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Social media and mental health:
Uses and gratifications of social networking
in relation to depression, anxiety
and offline relationships among young adults

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Abstract

Background. Social media is a fixed component in the lives of billions of people around the world. Especially young adults between the ages of 18 to 24 years old are amongst the most active users of social media networking sites. For that reason, there is a growing interest in exploring social media platforms and their possible effect on young individuals. However, opinions are still divided regarding the effect of social media, reporting positive as well as negative consequences of social media use on the psychological well-being of individuals. Current research focuses mainly on examining the frequency of social media use, whereby many claim that type and motivations of usage are more influential and need more consideration. The aim of this study is to examine five motivations (gratifications) for using Facebook and Instagram and their relation to depression, anxiety and offline relationships.

Method. A cross-sectional online survey-based research design was conducted including 235 participants, with 61.7% females and 37.4% males, between the ages of 18 to 24 ($M=21.43$). The survey consisted of 45 questions asking about the motivations of respondents for using Facebook and Instagram. Furthermore, participants filled in questions about their psychological well-being (depression and anxiety) and quality of relationships, as well as demographic questions. For the statistical analysis, the computer program SPSS Statistics was employed.

Results. Findings showed that participants who scored high on self-expression when using Facebook and Instagram showed lower anxiety scores. Regarding the Instagram use of the participants, self-expression and socializing showed statistically significant negative correlations with anxiety. No significant relation has been found between anxiety and the social media gratifications convenience, information seeking, entertainment. Overall, no significant effects have been detected between all five social media gratifications and depression as well as offline relationships.

Conclusion. This research addresses a research gap in exploring user motivation of social media use and the effects on psychological well-being and offline relationships. Overall, the findings indicate that social media gratifications with a higher social component such as socializing and self-expression have a reducing effect on anxiety. However, no connection has been found between social media gratifications and depression as well as offline relationships. That adds to the obscurity in the effects of social media on people's mental health. Since similar studies in this area have significantly connected social media use with mental health outcomes, yet has not been proven to be causal, more research has to be performed on the continuously changing phenomenon of social media regarding the various types and forms of use.

Key words. social media, internet, uses and gratifications, motivations, depression, anxiety, offline relationships, young adults, mental health

Introduction

The emergence of web 2.0 which includes the inception of social media has significantly changed and innovated the way individuals communicate in the present day. This year, worldwide 4.39 billion people make use of the internet (WeAreSocial, 2019). One of the most popular online activities is the use of social network sites. Social media platforms are used by around 3.5 billion people every day, which is 45 % of the world population in 2019 (WeAreSocial, 2019). Solely Facebook is reported to have over 2.27 billion monthly active users and is the ongoing market leader with regard to its reach and scope, followed by YouTube and Instagram, which has reportedly passed the 1 billion mark of active account users (WeAreSocial, 2019). Furthermore, the biggest user group on social media platforms are 18 to 34 year olds, of which 80-90% utilize social media (WeAreSocial, 2018; Royal Society for Public Health [RSPH], 2017). Regarding the change of media in the past century, the digital world itself has evolved concerning its features and form of usage. The World Wide Web (or Web) is not equivalent to the internet, but is the most crucial part of the internet. According to Aghaei, Nematbakhsh and Farsani (2012) the Web can be defined as a techno-social system to interact humans based on technological networks. Web 1.0 can be described as the first generation of the Web, which provided limited user interactions or content contributions and only allowed to search the information (Aghaei, Nematbakhsh & Farsani, 2012). Meaning that the vast majority of users simply acted as consumers of content (Cormode & Krishnamurthy, 2008). With the transition to Web 2.0, users are able to participate in the content creation, which is the most remarkable feature of this advanced generation. Tim O'Reilly (2005), the founder of O'Reilly media, defines Web 2.0 as the transition of the internet as platform, delivering software as a continually-updated service that advances the more people use it, consuming and exchanging data from multiple sources while individuals provide their own data and services which overall delivers rich user experiences. One of the prevalent inventions originated from the rise of Web 2.0 is social media. Per definition, social media is a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0 and allow the creation and exchange of user-generated content (Kaplan & Haenlein, 2010). Social media consists of different types of media outlets including social networks, internet forums, weblogs, social blogs, micro blogging, wikis, podcasts, pictures, video, rating and social bookmarking (Kaplan, & Haenlein, 2010). Among the most popular form of social media are social networking sites, characterised as web-based services where users are able to create personal profiles, articulate friendship connections and socially interact with the friend connections by uploading, liking and commenting on content such as photos, messages, and videos shared on newsfeed (Ellison, Steinfield & Vitak, 2011). However, the choice for a specific type of media platform varies amongst users and might depend on the needs and motivations of people for using social media platforms (Brandtzæg, 2012; Go & Han You, 2016). Currently, more attention is paid in exploring the motivations of individuals for using social media. Several

studies have identified a variety of user motivations ranging from information exchange, freedom of expression and social maintenance (Orchard et al., 2014) to motivations such as entertainment and communication, which specifically regard the use of Facebook (Krause, North, & Heritage, 2014). Individuals increasingly embrace social networking sites as tools for both communication and information, which help them fulfill their personal desires and needs. This, however, can influence the mood and psychological well-being of individuals. Scholars are divided in the debate regarding the effects of social media. The benefits of social networking appear to lay in the facilitation of online communication, networking, and/or collaboration (Russo, Watkins, Kelly, and Chan, 2008). However, experts fear that exposure to social networking sites negatively influence the health of people. Many studies have connected excessive social media use to sleep deprivation, body dissatisfaction and mental health disorders (Tripathi & Abdul Ahad, 2018; Lin et al., 2016). This shows that there is a connection between social media and negative health outcomes. A large bandwidth of research is placing its emphasis on assessing social media and mental health in conjunction with other factors such as night-specific use, self-esteem and sleep deprivation making it difficult to detect whether there is a clear linear relation solely between social media use and mental health. As these different factors influence the analysis regarding the effect of social media upon mental health, this makes the assessment more difficult. Furthermore, most studies assess social media based on time spent on social media and frequency of use. However, this approach fails to fully understand the intentions of the user and emotional involvement in the use of social media. Researchers claim that rather the emotional component and motivations for using social media is of importance (Davila et al., 2012). However, there is a gap in this area of research, offering few information concerning the user motivations of social media use in the context of psychological well-being. Being one of the most influential phenomena in present days, it is essential to analyze and understand the effects and impact social media has on human beings. Therefore, this research investigates motivations for using social media in form of gratifications and their relation to depression, anxiety and offline relationships in young adults. A quantitative cross-sectional survey study was performed to answer the following research question: *To what extent do gratifications of social media use relate to depression, anxiety and offline relationships among young adults?*

Theoretical framework

This chapter strives for manifesting a theoretical outline by introducing relevant concepts that are essential for the research problem that is being investigated. The literature presented summarizes research findings on social media in relation to mental health and the quality of offline relationships by means of reviewing previous conducted studies. The purpose is to build a theoretical background that explains and supports the reasoning of this research, as well as to link this study to broader areas of knowledge.

Social media and psychological well-being

Since the advent of social media, more studies have placed emphasis on researching the impact social networking has on human lives. Some of the primary research areas include body image and disordered eating, security, customer value creation, social networking and internet addiction, mobile social networking services, smartphones leading to social networking, websites adoption and health (Tripathi & Abdul Ahad, 2018). The debate in the use of social networking sites is difficult to evaluate, as it entails much controversy regarding its value. Partially, it is seen as a useful tool for marketing activities and a way to communicate and connect to other people. Others fear the negative impact social media can have on people's lives (Tripathi & Abdul Ahad, 2018).

