NOVA IMS Information Management School

MGI

Mestrado em Gestão de Informação
Master Program in Information Management

Uncovering social media outcomes in a context of social distancing

Alena Rouslanovna Shkel

Dissertação apresentada como requisito parcial para obtenção do grau de Mestre em Gestão de Informação

NOVA Information Management School
Instituto Superior de Estatística e Gestão de Informação
Universidade Nova de Lisboa

NOVA Information Management School
Instituto Superior de Estatística e Gestão de Informação
Universidade Nova de Lisboa

UNCOVERING SOCIAL MEDIA OUTCOMES IN A CONTEXT OF SOCIAL DISTANCING

By

Alena Rouslanovna Shkel

Master Thesis presented as partial requirement for obtaining the Master's degree in Information Management, with a specialization in Knowledge Management and Business Intelligence

Supervisor: Prof. Doutor Frederico Cruz Jesus

August 2022

ACKNOWLEDGEMENTS

I've had a lot of help and support during the process of completing this dissertation.

First and foremost, I would want to express my gratitude to Professor Frederico Cruz, who served as the sole supervising professor for this research and whose experience was of the most importance in developing the study's objectives and methodology. Your insightful remarks pushed me to improve my thoughts and raise the bar on my studies.

I would also like to express my gratitude to my mother for her unwavering support throughout my academic career.

ABSTRACT

Social media platforms are very used nowadays in developed countries. Since lockdown and social distancing took place due to COVID-19, its importance has soared. This is understandable, as people try other ways of communicating when deprived of their primary mode of communication. This study aims to investigate how the state of social distancing and lockdown affects people's use of these platforms. Even though social media is a widely researched topic, few studies have been conducted in these circumstances, hence the importance of the study. The current study was designed to test the Unified Theory of Acceptance and Use of Technology (UTAUT2). In addition, it was hypothesized that COVID-19-induced isolation would cause people to use social media excessively, leading to social media fatigue. The moderation effect of loneliness on the relationship between social media use and social media fatigue was also investigated. A survey was conducted to test our theory. Structural Equation Modelling (SEM) was used to analyze the outcome. The results revealed that both social media use and loneliness are significant causes of social media fatigue among isolated individuals due to the COVID-19 pandemic.

KEYWORDS

Social media, social media use, loneliness, unified theory of acceptance and use of technology (UTAUT2), social media fatigue.

INDEX

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS AND ACRONYMS

SM	Social Media
UTAUT 2	Unified Theory of Acceptance and Use of Technology 2
AVE	Average Variance Extracted
HTMT	Heterotrait Monotrait
PE	Performance Expectancy
EE	Effort Expectancy
SI	Social Influence
FC	Facilitating Conditions
HM	Hedonic Motivation
PV	Price Value
HT	Habit
LL	UCLA Loneliness Scale
SMF	Social Media Fatigue

1. INTRODUCTION

There are 4.2 billion people worldwide who use Social Media (SM) (*Social Media Statistics & Facts* | *Statista*, 2020). Facebook and YouTube are the two SM platforms with the most active users. The first platform has 2.498 million, while the latter has 2.000 million active users (*Social Media Statistics & Facts* | *Statista*, 2020).

SM is omnipresent and is part of people's everyday life. Schlagwein and Hu proposed that SM are internet-based communication and collaboration channels (Schlagwein & Hu, 2018). Since the COVID-19 lockdown took place and social distancing measures started, the importance of SM has soared (e.g., Zoom's market cap rose substantially after March 2020). This situation is understandable, as people try other ways of communicating when deprived of their primary mode of communication.

Information and Communication Technologies (ICT) and SM have other purposes besides hedonistic ones: work, school, and health appointments. When in March 2020, the COVID-19 pandemic began in the West, governments and world organizations began to take action to try to slow down the spread of the virus. People found themselves forced to stay at home for long periods without being able to have contact with large groups of people. Thus, people had to get used to a new way of life in which every human interaction, except with people with whom they shared a house, had to be done through a screen. This triggered the importance of ICT to skyrocket. Data collected in the United States in May 2020 regarding the use of mobile phones suggests that people are becoming more dependent on phone services. Text messages increased by 37%, SM use increased by 36%, shopping apps usage increased by 23%, and lastly, video calls increased by 32% (*U.S. Study Finds COVID-19 Pandemic Transforms Cell Phone Usage* | Twigly, 2020).

Since the lockdown, statistics have shown a considerable increase in SM usage. A survey conducted in March 2020 and then published on Statista shows that 40 per cent of consumers spend more time on messaging services and SM than before the pandemic (• *Statista - The Statistics Portal for Market Data, Market Research and Market Studies*, 2020). Excessive use of SM platforms can lead to pathological solid and maladaptive psychological dependence on SM (Turel & Serenko, 2012), leading to feelings of loneliness (Matook et al., 2015). Therefore, it is essential to examine how an increase in SM usage, a state of social distancing, and seclusion can affect a person's wellbeing.

This study enriches the research testing and analyzing the UTAUT2 (Venkatesh et al., 2012) Venkatesh's model to understand the effects of SM use in such a unique and new setting for us, the social isolation due to COVID-19.

With this research, we aim to find out how the state of social distancing affects people's SM use. Although SM is a widely researched topic, this is a new and important context to study SM use and its consequences. From past studies, we understand that the increase in SM use leads to adverse effects, thus, in this study we are trying to answer the following research questions:

1. In a social distancing context does the use of SM lead to adverse effects like SM fatigue?
2. What leads people to use SM in this context?

