Wheeler & Miyake, 1992). On the other hand, when the social comparison involved inferior targets and acts as a downward comparison, it has been shown that in this case there is an increase in the positive self-evaluation and mood enhancement (Collins, 1996). Furthermore, according to Park and Beak (2018), HVSM users who tend to compare their opinions online are likely and able to experience upward absorptive emotions like inspiration. This is called opinion-based social comparison.

When it comes to opinion-based social comparison, literature is not too thorough yet, especially not in an online context. On the other hand, the already existing papers suggest that there are a number of factors which need to be taken into account when investigating opinion-based social comparison. According to Suls et al. (2000) for example, there are three different evaluative questions when it comes to comparing opinions. This triadic model was introduced to further analyse and understand how social comparison of opinion can influence one's attitudes and behaviour and emerging adults' identity development. The triadic model is made up of the following dimensions: belief assessment (i.e. "Is Z correct?"), preference management (i.e. "Do I like Z?") and preference prediction (i.e. "Will I like Z?"). These evaluative questions are all connected and associated with a different comparison dynamic (Suls et al., 2000). As an example, regarding the dimension "preference assessment" there is a significant role attached to whether the comparison takes place with similar people in related attributes or not. Considering preference prediction, the most effective and meaningful comparisons are made with people who already experienced that specific event (Z), and with those who exhibit consistency in their related attributes. Furthermore, regarding belief assessment, the comparison has to be made with someone who is an "expert" or on a more advantaged status,

but this person at the same time should hold certain basic values which are in common (Suls et al., 2000). In conclusion, the available literature about opinion-based online social comparison declares that it can in fact directly and positively influence the psychological well-being of users, but only if the comparison target is seen as a role model instead of a superior competitor (Park & Baek, 2018). In this research, it is expected to find similar results in the context of mental health attitudes and online social comparison, therefore the following hypothesis is proposed:

*H1a: Opinion-based social comparison on HVSM platforms will positively affect emerging adults' attitudes toward mental health.*

*H1c: Opinion-based social comparison on HVSM platforms will positively affect emerging adults' help-seeking behaviour.*

## **2.5 Mediating role of inspiration**

While most studies only focus on the negative aspects of online social comparison, there are a few studies concerning upward assimilative emotions, like inspiration, which leads to positively influenced psychological well-being. One of these studies was carried out by Park and Baek in 2018 where they concluded that in the case where the individual compares him or herself to a target who is seen as a model rather than a competitor in the eye of the individual, feelings of inspiration instead of envy arise. Thus, when such inspiration or in other words, a role model is seen online, it can influence the way how individuals engage in the social process of creating meaning. Meier et al. (2020) point out in their study that active or passive exposure to others' positive posts and self-representation on highly visual social media sites such as Instagram and TikTok were repeatedly connected to and associated with negative effects and reduced psychological well-being in previous research. These existing studies also mention upward social comparison on HVSM sites connected to the triggering feelings of envy. What Meier et al. also mentioned in their research is that almost all prior study has greatly neglected the possibility of social comparison facilitating positive effects in individuals such as feelings of inspiration or motivation causing much more positive outcomes regarding individuals' mental well-being (Meier et al., 2020). Though the literature landscape is not straightforwardly set on the same conclusion, the aforementioned research paper clearly states that social comparison can play a role in the facilitation of positive effects and outcomes when using

highly visual social media. That is why this paper aims to find similar results when it comes to feelings of inspiration and its mediating role, hence the following hypotheses were formulated:

*H1b: Opinion-based social comparison on HVSM platforms will positively affect emerging adults' feelings of inspiration.*

*H2a: Feelings of inspiration mediate the relationship between opinion-based online social comparison and the mental health attitudes of emerging adults.*

*H2b: Feelings of inspiration mediate the relationship between opinion-based online social comparison and the help-seeking behaviour of emerging adults.*

## **2.6 Moderating role of gender**

Among other demographic variables, gender is one of the most essential factors which represent the differences and influence the attitudes of young adults toward mental health problems and toward seeking professional help (Leong & Zachar, 1999). Since males are inherently characterized by strength, aggressiveness and emotionally neutral attitude, they are significantly less likely to express their state of mind on mental health issues and interest in seeking any psychological help (Ang et al., 2004). Furthermore, females often possess openness as a characteristic which can influence their positive attitude towards mental health, mental health education and seeking professional help. On the contrary, males are more restricted emotionally and more hesitant when it comes to emotional distress and mental health issues (Morgan & Robinson, 2003; Vogel & Wester, 2003). Furthermore, when it comes to online social comparison regarding gender differences, it is expected according to previous findings that social comparison activities have a much greater effect on women than on men (Nesi & Prinstein, 2015; Myers & Crowther, 2009). Hence, this research study expects gender as a moderating factor in the relationship between online social comparison on HVSM sites and the emerging adult participants' positive attitude towards mental health issues and seeking professional help. Moreover, it is expected that this positive effect is going to be greater for women than for men. Therefore, the following hypotheses are proposed:

*H3a: The positive relationship between opinion-based online social comparison and emerging adults' attitudes towards mental health issues is expected to be stronger for female participants.*

*H3b: The positive relationship between opinion-based online social comparison and emerging adults' help-seeking behaviour is expected to be stronger for female participants.*

*H3c: The mediated relationship between opinion-based social comparison and mental health attitude will be different for males and for females.*

*H3d: The mediated relationship between opinion-based social comparison and help-seeking behaviour will be different for males and for females.*

## **2.7 Moderating role of time spent on HVSM**

In recent years, as the internet and social media sites evolved and became part of people's everyday life, their short and long-term effects are also the main focus of many researchers. Social media's definition has changed a lot since it first was defined in 1995. According to the latest one, social media can be defined as "any resource that is designed to facilitate engagement between individuals" (Aichner et al., 2021). The effects of social media and the emerging attention regarding its influence on human health, especially on mental health, are important and have to be taken into account. At the same time, as it is such an important topic, multiple research studies have already been carried out, but the effects of social media on users' mental health are still unclear and most of the evidence in this field is contradictory and inconclusive. As a matter of fact, some studies have implied that the use of social media has a direct negative effect on mental health outcomes and attitudes including for example decreased empathy, suicidality and negative attitude toward life in general (Davila et al., 2012; Sadaghevani & Tatari, 2020). On the contrary, some other studies found that social media can have beneficial outcomes for some individuals such as through authentic self-presentation or downward social comparison people can reach an optimal, positive mental health and attitude, community building, self-expression and positive identity development (Reinecke & Trepte, 2014; Sadaghevani & Tatari, 2020). Moreover, these studies also included the time participants spent on social media sites to investigate whether it is a contributing factor to either positive or negative health outcomes of social media use. While some previous findings claim that mere exposure to social media can strengthen the effects of mental health-related symptoms in young adults, there is a lack of clear evidence for this (Berryman et al., 2018). Thus, the moderating role of time spent on highly visual social media as a factor is included in the research model in order to be able to analyse whether it has an effect or not in this particular research. That is why the following hypotheses were formulated:



*H4a: Time spent on highly visual social media sites moderate the relationship between opinion-based online social comparison and the mental health attitudes of emerging adults.*

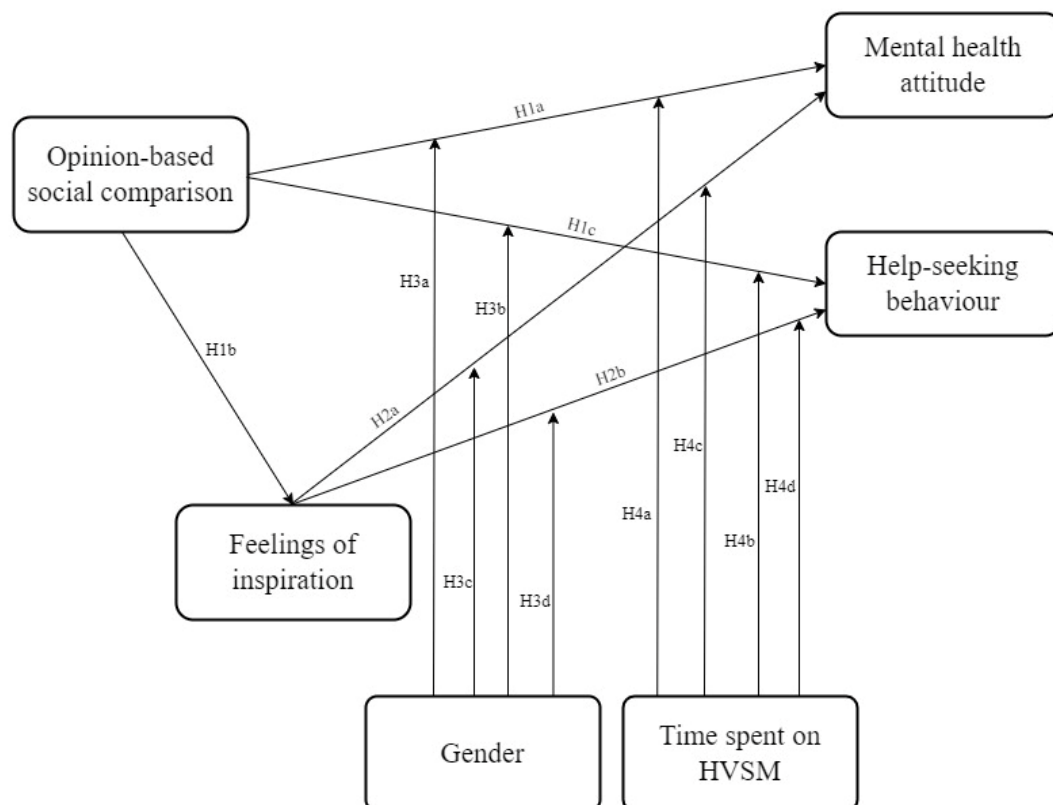
*H4b: Time spent on highly visual social media sites moderate the relationship between opinion-based online social comparison and help-seeking tendencies of emerging adults.*

*H4c: The mediated relationship between opinion-based social comparison and mental health attitude will be different depending on the time spent on HVSM.*

*H4d: The mediated relationship between opinion-based social comparison and mental health attitude will be different depending on the time spent on HVSM.*

**Figure 1**

*Hypothesized relationships between opinion-based social comparison and mental health attitudes and help-seeking behaviour of emerging young adults*



### 3 Method

The following section describes the methods used to analyse the collected data.

### **3.1 Design**

This study was a quantitative online survey-based research design. This fit well with the aim of the research study as it allowed for both examining effects and possible moderation effects as well. The decision to use this design was made in order to gather data easily, fast and from a wide array of emerging adults. This way it was most likely to collect data which is representative of the whole population of the study. Online social comparison on HVSM acted as the independent variable in the survey while attitude towards mental health and help-seeking behaviour were the dependent variables. The expected moderating variables between the two were gender and time spent on HVSM, while the expected mediating variable was feelings of inspiration.

### **3.2 Participants and recruitment**

The participants recruited had to fulfil two criteria according to the research claims. The first criterion was that they had to be in the emerging adulthood period, which ranges from 18 to 29 years old. The second was that they were familiar with and were active users of the aforementioned two highly visual social media sites, namely Instagram and TikTok. Moreover, both males and females were decided to be included in the sample as this allows to pinpoint differences between the gender groups. The research was not focused on nationality as a criterion but included all nationality emerging adults living in the Netherlands. Participants were recruited through convenience sampling, which means that the hyperlink to the online questionnaire was posted and shared via social media. Namely Instagram, WhatsApp, Facebook and LinkedIn. Additionally, the snowball method was also included in the sampling procedure since the participants were also asked to spread the online survey by sharing it with other people online who are also part of the target group.

At last, the final sample of the online survey included 156 participants, since 136 responses had to be deleted before analysis because of incomplete data (55 of them) or they failed to meet the previously set research criteria. Participants' ages ranged from 18 to 29 with an average of 22.1 ( $SD=2.9$ ). The distribution of age (Figure 1, in Appendix C) in the sample shows that most respondents were between 19 and 22 years old, thus it can be concluded that the sample is not so representative of the older ages of emerging adulthood. All demographics of the survey sample can be found in Table 1 below. 62.8% of the participants were female which is the vast majority of the sample. Most of the participants were Dutch, followed by the "other" category which included 12 other nationalities, and last, but not least, 12.8% of the

participants were German. Since this study was not limited to nationality because it did not aim to detect differences between them, all participants were considered as part of the research population of emerging adults living in the Netherlands. Furthermore, regarding time spent on Instagram the most frequent answer was 1-2 hours a day, while for the same question, but regarding TikTok, the most frequent answer was no use at all.