Since social media has already been connected, in combination with other factors, to cause negative health outcomes such as depression and anxiety (Lin, et al., 2016). This study aims at examining how social media relates to these aspects of mental well-being. This is done by means of extending this field of research, focusing specifically on motivations for using social media and the direct relation to psychological well-being. Especially adolescents and young adults are amongst the most frequent users of social networking sites (Lenhart, 2009). More recently, a survey of the new Pew Research Center of the United States shows that the social media landscape in early 2018 is proceedingly composed of young adults from 18 to 25 years old being the predominant social media users (Smith, Anderson, Smith, & Anderson, 2019). This age group seemed to be particularly exposed to the effects of social media which might be explained by the fact that adolescence is known to be a vulnerable period where individuals are at risk to suffer from low self-esteem (Orth et al., 2015). Depression and anxiety are among the leading causes of burden of disease in youth (Patel, 2013). This evidence is alarming, given that depression and anxiety are strong predictors of a multitude of negative health and psychosocial outcomes, such as interruption in development, academic difficulties, poor interpersonal relationships, behavioral problems, low self-esteem, substance abuse and suicide (Hawgood and De Leo, 2008). According to a study by Huang (2010), associations regarding frequent use of the internet and negative psychological well-

being have been found. This evidence is supported by a national study of young adults of the United states, in which depression has been strongly and significantly associated to frequent social media use (Lin et al., 2016). Differences in the effects of social media have also been found when comparing the different sex. A recent UK government survey of children aged 14 to 15 years (Department of Health and NHS England 2015) showed that girls were more than twice as likely to suffer from symptoms of common mental disorder as boys. This shows that gender-related differences in the assessment of mental health problems and social media also need consideration. Therefore, it is essential to further investigate the relation of the social media use of especially young adults and their psychological well-being. Despite significant results of especially excessive social media use and its negative effect on mental well-being, no clear causations have been found. A few studies in fact report positive effects of social networking on mental health including increased self-confidence, development of skills, awareness, etc. (Tripathi & Abdul Ahad, 2018). Furthermore, previous studies often measure social media use in combination with other variables such as sleep deprivation, since poor sleep is known to contribute to anxiety, depression and low self-esteem (Alfano et al., 2009, Fredriksen et al., 2004). Reportedly, adolescents themselves seem to have conflicting views on the effects of their social media use. In a qualitative study performed by Radovic, Gmelin, Stein and Miller in 2017, adolescents who categorize themselves as the “least happy” said that social media makes them feel more popular and less shy while also making them feel less confident, worse about themselves and more depressed. A couple of studies argue that it is hard to identify whether social media use is the actual source of the problem. They mention that adolescents who experienced high levels of psychological distress, unmet mental health needs and suicidal ideation were more frequent users of social media (Sampasa-Kanyinga & Lewis, 2015) such as Facebook (Hong, Huang, Lin, & Chiu, 2014). Adding to this piece of evidence, Ybarra, Alexander and Mitchell (2005) note that, compared to their non-depressed peers, depressed adolescents are reported to use the internet more frequently. This implies that individuals who already suffer from mental health issues increasingly utilize social media services. This blurs the line in distinguishing whether mental health outcomes are a result of using social media or if significant findings are based on preconditioned individuals already suffering from mental health issues. With evidence for associations between psychological well-being and social media use, the significance of this research topic is unquestionable, however, the exact relationship between the two variables is still unclear, which requires further exploration in this field of research.

2.7 Social media and offline relationships

Another research string that has been increasingly studied in the context of social media is the way the internet is an influential factor in respect to the quality and formation of social networks.

There is evidence that report positive effects between social media use and the quality of online relationships. As reported by Thayer and Ray (2006), online communication fosters

relationship building, improves communication between people, and documents gender and generational differences in online communication. Studies such as Ellison, Steinfield and Vitak (2011) and Phua and Jin (2011) found that the maintenance of relationships on Facebook, including sympathizing with others, led to increased bridging social capital. Comparable is a study with international college students in the United States, which also found that social media use positively influences bridging social capital and bonding social capital in the home countries of students. Furthermore, engaging in social media activities via platforms such as Facebook, Twitter, Reddi, Instagram, Snapchat and Tumblr, according to Bessiere et al. (2010) and Pena and Quintanilla (2015), provide opportunities for keeping in touch with family, friends as well as other social interactions that mitigate depression and anxiety. Thus, social media use connects people by expanding their online social networks and facilitating interaction with others from distinct geographical locations who share similar interests (Phua & Jin, 2011). However, this does not imply that social media use has a positive effect on real life or offline relationships. Although social media use has shown to hold the potential to favourably influence online relationships many studies have reported negative implications from using social networking sites specifically in relation to real life relationships. A study revealed stated that a few participants (21%) indicated that social media helped them to expand their social circle and enhanced expressive power (13%) nevertheless the majority of participants noticed negative impacts on their social relationships (36%) stating that social media has isolated them from the real world and had created a communication gap with their family. In addition, participants acknowledged that social media is preferred over real-world communication and used to try to ignore the physical presence of their peers. This evidence is also supported by Back et al. (2013) and Marar (2012) who report that especially frequent users might substitute social media for face-to-face social interaction. This in fact can have serious consequences for the development of valuable relationships. The lack of meaningful connections to others not only harms the quality of offline relationships, adolescents can experience adjustment problems which consequently may lead to mental health difficulties (Baker & Algorta, 2016). As illustrated the use of social media and its effects on social relationships is closely connected to mental health outcomes. A study by Shensa, Sidani, Lin, Bowman and Primack (2015) declared that frequent exposure to unrealistic portrayals on social media might give people the illusion that others are living happier and more connected life which causes people to feel more isolated. In addition, social media use has ignited adolescents to fight and argue with their elders when interrogating on their prolonged social media usage which revealed negative mood modifications and personality modifications. Currently, practitioners and users of social media are still uncertain whether social media has a positive or negative impact on the quality of social relationships. Many studies seem to find positive effects considering social media engagement and online relationships, however this does not necessarily apply to the quality of offline relationships. For the sake of closing the research gap the objective of this study is to examine the

motivations of social networking platforms and its relation to the quality of offline relationships among higher educated young adults.

Chapter uses and gratifications theory (UGT)

To study reasons and motivations of young adults social media use and its relation to psychological well-being and offline relationships the uses and gratification theory (UGT) will be introduced as a central component of this research.

When reviewing past research approaches as a way to understand user interest towards media, the uses and gratifications model (UGT) stands out as a prominent tool in exploring media uptake. The UGT can be defined as a framework that explains how and why people actively seek out specific types of media (Phua, Jin, & Kim, 2017). In the notion of UGT, people receive gratifications through the media, which satisfy their informational, social, and leisure needs (Rubin, 1986). Furthermore, the theory attempts to explain the uses and functions of the media for individuals, groups, and society in general. Three objectives form the core in developing this theory: 1) to explain how individuals use media to gratify their needs. 2) to discover underlying motives for individuals media use 3) to identify the positive and the negative consequences of individual media use. At the core of uses and gratifications theory lies the assumption that individuals actively seek out the mass media to satisfy individual needs allowing individuals to realise gratifications such as information seeking (Whiting & Williams, 2013), convenience (Ko et al., 2005), entertainment (Dolan, Conduit, Fahy, & Goodman, 2015), social interaction and self-expression (Treviño, Flor Morton, & Carolina Robles, 2016). The UGT takes on a different approach by moving the focus to the users enabling the audience to have an active role in media choice, suggesting that individuals actively search for, identify with and employ media to fulfil specific gratification needs (Ku, Chu, & Tseng, 2013). This perspective identifies consumers as active, rather than passive, recipients of media which reverses the original paradigms of “what media do to people” to a new approach on “what people do with media” (Schin, 2011). The bottom line is a medium will be used more frequently and is more likely to be adapted when existing motives to use the medium result in more satisfaction (Rosengren, 1974).

Uses and gratification theory and social media

More recently, scholars are interested in applying the uses and gratification theory in the context of social media. The desire emerges to identify the reasons for individuals using social media as the use of social networking websites is remarkable fast (Treviño, Morton & Carolina Robles, 2016). While a UGT perspective has been applied in the context of traditional forms of media (Leung & Wei, 2000), the rapid growth of the Internet and social media platforms has created terms in which a higher level of interactivity from users is required (Ko et al., 2005). Due to the different design and usability features of Facebook

compared to other popular social networking sites like Twitter, Instagram, and Snapchat, users of each social media may differ significantly on motives for using each of these four social media platforms (Alhabash & Ma, 2017). Understanding the users within social media is therefore crucial in comprehending how social media itself functions. The multi applicability of the UGT enables researcher to gain valuable insights into this new medium. Since social media is a rather new way of communication consisting of various types which serve different uses, identifying the associated needs as well as motivations for using these channels is an emerging and interesting field of exploration. There is still a general disagreement on how many categories or dimensions are needed to measure a person's motivation when using certain media. For example, considering the use of social networking sites, Park, Kee and Valenzuela (2009) measure four factors, while Whiting and Williams (2013) identify seven factors as crucial to understand the patterns of social media usage.