In answering these questions, the remainder of this paper is organized as follows. In Section 2, the theoretical background of the research will be introduced. In Section 3, the research model will be explained. In Section 4, the data that was collected will be shown. In Section 5, the results of the research will be presented. In Section 6, the results will be discussed. In the final Section, the conclusion of the research will be done.

2. THEORETICAL BACKGROUND

2.1 THE CONCEPT OF SOCIAL MEDIA

First, it is crucial to understand the concept of SM. The concept delivered by the tech giants with the introduction and innovation of SM encompasses various aspects like business, entertainment, communication, lifestyle activities, news, social sharing, digital collaboration etc. SM becomes a highly productive tool to drive business growth and success, stay connected with the world, and more when used within limits and productively.

Users turn to SM for information and relationship-sharing services, such as friending others and sharing news, to maintain associations and manage contacts (Enders et al., 2008). They can stay in touch with friends and acquaintances by following them and seeing what they share on SM, creating and inviting friends to events through these networks, or sharing career steps on LinkedIn. Users obtain relational benefits from acquiring and preserving social capital with others, producing a social sense of interdependence, belongingness, and identity generally presented in friendships, peer support, and group affiliation (Ellemers et al., 1999). They also obtain informational benefits from interpersonal information exchange and sharing within their social network (Granovetter, 1973).

However when it is used excessively for entertainment purposes such as music, games, online videos, etc.. it becomes one of the most devastating achievements of the modern era that has the potential to cause real consequences to its users (Cho et al., 2008). Primarily, social networking sites like Instagram, Facebook, LinkedIn, WhatsApp etc., are used for personal, social, and entertainment use but there are also features for professional use like Facebook Business Manager, LinkedIn for Business, WhatsApp Business, and so on. From the end user's perspective, the core concept of SM is to connect digitally, share information with others, and explore various entertainment, business, and lifestyle features, as reported by Kim (2018). However, this perception of social networking does not match the reality in many cases, as a significantly high percentage of the world's population overuses social networking. Instead of focusing on the positive aspects, many only seem to overuse SM for entertainment purposes. Spending excessive time on SM, making video calls, playing games, watching videos online, listening to music are some ways many use social networking sites that hinder their life productivity and cause mental or psychological effects.

In the next section, we will focus on identifying the inferential factors that drive users to stay connected to social sites, and we will list and explore the consequences associated with excessive SM use.

2.2 PRIOR RESEARCH ON SOCIAL MEDIA OUTCOMES

When it comes to excessive use of social networking sites, users usually adopt an unhealthy life cycle. For example, unhealthy lifestyle habits can cause many to opt-out of SM sites but spend more time on SM. Many factors play a crucial role in getting addicted to SM, which makes it harder to reduce the amount of time spent on SM or to disconnect from the social world. The following factors drive the use of social networking apps and platforms (Ponnusamy et al., 2020).

With the high adoption of Internet of Things (IoT) devices such as laptops, smartphones, tablets, etc., it has become highly convenient for end-users to access social networking platforms and apps. With access to various entertainment features just a few taps away, it is becoming increasingly difficult to resist the temptation to connect to the social world. This is sometimes referred to as "hyperconnectivity". However, this convenience comes at the cost of psychological effects such as impaired concentration and focus, sleep disturbances, and more.

A large number of SM users give in to the urge to keep checking SM pages due to the " fear of missing out" (FOMO) (Alt, 2015; Beyens et al., 2016; Dhir et al., 2019; Przybylski et al., 2013). Despite not receiving any critical news or notifications, many continue to repeatedly visit social networking sites for fear of missing out on the latest news, events, gossip, videos, music, etc., according to their preferences. Similarly, the fear of being unable to respond to, comment on, participate in, share, or like online content can lead to being disconnected from friends and peers online. In contrast, real-life relationships may suffer if one does not connect and communicate with others immediately after receiving the latest news, posts, and updates.

Many SM addicts feel anxious, awkward, or lonely in real-life social situations. By avoiding real-life communication and connection, they turn to SM and prefer to engage digitally because it can make them feel safer, less anxious, and more in control.

The ability to get global information, stay connected with others, grow businesses, and digital learning are some of the SM applications. Similarly, SM enables users to gain relational advantages and create a social sense of interdependence, belonging, and identity that

manifests itself in friendships, peer support, and group memberships (Sadagheyani & Tatari, 2020). However, many overstep the mark in their quest to reap these potential benefits as perceived by social networks, leading to the sprout of devastating real-life effects. The following are some unhealthy consequences of SM.

2.1.1 Psychological and mental health implications

Psychological wellbeing is a "multifaceted domain encompassing positive self-regard, mastery of the surrounding environment, quality relations with others, continued growth and development, purposeful living, and the capacity for self-determination" (Ryff & Keyes, 1995, p.724). It is also described according to the basic concept of eudaimonic wellbeing (Ryff & Keyes, 1995). Inappropriate and heavy use of SM severely impacts mental and physical abilities since it interferes with daily activities, including family, work, and school (Caci et al., 2017).

Studies have found that people who are stressed, struggling with anxiety, depression, or alone are more likely to use SM at unhealthy levels. Feelings of stress, anxiety, loneliness, and depression can lead many to rely heavily on SM to connect with others and gain a sense of connection and belonging to reduce their loneliness and depression. However, the more they use SM to alleviate their feelings, the more they feel disconnected and lonely, and this unhealthy cycle continues. Similarly, studies have shown that unhealthy SM use increases feelings of inadequacy, dissatisfaction, and isolation, worsening mood and hindering the ability to move forward and connect with others in real-life situations (Hu et al., 2015).