**Table 1**

*Demographics of the Online Questionnaire Sample (156 participants)*

Characteristic	n	%
Gender		
Male	55	35.4
Female	98	62.8
Nationality		
Dutch	82	52.6
German	20	12.8
Other	54	34.6
Highest education obtained		
Primary school	1	.6
Secondary grammar/high school	75	48.1
Practical education/ apprenticeship	19	12.2
Bachelor's or equivalent level	48	30.8
Master's or equivalent level	11	7.1
Another degree	2	1.3
Instagram use per day		
Less than or maximum half an hour a day	33	21.2
1-2 hours a day	66	42.3
2-3 hours a day	42	26.9
3-4 hours a day	11	7.1
More than 5 hours a day	3	1.9
I do not use Instagram	1	.6
TikTok use per day		
Less than or maximum half an hour a day	23	14.7
1-2 hours a day	36	23.1

2-3 hours a day	23	14.7
3-4 hours a day	7	4.5
More than 5 hours a day	2	1.3
I do not use TikTok	65	41.7

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### 3.3 Procedure

The data collection for the online survey took place from the 25<sup>th</sup> of May until the 8<sup>th</sup> of June in 2022. Participants had the possibility to fill out the online questionnaire from any device at any moment in time. It was possible to choose between English and Dutch as language of the questionnaire to make sure everyone could sufficiently understand each question. The survey started with a general introduction containing information about the study and its purpose in general without biasing the participants. Furthermore, participants were informed about their right to withdraw from the study at any moment and that it was an entirely anonymous, voluntary-based participation. Additionally, they were also briefed that the data collected was confidential, for the sole purpose of this study and would not be published anywhere else. The data from the participants who did not finish the study and dropped out or did not comply with the criteria presented by the study were removed immediately. Once the participants accepted the previously mentioned terms and consented to the participation they could continue to the next page where the demographic part of the questionnaire started. These included their gender, age, nationality, their highest obtained education and whether they are active on Instagram and/or TikTok. When this question was answered by “no”, the questionnaire automatically ended. The last questions in this block for those answered with a “yes” were about their average time spent in hours on TikTok and on Instagram per day, separately and what kind of activities they performed in their most recent Instagram and/or TikTok use. The survey continued with blocks of questions regarding opinion-based social comparison, participants’ mental health attitude, their help-seeking tendencies, and questions regarding feelings of inspiration. Participation in this study on average took approximately 5-10 minutes and it was approved by the ethics committee of the University of Twente prior to data collection.

### 3.4 Instruments

All the questions of the online survey contained a 5-point Likert Scale of agreement starting from strongly disagree to strongly agree. This was chosen in order to make the filling out of the survey accessible, fast and easy for all participants. Since the blocks of questions were

placed in a matrix containing the 5-point Likert Scale on top of each matrix, it made the experience of participants less frustrating and made the process of filling out faster than if another type of scale was used. The following section is going to explain all items of the questionnaire and their origin which can be overviewed as well in Table 1 in Appendix D.

### **3.4.1 Online Social Comparison**

Opinion-based social comparison on HVSM sites was measured by taking items of the scale developed by Yang et al. (2018), the so-called Social Media Social Comparison Scale (SMSCS). All in all, this study had twelve items measuring social comparison online which were partly taken and slightly adjusted from the scale of Yang et al., and some items were newly created. The list regarding this can be seen in Table 1 in Appendix D. The participants had to indicate on a general 5-point Likert scale how much they agreed with each statement regarding their latest social media use, namely Instagram and/or TikTok. The higher the mean score of these items, the higher the engagement of participants in opinion-based social comparison on HVSM platforms.

### **3.4.2 Mental health-attitude**

The construct “mental health-attitude” was measured by seven items, from which some items were adopted from Weller and Grunes’s Attitudes to Mental Illness Questionnaire (ATMIQ) (1988) and Link's Perceived Stigma Questionnaire (PSQ)(1987). There were a few items which were newly created. The overview of the items and the scales they are based on can be found in Table 1 in Appendix D. The participants were asked to assess each statement according to the extent they agreed or disagreed with them on a 5-point Likert scale. Some items were reverse coded and scoring high on them meant that individuals had a generally worse mental health attitude than others.

### **3.4.3 Feelings of inspiration**

The items in the questionnaire measuring feelings of inspiration were based on and taken from the External and Internal Scale of Inspiration developed by Jones and Dodd (2014). The scale was originally developed in order to measure internal and external motivators of feelings of inspiration. In this case, the items which measured the external or prosocial motivation for inspiration were taken and adjusted in some cases in order to fit the context of the current study. Participants had to indicate using the 5-point Likert scale how strongly they feel inspired by the situation projected by the items. Six items were taken from the original scale and slightly

adjusted to fit the online social media context. The other items were newly created and were based on realistic expectations when it comes to feelings of inspiration. Higher mean scores indicate higher feelings of inspiration provided by social engagement on HVSM sites.

#### **3.4.4 Help-seeking behaviour**

Regarding the measurement of the variable “help-seeking behaviour”, the items were based on and taken from the shortened form of Attitudes Toward Seeking Professional Psychological Help Scale (ATSPPH-SF) developed by Fischer and Farina (1995). The original scale consists of 24 items and measures three internally consistent factors which are psychological openness, help-seeking propensity and indifference to stigma. The items which were taken were adjusted to measure only the help-seeking behaviour of the participants. All eight items were based on the ATSPPH-SF scale where participants had to indicate how strongly they agree with each item with the help of a 5-point Likert scale. The higher participants scored on the construct, the higher the likelihood of them to reach out for professional help when facing emotional or mental problems.

#### **3.5 Pre-testing**

A pre-test was conducted prior to the real data collection in order to assess whether the questions formulated were clear as well as understandable and to see how long it takes to fill out the survey. In the pre-test, participants were chosen from the research population (aged between 18-29, an active user of Instagram and/or TikTok) and asked to think aloud while filling out the survey. Then, to evaluate their experience after and give feedback on the questions asked. Six participants filled out the pre-test survey. This led to insights on what needed to be changed in order to make the online questionnaire more understandable and clearer. This included some changes in wording, some of the negative wordings were highlighted using bold letters and underscoring, and in a few questions the denying word was made capitalized in order to avoid misunderstanding. To see how long it takes to fill out the questionnaire, pre-test participants were timed while filling out the survey so an estimate could be concluded. The published, improved version of the questionnaire can be seen in Appendix A (in English) and Appendix B (in Dutch).

#### **3.6 Data preparation and analysis**

To analyse the obtained data from the online questionnaire, the statistical software, SPSS was used with a default significance level of .05 alpha (Maier & Lakens, 2022). Those participants

who ended up not completing the survey or did not fall into the target population of the research were deleted from the dataset. The result of the cleaning of the data included the deletion of a total of 136 responses from which 55 was not completed and the rest of these were participants who did not fall into the research population. Thus, from the original 292 responses only 156 were considered to be useful for an analysis in the end. Additionally, before the start of the analysis, the negatively worded items were recoded reverse. Then descriptive statistics were calculated as the first step in the analysis process of the dataset. The clear overview of these descriptive statistics is visible in section 4.2 Participants and recruitment. For the numerous variables included in the dataset (e.g., age) the mean, standard deviation, minimum and maximum were calculated, while for categorical variables (e.g., gender, educational level, nationality, time spent on TikTok, time spent on Instagram) the frequency percentages, minimum and maximum were calculated.

### **3.6.1 Factor analysis**

First all thirty-five questions were factor analysed which revealed that one item (HSB4 (R)) had to be excluded because it did not load to any constructs. After the exclusion, another factor analysis was run. Thirty-four questions related to the proposed hypotheses were factor analysed in order to measure internal dimensionality, structure and construct validity using principal components analysis with varimax rotation in SPSS. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was .78, which is above the commonly recommended value of .5, and Bartlett's test of sphericity was ( $\chi^2(595) = 2055.396$ ,  $p < .001$ ) which is considered to be significant since  $p$  has to be  $< .05$  (Williams et al., 2010). These values indicate that the data collected was enough to perform a factor analysis. The analysis which helped to obtain the eigenvalues for each factor resulted in showing four factors with the eigenvalues above the Kaiser's criterion of 1. This means that there are four dimensions that can be found in the data. These are namely, factor 1 represents opinion-based social comparison, factor 2 feelings of inspiration, factor 3 represents help-seeking behaviour and factor 4 mental health-attitude. The factor loadings ranged from .423 to .847, thus it can be concluded that all factor loadings are above the criterion value of .4 (Williams et al., 2010). These factor loadings and the related Cronbach's alphas can be found below in Table 2. Additionally, even though some of the loadings of items were relatively low compared to others, they were still above the critical .4 value, and they clearly loaded to one factor, so it was decided to leave them also in for further analyses.

### 3.6.2 Reliability analysis

The next step in the analysis process is the reliability analysis of the construct where the Cronbach's alphas of each of the four dimensions are calculated. According to statistical suggestions, Cronbach's alpha which is  $>.6$ , is considered sufficient, high reliability (Taber, 2017). In the case of this study, all constructs scored above the suggested alpha value which means that they can be considered reliable. Furthermore, there was no increase in any of the constructs when an item was deleted. The values of Cronbach's alphas for each construct can be seen in Table 2 below.

**Table 2**

*Factor loadings and Cronbach's Alphas of the online questionnaire items*

Construct	Cronbach's Alpha	Item	Factor loading
Opinion-based social comparison	.838	C8	During my most recent social media use, I looked at the opinions of others to form my own opinion. .696
		C6	During my most recent social media use, I encountered opinions of others in their posts that made me think about my own opinion. .631
		C7	During my most recent social media use, I tried to find out about the opinions of others. .616
		C4	I value the opinions of other social media users. .608
		C3	I feel that other users are often effective in giving good advice. .590
		C9	During my most recent social media use, other users provided me with interesting insights on topics I value. .528
		C2	I feel like I can relate to other users. .423
		C11 (R)	During my most recent social media use, I did NOT compare with others to see whether I am doing relatively better or worse. .795
		C10	During my most recent social media use, I thought about whether I am doing relatively better or worse than other people. .781
		C12	During my most recent social media use, I compared how I am doing socially with other people. .705
		C5	My values are similar to the other users' values. .567



Feelings of Inspiration	.830	C1	I often follow the lives of other users online.	.760
		I2	Posts of other users online inspire me to revise my opinion on certain topics.	.799
		I3	I am inspired by the ideas and accomplishments of other people (shared online).	.741
		I1	During my most recent social media use, I felt inspired when I saw the posts/stories of other users.	.705
		I5	Posts/stories of social media users inspire me to talk about topics I normally wouldn't talk about.	.630
		I8	I often experience times of inspiration when interacting with others online.	.557
		I4	When I reflect upon other people's lives, I feel inspired.	.500
		I7	When I am inspired, I feel compassion toward others.	.706
Help-seeking behaviour	.701	I6	I feel inspired when I think of myself as part of a larger group.	.676
		HSB8 (R)	Talking about problems with a psychologist seems to be a poor way to get rid of emotional problems.	.760
		HSB7 (R)	Given the amount of time and money involved in psychotherapy, I am not sure that it would benefit someone like me.	.662
		HSB3	If I thought I was having a mental breakdown, my first thought would be to get professional attention.	.773
		HSB1	I would want to get psychological help if I were worried or upset for a long period of time.	.766
		HSB6	A person with an emotional problem is not likely to solve it alone; he or she is more likely to solve it with professional help.	.545
		HSB5	I might want to have psychological counselling in the future.	.505
		HSB2 (R)	Personal and emotional troubles, like most things in life, tend to work out by themselves.	.847
Mental health attitude	.636	MA3 (R)	I believe that entering a mental hospital is a sign of personal failure.	.710
		MA4 (R)	Once I know a person has mental issues, I will take his or her opinion less seriously.	.665
		MA2 (R)	I would find it hard to talk to someone about mental health problems.	.542

MA6	Mental health is not a taboo topic.	.774
MA7	If I was concerned about a mental health issue with a family member or myself, I would feel comfortable discussing it with someone.	.456
MA1 (R)	I find it hard to talk to someone with mental health problems.	.552
MA5	I would willingly accept an individual who receives mental health services as a close friend.	.761

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## 4 Results

To test the hypotheses proposed in the study, the data resulting from the online questionnaire was analysed in the statistical programme, SPSS. There were linear regression analyses, mediation analyses and moderator analyses conducted. The results are discussed in the following parts below.

### 4.1 Correlation analyses

Before performing the linear regression analyses, the assumptions of such analyses were checked. Namely, the assumption of normality with histograms and P-P-plots, the assumption of homoscedasticity and linearity with scatterplots. The assumption of independence was checked by looking at the Durbin-Watson test, while the assumption of multicollinearity was tested by the calculation of variance inflation factor (VIF) values. The results showed that the assumptions were all met (see Appendix F). Once these assumptions met the criteria, three simple linear regression analyses were conducted. These were to test the previously proposed hypotheses H1a, H1b, and H1c.

#### 4.1.1 Mental health attitude

A simple linear regression or a univariate analysis of variance (ANOVA) was conducted in order to predict mental health attitude (as the dependent variable) based on opinion-based social comparison (as the independent variable). This was done in order to test the proposed hypothesis of H1a (“Opinion-based social comparison on HVSM platforms will positively affect emerging adults’ attitudes toward mental health.”). The model showed non-significant results,  $F(1, 154)=2.773$ ,  $p=.098$  and explained 1.8% variance, means that the null hypothesis which states that opinion-based online social comparison has no positive effect on attitudes

toward mental health cannot be rejected, thus the findings do not confirm the originally proposed H1a hypothesis.