Thus far, several studies have examined motivations for using social media by applying the uses and gratification theory. In a study by Orchard et al. (2014) found that motivations for social media use included information exchange, conformity, freedom of expression, social maintenance, and recreation, with the strongest predictor being making new connections. With regard to Facebook use Krause, North, and Heritage (2014) detected entertainment, communication, and habitual diversion to be three main gratifications. However, Hunt, Atkin, and Krishnan (2012) also found that interpersonal communication, self-expression, and entertainment motives are factors for frequent Facebook use. Treviño, Morton, and Robles (2016) proposed a measurement instrument including five dimension of social media use namely information, entertainment, convenience, social interaction and self expression. Till date, the existing research landscape in the context of the uses and gratification theory has been mainly focusing on exploring the gratifications in relation to different social media platforms. Specifically, Facebook is frequently used as medium when researching the motivations of social media use. To further understand why individuals use social media platforms, five user gratifications have been identified as most popular motivations when individuals make use of social media. The aim of this study is to analyse the gratifications information seeking , convenience, socializing, self-expression and entertainment in relation to psychological well-being and offline relationships.

Uses and gratification theory and psychological well-being

Merly any prior research has analyzed gratifications resulting of the use of Facebook and Instagram in relation to psychological well-being. However, based on comparable research in the field of mental health, social relationships and social media, uses and gratifications can be linked to these areas of research by applying the uses and gratifications theory. In particular, one trend of social media use has been identified by Quan-Haase and Young (2010) stating that people increasingly embrace social networking sites as tools for both communication and information, which will help them to fulfill their informational, emotional, and social desires.

This suggests that individuals partially make use of social media in order to look for information or share information. Based on this evidence, information seeking has been identified as one of the gratifications to inspect whether this construct is related to mental health outcomes. Moreover, these stimuli resulting from using social media can influence the mood and psychological well-being of individuals. Several studies have already linked mental well-being with internet usage (Lin, et al., 2016). A study reported that adolescents who were in a bad mood, engaged in more frequent use of social media to seek distraction (e.g. celebrity pages), to look for positive (e.g. happy quotes) and/or humorous content, to complain or because they wanted to avoid talking in person (Radovic, Gmelin, Stein, & Miller, 2017). In that regard, the entertainment aspect in social media is seemingly relevant to social media users. With the connection of entertainment to distraction, mood modification and social avoidance behavior, this variable was identified as interesting approach in analysing the relationships between social media gratifications and psychological well-being. With the initial intention to use social media to improve mood would according Radovic, Gmelin, Stein, and Miller (2017) give rise to unintended consequences like social comparison among adolescents. This might indicate that adolescents and young adults may use social media as an outlet to express feelings in ways that might not be comfortable or suitable in face-to-face interaction. For that reason, self-expression seem to be an important component and gratification when analysing social media use and mental well-being as it includes emotional as well as social aspects. The results of Baker and Perez Algorta (2016) show that taking frequency of use as a measurement tool is limited in its inability to describe in what ways SM is used, arguing that psychological outcomes of an adolescent who frequently uses SM to send personal messages to close friends may be different from an adolescent who scrolls through status updates for hours in a less goal-oriented way. The key finding of their study demonstrates that the type or quality of social media use is of importance when analysing the effects of social media use meaning that the nature of online social network use may be more important in influencing symptoms of depression or vice versa than the frequency or duration of engagement alone. This evidence is supported by Davila et al. (2012) showing that the quality of network experiences, whether a person perceives their online interactions to be either positive or negative, are more influential in predicting well-being than frequency of use. Baker and Perez Algorta (2016) address in their study a current research gap that requires further efforts in taking into account specific activities and certain functions of social media use (e.g., to connect with others, to follow celebrities, to post photographs, to express emotions).

2.11 Research Question

Having explained the relevance and connection between social media gratification, psychological well-being and social relationships this research aims to examine the motivation for using social media with respect to anxiety, depression and offline relationships among young adults. By exploring which of the five gratifications - information seeking,

convenience, self-expression, entertainment and socializing -- have an effect on each of the three dependent variables (anxiety, depression, offline relationships). In addition, demographics are used as moderating variables to investigate whether age, nationality and gender have an underlying effect on the relation between social media gratifications and psychological well-being, as well as offline relationships. This study extends current research by examining the interplay between user gratifications of social media and psychological well-being, to identify possible consequences of social media, and encourage further research to develop measurements that are able to reduce possible negative effects of social media. Based on the theoretical framework and theories introduced before, the following research question has been formulated:

To what extent do gratifications of social media use relate to psychological well-being and offline relationships among young adults?

To answer the research question, 4 hypotheses were formulated:

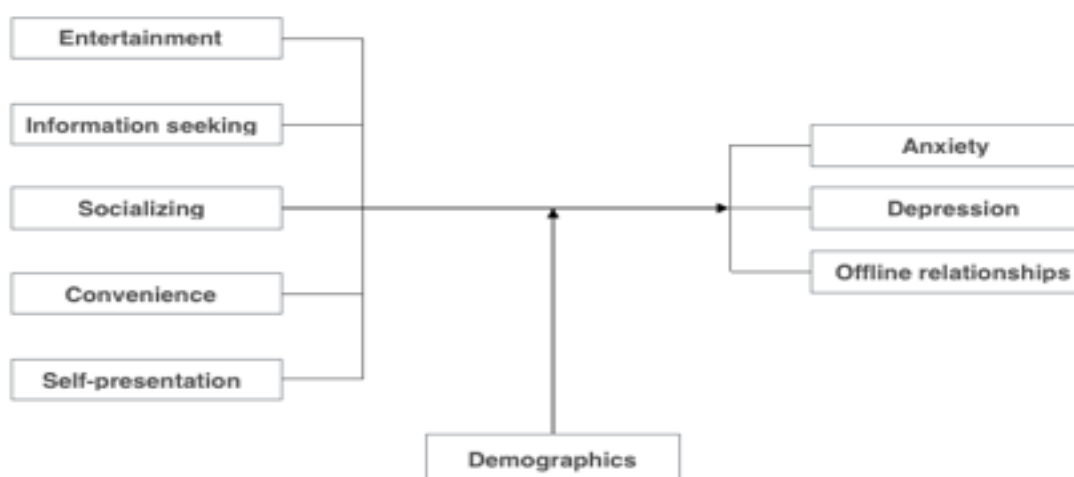
H1: Emotional gratifications (Socializing & self-presentation) positively correlate with anxiety

H2: Emotional gratifications (Socializing & self-presentation) positively correlate with depression.

H3: Convenience, entertainment and information seeking positively correlate with quality of offline relationships

H4: Gender and Age moderate the relationship between user gratifications and anxiety, depression and offline relationships

Figure 1. Conceptual model of the relationships between social media gratifications, anxiety,



depression and offline relationships with Demographics as moderators.