2.1.2 Social Media fatigue and hindered academic performance

SM is relatively popular among adolescents and young adults who are still in the academic phase. A study of 362 questionnaires conducted by Ponnusamy et al. (2020) at a Malaysian University revealed that excessive use of Instagram led to students developing feelings of dissatisfaction, shyness, and lower academic performance. Also, another study Lau (2017) on students at a University in Hong Kong linked unhealthy SM use to negative academic performance. A study conducted by Malik et al. (2020) on 1,398 WhatsApp users (aged 19 to 27 years old) and 472 WhatsApp users (aged 18 to 23 years) revealed excessive and unhealthy SM use leads to SM fatigue. In addition, the study found that self-comparison and

self-representation on SM increased SM fatigue and ultimately affected the participants' academic performance.

Aside from the above studies and their findings, many other studies link psychological and mental health disorders to excessive SM use. A recent study by Sadagheyani & Tatari (2020) extensively examined 501 different studies and articles related to SM and its effects. In reviewing these 501 studies, it was found that 50 studies found an association between SM and mental health effects, with excessive use leading to the burgeoning of feelings such as anxiety, depression, and loneliness. The study also uncovered adverse effects related to sleep quality, suicidal and self-harm thoughts, increased levels of psychological distress, decreased self-esteem, dissatisfaction with one's body, dissatisfaction with lifestyle, and fear of missing out. The study also indicates that users also resorted to cyberbullying against others online in extreme cases.

Conversely, several studies also found positive effects of SM. The same study conducted by Sadagheyani & Tatari (2020) also revealed that receiving information, emotional support, building relationships, connections, interactions, and networks were some of the major benefits reported by the study participants. Similarly, a study conducted by Dhir et al. (2019) revealed that users reported positive effects of using SM, including improved creativity, self/identity, discovering sources of valuable information, online learning, skill-building, and developing and maintaining relationships.

SM platforms are designed to provide a range of functions to end-users. Although they have productive functions, learning, and business applications, a significant portion of the world's population abuses these social networks. While countless studies have shown unhealthy use of social networks to be linked to several mental and psychological disorders, studies have also reported the potential benefits of using SM. In short, whether one reaps the benefits or faces the consequences of misusing SM depends on the perception and habits of the end-user. It is essential to educate oneself on the proper use of SM. Limiting SM use and using it for productive and creative purposes provides a positive mental state. In contrast, excessive use leads to real-life consequences that interfere with daily interactions and tasks.

3. RESEARCH MODEL

To examine SM use outcomes related to social isolation due to COVID-19, an integrated model combining Venkatesh's extended unified theory of acceptance and use of technology (UTAUT2) and the eight-item UCLA loneliness scale was used as a theoretical lens.

UTAUT2 was developed to explain and predict technology adoption. In this work, we use it to examine SM use in the context of social isolation due to COVID-19. The UTAUT2 model is an improved version of UTAUT, which explains technology acceptance and adoption by users in an organizational context. The UTAUT model was developed based on eight previous theories and models of technology acceptance: Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Motivation Model (MM), Theory of Planned Behaviour (TPB), Combined TAM and TPB (C-TAM-TPB), Model of PC Utilization (MPCU), Innovation Diffusion Theory (IDT), Social Cognitive Theory (SCT). The extended version of this theory,the UTAUT2 model (Venkatesh et al., 2012) includes three more constructs then the previous version: hedonic motivation, price value,and habit.

According to Perlman & Peplau (1981), loneliness is the unpleasant experience that occurs when a person's network of social relationships is deficient in some important way, either quantitatively or qualitatively. To measure the loneliness people experience during isolation due to the COVID-19 pandemic, we used the eight-item UCLA Loneliness Scale.

Performance expectancy is the most influential factor in SM use and adaptation. The extent to which an individual believes that using the system will help him or her improve job performance is referred to as performance expectancy (Venkatesh et al., 2003). It is believed that using a particular technology will be beneficial to the individual. The opportunities brought by SM lead to a higher performance expectancy. The usage factors behind everything consist of five items: external motivation, job fit, relative advantage, outcome expectancy, and usefulness (Venkatesh & Davis, 2000). Individuals' perceptions of these factors concerning SM use are very positive, making performance expectancy a positive factor behind SM adaptation. The estimated improvement in performance and the user's satisfaction after the whole experiment leads him/her to use SM repeatedly. The isolation during COVID-19 and world turning upside down from physical to digital modes, and the large flow of people adapting are evidence of the positive performance expectancy of technological forums and applications. Hence, the first hypothesis:

H1. Performance expectancy (PE) is positively associated with SM use.

The degree of ease associated with using a technology by (Venkatesh et al., 2003) is referred as effort expectancy. It could be described as the effort required to use technology in simpler terms. SM platforms are developed in a certain user-friendly manner so that they can be easily interpreted and accepted by the audience. Such applications come with many benefits that have to do with easy accessibility to users of any age group. Within seconds, one can find out the news about the whole world, could quickly gather global databases or get entertainment. Everything is available just a single click away. The Technology Acceptance Model – TAM - (Davis, 1986) is highly based on the perception of ease of use, which refers to the idea that using new technology will be effortless. In such an emergency and the rapid transition of all physical activities into online activities due to the pandemic, people's life activities were not hindered as most modern applications had a convenient user interface. Despite the isolation, people could easily access many functions because today's technology is designed for everyone, one does not need much learning for mere access.

H2. Effort expectancy (EE) is positively associated with SM use.

Social influence is defined as the degree to which an individual perceives that important others believe they should use the technology (Venkatesh et al., 2003). Social influence includes intentional and unintentional efforts to change another person's beliefs, attitudes, or behaviour (Gass, 2015). Trends that the majority follow or that are common in society can also cause people to change their behaviour to fit in. People use SM to build and maintain relationships with others (Boyd & Ellison, 2007). Many people, especially teenagers and young adults, join SM platforms to experiment or to participate in trends. Many people joined with the aim of overcoming loneliness by connecting with social networks. Therefore, positive social influence has a positive proportionality to SM use.