#### **4.1.2 Help-seeking behaviour**

The same ANOVA analysis was conducted with opinion-based social comparison as independent variable and help-seeking behaviour tendencies as the dependant variable in order to see whether the proposed hypothesis H1c is true or not. This was done by examining if opinion-based social comparison online explained variance within help-seeking behaviour. The hypothesised relationship was found to be insignificant in this case as well,  $F(1, 154)=2.980$ ,  $p=.86$  with an explained variance of 1.9%. Therefore, the null-hypothesis cannot be rejected, the findings are not in line with the proposed H1c hypothesis (“Opinion-based social comparison on HVSM platforms will positively affect emerging adults’ help-seeking behaviour.”).

#### **4.1.3 Feelings of inspiration**

A third simple linear regression (ANOVA) analysis was conducted to test the proposed H1b hypothesis (“Opinion-based social comparison on HVSM platforms will positively affect emerging adults’ feelings of inspiration.”). In this case, opinion-based social comparison was the independent variable and feelings of inspiration was the dependant one. When the hypothesis was tested, the results were found to be significant,  $R^2=.53$ ,  $F(1, 154)=174.148$ ,  $p<.001$ . Consequently, the null-hypothesis of opinion-based social comparison will not have a positive effect on emerging adults’ feelings of inspiration can be rejected and the findings are aligned with the originally proposed H1b hypothesis.

### **4.2 Mediation analyses**

Simple mediation analyses were conducted in order to test the proposed hypotheses H2a and H2b.

#### **4.2.1 Mental health attitude**

Firstly, the mediation analysis was conducted to see whether opinion-based social comparison online could positively influence the mental health attitudes of emerging young adults through feelings of inspiration. The results revealed that although there was a significant effect of opinion-based social comparison on feelings of inspiration which is in line with the proposed hypothesis, H1b (“Opinion-based social comparison on HVSM platforms will positively affect

emerging adults' feelings of inspiration.”), there was a non-significant effect of H2a (Feelings of inspiration will mediate the relationship between opinion-based online social comparison and the mental health attitudes of emerging adults.). The testing was done by looking at the bivariate regression analysis previously done between opinion-based social comparison and mental health attitude,  $b = -.118$ ,  $SE = .071$ , then on the bivariate regression analysis between opinion-based social comparison and the mediator variable, feelings of inspiration,  $b = .773$ ,  $SE = .059$ . Then a multiple regression analysis was run to estimate the direct effect between opinion-based social comparison and mental health attitude using opinion-based social comparison and feelings of inspiration as predictors of mental health attitude,  $b = -.239$ ,  $SE = .103$  and  $b = .157$ ,  $SE = .097$ . Then the Sobel-test was used to estimate and test the indirect effect for statistical significance. This test revealed that the findings were non-significant, Sobel test = 1.606,  $p = 0.108$ . The estimate of the indirect effect = .121 of opinion-based social comparison on emerging adults' mental health attitudes. Thus consequently, since the estimates were all non-significant, the null hypothesis cannot be rejected which means that the originally proposed H1b hypothesis is not applicable.

#### **4.2.2 Help-seeking behaviour**

A second mediation analysis was conducted in order to this time test whether opinion-based social comparison online could indirectly, positively influence the help-seeking behaviour tendencies of young, emerging adults through feelings of inspiration as a mediator variable. Once again, the existing positive relationship between opinion-based social comparison and feelings of inspiration (H1b) did not influence the proposed mediated relationship hypothesis H2b (“Feelings of inspiration will mediate the relationship between opinion-based online social comparison and the help-seeking behaviour of emerging adults.”). The testing of the mediated relationship was done the same way as in the previous step. First, the results of the bivariate regression analysis between opinion-based social comparison and help-seeking behaviour  $b = .178$ ,  $SE = .104$ , were looked at, followed by the bivariate regression analysis between opinion-based social comparison and feelings of inspiration  $b = .773$ ,  $SE = .059$ . Then a multiple regression analysis was used to estimate the direct effect between opinion-based social comparison and help-seeking behaviour using opinion-based social comparison and feelings of inspiration as predictors of help-seeking behaviour,  $b = -.072$ ,  $SE = .098$  and  $b = .178$ ,  $SE = .104$ . Then the Sobel-test = -0.734,  $p = .463$ . The estimate of the indirect effect = .701 which concludes that the null-hypothesis cannot be rejected in this case and the originally proposed H2b hypothesis is not true.

### **4.3 Moderator analyses**

Moderator analyses were conducted to test the proposed hypotheses H3a, H3b, H4a and H4b.

#### **4.3.1 Mental health attitude**

To check whether the proposed H3a hypothesis (“The positive relationship between opinion-based online social comparison and emerging adults’ attitudes towards mental health issues is expected to be stronger for female participants.”) is true or not, a moderator analysis was run and revealed that  $F(3, 152)=2.149$ ,  $p=.094$  non-significant with an explained variance of 4.7%. This means that the null-hypothesis of the positive effects of opinion-based social comparison and emerging adults’ attitudes toward mental health is not stronger for female participants cannot be rejected which is not in line with H3a hypothesis.

Furthermore, H4a (“Time spent on highly visual social media sites moderate the relationship between opinion-based online social comparison and the mental health attitudes of emerging adults.”) was also tested by a moderation analysis in regard to both time spent on TikTok  $R^2=.45$ ,  $F(3, 152)=1.161$ ,  $p=.327$  and time spent on Instagram  $R^2=.49$ ,  $F(3, 152)=1.763$ ,  $p=.157$ . Both of the analyses were insignificant resulting in the disability of rejecting the null-hypothesis.

#### **4.3.2 Help-seeking behaviour**

The same moderator analyses were run to test this time the proposed H3b hypothesis (“The positive relationship between opinion-based online social comparison and emerging adults’ help-seeking behaviour is expected to be stronger for female participants.”). The results revealed a non-significant relationship,  $F(3, 152)=2.867$ ,  $p=.039$  and explained a variance of 2.8% in the model. This means that the null-hypothesis can be rejected and the alternative, proposed H3b hypothesis is true as it was expected, the help-seeking tendencies are stronger for women than for men when it comes to opinion-based social comparison online.

Additionally, time spent on TikTok and Instagram as moderator variables were also tested. The findings showed that the proposed hypotheses, H4b (“Time spent on highly visual social media sites moderate the relationship between opinion-based online social comparison and help-seeking tendencies of emerging adults.”) was not true. Regarding TikTok the results are the following:  $R^2=.029$ ,  $F(3, 152)=1.289$ ,  $p=.280$ , while regarding Instagram:  $R^2=.032$ ,  $F(3, 152)=1.583$ ,  $p=.196$ . Thus, the null-hypothesis cannot be rejected which is not in line with the expectations of the study.

#### **4.4 Moderated mediation analysis**

In order to see whether H3c and H4c hypotheses are significant in the model, moderated mediation analyses had to be conducted.

##### **4.4.1 Mental health attitude**

Regarding the proposed hypothesis H3c (“The mediated relationship between opinion-based social comparison and mental health attitude will be different for males and for females.”) ended up not being true to the expectations. The results  $F(4, 151)=1.853$ ,  $p=.121$  indicated a non-significant moderated mediating relationship, thus the null-hypothesis cannot be rejected.

Two other moderated mediation analyses were conducted in order to see whether the mediated relationship between opinion-based social comparison and emerging adults’ mental health attitude differ depending on their time spent on highly visual social media sites. The results showed non-significant values for both Instagram  $F(4, 151)=1.981$ ,  $p=.100$  and TikTok  $F(4, 151)=1.781$ ,  $p=.135$  use, which means that both null-hypotheses could be rejected and the originally proposed H4c (“The mediated relationship between opinion-based social comparison and mental health attitude will be different depending on the time spent on HVSM.”) hypothesis is also not true.

##### **4.4.2 Help-seeking behaviour**

When it comes to the proposed hypothesis H3d (“The mediated relationship between opinion-based social comparison and help-seeking behaviour will be different for males and for females.”), the mediated moderation analyses showed that the outcomes are insignificant  $F(4, 151)=1.099$ ,  $p=.359$ . This means that the mediated relationship between opinion-based social comparison and help-seeking behaviour did not differ for different genders and that the null-hypothesis cannot be rejected.

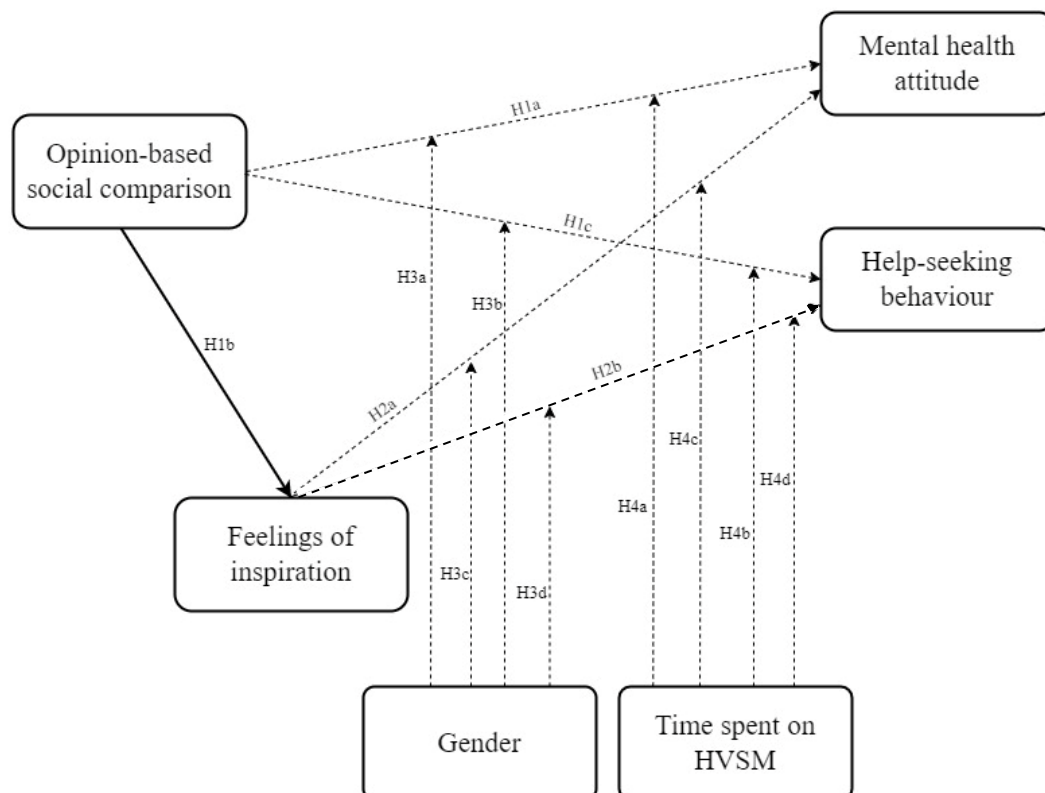
The last two mediated moderation analyses were to test the proposed hypothesis H4d (“The mediated relationship between opinion-based social comparison and mental health attitude will be different depending on the time spent on HVSM.”) both regarding Instagram and TikTok use. The results showed insignificant mediated moderation values for both platform use  $F(4, 151)=1.271$ ,  $p=.283$  and  $F(4, 151)=1.159$ ,  $p=.330$ . Conclusively, the null-hypothesis cannot be rejected meaning there was no found moderating effects of time spent on HVSM sites and the mediated relationship between opinion-based social comparison and help-seeking behaviour.

## 4.5 Summary of the findings

To summarize the findings of the study, it is clear that opinion-based social comparison on highly visual social media sites, in this case, Instagram and TikTok, is not a significant factor when it comes to emerging adults' mental health attitudes and help-seeking behaviour. Furthermore, the mediation analysis was also inconclusive, which means that feelings of inspiration did not affect the relationship either between opinion-based social comparison online and mental health attitudes or between the first and help-seeking behaviour. On the other hand, the analysis of opinion-based social comparison and feelings of inspiration showed a positive correlation. Furthermore, despite the expectations, gender or time spent on HVSM sites did not have any moderating effect on the relationship between the independent and dependant variables. The visual overview of the hypotheses can be seen below in Figure 2 where the dotted lines indicate the insignificant relationships, and the black line stands for the significant one.

**Figure 2**

*Overview of the results regarding the formulated hypotheses*



## 5 Discussion

The current research study was aiming to answer the following research questions: *“To what extent can opinion-based social comparison on HVSM sites influence emerging adult users’ attitude towards mental health and their tendency to seek professional help with moderating factors of gender, time spent on HVSM sites and feelings of inspiration in the Netherlands?”*

In order to answer these questions, an online questionnaire study was designed and conducted. The following paragraphs are going to discuss and elaborate on the main findings of the study, its theoretical and practical implications, limitations and suggestions for future research are going to be made.