3 Research Methodology

Research design and procedure

To find out why individuals make use of social media and if these factors influence mental health disorders such as depression and anxiety as well as offline relationships, a quantitative cross-sectional survey study was conducted in form of an online questionnaire. A quantitative approach has been identified as most suitable, defined as research or a data collection technique that explains phenomena according to numerical data which are analysed by means of mathematically-based methods, especially within statistics (Yilmaz, 2013). Furthermore, a cross-sectional research design is advantageous since it is cheap, requires little resources and substantial data can be acquired in a short amount of time (Mann, 2003). Participation was on a voluntary basis and the questions were formulated in English. The participants were asked to fill out the questionnaire one time only with an estimated duration of six minutes. The online survey has been designed with the online tool “Qualtrics” as well as data from all participants were collected and stored in this online software. Qualtrics is a web-based survey tool which enables the creation of surveys, the distribution of the questionnaire to participants via an anonymous link, email or social media networks and analysis of participants data after data collection. In addition Qualtrics provides the researcher with an overview over respondents data and allows to export data to the analysis tool SPSS. Questions (Appendix B) within the survey were designed and based on the uses and gratification theory and existing scales used in previous studies. In total the questionnaire consisted of 45 questions. The questions used in the questionnaire have been structured in a logical order. Beginning with a short briefing of the research as well as asking for the consent of all respondents taking part in this research using an onscreen tick box at the start of the online survey. Questions have been divided in 6 blocks. After participants completed the survey an information page was shown with relevant knowledge about mental health disorders, contacts if participants suffer from mental health disorders and are in need of help, self-tests to assess levels of depression and anxiety and lastly recommendations which can help to reduce anxiety and depressive mood.

Data Quality - Validity and reliability

In order to ensure validity of the study several measurements have been taken before sending the survey to the targeted population. First, a research proposal has been sent to and approved by an ethical committee from the faculty of Behavioral Management Science (BMS) of the University of Twente which monitors the ethical considerations in research involving human beings and using potential sensitive data from individuals. The BMS Ethics Committee is responsible for assessing whether the research proposed conforms to ethical standards and approval needs to be given before starting the research project. Second, a pre-test was taken before the distribution of the survey. A few randomly selected participants were asked to

inspect the questionnaire on errors and give feedback on its structure, logic and comprehensibility. With this method the questionnaire can be refined and assures respondents will not encounter problems in answering the questions (Saunders et al. 2009). Furthermore, to obtain a representative sample of a certain population there are specific guidelines for the amount of data to be collected. For online surveys, the expected amount of data that needs to be collected are between 100 to 150 respondents. This study strived to include at least 200 respondents in order to have a representative sample size. With now completed 235 questionnaires a good amount of answers has been collected that enable consistent findings and therefore reliable conclusions. Analyses and conclusions of the research as well as items of the questionnaire are based on numerical facts of the collected data and findings of existing studies, in the interest of obtaining verified and applicable results.

Participants and research sample

The population that has been selected as a source for this study are young adults ranging from 18 to 24 years. Additional selection criteria focused on the resources the participants had to possess in order to be included in this research. Participants were required to have a sufficient level of English to understand the context and questions of the study in order to ensure reliability. Lastly, participants needed to be active on social media or own a social media account on the platforms Facebook and Instagram. In total, 275 participants took part in this study of which 235 (88 male, 145 female, 2 “other”) were selected by means of excluding respondents that were incomplete or did not fit the requirements. The sample consists of mainly high educated pupils with 90, 2 % indicated to be enrolled as a student at a university or college. Furthermore, the largest participant group of this sample were dutch (40,4%) followed by German pupils (39,1%) and “other” (20,4%). With regard to the recruitment process of participants, the survey was distributed on several social media platforms including Facebook, Instagram and LinkedIn as well as an anonymous link has been sent to several people via whatsapp. In addition respondents have been approached in person at the University campus where the research was performed.

Table 1

Socio-demographic characteristics of the participants (N= 235)

<i>Items</i>	<i>Category</i>	<i>Frequency</i>	<i>Percentage</i>
Gender	Female	145	61,7
	Male	88	37,4
	Other	2	0,9
Age	18	12	5,1

	19	19	8,1
	20	33	14,0
	21	44	18,7
	22	44	18,7
	23	25	10,6
	24	35	14,9
Missing	18-24	23	9,8
Nationality	Dutch	95	40,4
	German	92	39,1
	Other	48	20,4
University/ College student	Yes	212	90,2
	No	23	9,8

Measures

Social media gratifications

With the objective to identify needs and behavioral patterns regarding individuals social media use, the use and gratification theory has been used as a basis for this research. Thereof, five uses and gratifications have been identified measuring the motivation for using social media by means of reviewing several articles (Dimmick, Chen, & Li 2004; Dolan, Conduit, Fahy, & Goodman, 2015; Kee, Park & Valenzuela, 2009; Whiting & Williams, 2013) selecting most frequently mentioned and common themes which are further explained in this section. The majority of items selected to measure single USG constructs derive from a study conducted by Treviño, Morton, and Robles (2016), which aimed at the construction of a valid measuring instrument that can elucidate the reasons for individuals using social media on a regular basis. In their study several constructs were measured on validity giving the means for ever single construct. In this study, five variables - information seeking, entertainment, self-expression, socializing and convenience - were measured using a 7-point scale reaching from 0 (Fully agree) to 6 (Fully disagree). For the variables used in this study three different scales were used for the dependent variables (Anxiety, Depression and Offline relationship) and five existing scales were used for the independent variables (Socializing, Convenience, Self-expression, Entertainment, Information Seeking) .

Information seeking

This category of social media use of the UGT is defined as the extent to which social media content provides users with resourceful and helpful information (Chen, Clifford, & Wells,

2002). Whiting and Williams (2013) add to the definition that individuals utilize the internet for the purpose of self-education. As in the results of Treviño, Morton, and Robles (2016) the information construct obtained the highest mean ($x = 5.03$, $SD = 1.15$). The following questions were utilized for measuring this construct: “to learn new things,” “I can get information”, and “I can provide others with information”. The internal consistency of this subsale in this current study equals $\alpha = 0.765$.

Entertainment

This uses and gratification theme is defined as using social media for entertainment and enjoyment purposes (Whiting & Williams, 2013) and the extent to which social media content is fun to media users (Eighmey & McCord, 1998). The construct entertainment has been measured on a 7-point scale using the following three items -- “Because it’s entertaining”, “Because it’s enjoyable”, and “To pass time”. Based on the analysis of Treviño, Morton, and Robles (2016) these have been the highest mean items of the entertainment construct indicating high reliability. In this study the cronbach's alpha displayed really high reliability $\alpha = 0.818$.

Self-expression

This uses and gratification category is specified as using social media to express oneself and share personal information. Other studies (Park, Kee & Valenzuela, 2009) describe the concept as self-status seeking. Self-expression was similarly measured as the construct mentioned before choosing for the three highest items: “I can express myself freely”, “To tell other things about myself”, and “To show my personality”. The Cronbach’s alpha coefficients of the scale self- expression of this study showed strong reliability $\alpha = 0.872$.

Socializing

This concept can be explained as using social media to communicate, socialize and interact with others. The items and name of the construct rely on the study performed by Park, Kee and Valenzuela (2009) examining the uses and gratification in a networking environment, specifically facebook. Items used for this construct are “To get peer support from others”, “To meet interesting people”, “To feel like I belong to a community”, “to talk about something with others”, and “to stay in touch with people I know”, again measured on a 7-point scale. The internal consistency of subsale socializing in this present study equals $\alpha = 0.828$.

Convenience

This category of social media usage is defined as providing convenience or usefulness to individuals. The three highest obtained item scores for this variable - “I can access it anytime, anywhere”, “Because I can find bargains on products and services”, and “Because it’s easy to update”- have been included in the questionnaire being the second highest construct regarding the users motives for using social media (Treviño, Morton, & Robles, 2016). The Cronbach’s alpha coefficients of the scale convenience in this study equals $\alpha = 0.769$

Depression

A widely used construct measuring depression is the Patient Health Questionnaire (PHQ). As a measurement tool for this research the PHQ-9 was employed which is the 9-item depression module from the full PHQ. This version of severe Depression scale is a self-administered and shortened version of depression measure consisting of 9 items. Respondents were given the option to answer each statement giving the scale 0 “not at all” to 3 “every day”. In the end of the 9 item questionnaire an additional item asks respondents: “How *difficult* have these problems made it for you to do your work, take care of things at home, or get along with other people?” According to Kroenke, Spitzer and Williams (2001) the PHQ-9 is a reliable and valid measure of depression severity and make this measure a useful clinical and research tool. In this current study the internal consistency of depression equals $\alpha = 0.867$.