H3. Social influence (SI) is positively associated with SM.

Facilitating conditions are defined as the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the technology (Venkatesh et al., 2003). It can also be defined as the degree to which users feel that a particular system or application meets information requirements is referred to as user satisfaction (Almarashdeh, 2016). SM is largely based on user feedback about facilitating conditions. SM platforms are developed as channels for disseminating information and eliminating loneliness from people's lives. They help people to get a deeper insight into everything, adapt to new environments, create communication channels, and understand each other's cultural preferences. SM gives the sense of one's identity. Most of these applications largely come with guidelines, and enough facilitating conditions for inducing positive performance expectation with less effort.

H4. Facilitating conditions (FC) is positively associated with SM use.

Hedonic motivation is defined as the fun or pleasure derived from using technology, and it has been shown to play an important role in determining technology use (Brown & Venkatesh, 2005). Various critics have adopted different types of interpretations regarding behaviour towards the use of SM, one of which is hedonic motivation. The results of any technological adaptation also cannot be separated from the basic psychological conditions of the user. Hedonic motivation, also known as incentive motivation, is the willingness to initiate behaviour that reinforces positive experiences (pleasant or good) and behaviours that reduce negative experiences (Kaczmarek, 2020). It is achieved by reducing psychological distress. People usually choose their actions based on whether it increases or decreases their happiness. SM platforms are those in which the consumer fully understands the motive and can evaluate the weightage of pros and cons at a personal level. The influence of hedonic motivation is positive in lonely, isolated, or introverted people to a much greater extent than the others. A person goes through three different stages of behaviour change and modelling while making a decision to do something (Bozarth, 1994): one of them is positive reinforcement, which means that the reward the consumer receives causes him to increase the probability of changing a certain behaviour.

H5. Hedonic motivation (HM) is positively associated with SM use.

Price value is the consumers' cognitive trade-off between the perceived benefits of the applications and the monetary cost of using them (Dodds, 1991).

Price is also a critical factor in determining the fate of a platform, technology, or initiative. In the SM space, pricing tends to be customer centric. This means that prices are set based on what users think things are worth. This is a definite strategy of companies. Upgrades of technologies are always produced according to luxury feedback, premium accounts and promotions are never free, but their experiences have a special value. The success of any business depends on how its product stands out from the competition. Most SM applications that the world has turned to in isolation due to COVID-19 have been available to consumers at the lowest cost and therefore have been perceived more positively. SM is completely focused on its customers. In fact consumers make SM, so any improvement or addition is based on feedback. Also, SM has open communication channels, so they have developed a strong relationship with their customers, even those who tend to keep their views private.

H6. Price value (PV) is positively associated with SM use.

Habit is measured as the extent to which an individual believes the behaviour to be automatic (Limayem et al., 2007). Technology has taken over much of life around the world. The transformation of all systems, whether in healthcare, education, etc., into digital systems is a massive testament to this. Unconscious scrolling and repetitive checking of notifications now permeate every aspect of people's lives. Habit is a perceptual construct that reflects the results of prior experiences (Venkatesh et al., 2012). However, subjective wellbeing and loneliness are also important indices of people's evaluation of deep media participation and adaptation to SM. Loneliness can be viewed as a result of individuals' perceived discrepancy between desired and achieved levels of social contact (Bahr et al., 1984). Lonely people do not have better routines, so they seem to indulge in SM more often.

H7. Habit (HT) is positively associated with SM use.

In recent years, researchers have begun to study fatigue related to the use of ICT (Salanova et al., 2013). Intense use of SM interferes with daily life and negatively affects life satisfaction (Malik et al., 2020). Compulsive use of SM, fear of missing out, or anxiety about online activities leads to fatigue, referred to as boredom or preoccupation. SM fatigue is a withdrawal from such platforms after becoming too overwhelmed by keeping connected and scrolling. Lack of focus, irritability, and anxiety is the underlying impulses. Similarly, the impact of this phenomenon can be unfavourable for SM platforms and their associated service providers, as users may limit, switch, or stop using them altogether, ultimately affecting profitability (Ravindran et al., 2014; Talwar et al., 2019). As discussed earlier, loneliness is directly proportionate to SM use. Similarly, the intensity of use positively correlates with SM fatigue.

H8. SM use is positively associated with SM fatigue.

Social isolation is defined as an objective lack of interactions with others or the wider community. Loneliness is defined as the subjective feeling of the absence of a social network or a companion. These two are everyday misfortunes nowadays (Leigh-Hunt et al., 2017).

Due to the fact that an individual cannot have recurrent encounters with the same connections, social loneliness is regarded to be a result of social isolation (Baumeister & Leary, 1995).Loneliness might motivate people to use SM more, or even excessively. Although studies also show that greater social networks may combat loneliness. Thus, we hypothesize that both SM use and SM fatigue will be lower for less lonely people.

H9. COVID-19 isolation moderates the relationship between SM use and SM fatigue, in such a way that this relation is higher for higher levels of COVID-19 isolation.

According to Venkatesh et al. (2003) the influence of performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit on behavioral intention is moderated by age.As well as the influence of habit on use behaviour. Thus, our last hypothesis:

H10. Age moderates the relationship between SM use and SM fatigue, in such a way that this relationship is higher for older individuals.

The research model can be seen in Figure 1.