### 5.1 Theoretical implications

As it was explained in the theoretical framework, highly visual social media was chosen as the starting point of the analysis of this research study because most of the previous research was mainly focused on text-driven social media platforms. Besides, it was also established that HVSM use is at an all-time high these days, especially among young, emerging adults. The available previous research which still focused on HVSM did not conclude straight evidence of either purely negative or positive effects of it on young adults’ mental health and their attitude towards it. Although, some papers included evidence of social media having positive effects on young, emerging adults which included their heightened feelings of connectedness to a social support network and their feelings of inspiration from others online which resulted in greater self-esteem and self-efficacy beliefs (Barry et al., 2017; Fang et al., 2017; Valkenburg et al., 2006). Furthermore, both mental health attitudes and help-seeking behaviour of young, emerging adults were chosen as variables in the study because while mental health is considered a “hot topic” in recent years, it is still to some extent a “taboo topic” as well. Research shows that people who live with diagnosed mental health issues are stereotyped and stigmatized by the eye of the public, and while many young adults admit to suffering from any kind of mental illness, only 11% of them seek help from a health care professional (Mitchell et al., 2017). Since it is also known that most of those young adults who decide not to get professional help try to find a solution and information online it makes it essential to reform how mental health and help-seeking are present in their everyday online, social media life. Hence, this paper was focusing on trying to find positive connections between highly visual social media use and mental health attitudes and help-seeking behaviour of young, emerging adults to see whether HVSM can have a direct or moderated impact on emerging young adults.



These hypothesised relationships were all based on the theory of social comparison, more specifically, opinion-based social comparison online since based on a thorough literature review, it was concluded that young, emerging adults often compare themselves and their opinions and ideals online to others. Research conducted by Park and Beak (2018) was one of the foundation literature papers of the current study since they claimed that when HVSM users compare their opinions online they are likely to experience upward absorptive emotions like inspiration as an example, which can positively influence their views and opinions on certain topics (Park & Beak, 2018).

Generally, this study expected to see positive correlations between opinion-based social comparison on highly visual social media sites (more specifically, Instagram and TikTok) and mental health attitudes of young, emerging adults as well as between opinion-based social comparison on HVSM and help-seeking tendencies. It was assumed, that those who positively compare themselves and relate to other users who post about their mental health issues or simply provide information, and stories of mental health-related content will be more prone to a positive, more acceptive mental health attitude and more prone to seek professional help when perceived necessary. The findings of the study revealed that neither of these assumptions was met after conducting an online survey-based research among young, emerging adults living in the Netherlands. The insignificant results for both analyses could be associated with several influencing factors when conducting the research study which will be more explicitly elaborated on further in the ‘limitations’ section. Furthermore, some suggestions will also be made later in order to help future researchers recreate an improved version of the study and see whether the hypotheses posed in the current research could still have relevance in a different research setting.

Furthermore, it was also hypothesized that the relationship between opinion-based social comparison on highly visual social media platforms will be positively mediated by feelings of inspiration. In other words, when emerging adults compare their opinions with other users online they could potentially feel inspired by these users’ ideas, ideology, lives or stories on certain topics which then would also positively influence their mental health attitudes and whether they seek professional help in times of need or not. While part of the proposed hypothesis was true, part of it once again resulted in insignificant findings. To elaborate, the results concluded that opinion-based social comparison online does in fact positively influence young, emerging adults’ feelings of inspiration which means that when they see other users’ success stories and uplifting posts they themselves also get inspired by them. This is a rather

important finding since it is evidence that it does matter what kind of content is present on highly visual social media. Additionally, this finding also means that a potential (influencer) campaign for positive mental health, mental health attitude and help-seeking on HVSM platforms could still positively influence emerging, young adults. Even though the moderation analysis was insignificant, there is a potential that further research could find evidence for the whole proposed hypothesis.

Lastly, it was proposed that both gender and time spent on highly visual social media moderate the relationship between both opinion-based social comparison online and mental health attitudes as well as between opinion-based social comparison online and help-seeking behaviour. First, as it was discussed in the theoretical framework, evidence in literature shows that women are more prone to social comparison and at the same time, men are less likely to express their opinion and feelings about mental health issues and less likely to seek professional help as well (Ang et al., 2004; Vogel & Wester, 2003; Nesi & Prinstein, 2015). Accordingly, it was expected that women's mental health attitudes and help-seeking behaviour will be more affected by opinion-based social comparison on HVSM sites than men's. After analysis, it was evident that these hypotheses ended up not being true. This could have happened because of several reasons, one of them the unequal distribution of male and female participants and the rather small number of recorded responses since it does not confirm the findings of the previously discussed literature. Future research could consider these issues when reconstructing this study later on. Second, the proposed moderated mediation hypothesis regarding opinion-based social comparison on HVSM sites, feelings of inspiration and mental health attitudes and help-seeking behaviour was expected to be different for females and males. This was proven to be untrue. Once again, the same issues can be mentioned as reasons for the unsuccessful proof. The same can be said about the moderating role of time spent on HVSM platforms. None of the proposed hypotheses was proven to be significant, which means that there is no clear evidence that exposure to HVSM is influential on mental health attitudes and help-seeking behaviour for young, emerging adults. Since in the theoretical framework it is established that there is no clear agreement in the literature history for this either (Berryman et al., 2018), the study used the hypotheses for exploration. Even though this study claims no significant influence on time spent on HVSM sites, it is possible that in another research setting it does have an impact on the mental health attitudes and help-seeking behaviour of young, emerging adults.

## **5.2 Practical implications**

When it comes to the practical implications after considering the results of the current study, a number of possible improvements can be listed. First of all, Instagram and TikTok could get rid of the available filters and adjustment settings before uploading a picture or video. This way people would be more encouraged to upload the reality, their real-life stories instead of something which is edited and filtered. People need to be encouraged to see that even those users who have millions of followers and seemingly perfect lives are human. Once a more realistic visual content is accepted by the majority of the users, sharing and comparing opinions on topics such as mental health without a filter could be easier embraced by the online society as well.

Secondly, the major HVSM companies together with researchers and educational professionals should start a movement or campaign in order to raise awareness of the importance of knowledge and acknowledgement of mental health issues motivating young, emerging adults to seek professional help and deal with their possible issues with a mental health professional instead of alone. This could be done for example by recruiting a number of socially influential social media characters who are or were struggling in the past with any kind of mental health problems. Create honest interviews with them which could be shared online and reach and encourage members of the users to also do so. Furthermore, live chats could also be started by social influencers online within the same campaign where together with a health care professional questions are raised and answered, and the public can shape the direction of the conversation.

## **6 Limitations and future research directions**

Even though the current research study was based on several theories and existing literature which is an indication of high validity with the correctly executed analyses, there are a few limitations which have to be noted in this section. First of all, most of the young, emerging adults who participated in the online questionnaire were between the ages of 19-22, which means that the slightly ‘older’ people from the target group were not equally represented. This could have caused the findings to be more age-appropriate for the ‘younger’ emerging adults rather than the ones between 22-29. Additionally, the sampling method used did not focus on nationality, but rather had the criterion “young, emerging adults living in the Netherlands”. Thus, it could be that a more nationally specific sample was drawn, the results would have been

different. Increasing the sample size could also enhance the findings since this study only used 156 participants.

Furthermore, in order to recruit participants for the online survey, convenience and snowball sampling methods were used. A number of limitations can be associated with these methods since the researcher is making use of his/her own social network for recruiting participants, it is not an entirely randomized method of sampling. This could potentially result in findings which are less generalizable for the whole population and could make the replication of the study harder as well. What is more, since the instrument for data collection was an online questionnaire, participants had to self-report when filling it out. This could easily limit the collected data of invalidity since the risk of response bias is present at all times. This is because scientifically, participants tend to provide answers to the survey which are socially desirable (Tracey, 2016).

Finally, the current study was only focusing on highly visual social media sites TikTok and Instagram, which could be considered a limitation of platforms. Since each individual who possesses Instagram and/or TikTok account has a different social influencing network online, they could not possibly be the targets of the same kind of content on the platforms. This means that while some of the participants could have seen positive mental health-related posts on each site, some of them may have never encountered one because of the different social circles which make it difficult to draw a real conclusion. This could also be further connected to the amount of knowledge individuals can seek from social media encounters when it comes to their attitudes towards mental health issues and whether they seek professional help when necessary or not.

In reference to the insights gained during the process of the study and the previously mentioned limitations, there are some recommendations which need to be mentioned in order to potentially improve and inspire future research on this field. One of these is the extension of the sample by size and demographics (e.g. different age groups, nationality) to gain insight and information about a bigger sample group from which it could be possible to predict what kind of targeted changes highly visual social media sites have to go under in order to raise a bigger awareness about the importance of mental health and help-seeking. Additionally, future research should also consider including a number of different social media sites which are popular among young, emerging adults. These include for example Snapchat or Facebook which are not solely relying on visual, but also on written content. Since these platforms are

worldwide famous and reach millions of people, they could easily also serve as networking sites to connect with people and compare opinions in order to positively influence one's life.

## **7 Conclusion**

To answer the research question, this study concluded that opinion-based social comparison on highly visual social media platforms such as TikTok and Instagram does not have any positive effects on the mental health attitude or help-seeking behaviour of young, emerging adults. This could be due to the fact that real mental health awareness and educationalized content are still not widely present on social media. Additionally, it can also be that this study was solely focused on TikTok and Instagram, but other social media platforms offer a broader or somewhat different display of content regarding positive mental health attitudes and professional help-seeking when necessary, this could be something for future researchers to investigate.

Additionally, contrary to the expectations and previous research base, the study did not find any difference in effect regarding gender or time spent on the previously mentioned social media platforms. This could also be further investigated in the future. Furthermore, the findings indicating that opinion-based social comparison online has an effect on people's feelings of inspiration show that content on social media sites could potentially influence the way how and in which way people form their opinions about certain topics, for instance, mental health as well. Thus, even though the current research did not reach outstanding results, it could be the start of a somewhat more extensive research field yet to be discovered.

## References

- Aichner, T., Grünfelder, M., Maurer, O., & Jegeni, D. (2021). Twenty-Five Years of Social Media: A Review of Social Media Applications and Definitions from 1994 to 2019. *Cyberpsychology, Behavior, and Social Networking*, 24(4), 215–222. <https://doi.org/10.1089/cyber.2020.0134>
- Akram, W., & Kumar, R. (2017). A Study on Positive and Negative Effects of Social Media on Society. *International Journal of Computer Sciences and Engineering*, 5(10), 351–354. <https://doi.org/10.26438/ijcse/v5i10.351354>
- Allen, K. A., Ryan, T., Gray, D. L., McInerney, D. M., & Waters, L. (2014). Social Media Use and Social Connectedness in Adolescents: The Positives and the Potential Pitfalls. *The Australian Educational and Developmental Psychologist*, 31(1), 18–31. <https://doi.org/10.1017/edp.2014.2>
- Ang, R. P., Lim, K. M., Tan, A. G., & Yau, T. Y. (2004). Effects of gender and sex role orientation on help-seeking attitudes. *Current Psychology*, 23(3), 203–214. <https://doi.org/10.1007/s12144-004-1020-3>
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 55(5), 469–480. <https://doi.org/10.1037/0003-066x.55.5.469>
- Arnett, J. J. (2007). Emerging Adulthood: What Is It, and What Is It Good For? *Child Development Perspectives*, 1(2), 68–73. <https://doi.org/10.1111/j.1750-8606.2007.00016.x>
- Arnett, J. J., Žukauskienė, R., & Sugimura, K. (2014). The new life stage of emerging adulthood at ages 18–29 years: implications for mental health. *The Lancet Psychiatry*, 1(7), 569–576. [https://doi.org/10.1016/s2215-0366\(14\)00080-7](https://doi.org/10.1016/s2215-0366(14)00080-7)
- Bandura, A. (1977). Social learning theory. Englewood Cliffs, NJ: Prentice Hall.
- Barry, C. T., Sidoti, C. L., Briggs, S. M., Reiter, S. R., & Lindsey, R. A. (2017). Adolescent social media use and mental health from adolescent and parent perspectives. *Journal of Adolescence*, 61(1), 1–11. <https://doi.org/10.1016/j.adolescence.2017.08.005>
- Battisby, A. (2019). The Latest UK Social Media Statistics for 2019. Website: <https://www.avocadosocial.com/latest-social-media-statistics-anddemographics-for-the-uk-in-2019/>
- Benton, S. A., Robertson, J. M., Tseng, W. C., Newton, F. B., & Benton, S. L. (2003). Changes in counseling center client problems across 13 years. *Professional Psychology: Research and Practice*, 34(1), 66–72. <https://doi.org/10.1037/0735-7028.34.1.66>