Anxiety

The Generalized anxiety disorder (GAD) scale was used to assess anxiety levels among respondents of this study. The 7-item anxiety scale (GAD-7) is a brief self-report scale used to identify cases of generalized anxiety and to assess symptom severity (Spitzer, Kroenke, Williams, & Löwe, 2006). Participants were given 7 statements in which they had to state how often they have been influenced by certain symptoms in the past 2 weeks. Response options were “not at all,” “several days,” “more than half the days,” and “nearly every day.”. As reported by Spitzer, Kroenke, Williams, and Löwe (2006) the GAD-7 is a valid and efficient tool for examining anxiety disorder and assessing its severity in clinical practice and research. The construct anxiety in this study has an internal reliability of $\alpha = 0.903$.

Offline relationships

The friendship scale by Hawthorne (2006) was utilized to measure the quality of people’s offline relationships. The 6-item scale is a short version which measures six of seven dimensions related to social isolation and oppositely social connection. Dimensions considered for this measure include the absence of sharing feelings or being intimate, the (in)ability to relate to others, being unable to ask for support, social networks, isolation and loneliness. The variable was measured based on six items using a 7-point scale ranging from 1(Fully agree) to 7(Fully disagree) . The internal consistency of the subscale in this present study equals $\alpha =$.

Demographics

Four demographics were included in the questionnaire asking the participants about age, nationality, gender and whether respondents are currently enrolled in a college or university. Regarding person’s nationality, respondents were given three options: “Dutch”, “German” and “other, namely”. The options for entering age was restricted to 18 to 24 years to make sure participants were within the targeted age group.

Data analysis

The analysis of the data were performed using the computer program IBM SPSS Statistics. The first step of the analysis entails testing the internal consistency (reliability) of the designed scales used in this research. A reliability analysis for each of the constructs namely social media gratifications, depression, anxiety and offline relationships was conducted. An additional step was included, which combined the gratifications of Facebook with the gratifications of Instagram (social media graifications_combined). For this new construct the reliability was also computed. Further, descriptive statistics were computed to analyse the independent and dependent variables including mean-and sum-scores and standard deviations. To ensure a normal distribution of the data, Skewness and Kurtosis were calculated. For the analysis of demographic variables age, gender, nationality and education, frequencies and percentages have been calculated. Moreover, a correlation analysis was conducted to measure all separate correlations between the variables. Therefore, Pearson's coefficient correlations were determined, to measure the strength and direction of linear relationships between the variables social media gratifications, depression and anxiety. The last step was composed of a multiple regression analysis, to determine the direction of linear relationships between the variables. The analysis was performed to detect whether social media gratifications predict depression, anxiety and offline relationships.

Factor analysis

Principal components factor analysis with varimax rotation revealed the following five constructs for social media gratifications: socializing, entertainment, self-expression, socializing and information seeking.

Table 2

Factor analysis

<i>Factor</i>	<i>Items</i>	<i>Components</i>				
		<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
Socializing	To get peer support from others	.722				
	To meet interesting people	.642				
	To feel like I belong to a community	.642				
	To talk about something with others	.674				
	To stay in touch with people I know	.529				
Entertainment	Because it is entertaining		.651			
	Because it is enjoyable		.640			
	To pass time		.676			
Self-expression	To express myself freely	.715				

	To tell others things about myself	.751	
	To show my personality	.677	
Convenience	I can access it anytime, anywhere	.529	
	Because I can get bargains on products and services		.549
	Because it is easy to update		.535
Information seeking	To learn new things		.585
	I can get information		.527
	I can provide others with information	.660	

Reliability analysis

For analysing the reliability of the scales, Cronbach's alpha was computed. Table 3 displays the Cronbach's alpha for each construct of the research model. When Cronbach's alpha is higher than .70 the scales can be confirmed as reliable (George & Mallery, 2003).

Table 3

Cronbach's alpha for each construct

<i>Construct</i>	<i>Cronbach's alpha</i>
Socializing	0,828
Entertainment	0,818
Self-expression	0,872
Convenience	0,769
Information Seeking	0,765
Depression	0,867
Anxiety	0,903
Offline relationships	0,123

Cronbach's alpha > .70

Chapter Results

Within this section, the results of the constructs/analysis are presented. This section is structured as follows: (1) Descriptive statistics (2) Correlation analysis and (3) Multiple regression analysis. With regard to the correlation analysis, the results are presented in three parts results: First mentioning the results for Facebook and Instagram gratifications combined as one unit, second the results for solely Facebook gratifications and third the results for only Instagram gratifications.

Descriptive statistics

Table 4 displays the descriptive statistics for all variables of the research model. To analyse whether the variables were normally distributed, Skewness and Kurtosis were used.

Table 4

Descriptive Statistics.

<i>Constructs</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>Skewness</i>	
<i>Kurtosis</i>					
Socializing	235	3.09	.80	.27	-.20
Entertainment	235	2.07	.80	.91	.63
Self-expression	235	3.43	.97	-.14	-.62
Convenience	235	3.15	.87	.08	-.53
Information Seeking	235	2.87	.90	.43	-.23
Depression	235	1.85	.56	1.19	1.21
Anxiety	235	1.94	.67	1.00	.37
Offline relationships	235	2.76	.49	-.11	.14

Correlational analysis

In order to test hypothesis 1, 2 and 3, Pearson's correlations were conducted to detect whether there is a significant relationship between the variables social media gratifications, depression, anxiety and offline relationships. The first analysis of Facebook and Instagram gratifications combined shows that a significant negative small strength correlation was found between self-expression and anxiety ($r = -.132$; $p < .05$). More specifically, participants that scored high on self-expression when using Facebook and Instagram scored low on anxiety. This correlation is shown in Table 5. Thus, the result is contradicting to hypothesis 1, which assumed that emotional gratifications such as socializing and self-expression will positively correlate with anxiety. Furthermore, no correlations between socializing, convenience, entertainment, information seeking and anxiety were found, since in all cases $p > .05$.

Moreover, no correlations were found between each of the combined gratifications (Facebook and Instagram) and depression, as can be seen in Table 5. Therefore, depression seems not to

be associated with motivations for using social media and thus does not support hypothesis 2.

Furthermore, no significant correlation could be identified between each of the combined gratifications (Facebook and Instagram) and offline relationships. Hence, the quality of relationships is not related to social media gratifications and is not in line with hypothesis 3.

Table 5

Pearson correlation showing the relation between Facebook and Instagram gratifications combined and anxiety, depression & offline relationships

<i>Constructs</i>		<i>Depression</i>	<i>Anxiety</i>	<i>Offline Relationships</i>
Socializing_combined	r	-.039	-.095	.027
Entertainment_combined	r	-.066	-.072	-.007
Selfexpression_combined	r	-.063	-.132*	.027
Convenience_combined	r	-.058	-.119	.012
Information_combined	r	-.021	-.042	-.010

*Pearson's r was calculated to examine the associations all variables. * $p < .05$*

When performing the analysis for solely Facebook gratifications, no significant correlations were found since again values were $p > .05$. Table 6 gives an overview regarding the results of the analysis for each construct.

Table 6

Pearson correlation showing the relation between Facebook gratifications combined and anxiety, depression & offline relationships

<i>Constructs</i>		<i>Depression</i>	<i>Anxiety</i>	<i>Offline Relationships</i>
Socializing_combined	r	.029	-.012	.016
Entertainment_combined	r	-.066	-.064	.005
Selfexpression_combined	r	-.047	-.055	.035
Convenience_combined	r	-.035	-.086	.025
Information_combined	r	.021	-.028	.041

*Pearson's r was calculated to examine the associations all variables. * $p < .05$*

The analysis regarding Instagram gratifications found a significant small strength correlation between socializing and anxiety ($r = -.139$; $p < .05$). This implies that participants who scored higher on socializing obtained lower anxiety scores. Furthermore, a small strength correlation was discovered between self-expression and anxiety ($r = -.165$; $p < .05$). This shows that participants using Instagram for self-expression score lower in anxiety. Therefore, these results again contradict research hypothesis 1 which assumed that emotional gratification (self-expression and socializing) correlated more positively with anxiety. The gratifications convenience, information seeking and entertainment had no significant correlations with anxiety, visible in Table 7.