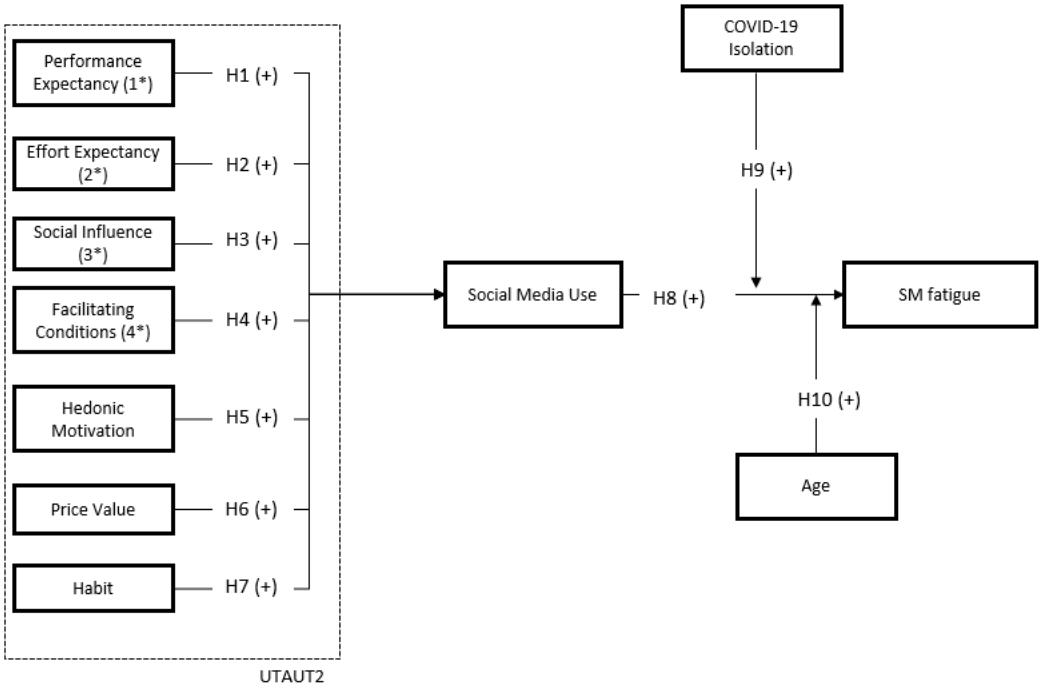

Figure 1 – Research Model

4. DATA

To test our model an online survey was conducted. The instrument was distributed online via a personal hyperlink from February to March 2021. The questionnaire was in English and had participants from all over the world.

At the beginning, the survey and its purpose were explained, expectations were set, and examples of SM were given. The start was a qualifying question, this asked if the person had used SM in the last three months. If not, the survey ended, and this answer was considered not eligible for the study. Next, the respondent had to go through 4 parts: the first part contained questions about the UTAUT2 constructs, the second part contained the UCLA loneliness scale items, the third part had SM fatigue constructs, and the last part contained demographic questions. Existing scales were adapted. To measure the intention to use social media Venkatesh's existing scale was adapted (Venkatesh et al., 2012). Loneliness was measured through the existing UCLA eight-item loneliness scale (Russel et al., 1978). SM fatigue constructs were adapted from Karasek (1979). All items in each question were measured with a seven-point scale, evaluating from "strongly disagree" (1) to "strongly agree" (7) (Appendix A).

There were 297 responses of which 222 were eligible for the study. Of all respondents, 76% were female, and 24% were male which is expected since 67% of internet users are female ,ages between 18 and 29 who use any social networking site (Duggan & Brenner, 2013). In our study, we had 64% of answers from people between the ages of 21 and 25. Most of the participants (39%) used Instagram the most. The second most used SM was WhatsApp. and the third most used was Facebook. 60% of the participants are students, 21% are dependent employers, 9% are working students, 5% are unemployed, and 5% are self-employed. The descriptive statistics of the participants can be seen in the table below.To examine the possible existence of common method bias, we used the Harman’s one-factor test (Podsakoff et al., 2003). The first factor merely accounts for 18% of the variance, a value well below the stipulated threshold of 50%. Hence, common method bias was not an issue in our data. The sample’s main characteristics can be seen in Table 1.

Measure	Value	Frequency	Frequency%
Gender	Female	168	76%
	Male	53	24%
Education level	Primary School	5	2%
	High School	54	24%
	Bachelor	92	41%
	Masters	70	32%
	PhD	1	0%
Income	Less than 500€	33	15%
	Between 500€ - 1000€	42	19%
	Between 1000€ - 1500€	44	20%
	Between 1500€ - 2000€	38	17%
	Between 2000€- 3000€	23	10%
	Between 3000€ - 4000€	16	7%
	Higher than 4000€	26	12%
Isolation restrictions	Mandatory quarantine	58	26%
	Self-imposed quarantine	41	18%
	Social distancing	117	53%
	No restrictions	6	3%

Table 1 - Descriptive statistics of the participants

RESULTS

The current study was designed to test UTAUT2. In addition, it was hypothesized that COVID -19 induced isolation would cause people to use SM excessively, leading to SM fatigue. The moderating effect of loneliness on the relationship between SM use and SM fatigue should also be investigated.

Data were analyzed by Structural Equation Modelling (SEM) using the Partial Least Squares (PLS). PLS is a component-based approach to SEM (Chin, 1998). PLS may be considered appropriate for this study because: (i) not all elements in the data are normally distributed ($p<0.01$); (ii) it is good for complex models and prediction-oriented research; (iii) the research model has not been tested in the literature (Hair et al., 2011; Sleuwaegen, 1992). The model was tested using SmartPLS 3 software (Ringle et al., 2015). The model included nine reflective and one formative latent variable. Age was a significant covariate in the model. Performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit were reflective exogenous constructs to SM use, which is the formative construct of the model. In addition, SM use and loneliness were exogenous constructs to SM fatigue.