- Berryman, C., Ferguson, C. J., & Negy, C. (2017). Social Media Use and Mental Health among Young Adults. *Psychiatric Quarterly*, 89(2), 307–314. <https://doi.org/10.1007/s11126-017-9535-6>
- Collins, R. L. (1996). For better or worse: The impact of upward social comparison on self-evaluations. *Psychological Bulletin*, 119(1), 51–69. <https://doi.org/10.1037/0033-2909.119.1.51>
- Corrigan, P. W., & Watson, A. C. (2002). The paradox of self-stigma and mental illness. *Clinical Psychology: Science and Practice*, 9(1), 35–53. <https://doi.org/10.1093/clipsy.9.1.35>
- Corrigan, P. W., Markowitz, F. E., & Watson, A. C. (2004). Structural Levels of Mental Illness Stigma and Discrimination. *Schizophrenia Bulletin*, 30(3), 481–491. <https://doi.org/10.1093/oxfordjournals.schbul.a007096>
- Corrigan, P. W., River, L. P., Lundin, R. K., Penn, D. L., Uphoff-Wasowski, K., Campion, J., Mathisen, J., Gagnon, C., Bergman, M., Goldstein, H., & Kubiak, M. A. (2001). Three Strategies for Changing Attributions about Severe Mental Illness. *Schizophrenia Bulletin*, 27(2), 187–195. <https://doi.org/10.1093/oxfordjournals.schbul.a006865>
- Crisp, A., Gelder, M., Goddard, E., & Meltzer, H. (2005). Stigmatization of people with mental illnesses: a follow-up study within the Changing Minds campaign of the Royal College of Psychiatrists. *World psychiatry : official journal of the World Psychiatric Association (WPA)*, 4(2), 106–113.
- Davila, J., Hershenberg, R., Feinstein, B. A., Gorman, K., Bhatia, V., & Starr, L. R. (2012). Frequency and quality of social networking among young adults: Associations with depressive symptoms, rumination, and corumination. *Psychology of Popular Media Culture*, 1(2), 72–86. <https://doi.org/10.1037/a0027512>
- Fang, J., Wang, X., Wen, Z., & Zhou, J. (2020). Fear of missing out and problematic social media use as mediators between emotional support from social media and phubbing behavior. *Addictive Behaviors*, 107(106430). <https://doi.org/10.1016/j.addbeh.2020.106430>
- Festinger, L. (1954). A Theory of Social Comparison Processes. *Human Relations*, 7(2), 117–140. <https://doi.org/10.1177/001872675400700202>
- Fischer, E. H., & Farina, A. (1995). Attitudes toward seeking professional psychological help: A shortened form and considerations for research. *Journal of College Student Development*, 36(4), 368–373. Retrieved from <https://psycnet.apa.org/record/1996-10056-001>
- Fischer, E. H., & Turner, J. I. (1970). Orientations to seeking professional help: Development and research utility of an attitude scale. *Journal of Consulting and Clinical Psychology*, 35(1, Pt.1), 79–90. <https://doi.org/10.1037/h0029636>

- Frost, R. L., & Rickwood, D. J. (2017). A systematic review of the mental health outcomes associated with Facebook use. *Computers in Human Behavior*, 76, 576–600. <https://doi.org/10.1016/j.chb.2017.08.001>
- Garcia, S. M., Tor, A., & Schiff, T. M. (2013). The Psychology of Competition. *Perspectives on Psychological Science*, 8(6), 634–650. <https://doi.org/10.1177/1745691613504114>
- Gowen, L. K. (2013). Online Mental Health Information Seeking in Young Adults with Mental Health Challenges. *Journal of Technology in Human Services*, 31(2), 97–111. <https://doi.org/10.1080/15228835.2013.765533>
- Griffiths, K. M., Nakane, Y., Christensen, H., Yoshioka, K., Jorm, A. F., & Nakane, H. (2006). Stigma in response to mental disorders: a comparison of Australia and Japan. *BMC Psychiatry*, 6(1). <https://doi.org/10.1186/1471-244x-6-21>
- Guimond, S., Branscombe, N. R., Brunot, S., Buunk, A. P., Chatard, A., Désert, M., Garcia, D. M., Haque, S., Martinot, D., & Yzerbyt, V. (2007). Culture, gender, and the self: Variations and impact of social comparison processes. *Journal of Personality and Social Psychology*, 92(6), 1118–1134. <https://doi.org/10.1037/0022-3514.92.6.1118>
- Haenlein, M., Anadol, E., Farnsworth, T., Hugo, H., Hunichen, J., & Welte, D. (2020). Navigating the New Era of Influencer Marketing: How to be Successful on Instagram, TikTok, & Co. *California Management Review*, 63(1), 5–25. <https://doi.org/10.1177/0008125620958166>
- Highfield, T., & Leaver, T. (2016). Instagrammatics and digital methods: studying visual social media, from selfies and GIFs to memes and emoji. *Communication Research and Practice*, 2(1), 47–62. <https://doi.org/10.1080/22041451.2016.1155332>
- Hosch, W. L. (2017, September 7). Web 2.0. Encyclopedia Britannica. <https://www.britannica.com/topic/Web-20>
- Hunt, J., & Eisenberg, D. (2010). Mental Health Problems and Help-Seeking Behavior Among College Students. *Journal of Adolescent Health*, 46(1), 3–10. <https://doi.org/10.1016/j.jadohealth.2009.08.008>
- Jelenchick, L. A., Eickhoff, J. C., & Moreno, M. A. (2013). “Facebook Depression?” Social Networking Site Use and Depression in Older Adolescents. *Journal of Adolescent Health*, 52(1), 128–130. <https://doi.org/10.1016/j.jadohealth.2012.05.008>
- Jones, S., Dodd, A., & Gruber, J. (2014). Development and Validation of a New Multidimensional Measure of Inspiration: Associations with Risk for Bipolar Disorder. *PLoS ONE*, 9(3), e91669. <https://doi.org/10.1371/journal.pone.0091669>
- Kauer, S. D., Mangan, C., & Sanci, L. (2014). Do Online Mental Health Services Improve Help-Seeking for Young People? A Systematic Review. *Journal of Medical Internet Research*, 16(3), e66. <https://doi.org/10.2196/jmir.3103>



- Kruglanski, A. W., & Mayseless, O. (1990). Classic and current social comparison research: Expanding the perspective. *Psychological Bulletin*, 108(2), 195–208. <https://doi.org/10.1037/0033-2909.108.2.195>
- Kumar, A., & Nayar, K. R. (2020). COVID 19 and its mental health consequences. *Journal of Mental Health*, 30(1), 1–2. <https://doi.org/10.1080/09638237.2020.1757052>
- Latane, B., & Wolf, S. (1981). The social impact of majorities and minorities. *Psychological Review*, 88(5), 438–453. <https://doi.org/10.1037/0033-295x.88.5.438>
- Leong, F. T. L., & Zachar, P. (1999). Gender and opinions about mental illness as predictors of attitudes toward seeking professional psychological help. *British Journal of Guidance & Counselling*, 27(1), 123–132. <https://doi.org/10.1080/03069889908259720>
- Levine, A., & Cureton, J. S. (1998). When hope and fear collide: a portrait of today's college student. San Francisco: Jossey-Bass Publishers
- Maier, M., & Lakens, D. (2022). Justify Your Alpha: A Primer on Two Practical Approaches. *Advances in Methods and Practices in Psychological Science*, 5(2), 251524592210803. <https://doi.org/10.1177/25152459221080396>
- Manikonda, L., & De Choudhury, M. (2017). Modeling and Understanding Visual Attributes of Mental Health Disclosures in Social Media. Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems. <https://doi.org/10.1145/3025453.3025932>
- Marengo, D., Longobardi, C., Fabris, M., & Settanni, M. (2018). Highly-visual social media and internalizing symptoms in adolescence: The mediating role of body image concerns. *Computers in Human Behavior*, 82, 63–69. <https://doi.org/10.1016/j.chb.2018.01.003>
- Martin, C. A., & Bush, A. J. (2000). Do role models influence teenagers' purchase intentions and behavior? *Journal of Consumer Marketing*, 17(5), 441–453. <https://doi.org/10.1108/07363760010341081>
- McCord, B., Rodebaugh, T. L., & Levinson, C. A. (2014). Facebook: Social uses and anxiety. *Computers in Human Behavior*, 34, 23–27. <https://doi.org/10.1016/j.chb.2014.01.020>
- McCrory, A., Best, P., & Maddock, A. (2020). The relationship between highly visual social media and young people's mental health: A scoping review. *Children and Youth Services Review*, 115, 105053. <https://doi.org/10.1016/j.childyouth.2020.105053>
- Meier, A., & Schäfer, S. (2018). The Positive Side of Social Comparison on Social Network Sites: How Envy Can Drive Inspiration on Instagram. *Cyberpsychology, Behavior, and Social Networking*, 21(7), 411–417. <https://doi.org/10.1089/cyber.2017.0708>

- Meier, A., Gilbert, A., Börner, S., & Possler, D. (2020). Instagram Inspiration: How Upward Comparison on Social Network Sites Can Contribute to Well-Being. *Journal of Communication*, 70(5), 721–743. <https://doi.org/10.1093/joc/jqaa025>
- Millward, L. J., Lutte, A., & Purvis, R. G. (2005). Depression and the perpetuation of an incapacitated identity as an inhibitor of return to work. *Journal of Psychiatric and Mental Health Nursing*, 12(5), 565–573. <https://doi.org/10.1111/j.1365-2850.2005.00875.x>
- Mitchell, C., McMillan, B., & Hagan, T. (2016). Mental health help-seeking behaviours in young adults. *British Journal of General Practice*, 67(654), 8–9. <https://doi.org/10.3399/bjgp17x688453>
- Montag, C., Yang, H., & Elhai, J. D. (2021). On the Psychology of TikTok Use: A First Glimpse From Empirical Findings. *Frontiers in Public Health*, 9. <https://doi.org/10.3389/fpubh.2021.641673>
- Morgan, T., & Ness, D. (2003). Students' Help-Seeking Behaviours by Gender, Racial Background, and Student Status. *Canadian Journal of Counselling*, 37(2), 151–166. Retrieved from <https://eric.ed.gov/?id=EJ822276>
- Myers, T. A., & Crowther, J. H. (2009). Social comparison as a predictor of body dissatisfaction: A meta-analytic review. *Journal of Abnormal Psychology*, 118(4), 683–698. <https://doi.org/10.1037/a0016763>
- Nesi, J., & Prinstein, M. J. (2015). Using Social Media for Social Comparison and Feedback-Seeking: Gender and Popularity Moderate Associations with Depressive Symptoms. *Journal of Abnormal Child Psychology*, 43(8), 1427–1438. <https://doi.org/10.1007/s10802-015-0020-0>
- Okazaki, S. (2000). Treatment delay among Asian-American patients with severe mental illness. *American Journal of Orthopsychiatry*, 70(1), 58–64. <https://doi.org/10.1037/h0087751>
- Oliver, J. M., Reed, C. K. S., Katz, B. M., & Haugh, J. A. (1999). Students' self-reports of help-seeking: the impact of psychological problems, stress, and demographic variables on utilization of formal and informal support. *Social Behavior and Personality: an international journal*, 27(2), 109–128. <https://doi.org/10.2224/sbp.1999.27.2.109>
- Park, S. Y., & Baek, Y. M. (2018). Two faces of social comparison on Facebook: The interplay between social comparison orientation, emotions, and psychological well-being. *Computers in Human Behavior*, 79, 83–93. <https://doi.org/10.1016/j.chb.2017.10.028>
- Phelan, J. C., Link, B. G., Stueve, A., & Pescosolido, B. A. (2000). Public Conceptions of Mental Illness in 1950 and 1996: What Is Mental Illness and Is It to be Feared? *Journal of Health and Social Behavior*, 41(2), 188. <https://doi.org/10.2307/2676305>