Furthermore, between Instagram gratifications and depression, no correlation was found because $p > .05$. Therefore, Instagram gratifications seem not to be associated with depression and thus seem to be opposed to hypothesis 2.

Moreover, no significant correlations could be identified in the relation of Instagram gratifications and offline relationships as can be seen in Table. Consequently, offline relationships show no association with Instagram gratifications and therefore this result does not support hypothesis 3.

Table 7

Pearson correlations showing the relation between Instagram gratifications and anxiety, depression and offline relationships

<i>Constructs</i>		<i>Depression</i>	<i>Anxiety</i>	<i>Offline Relationships</i>
Socializing_combined	r	-.085	-.139*	.029
Entertainment_combined	r	-.042	-.058	-.020
Selfexpression_combined	r	-.063	-.165*	.071
Convenience_combined	r	-.067	-.127	-.002
Information_combined	r	-.015	-.042	.021

*Pearson's r was calculated to examine the associations all variables. * $p < .05$*

Multiple Regression Analysis

The goal of determining the ability of social media gratifications to predict each of the dependent variables anxiety, depression and offline relationships was explored by performing a hierarchical multiple regression analysis.

In the first multiple regression model, the five independent Facebook and Instagram variables combined and anxiety were included. Table 8 shows that these variables did not account for a significant amount of variance in anxiety since $p > .05$. As a result, social media gratifications do not predict anxiety and hypothesis 1 can be rejected.

Table 8

The effects of social media gratifications upon anxiety

<i>Items</i>	<i>B</i>	<i>95% CI</i>	<i>Beta</i>	<i>t</i>	<i>p</i>
Socializing	.006	[-.150, .163]	.008	.081	.936
Entertainment	-.004	[-.132, .123]	-.005	-.069	-.945
Self-expression	-.101	[-.224, .023]	-.145	-1.608	-.109
Convenience	-.094	[-.039, .188]	-.121	-1.350	-.178
Information Seeking	.078	[-.057, .213]	.100	1.134	.258

The second regression model was conducted with the dependent variable depression, measuring the relation with the five social media gratifications (Facebook and Instagram combined). Table 9 shows that the user gratifications did not account for a significant amount of variance in depression. Respectively, the relationship between social media gratifications and depression is not linear, meaning that social media gratifications do not predict levels of depression. This means that hypothesis 2 can be rejected.

Table 9

The effects of social media gratifications upon depression

<i>Items</i>	<i>B</i>	<i>95% CI</i>	<i>Beta</i>	<i>t</i>	<i>p</i>
Socializing	.008	[-.123, .139]	.012	.122	.903
Entertainment	-.026	[-.133, .081]	-.037	-.478	.633
Self-expression	-.057	[-.161, .046]	-.099	-1.093	.276
Convenience	-.046	[-.161, .069]	-.072	-.790	.430
Information Seeking	.075	[-.039, .188]	.155	1.295	.197

Moreover, the third regression model was performed with offline relationship as dependent variable in order to detect its link to social media gratifications. This model also reveals that Facebook and Instagram gratifications did not account for a significant amount of variance in offline relationships, which is shown in Table __. Therefore, social media gratifications do not predict the quality of relationships and research hypothesis 3 can be rejected as well.

Table 10*The effects of social media gratifications upon offline relationships*

<i>Items</i>	<i>B</i>	<i>95% CI</i>	<i>Beta</i>	<i>t</i>	<i>p</i>
Socializing	.019	[-0.97, .135]	.031	.326	.744
Entertainment	-.017	[-.112, .078]	-.028	-.357	.722
Self-expression	.015	[-.076, .106]	.029	.323	.747
Convenience	.016	[-.085, .118]	.029	.315	.753
Information Seeking	-.030	[-.130, .071]	-.052	-.581	.562

Discussion

The aim of this study was to investigate whether social media gratifications regarding the use of Facebook and Instagram have an influence on anxiety, depression and offline relationships in young adults. Specifically, the purpose was to determine whether the motivations for using social media (gratifications) positively correlate with psychological well-being and whether age, nationality and gender influence this relationship as a mediator. In this research, social media gratifications were assessed by five common gratifications: information seeking, convenience, self-expression, socializing and entertainment. Psychological well-being was examined using depression, anxiety and offline relationships as variable. In the following, first the findings of the computed analysis will be discussed and interpreted. Then, limitations of this study will be presented to further sense making of the study composition and the results. Finally, an overall conclusion is formulated which, include recommendations for future research.

The results of this study revealed a small negative correlation between self-expression and anxiety when examining Instagram and Facebook usage. This means that young adults that use Facebook and Instagram in order to express themselves scored low anxiety levels. Thus, the assumptions made for this research are not supported, since it was expected that emotional gratifications such as self-expression and socializing would positively correlate with anxiety. Moreover, the analysis for Instagram gratifications showed that there is a small negative correlation between anxiety and the two gratifications self-expression and socializing. Symbolizing that participants that use Instagram for self-expression and socializing have lower levels of anxiety. This, again, is in contrast with the previously previous formulated research hypothesis of this study. No significant results have been found between anxiety and the three gratifications convenience, entertainment and information seeking. Based on the given results, it could be assumed that emotional gratifications or gratifications with a higher social component assist in reducing anxiety among young adults. This outcome may be explained by the literature, reporting that social media provides opportunities for connecting with friends and enables social interactions which consequently reduces depression and anxiety (Pena & Quintanilla, 2015). Generally, the present study

suspected that specifically emotional gratifications such as socializing & self-expression would have a negative impact on psychological well-being. This decision was based on previous research suggesting that the quality of network experience and type of use are more significant in predicting mental health outcomes than frequency of use and time spent on social media (Baker & Perez Algorta, 2016; Davila et al., 2012). In addition, literature detected that Instagram is rated as the social media platform with the highest negative impact on people's mental health (RSPH, 2017) which was an additional argument to focus on Instagram usage and the effects on psychological well-being. Overall, there is enough evidence that supports the value of this study and shows the significance in examining whether motivations for social media use may be associated with changes in mood or psychological well-being. However, the analysis of this research found no significant result in the relation of Facebook and Instagram gratifications and depression. This indicates that the motivations for individuals using social media does not seem to have an effect on depressive mood. This result disproves our formulated hypotheses and adds to the ambivalent and inconsistent judgment regarding the effects of social media (Vogel & Rose 2016). These insignificant results may be explained by a set of reasons. With regard to literature, a few studies found significant results when researching frequent social media use and its influence on psychological well-being (Lin, et al., 2016). However, other studies have examined the relationship between social media and mental health by means of using additional variables such as night-time specific social media use, low self-esteem and sleep deprivation (Richards, Caldwell, & Go 2015). This however, implies that these variables might be the leading or contributing factor in influencing or causing negative mental health outcomes which makes it hard to identify if social media is the real cause of the problem. Few studies solely explore the direct relationship between social media and mental health which was one of the main objectives of this research. An additional justification lies in the fact that depression and other mental health disorders are multifaceted and complex illnesses. It is difficult to understand why and when a person suffers from mental health issues and to identify the root of the problem. Many factors in combination may contribute to depression and anxiety. Thus, when analysing such a construct it is complex to identify if social media alone significantly influences or even causes mental health disorders. Social media gratifications might be a contributing factor in stimulating negative mental health outcomes, however, based on the outcomes of this research this factor is not strong enough to prove causation. Another possible explanation may be explained by the fact that most studies which reported significant results in the context of mental health and social media use assessed individuals who already suffer from depression. They find that people who already suffer from depression tend to engage in more frequent social media use (Ybarra, Alexander, & Mitchell, 2005). The relation therefore is two directional which makes it compound in identifying whether social media has caused mental health issues or if individual's already suffering from depression tend to engage in frequent social media usage. All of these reasons mentioned might present factors that have influenced the outcome of this research and may justify the