The evaluation of the model was conducted in two phases. First, the measurement model of the reflective and formative constructs was assessed. Second, the assessment of the structural model was completed.

5.1 MEASUREMENT MODEL

Cronbach's α and composite reliability (CR) measured the internal consistency of the reflective variables. The acceptable range of internal consistency in exploratory research is 0.6 - 0.7. AVE (Average Variance Extracted) is the measure of convergent validity. It is the mean of the square of outer loadings of all indicators on a construct. AVE value 0.5 indicates that a construct explains 50% of the variance of the indicators, while the rest is in error terms. The desired value of AVE can only be achieved if the outer loadings of all indicators are above 0.7. The evaluation of the formative model mainly involves convergent validity. The principles of internal consistency do not apply to it. In the formative measurement model, the external loadings of the indicators should be greater than 0.4 (Hair et al., 2016).

The discriminant validity of the constructs was examined using the HTMT criterion. Heterotrait Monotrait criterion is an extended method for determining discriminant validity. HTMT is the heterotrait-monotrait ratio of correlations.. It is suggested by Henseler et al. (2015) that if the value of HTMT is less than 0.9 between two constructs, it means that discriminant validity has been established. Psychometric properties of the variables are given in Table 2.

Construct	Cronbach's Alpha	CR	AVE
Performance Expectancy	0.786	0.819	0.610
Effort Expectancy	0.879	0.915	0.731
Social Influence	0.907	0.940	0.840
Facilitating Conditions	0.849	0.829	0.627
Hedonic Motivation	0.905	0.941	0.841
Price Value	0.894	0.931	0.819
Habit	0.732	0.850	0.655
Loneliness	0.826	0.885	0.657
Social Media Fatigue	0.922	0.941	0.762

Table 2 - Measurement model estimations

The values of Cronbach's alpha and composite reliability shown in the above table indicate that all the scales have met the criteria for internal consistency. AVE of all constructs is above the criterion, which is 0.5. In the initial analysis, the AVE value of loneliness was less than 0.5. The composite reliability was also less than 0.6. In this case, Hair et al. (2016) suggest the elimination of indicators with outer loading < 0.7 only if the elimination improves the composite reliability of the variable. Since the variables used in the study are theory-based and have well-established psychometric properties, we decided not to eliminate the indicators as this could affect content validity. We can proceed with the analysis as convergent validity has been demonstrated (Huang et al., 2013). In the case of the formative variable SM use, three indicators with outer loadings less than 0.3 were eliminated to achieve convergent validity. The formative measurement model was further evaluated concerning other variables while the structural models were assessed. The values of the HTMT ratio of all constructs are less than 0.9. All constructs have strong discriminant validity.

5.2 STRUCTURAL MODEL

In examining the structural model, the collinearity score (VIF), coefficient of determination (R^2), and the adjusted R^2 of the dependent variables. To find out the problem of multicollinearity, i.e., the correlation between the exogenous variables of the model, the VIF statistic was

obtained. According to (Hair et al., 2016), the values of VIF should be less than five. The collinearity statistics of the constructs can be found in Table 3.

	Social Media Use	Social Media fatigue
Performance Expectancy	1.390	
Effort Expectancy	1.608	
Social Influence	1.183	
Facilitating Conditions	1.439	
Hedonic Motivation	1.461	
Price Value	1.227	
Habit	1.169	
Social Media Use		1.147
Loneliness		1.026

Table 3 - Collinearity statistics of the constructs

The table above shows that all constructs' VIF value is less than five. Consequently, there is no multicollinearity among the variables in the study. The criteria for SM usage content validity is also met as its VIF value is less than five.

The predictive capabilities of the model were calculated in two ways. First, R^2 was examined, i.e., the predictive power of all exogenous constructs for the linked endogenous constructs. The bootstrapping procedure determined it. Second, the adjusted R^2, which accounts for the number of independent variables included in the model, was used to evaluate the model (Niehaves & Plattfaut, 2014). *R^2 and R^2 adjusted of the study variables can be found in Table 4.*

Construct	**R^2**	**R^2 adjusted**
Social Media Use	0.253	0.229
Social Media Fatigue	0.157	0.142

Table 4 - Coefficient of Determination (R^2), Coefficient of Determination adjusted (R^2 adjusted), of the Study Variables

According to (Hair et al., 2011), R^2 of 0.25 can be considered weak, 0.5 moderate and 0.75 strong. The above values show that the predictor's technology and SM fatigue are weak predictors.

Path coefficients represent the prediction of a specific endogenous construct by specific endogenous constructs. Their significance is determined by the t-value, which corresponds to the specific significance level (p-value). f^2 is the effect size of the predictive power of all

exogenous variables on the endogenous variable when certain endogenous variables are removed from the model. It was obtained by bootstrapping at Quality Criteria. Path coefficients and their significance test UTAUT2 were given in Table 5.

Predictor	β	p value	Conclusion
Performance Expectancy	-0.009	0.924	non-significant
Effort Expectancy	0.094	0.375	non-significant
Social Influence	0.072	0.327	non-significant
Facilitating Conditions	-0.257	0.180	non-significant
Hedonic Motivation	0.121	0.112	non-significant
Price Value	0.039	0.646	non-significant
Habit	0.381	0.000	Significant at 99%

Table 5 - Path coefficients for the predictors of social media use incorporating UTAUT2

It can be stated that during the COVID -19 crisis, only habit made people use SM. While other factors did not contribute to the use of SM. Thus, the only activity for isolated people is to use smartphones to connect with their outside world (Greenhalgh et al., 2020; Vargo et al., 2021).