- Pretorius, C., Chambers, D., & Coyle, D. (2019). Young People's Online Help-Seeking and Mental Health Difficulties: Systematic Narrative Review. *Journal of Medical Internet Research*, 21(11), e13873. <https://doi.org/10.2196/13873>
- Rasmussen, E. E., Punyanunt-Carter, N., LaFreniere, J. R., Norman, M. S., & Kimball, T. G. (2020). The serially mediated relationship between emerging adults' social media use and mental well-being. *Computers in Human Behavior*, 102, 206–213. <https://doi.org/10.1016/j.chb.2019.08.019>
- Reinecke, L., & Trepte, S. (2014). Authenticity and well-being on social network sites: A two-wave longitudinal study on the effects of online authenticity and the positivity bias in SNS communication. *Computers in Human Behavior*, 30, 95–102. <https://doi.org/10.1016/j.chb.2013.07.030>
- Russo, A., Watkins, J., Kelly, L., & Chan, S. (2008). Participatory Communication with Social Media. *Curator: The Museum Journal*, 51(1), 21–31. <https://doi.org/10.1111/j.2151-6952.2008.tb00292.x>
- Sadagheyani, H. E., & Tatari, F. (2020). Investigating the role of social media on mental health. *Mental Health and Social Inclusion*, 25(1), 41–51. <https://doi.org/10.1108/mhsi-06-2020-0039>
- Sebre, S. B., & Miltuze, A. (2021). Digital Media as a Medium for Adolescent Identity Development. *Technology, Knowledge and Learning*, 26(4), 867–881. <https://doi.org/10.1007/s10758-021-09499-1>
- Siddiqui, S., & Singh, T. (2016). Social Media its Impact with Positive and Negative Aspects. *International Journal of Computer Applications Technology and Research*, 5(2), 71–75. <https://doi.org/10.7753/ijcatr0502.1006>
- Statista. (10 September 2021). Worldwide digital population as of January 2021. Retrieved from <https://www.statista.com/statistics/617136/digital-population-worldwide/#:~:text=As%20of%20January%202021%20there,the%20internet%20via%20mobile%20devices.>
- Statista. (28 April 2022). TikTok user ratio in the U.S. 2021, by age group. Retrieved from <https://www.statista.com/statistics/1095186/tiktok-us-users-age/>
- Statista. (8 February 2022). Social media usage in the Netherlands - Statistics & Facts. Retrieved from <https://www.statista.com/topics/5524/social-media-in-the-netherlands/#dossierKeyfigures>
- Suls, J., Martin, R., & Wheeler, L. (2000). Three Kinds of Opinion Comparison: The Triadic Model. *Personality and Social Psychology Review*, 4(3), 219–237. [https://doi.org/10.1207/s15327957pspr0403\\_2](https://doi.org/10.1207/s15327957pspr0403_2)
- Taber, K. S. (2017). The Use of Cronbach's Alpha When Developing and Reporting Research Instruments in Science Education. *Research in Science Education*, 48(6), 1273–1296. <https://doi.org/10.1007/s11165-016-9602-2>

- Tracey, T. J. G. (2016). A note on socially desirable responding. *Journal of Counseling Psychology*, 63(2), 224–232. <https://doi.org/10.1037/cou0000135>
- Valkenburg, P. M., Peter, J., & Schouten, A. P. (2006). Friend Networking Sites and Their Relationship to Adolescents' Well-Being and Social Self-Esteem. *CyberPsychology & Behavior*, 9(5), 584–590. <https://doi.org/10.1089/cpb.2006.9.584>
- Vanheusden, K., Van der Ende, J., Mulder, C. L., Van Lenthe, F. J., Verhulst, F. C., & Mackenbach, J. P. (2008). Beliefs about mental health problems and help-seeking behavior in Dutch young adults. *Social Psychiatry and Psychiatric Epidemiology*, 44(3), 239–246. <https://doi.org/10.1007/s00127-008-0428-8>
- Vogel, D. L., Epting, F., & Wester, S. R. (2003). Counselors' Perceptions of Female and Male Clients. *Journal of Counseling & Development*, 81(2), 131–141. <https://doi.org/10.1002/j.1556-6678.2003.tb00234.x>
- Vogel, E. A., Rose, J. P., Roberts, L. R., & Eckles, K. (2014). Social comparison, social media, and self-esteem. *Psychology of Popular Media Culture*, 3(4), 206–222. <https://doi.org/10.1037/ppm0000047>
- Wahl, O. F. (2003). News Media Portrayal of Mental Illness. *American Behavioral Scientist*, 46(12), 1594–1600. <https://doi.org/10.1177/0002764203254615>
- Wheeler, L., & Miyake, K. (1992). Social comparison in everyday life. *Journal of Personality and Social Psychology*, 62(5), 760–773. <https://doi.org/10.1037/0022-3514.62.5.760>
- Williams, B., Onsman, A., & Brown, T. (2010). Exploratory factor analysis: A five-step guide for novices. *Australasian Journal of Paramedicine*, 8(3). <https://doi.org/10.33151/ajp.8.3.93>
- Yang, C. C., Holden, S. M., & Carter, M. D. K. (2018). Social Media Social Comparison of Ability (but not Opinion) Predicts Lower Identity Clarity: Identity Processing Style as a Mediator. *Journal of Youth and Adolescence*, 47(10), 2114–2128. <https://doi.org/10.1007/s10964-017-0801-6>

## Appendix A – The online questionnaire in English

.....page1.....

Dear respondent,

You are being invited to participate in a research study about highly visual social media use.

This study is being conducted by Sára Boros from the Faculty of Behavioural, Management and Social Sciences at the University of Twente.

The purpose of the study is to see what kind of highly visual social media use habits young emerging adults have and to reflect on their attitude towards mental health issues. The survey will take you approximately 10 minutes to complete. The data will be used solely for the researcher's Bachelor Thesis in Communication Science. Moreover, the data will be handled confidentially and anonymously.

Your participation in this study is entirely voluntary and you can withdraw at any time. You are free to omit any question.

There are no known risks associated with this study and all precautions are being taken to minimize potential harms, such as to your anonymity. Any known risks are minimized by storing the data offline and anonymizing your provided responses.

Study contact details for further information: Sára Boros [s.boros@student.utwente.nl](mailto:s.boros@student.utwente.nl)

I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and can withdraw from the study at any time, without having to provide a reason.

- Yes, I consent and continue to the survey
- No, I do not consent and quit the survey

.....page2.....

1. What is your gender?

- Male
- Female
- Other
- Prefer not to say

2. How old are you?  
...SPACE FOR WRITTEN ANSWER...
3. What is your nationality?
  - Dutch
  - German
  - Other, namely  
...SPACE FOR WRITTEN ANSWER...
4. What is your highest obtained educational level (highest education that you successfully completed)?
  - Primary school
  - Secondary high school
  - Practical education/apprenticeship
  - Bachelor's or equivalent level
  - Master's or equivalent level
  - PhD or equivalent level
  - Another degree, namely  
...SPACE FOR WRITTEN ANSWER...
5. Are you an active user of Instagram and/or TikTok?
  - No
  - Yes
6. On average, how many hours per day do you use Instagram?
  - Less than or maximum half an hour a day
  - 1-2 hours a day
  - 2-3 hours a day
  - 3-4 hours a day
  - More than 5 hours a day
  - I do not use Instagram
7. On average, how many hours per day do you use TikTok?
  - Less than or maximum half an hour a day
  - 1-2 hours a day
  - 2-3 hours a day
  - 3-4 hours a day
  - More than 5 hours a day
  - I do not use TikTok
8. In my most recent Instagram/TikTok use, I ... (multiple answers are possible)
  - Scrolled through the posts of other users
  - Watched stories of other users

- Liked posts
- Commented on others' posts
- Re-posted others' posts
- Sent a DM (direct message)
- Watched Reels
- Posted something
- Other, namely

...SPACE FOR WRITTEN ANSWER...

.....page3.....

Please indicate how strongly you agree or disagree with the following sentences regarding your Instagram/TikTok use.

1. I often follow the lives of other users online.
2. I feel like I can relate to other users.
3. I feel that other users are often effective in giving good advice.
4. I value the opinions of other social media users.
5. My values are similar to the other users' values.
6. During my most recent social media use, I encountered opinions of others in their posts that made me think about my own opinion.
7. During my most recent social media use, I tried to find out about the opinions of others.
8. During my most recent social media use, I looked at the opinions of others to form my own opinion.
9. During my most recent social media use, other users provided me with interesting insights on topics I value.
10. During my most recent social media use, I thought about whether I am doing relatively better or worse than other people.
11. During my most recent social media use, I did NOT compare with others to see whether I am doing relatively better or worse.
12. During my most recent social media use, I compared how I am doing socially with other people.

.....page4.....

Please indicate how strongly you agree or disagree with the following sentences.

1. I find it hard to talk to someone **with** mental health problems.
2. I would find it hard to talk to someone **about** mental health problems.
3. I believe that entering a mental hospital is a sign of personal failure.
4. Once I know a person has mental issues, I will take his or her opinion less seriously.
5. I would willingly accept an individual who receives mental health services as a close friend.
6. Mental health is not a taboo topic.
7. If I was concerned about a mental health issue with a family member or myself, I would feel comfortable discussing it with someone.

.....page5.....

Please indicate how strongly you agree or disagree with the following sentences. (Consider all sentences in an online setting.)

1. During my most recent social media use, I felt inspired when I saw the posts/stories of other users.
2. Posts of other users online inspire me to revise my opinion on certain topics.
3. I am inspired by the ideas and accomplishments of other people (shared online).
4. When I reflect upon other people's lives, I feel inspired.
5. Posts/stories of social media users inspire me to talk about topics I normally wouldn't talk about.
6. I feel inspired when I think of myself as part of a larger group.
7. When I am inspired, I feel compassion toward others.
8. I often experience times of inspiration when interacting with others online.

.....page6.....

Please indicate how strongly you agree or disagree with the following sentences.

1. I would want to get psychological help if I were worried or upset for a long period of time.
2. Personal and emotional troubles, like most things in life, tend to work out by themselves.
3. If I thought I was having a mental breakdown, my first thought would be to get professional attention.
4. I admire people who are willing to cope with their problems and fears **without** seeking professional help.
5. I might want to have psychological counselling in the future.
6. A person with an emotional problem is not likely to solve it alone; he or she is more likely to solve it with professional help.
7. Given the amount of time and money involved in psychotherapy, I am not sure that it would benefit someone like me.
8. Talking about problems with a psychologist seems to be a poor way to get rid of emotional problems.

.....END.....



## Appendix B – The online questionnaire in Dutch

.....pagina1.....

Geachte respondent,

U wordt uitgenodigd om deel te nemen aan een onderzoek over zeer visueel gebruik van sociale media.

Dit onderzoek wordt uitgevoerd door Sára Boros van de Faculteit der Gedrags-, Management- en Maatschappijwetenschappen van de Universiteit Twente.

Het doel van het onderzoek is om te zien wat voor soort gebruiksgewoonten jongvolwassenen hebben met betrekking tot zeer visuele sociale media en om na te denken over hun houding ten opzichte van geestelijke gezondheidskwesties. Het invullen van de enquête kost u ongeveer 10 minuten. De gegevens zullen uitsluitend worden gebruikt voor de bachelor scriptie van de onderzoeker in Communicatiewetenschap. Bovendien zullen de gegevens vertrouwelijk en anoniem behandeld worden.

Uw deelname aan dit onderzoek is geheel vrijwillig en u kunt zich op elk moment terugtrekken. Het staat u vrij om een vraag weg te laten.

Wij zijn van mening dat er geen bekende risico's verbonden zijn aan dit onderzoek en alle voorzorgsmaatregelen worden genomen om mogelijke schade, zoals uw anonimiteit, tot een minimum te beperken. Wij zullen eventuele risico's tot een minimum beperken door de gegevens offline op te slaan en de door u gegeven antwoorden te anonimiseren.

Contactgegevens voor verdere informatie: Sára Boros [s.boros@student.utwente.nl](mailto:s.boros@student.utwente.nl)

Ik geef vrijwillig mijn toestemming om deel te nemen aan dit onderzoek en begrijp dat ik kan weigeren vragen te beantwoorden en mij op elk moment uit het onderzoek kan terugtrekken, zonder dat ik daarvoor een reden moet opgeven.

- Ja, ik ga akkoord en ga verder met de enquête
- Nee, ik ga niet akkoord en ik stop met de enquête

.....pagina2.....

1. Wat is uw geslacht?

- Mannelijk
- Vrouwelijk
- Andere
- Zeg ik liever niet

2. Hoe oud bent u?

...RUIJTE VOOR SCHRIFTLELIJKE ANTWOORD...

3. Wat is uw nationaliteit?

- Nederlands
- Duits
- Andere, namelijk

...RUIMTE VOOR SCHRIFTELIJK ANTWOORD...

4. Wat is uw hoogst behaalde onderwijsniveau (hoogste opleiding die u met succes hebt afgerond)?

- Basisschool
- Voortgezet onderwijs (vwo, havo, vmbo)
- Praktijk onderwijs (mbo)
- Hoger onderwijs - bachelor of gelijkwaardig niveau (hbo, wo)
- Master of gelijkwaardig niveau
- Doctoraat of gelijkwaardig niveau
- Andere graad, namelijk

...RUIMTE VOOR SCHRIFTELIJK ANTWOORD...

5. Bent u een actief gebruiker van Instagram en/of TikTok?

- Nee
- Ja

6. Hoeveel uur per dag gebruikt u Instagram gemiddeld?

- Minder dan of maximaal een half uur per dag
- 1-2 uur per dag
- 2-3 uur per dag
- 3-4 uur per dag
- Meer dan 5 uur per dag
- Ik gebruik Instagram niet

7. Hoeveel uur per dag gebruikt u TikTok gemiddeld?

- Minder dan of maximaal een half uur per dag
- 1-2 uur per dag
- 2-3 uur per dag
- 3-4 uur per dag
- Meer dan 5 uur per dag
- Ik gebruik TikTok niet

8. In mijn meest recente Instagram/TikTok gebruik, heb ik... (meerdere antwoorden zijn mogelijk)

- Gescrold door de berichten van andere gebruikers
- Verhalen van andere gebruikers bekeken
- Berichten geliket
- Commentaar gegeven op berichten van anderen
- Berichten van anderen gerepost
- Een DM (direct bericht) gestuurd
- Reels gekeken
- Iets gepost
- Andere, namelijk

...RUIJTE VOOR SCHRIFTLELIJ ANTWOORD...