insignificance of results. Additionally, no significant effect has been discovered between social media gratifications and offline relationships. Meaning that the motivations for young adults social media use has no impact on the quality of their relationships. A reason for this insignificant finding could be explained by the poor reliability of the offline relationships scale. Furthermore, this study was focused on the motivations for using social media while multiple studies have examined the frequency of social media use. Hence, Back et al. (2013) and Marar (2012) report that especially frequent users might substitute social media for face-to-face social interaction and this hampers the quality of offline relationships. Using social media gratifications as means to observe whether social media influences the quality of relationships among young adults might not be the most optimal approach. Overall, a general explanation might stem from the fact that the motivations for using social media are in the focus of this study. The motivations for using social media are not equivalent to social media use. Research in this field compares social media use and frequency of use in relation to psychological well-being. Since this approach is relatively unique, thus there was no certainty that gratifications of social media use are connected to mental health and offline relationships. Furthermore, it was indicated that demographics play a significant role in the way people use social media. The partial interest of this study was to identify whether sex, age and nationality moderate the relationship between social media gratifications and mental health outcomes. However, since the multiple regression analysis has revealed no significant results for all of the variables, performing a moderation analysis was not perceived as logical as it would result in no significant results. To answer the research question, the essential part of the analysis was to identify most common user gratifications of social media and whether these influences people's psychological well-being and quality of relationships. The findings of this study showed small negative correlations between anxiety, self-expression and socializing when using Instagram and Facebook. Therefore, this study cannot fully confirm that social media gratifications relate to psychological well-being, but to a certain extent since self-expression and socializing were found to correlate with anxiety.

Limitations

Although this research has been executed correctly and theories as well as items used in this study have been based on existing literature with indication of high validity, a few limitations have been identified. One limitation identified in this study regards the total number of participants partaking in this study indicating a relatively small sample size due to limited time and scope. Even though the amount of participants in this study (235 participants) are above satisfactory common recommended condition for sample size -- for a quantitative survey study a minimum of 100- 150 people -- a bigger sample can possibly provide better results when assessing the reliability of the scale. In addition, a bigger sample indicates a better representation of the overall population and makes the research overall more valuable. Another potential issue with regard to the population of this study is that data was collected via convenience sample. Although convenience sampling provides a few advantages

including time efficiency, it may be biased and may not represent the entire population. Participants of this study consisted of 90 percent college and university students which optimally fits the age group of social media users, however, represents a higher educated section of the overall population and is therefore limited in making assumptions about the age groups as a whole as well as reduces the generalizability of the study to a broader context. With respect to this study's methodology a limitation has been identified within the data collection and processing of data. An error occurred while storing data in the software used to carry out the survey which caused missing values concerning respondents age. In total 23 responses were missing an age indication, even though the rest of the questionnaire was filled out successfully. Although respondents confirm in the beginning of the survey that they are between the ages of 18 to 24 -- assuming they are in this specific age group-- values regarding age such as the calculation of the mean can be slightly biased.

Furthermore, using online surveys as measurement tool can be a constraint in itself. The use of online survey software provides important benefits for both the researchers and the respondents, however leaves the researcher less control over the quality of respondents and participants in the study. The online context impedes the researcher to actually be certain about who really answered the questionnaire and if participants answered the questionnaire in an honest way. In addition, surveys do not give in-depth insights into people's feelings, thoughts and experiences which might lead to a limited understanding of the responses and results. Lastly, this study only focuses on two social media platforms namely Facebook and Instagram. This specific focus might disregard additional features, user groups and social networking sites that are important in assessing the motivation for using social media. Consequently, the selection of a limited amount of social media platforms might not represent social media motivations as a whole.

Conclusion

In this quantitative cross-sectional survey study, young adults from 18 to 24 years old were asked about their motivations for using Facebook and Instagram to understand how social media gratifications may be related to the psychological well-being of individuals and the quality of relationships. As compared to other studies, this research addressed a research gap by including social media gratifications and analysing its direct relation to mental well-being without the inclusion of additional factors. Overall, the findings do support the general presumption that user gratifications can have an effect on the psychological well-being of young adults. Showing that gratifications with a higher social component such as self-expression and socializing regarding Facebook and specifically Instagram usage score lower anxiety scores among young adults. No significant effects were found between anxiety and convenience, information seeking, and entertainment. Furthermore, no effects have been detected between social media gratifications, depression and offline relationships. For that

reason, the research hypotheses in this study could not be met. Only a small negative correlation was found between self-expression and socializing with regard to anxiety which, however, is contradicting to first hypothesis as a positive correlation between the two variables was assumed. The relationship between social media and psychological well-being therefore still remains unclear. Based on the findings of this study and results of other studies which have reported a significant correlation between social media use and mental health disorders this field of research still needs to be further explored as the effects of social media are still not fully understood. This research contributes to existing research and literature for numerous reasons. First, this study is the first to connect uses and gratifications of specific social media platforms to the context of mental health and offline relationships. Second, the theoretical framework provides a rich understanding the motivations of individuals for using social media as well as user behavior and social media related activities individuals engage in. Last, this research provides academics and society at large with valuable knowledge about the expanding modern phenomenon of social media. In that regard, this research stimulates critical thinking and demands people to question and reflect on the influence of today's new media, in particular the use of communication tools such as social media.

Future Research

In reference to the insights gained during the literature search as well as process of this study and previously identified limitations, a few recommendations are presented that hold the potential to improve and inspire future work in this field of research.

First, a few adjustments can be made in respect to the selected population of this study. This research was largely limited to college students of a specific university. While college students might represent the largest group of social media users, future research might think of targeting segments with different educational levels and nationalities. For more variety in the sample population it may be interesting to compare different age groups. Furthermore, the total number of participants in the sample was rather small, it therefore suggested to have a bigger sample size that can provide better results which are more representative for targeted population.

Second, this study was cross-sectional only collecting data on one given point of time. Future work may consider extending findings using longitudinal study which would be beneficial to analyse the causes and effects of social media and psychological well-being over a period of time. Especially, due to the fast changing nature of social media this can be a proficient method to follow transitions and developments regarding social media and its effect on individuals. In addition, longitudinal research is required to analyse the direction of association between social media use and mental health in order to identify possible risks which then enable the creation of healthy social media practices.

Third, future research perhaps should think of choosing a different research method. In order to receive a deeper understanding concerning the opinions, motives and needs of individuals

social media use it is advised to apply a mixed method approach meaning the combination of quantitative and qualitative methods. This could be done by conducting a survey study together with interviews or observations. Using different techniques and combining them within one study gives the possibility to explore multiple perspectives of the phenomenon. The mixed method approach assists in examining complex connections between various factors as it is the case with social media and psychological well-being.

Lastly, this paper focused on two social media platforms and five selected gratifications. Preceding research is needed to further explore other characteristics and platforms of social media. More specifically, the focus should lie on activities individuals engage in on social media such as sharing pictures, active or passive social media use in combination with frequency of use. A few studies have already mentioned that the frequency of social media use is less influential rather the type and quality of use evokes certain effects. Closing this research gap can lead to valuable insights. Further, this research showed that Facebook and Instagram are similar in its use and motivation of use. Exploring social media platforms that might differ in usage and interface might lead to more insightful results.

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Appendix

Appendix A: Mandatory Literature Study Log

1. Research questions and main concepts for the literature study:

RQ1: What theories and studies address social media in relation to mental health ?

Sub Questions:

RQ2: What are the effects of social media?

RQ3: How does social media use relate to depression and anxiety?

RQ4: Who is the largest user group of social media?

RQ5: What are the most popular social media platforms?

RQ6: What are the reasons for using social media?

RQ7: How does the uses and gratification theory apply to the context of social media?

RQ8: How does social media relate to the quality of relationships?

RQ9: Social media and young adults or adolescents?

2. Materials and Databases

In order to find qualitative relevant information for the theoretical framework and the different scales used in the study, specific databases, search method and appropriate material were selected. The primary databases used to search for literature were Scopus, the online library of the university Lisa, Psycinfo and google scholar. Scopus is one of the largest databases including peer reviewed articles in fields such as social sciences, physical sciences and health sciences.