In the final stage, the path coefficients for the predictors of SM fatigue, the effect sizes f^2 and q^2, the effect size of predictive relevance, were determined. q^2 was calculated manually using the formula [(Q2Included- Q2excluded)/(1- Q2Included)] (Hair et al., 2016). Q2Included is the predictive relevance by including certain exogenous constructs, Q2excluded is the predictive relevance value by excluding certain exogenous constructs from the model. Q2excluded for all constructs was obtained by eliminating all exogenous constructs from the model one by one and calculating the blind fold. An effect size (f2 and q2) of less than 0.02 means there is no effect, but 0.02, 0.15, and 0.35 represent small, medium, and large effect sizes, respectively. The path coefficients for the predictors of SM fatigue can be found in Table 6.

Path	β	p value	f^2	q^2
Social Media Use → Social Media Fatigue	0.173	0.033	0.03	0.01
Loneliness → Social Media Fatigue	0.228	0.002	0.06	0.03
Social Media Use * Loneliness → Social Media Fatigue	-0.040	0.624	-	-

Table 6 - Social media use, loneliness, and social media fatigue

The above table shows that both SM use and loneliness are significant causes of SM fatigue among individuals who are isolated due to the COVID -19 pandemic. However, the effect size is small. This fact can be supported by a previous study by Islam et al. (2020) which states that entertainment and sharing unverified information on SM leads to SM fatigue among

individuals. The negative effect of SM use is confirmed by another study conducted by Ahmad & Murad (2020). They studied that people indulged in SM use during the lockdown, which led to more panic. Besides all the negative effects of SM use on mental health and the associated predictors of SM fatigue, it is a confirmed fact that heavy use of SM leads to SM fatigue in young adults.

The research model with the results can be seen in Figure 2.

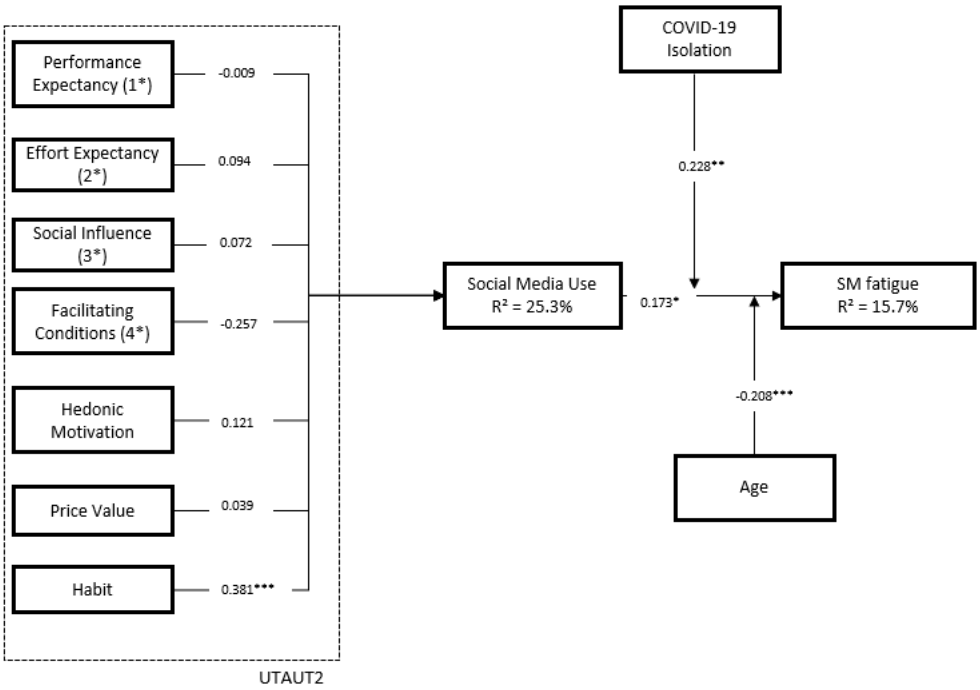

Figure 2 - Research Model with results

Note: * $p < 0.05$; ** $p < 0.01$; and *** $p < 0.001$

5. DISCUSSION

DISCUSSION OF FINDINGS

In March 2020, the whole developed world was obligated to turn digital. Among remote work and education, many individuals increased their time spent on SM platforms such as Facebook and Instagram, fulfilling their needs for COVID-related information, amusement, and interpersonal contact. Despite the undeniably beneficial function that SM plays in an emergency like social isolation due to COVID-19, more SM usage is likely to result in SM fatigue.

It was hypothesized that increased loneliness in social isolation due to COVID-19 would lead to SM fatigue in SM users. The current research was designed to test this hypothesis through the UTAUT2 and the UCLA eight-item loneliness scale. Data resulting from a survey distribution was analyzed through SEM using the PLS approach. The model was tested using Smart PLS 3 software (Ringle et al., 2015). The assessment of the model was completed in two phases. First, the measurement model of reflective and formative constructs was evaluated. Second, the assessment of structural model was completed.

End-users may expect a variety of features from SM networks. Even though these social networking sites provide valuable features, learning, and commercial applications, a considerable section of the world population misuses them. While several research has clearly connected harmful SM networking usage to various mental and psychological troubles, other research has revealed possible advantages of utilizing SM. This study aimed to find out if in a unique situation of social isolation for long periods, SM use would cause SM fatigue or not.

The findings of this study contribute to the literature on SM use whilst in quarantine due to the COVID-19 pandemic. It was concluded that SM use and loneliness are significant causes of SM fatigue among individuals in social isolation due to COVID-19.