.....pagina3.....

Geef aan hoe sterk u het eens of oneens bent met de volgende zinnen over uw Instagram/TikTok-gebruik.

1. Ik volg vaak het leven van andere gebruikers online.
2. Ik heb het gevoel dat ik me kan identificeren met andere gebruikers.
3. Ik vind dat andere gebruikers vaak doeltreffend zijn in het geven van goed advies.
4. Ik waardeer de meningen van andere gebruikers van sociale media.
5. Mijn waarden komen overeen met die van de andere gebruikers.
6. Tijdens mijn meest recente gebruik van sociale media kwam ik in hun posts meningen van anderen tegen die mij aan het denken zetten over mijn eigen mening.
7. Tijdens mijn meest recente sociale-mediagebruik probeerde ik de mening van anderen te achterhalen.
8. Tijdens mijn meest recente gebruik van de sociale media, keek ik naar de meningen van anderen om mijn eigen mening te vormen.
9. Tijdens mijn meest recente gebruik van sociale media hebben andere gebruikers mij interessante inzichten verschaft over onderwerpen die ik belangrijk vind.
10. Tijdens mijn meest recente sociale-mediagebruik dacht ik na over de vraag of ik het relatief beter of slechter doe dan andere mensen.
11. Tijdens mijn meest recente sociale-mediagebruik heb ik NIET met anderen vergeleken om te zien of ik het relatief beter of slechter doe.
12. Tijdens mijn meest recente sociale-mediagebruik vergeleek ik hoe ik er sociaal voor sta ten opzichte van andere mensen.

.....pagina4.....

Geef aan hoe sterk u het eens of oneens bent met de volgende zinnen.

1. Ik vind het moeilijk om met iemand te praten **met** mentale gezondheidsproblemen.
2. Ik zou het moeilijk vinden om met iemand te praten **over** geestelijke gezondheidsproblemen.
3. Ik geloof dat naar een psychiatrische inrichting gaan een teken van persoonlijk falen is.

4. Als ik weet dat iemand psychische problemen heeft, zal ik zijn of haar mening minder serieus nemen.
5. Ik zou een persoon die geestelijke gezondheidszorg ontvangt graag als goede vriend accepteren.
6. Geestelijke gezondheid is geen taboe.
7. Als ik me zorgen zou maken over een geestelijk gezondheidsprobleem bij een familielid of bij mezelf, zou ik me op mijn gemak voelen om dat met iemand te bespreken.

.....pagina5.....

Geef aan hoe sterk u het eens of oneens bent met de volgende zinnen. (Denk aan alle zinnen in een online omgeving.)

1. Tijdens mijn meest recente sociale-mediagebruik, voelde ik me geïnspireerd toen ik de posts/verhalen van andere gebruikers zag.
2. Berichten van andere gebruikers online inspireren mij om mijn mening over bepaalde onderwerpen te herzien.
3. Ik ervaar vaak momenten van inspiratie wanneer ik online met anderen interageer.
4. Ik word geïnspireerd door de ideeën en verwezenlijkingen van andere mensen (online gedeeld).
5. Ik voel me geïnspireerd als ik mezelf zie als deel van een grotere groep.
6. Als ik nadenk over het leven van andere mensen, voel ik me geïnspireerd.
7. Als ik geïnspireerd ben, voel ik medeleven met anderen.
8. Berichten/verhalen van social media-gebruikers inspireren me om te praten over onderwerpen waar ik normaal niet over zou praten.

.....pagina6.....

Geef aan hoe sterk u het eens of oneens bent met de volgende zinnen.

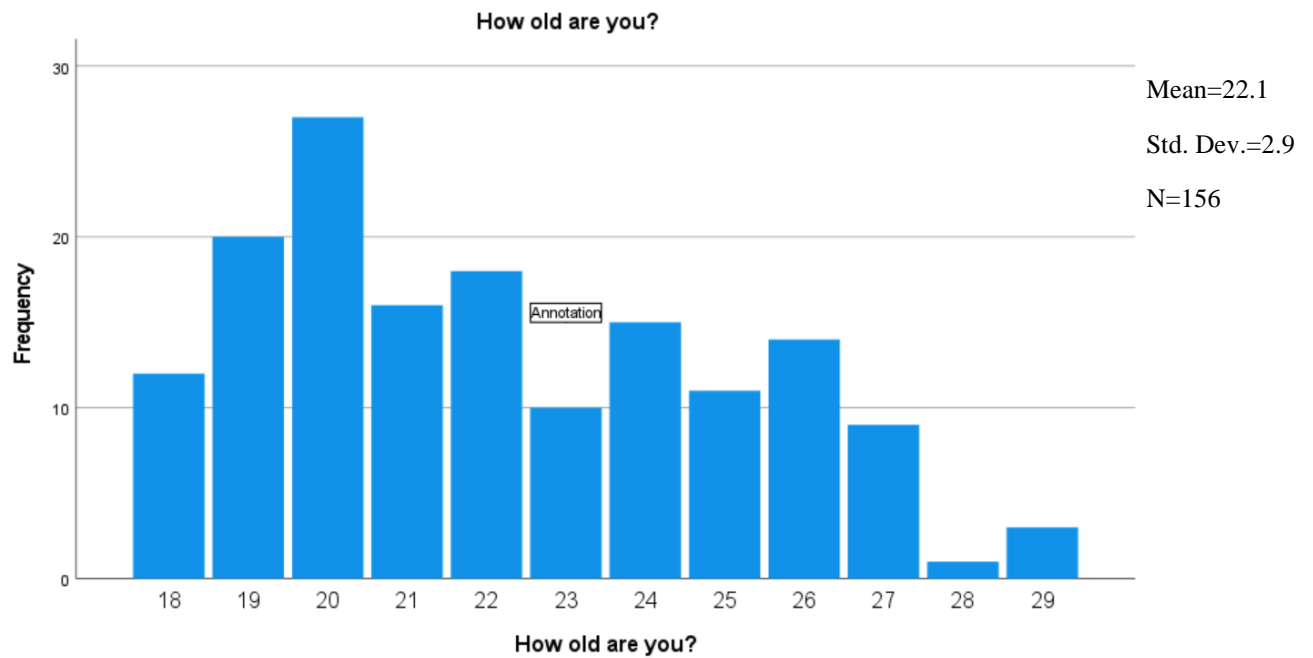
1. Ik zou psychologische hulp zoeken als ik me zorgen zou maken of langere tijd van streek zou zijn.
2. Persoonlijke en emotionele problemen, zoals de meeste dingen in het leven, hebben de neiging om vanzelf op te lossen.
3. Als ik dacht dat ik een zenuwzinking had, zou ik eerst professionele hulp zoeken.
4. Ik bewonder mensen die bereid zijn om met hun problemen en angsten om te gaan **zonder** professionele hulp te zoeken.
5. Ik wil misschien psychologische begeleiding in de toekomst.
6. Een persoon met een emotioneel probleem zal het waarschijnlijk niet alleen oplossen; hij of zij zal het eerder oplossen met professionele hulp.
7. Gezien de hoeveelheid tijd en geld die bij psychotherapie betrokken zijn, ben ik er niet zeker van dat iemand als ik daar baat bij zou hebben.
8. Praten over problemen met een psycholoog schijnt een slechte manier te zijn om van emotionele problemen af te komen.

.....EIND.....

## Appendix C – Age distribution of the online questionnaire sample

**Figure 1**

*Age distribution of the participants of the online questionnaire study*



## Appendix D – The online questionnaire items and the scales that they are based on

**Table 1**

*Overview of the final included items of the online questionnaire and their origins*

Construct	Final included item	Origin of the item
Opinion-based social comparison	C1. I often follow the lives of other users online.	Newly created item
	C2. I feel like I can relate to other users.	Newly created item
	C3. I feel that other users are often effective in giving good advice.	Newly created item
	C4. I value the opinions of other social media users.	Newly created item
	C5. My values are similar to the other users' values.	Newly created item
	C6. During my most recent social media use, I encountered opinions of others in their posts that made me think about my own opinion.	Newly created item
	C7. During my most recent social media use, I tried to find out about the opinions of others.	Newly created item
	C8. During my most recent social media use, I looked at the opinions of others to form my own opinion.	Based on SMSCS item: On social media, I try to find out what others think who face similar problems as I face (Yang et al., 2018)
	C9. During my most recent social media use, other users provided me with interesting insights on topics I value.	Based on SMSCS item: When using social media, I try to find out what others think about something that I want to learn more about (Yang et al., 2018)
	C10. During my most recent social media use, I thought about whether I am doing relatively better or worse than other people.	Based on SMSCS item: I don't really use social media to compare with others to see how well I'm doing (reversely coded) (Yang et al., 2018)

Mental health attitude	C11. During my most recent social media use, I did NOT compare with others to see whether I am doing relatively better or worse.	Based on SMSCS item: I don't really use social media to compare with others to see how well I'm doing (Yang et al., 2018)
	C12. During my most recent social media use, I compared how I am doing socially with other people.	Based on SMSCS item: On social media, I compare how I am doing socially with other people (Yang et al., 2018)
	MA1. I find it hard to talk to someone with mental health problems.	Based on ATMIQ item: I would be afraid to have a conversation with a mentally ill person (Weller & Grunes, 1988).
	MA2. I would find it hard to talk to someone about mental health problems.	Newly created item
	MA3. I believe that entering a mental hospital is a sign of personal failure.	Based on PSQ item: Most people feel that entering a mental hospital is a sign of personal failure (Link, 1987)
	MA4. Once I know a person has mental issues, I will take his or her opinion less seriously.	Based on PSQ item: Once they know a person was in a mental hospital, most people will take his or her opinions less seriously (Link, 1987)
	MA5. I would willingly accept an individual who receives mental health services as a close friend.	Based on ATMIQ item: I could maintain a friendship with someone with a mental illness (Weller & Grunes, 1988)
Feelings of inspiration	MA6. Mental health is not a taboo topic.	Newly created item
	MA7. If I was concerned about a mental health issue with a family member or myself, I would feel comfortable discussing it with someone.	Based on ATMIQ item: I would be ashamed if people knew that someone in my family had been diagnosed with a mental illness (Weller & Grunes, 1988)
	I1. During my most recent social media use, I felt inspired when I saw the posts/stories of other users.	Based on EISI item: I am inspired by other people (Jones & Dodd, 2014)

	I2. Posts of other users online inspire me to revise my opinion on certain topics.	Newly created item
	I3. I am inspired by the ideas and accomplishments of other people (shared online).	Based on EISI item: I am inspired by the ideas and accomplishments of other people (Jones & Dodd, 2014)
	I4. When I reflect upon other people's lives, I feel inspired.	Based on EISI item: When I reflect upon other people's lives, I feel inspired (Jones & Dodd, 2014)
	I5. Posts/stories of social media users inspire me to talk about topics I normally wouldn't talk about.	Newly created item
	I6. I feel inspired when I think of myself as part of a larger group.	Based on EISI item: I am inspired when thinking of myself as part of a larger group (Jones & Dodd, 2014)
	I7. When I am inspired, I feel compassion toward others.	Based on EISI item: When I am inspired, I feel compassion towards others (Jones & Dodd, 2014)
	I8. I often experience times of inspiration when interacting with others online.	Based on EISI item: I often experience times of inspiration (Jones & Dodd, 2014)
Help-seeking behaviour	HSB1. I would want to get psychological help if I were worried or upset for a long period of time.	Based on ATSPPH-SF item: I would want to get psychological help if I was worried or upset for a long period of time (Fischer & Farina, 1995)
	HSB2. Personal and emotional troubles, like most things in life, tend to work out by themselves.	Based on ATSPPH-SF item: Personal and emotional troubles, like most things in life, tend to work out by themselves (Fischer & Farina, 1995)
	HSB3. If I thought I was having a mental breakdown, my first thought would be to get professional attention.	Based on ATSPPH-SF item: If I believed I was having a mental breakdown, my first inclination would be to get professional attention (Fischer & Farina, 1995)



HSB4. I admire people who are willing to cope with their problems and fears without seeking professional help.

Based on ATSPPH-SF item:  
There is something to admire about a person who copes with conflicts and fears without going for professional help (Fischer & Farina, 1995)

HSB5. I might want to have psychological counselling in the future.

Based on ATSPPH-SF item: I might want to get psychological counselling in the future (Fischer & Farina, 1995)

HSB6. A person with an emotional problem is not likely to solve it alone; he or she is more likely to solve it with professional help.

Based on ATSPPH-SF item: A person with an emotional problem is not likely to solve it alone; he or she is likely to solve it with professional help (Fischer & Farina, 1995)

HSB7. Given the amount of time and money involved in psychotherapy, I am not sure that it would benefit someone like me.