Literature Search Matrix

Constructs	Related terms	Smaller terms	Broader terms
Social media	Social networking sites, social media platforms, social networking, social interaction, new communication, social media channels, modern communication,	Instagram, Facebook, social media platforms , sharing	Internet, new media, Web 2.0, traditional media, websites, digital media, networks

Mental health	Psychological well-being, mental health disorders, mental illness, disorders, mental well-being, negative mental health outcomes, mental health outcome, mental health problem	Depression, anxiety, neuroticism, sleep deprivation, body dysmorphia	Health
Offline Relationships	social relationships, social network, networks, friendship, social support, connectedness, isolation, online relationships, real life relationships, real world relationships	friends, family	Relationships, Network
social media gratifications	motivation, motivations, social media use, reasons, gratifications, user intention, needs, desires	information seeking, convenience, entertainment, self-expression, socializing, escape, pass time	Uses and gratification theory

N r	Date	Database	Search action + search technique	Total hits
1	08/03	Scopus	TITLE-ABS-KEY (((social media OR social media use OR social media effects)))	
2	09/03	Scopus	TITLE-ABS-KEY (((social media OR social media use OR social media effects))) AND ((mental health OR mental health outcomes OR negative mental health outcomes OR mental health disorders OR psychological well-being)))	
3		Scopus	TITLE-ABS-KEY (((social media OR social media use OR social media effects))) AND ((mental health OR mental health outcomes OR negative mental health outcomes OR mental health disorders OR psychological well-being))) AND (((young adults OR adolescents OR teenagers OR young children)))	
4			TITLE-ABS-KEY (((

Appendix B: Survey Questions

Questionnaire

<i>Construct</i>	<i>Items</i>
Depression	<ol style="list-style-type: none">1. Little interest or pleasure in doing things2. Feeling down, depressed, or hopeless3. Trouble falling or staying asleep, or sleeping too much4. Feeling tired or having little energy5. Poor appetite or overeating6. Feeling bad about yourself or that you are a failure or have let yourself or your family down7. Trouble concentrating on things, such as reading the newspaper or watching television8. Moving or speaking so slowly that other people could have noticed. Or the opposite being so fidgety or restless that you have been moving around a lot more than usual9. Thoughts that you would be better off dead or of hurting yourself in some way10. How difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?
Anxiety	<ol style="list-style-type: none">1. Feeling nervous, anxious or on edge2. Not being able to stop or control worrying3. Worrying too much about different things4. Trouble relaxing5. Being so restless that it is hard to sit still6. Becoming easily annoyed or irritable7. Feeling afraid as if something awful might happen8. How difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?
Offline relationships	<ol style="list-style-type: none">1. It has been easy to relate to others2. I felt isolated from other people3. I had someone to share my feelings with4. I found it easy to get in touch with others when I needed to5. When with other people I felt separate from them6. I felt alone and friendless
Socializing	<ol style="list-style-type: none">1. To get peer support from others

	2. To meet interesting people 3. To feel like I belong to a community 4. To talk about something with others 5. To stay in touch with people I know
Entertainment	6. Because it is entertaining 7. Because it is enjoyable 8. To pass time
Self-expression	9. To express myself freely 10. To tell others things about myself 11. To show my personality
Convenience	12. I can access it anytime, anywhere 13. Because I can find bargains on products and services 14. Because it's easy to update
Information seeking	15. To learn new things 16. I can get information 17. I can provide others with information
Demographics	How old are you? What is your gender? What is your nationality? Are you currently enrolled as a student at a university or college?

Questions:

Depression: Over the last 2 weeks, how often have you been bothered by any of the following problems?
Scale: Not at all, Several days, More than half the days, Nearly everyday

Anxiety: Over the last 2 weeks, how often have you been bothered by any of the following problems?
Scale: Not at all, Several days, More than half the days, Nearly everyday

Offline relationships: Below are six statements that you may agree or disagree with. Please indicate your agreement with each item. Please be open and honest in your responding.
Scale: 7-point scale (Strongly agree, strongly disagree)

Social media gratifications: Think of the reason why you make use of Facebook. Please indicate your agreement with each item. Please be open and honest in your responding.
Scale: 7-point scale (Strongly agree, strongly disagree)

Appendix C: General Information

Welcome to this study,

I would like to invite you to participate in this research project. The purpose of this study is to investigate the use of social media and its relation to mental health and offline relationships of young adults.

This study is conducted by Alicia Reichelt (a.reichelt@student.utwente.nl) from the Faculty of Behavioral, Management and Social Sciences of the University of Twente, in the Department of Communication Science. The duration of this survey will be approximately 6 min.

To participate in this study you must be between the age of 18 to 24 years and able to read and understand the questions in English. The participant is required to have an account on Facebook and Instagram in order to answer the questions.

There are no obvious risks associated with participating in this study. There may be some discomfort due to more personal questions. You do not have to answer any questions you do not wish to answer. Your participation is voluntary and you are free to discontinue your participation at any time.

Please carefully read the questions on the following pages and answer them in an honest and serious way.

In case of further questions or remarks with regards to the research study please contact:
a.reichelt@student.utwente.nl

Kind regards, Alicia Reichelt

Informed consent

On a voluntary basis, I decide to participate in this online survey. I have the right to withdraw from this survey at any time without giving any reasons. I understand that the acquired data may be used for a Bachelor thesis and will be handled confidentially. In addition, all personal details will be removed from the data and full anonymity is assured. I have read and understood the points and statements mentioned above. I have had all my questions answered to my satisfaction, and I agree to participate in this study.

Agree

Disagree

Appendix D: Closing Information

Thank you for your participation in this study!

INFORMATION!

It is very common that everyone experiences negative feelings, thoughts, and emotions to some degree at various points in their life. However, if you or a person close to you are experiencing these feelings frequently and strongly, or if you feel that you need help, then you should always seek the advice of a professional. Whilst depression can be difficult to understand for those suffering and their environment, it can be successfully treated and many people go on to lead fulfilled lives.

The signs and symptoms of depression should be taken seriously if they last for more than two weeks or if they leave you feeling unsafe at any point in time.

If over the last two weeks you have been constantly worried, afraid or panicking about things that might happen or for no reason at all – you may be experiencing Anxiety.

If you feel that you struggle from depression and/or anxiety and these feelings make it difficult to perform tasks, maintain relationships and decrease in quality of life, please look for help! Needing additional help does not mean that you are a weak person. There is no need to suffer in silence – taking the first step can help you to live a happier life.

CONTACTS

For all students of the University of Twente:

Contact the student psychologists if you are in need of personal contact about e.g. personal problems (if you are feeling lonely or depressed, suffering from procrastination, having trouble with parents, a relationship or fellow students) and doubts about your choice of study. <https://www.utwente.nl/en/ces/sacc/coaching-counselling/counsellors/student-psychologist/>

If you are not a student at the University of Twente and suffer from mental health issues, please search for a psychologist in your area of residence.

If you have limited access to professional counseling or you feel uncomfortable with receiving face-to-face therapy, e-counseling can be a good alternative:

Online counseling: <https://www.betterhelp.com/about/>

In a crisis/emergency situation and the need for immediate help:

Suicide Hotlines Worldwide:

http://www.suicidestop.com/call_a_hotline.html

<http://www.suicide.org/international-suicide-hotlines.html>

TIPS

Measurements you can take right now that can be helpful to reduce feelings of depression and anxiety:

1. Get in a routine: plan your day
2. Exercise
3. Eat healthy
4. Meditate
5. Get enough sleep
6. Set small (daily) goals for yourself
7. Get support: Talk to friends, your family or a therapist
8. Do something meaningful: activities that feel important to you, find your sense of purpose

WEBSITES

For more information regarding this subject, these links can help you:

<https://www.nlm.nih.gov/health/topics/depression/index.shtml>

<https://www.psychiatry.org/patients-families/depression/what-is-depression>

<https://depression.org.nz>

<https://www.helpguide.org/articles/depression/coping-with-depression.htm/>

SELF-TEST

Wondering whether to turn for help? Self-tests can further assess whether you have depression and/or anxiety disorder. Be aware that these tests are no replacement for specific medical advice or as a substitute for professional care, however they can be a guide for whether a medical professional needs to provide you with a complete evaluation.

<https://www.depression-anxiety-stress-test.org/take-the-test.html>