Based on ATSPPH-SF item: Considering the time and expense involved in psychotherapy, it would have little value for a person like me (Fischer & Farina, 1995)

HSB8. Talking about problems with a psychologist seems to be a poor way to get rid of emotional problems.

Based on ATSPPH-SF item:  
The idea of talking about problems with a psychologist strikes me as a poor way to get rid of emotional conflicts (Fischer & Farina, 1995)

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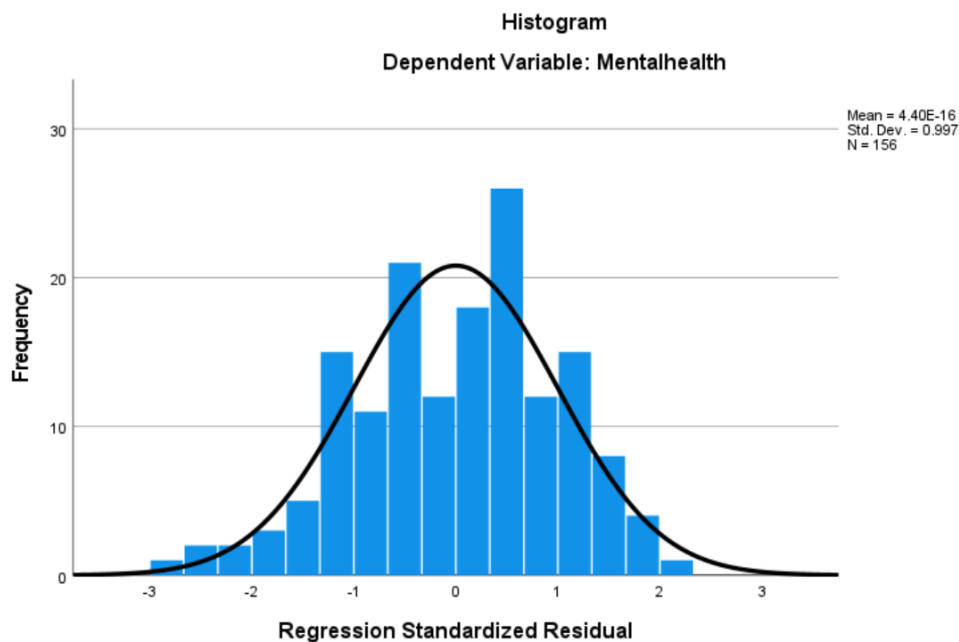
## Appendix E – Checking assumptions of bivariate linear regression

### Assumption of normality

Normality assumptions were tested for the two dependent variables, mental health attitude and help-seeking behaviour by using histograms and P-P-plots (see Figure 1, 2, 3, and 4). The histograms' shapes suggest normality and the data points of both dependant variables fall close to the "ideal" diagonal lines. Conclusively, the assumptions of normality have been met for the variables mental health attitude and help-seeking behaviour.

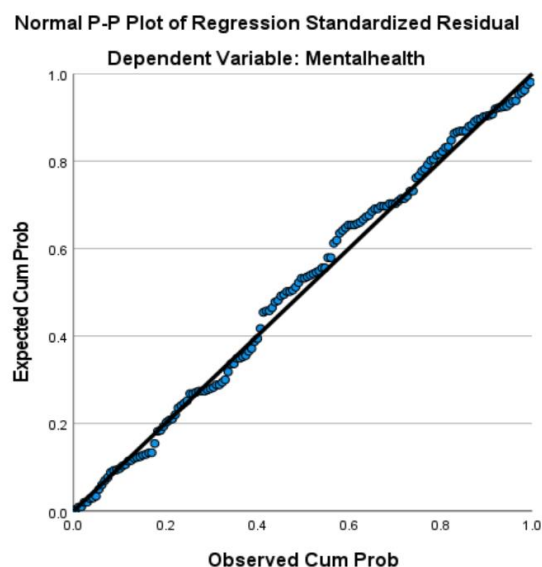
**Figure 1**

*Histogram of mental health attitude to check for normality*



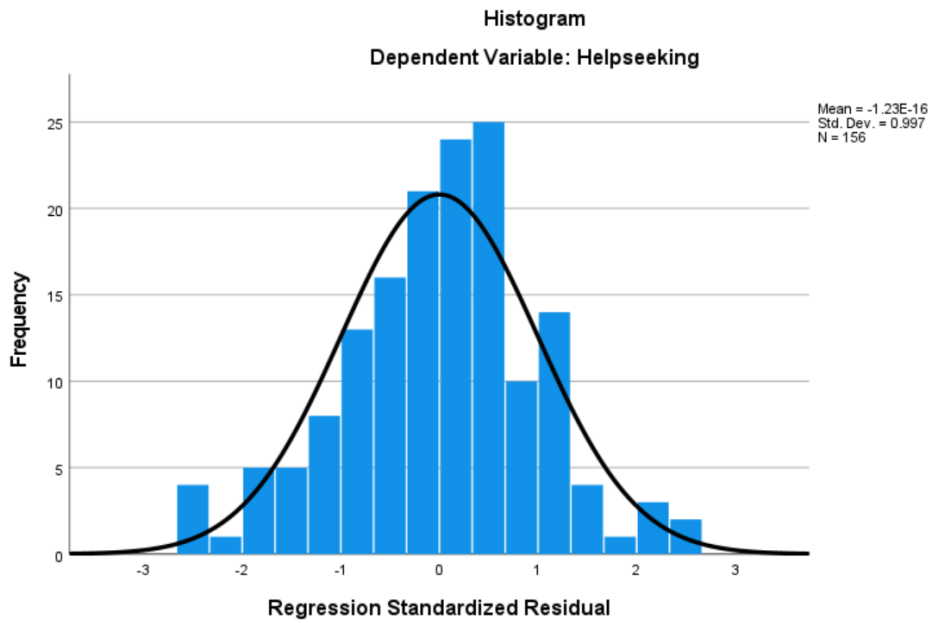
**Figure 2**

*P-P-plot of mental health attitude*



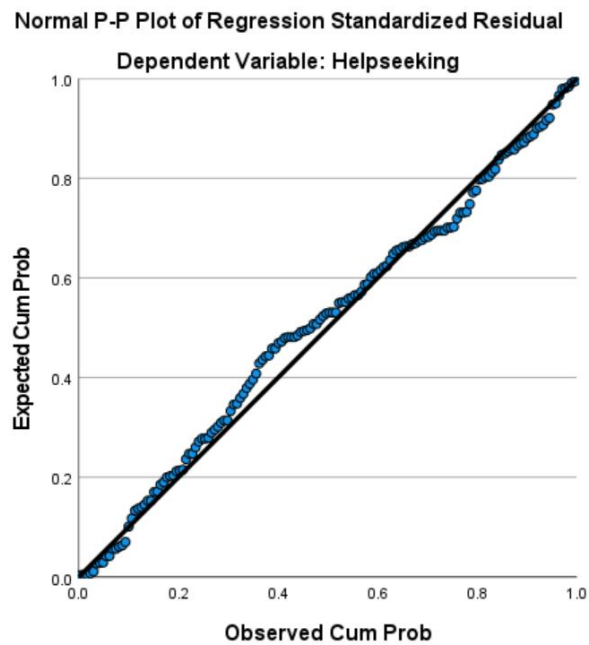
**Figure 3**

*Histogram of help-seeking behaviour to check for normality*



**Figure 4**

*P-P-plot of help-seeking behaviour*

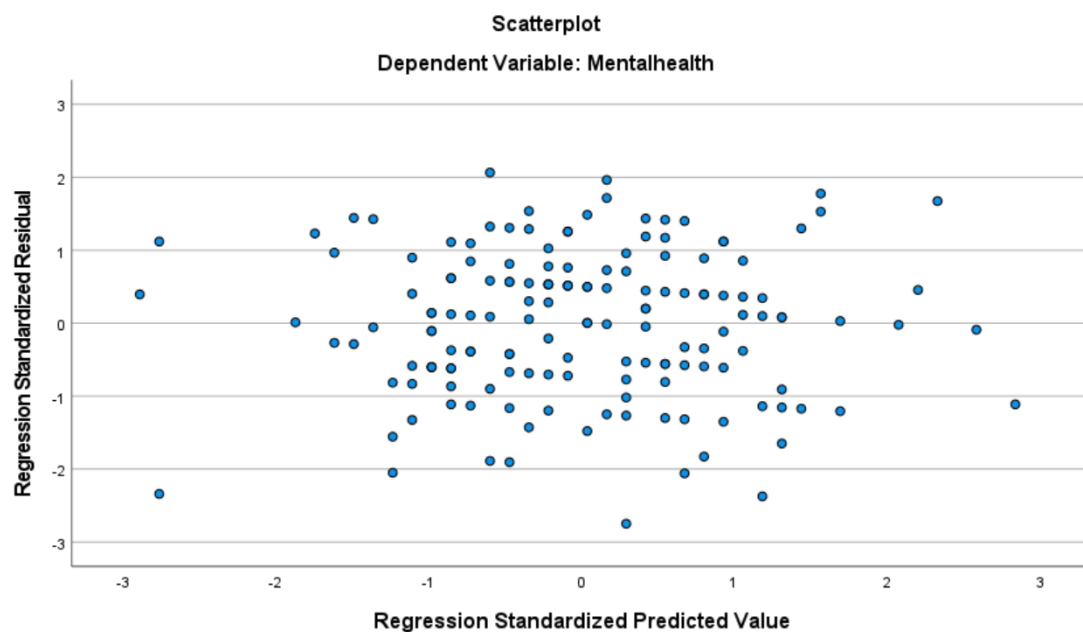


### Assumption of homoscedasticity and linearity

In order to check the assumption of homoscedasticity and linearity, the assumed systematic relationship between predicted values and errors of the model was checked. For these assumption checks, scatterplots for standardized predicted values against residuals were used. Since there were no clear funnel or curve shapes found in any of these scatter plots, both the assumptions of homoscedasticity of linearity are met regarding the model (see Figures 5 and 6).

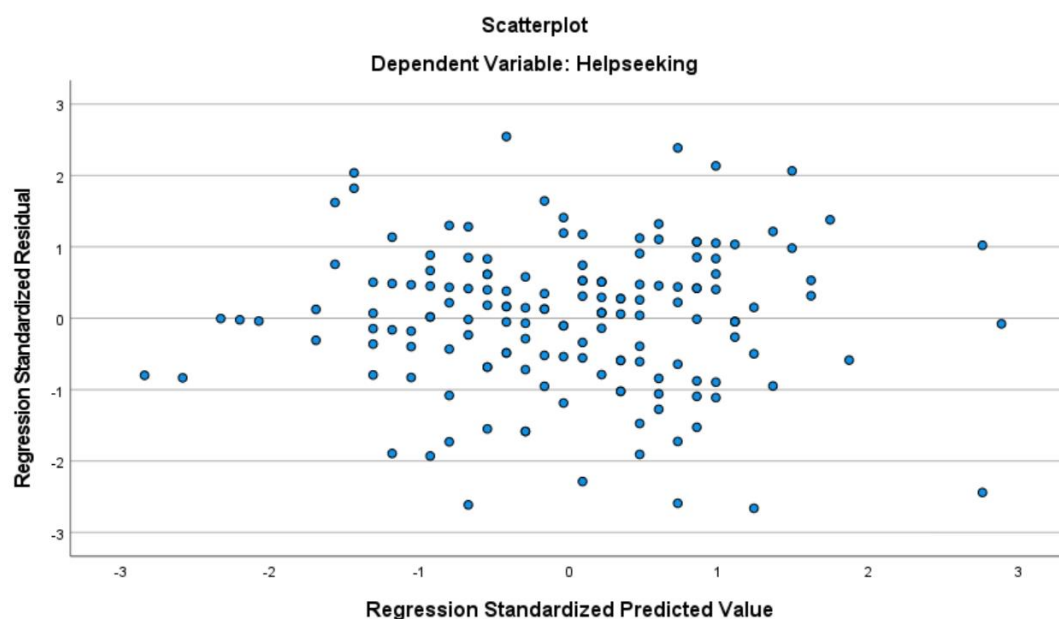
**Figure 5**

*Scatterplot to check homoscedasticity and linearity for mental health attitude*



**Figure 6**

*Scatterplot to check homoscedasticity and linearity for help-seeking behaviour*



### **Assumption of Independence**

In order to evaluate the assumption of interdependence, the errors of the model were checked to see whether they are unrelated to each other or not. The Durbin-Watson test was used for this. The value of mental health attitude was 1.863 and for help-seeking behaviour, it was 2.185 which means that all values fell between 1 and 3, the recommended range.

### **Assumption of Multicollinearity**

The last assumption check, the one of multicollinearity included a correlation matrix of predictor variables and a calculation of variance inflation factor (VIF) values. All VIF-values were below 10 and the correlation matrix revealed that no predictor variables correlated too highly (above .8 or .9). These values show no reason for concern regarding the assumption of multicollinearity.