THEORETICAL IMPLICATIONS

SM has many advantages, however some stand out, according to the research done so far. The theoretical implications include the development of a SM specific theory that emphasizes

the negative aspects of communication. The framework for addictive behaviours related to SM engagement is created through an examination of the internal and external motivations for SM use, as well as potential psychological deficits. Excessive SM usage also considers altering the primary mode of interpersonal communication interactions and modifying corporate communication structures. Large amounts of SM use can also hurt health communication. More research regarding the addictive capabilities of SM and potential solutions to the issues created by COVID-19, causes individuals to overuse SM, as well as possible solutions to the problems that arise because of this relationship, is needed in the future.

The study's key theoretical contribution is that it is a pioneer in research testing and analyzing Venkatesh's model in order to understand the effects of SM use during such a unique and new setting for us, the social isolation due to COVID-19.

The results show that that both SM use and loneliness are significant causes of SM fatigue among individuals who are isolated due to the COVID -19 pandemic with a small sized effect. This could indicate that SM could play a good and maybe even healthy role in situations like these, since online becomes the only way to communicate with other people, friends, family, and colleagues. Thus, further research should be done to understand this topic further and create tools to use this information in our advantage.
This study contributes to the stream of research on SM outcomes by investigating its consequences in a unique and specific situation that is relatively new to us. Furthermore, this study is among the first attempts to explore this topic in a COVID-19 pandemic.

Within the COVID-19 pandemic, we have witnessed an increase in use of SM which augments its normal consequences, good and bad. Like cyberbullying, connections between people and so on. It is of the most important matter to continue research to better our lives in a world where SM is growing so much in users and we confront situations where these are the only ways of communications for long periods of time.

PRACTICAL IMPLICATIONS

The findings from this study provide an insight into the dark side of SM. The feeling of loneliness leads to the overuse of SM, which leads to SM fatigue. With these findings in mind, it is clear that this issue needs to be addressed for future situations like social distancing and social isolation due to a pandemic. Thus, parents, educators, and employers should consider mitigating its influence.

The younger generation, thet gew up with gadgets, also should be closely monitored by adults on the time management of the usage of SM applications to decrease the mental load of possible mental issues onto not fully formed teenagers. Thus, parents, educators, and employers should consider mitigating its influence. Future more studies should be completed in order to help to improve the education system, and behavior tendencies within the younger generation to have usage of SM to their advantage and not the opposite. As well as teach current and future parents how to protect themselves and their children from the negative impact of the influence of SM.

LIMITATIONS AND FUTURE RESEARCH

As with any research, the current study has some limitations, which should be considered for future research. Longitudinal studies should focus more on one demographical group since, for instance, different age gaps may have different circumstances from teenagers. Nor do they react to such events and use SM in the same way. Also, cultures, countries and varied economic realities are affected differently.

It is also important to study other outcomes like psychological wellbeing in academic or work performance in these conditions.

6. CONCLUSION

In the context of social distancing and/ or social isolation people had to turn to different ways of communicating with their friends, family, and co-workers, since their primary way of communication was excluded. Our work, which is based on earlier research and analysis, contributes in a novel way to the ongoing topic of "why and how individuals use SM". This research also adds a new twist to this type of study by including the context of social isolation caused by COVID-19.

This study uses an integrated research model (UTAUT2 + UCLA eight-item loneliness scale) as a framework to uncover if, in this context, the increase of SM use would lead to SM fatigue. This study was conducted via an online survey that had answers from people worldwide. The findings reveal that SM use and loneliness are significant causes of SM fatigue in the context of social isolation due to COVID-19. This study contributed to the academic researchers developing a SM specific theory that emphasizes the negative aspects of communication in social isolation or social distancing due to COVID-19 pandemic.

BIBLIOGRAPHICAL REFERENCES

• *Statista - The Statistics Portal for Market Data, Market Research and Market Studies*. (n.d.). Retrieved July 16, 2020, from https://www.statista.com/

Ahmad, A. R., & Murad, H. R. (2020). The impact of social media on panic during the COVID-19 pandemic in iraqi kurdistan: Online questionnaire study. *Journal of Medical Internet Research*, *22*(5), 1–11. https://doi.org/10.2196/19556

Almarashdeh, I. (2016). Sharing instructors experience of learning management system: A technology perspective of user satisfaction in distance learning course. *Computers in Human Behavior*, *63*, 249–255. https://doi.org/10.1016/j.chb.2016.05.013

Alt, D. (2015). College students' academic motivation, media engagement and fear of missing out. *Computers in Human Behavior*, *49*, 111–119. https://doi.org/10.1016/J.CHB.2015.02.057

Bahr, H. M., Peplau, L. A., & Perlman, D. (1984). Loneliness: A Sourcebook of Current Theory, Research and Therapy. In *Contemporary Sociology* (Vol. 13, Issue 2, p. 203). https://doi.org/10.2307/2068915

Baumeister, R. F., & Leary, M. R. (1995). The Need to Belong: Desire for Interpersonal Attachments as a Fundamental Human Motivation. *Psychological Bulletin*, *117*(3), 497–529. https://doi.org/10.1037/0033-2909.117.3.497

Beyens, I., Frison, E., & Eggermont, S. (2016). "I don't want to miss a thing": Adolescents' fear of missing out and its relationship to adolescents' social needs, Facebook use, and Facebook related stress. *Computers in Human Behavior*, *64*, 1–8. https://doi.org/10.1016/J.CHB.2016.05.083

Boyd, D. M., & Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication*, *13*(1), 210–230. https://doi.org/10.1111/j.1083-6101.2007.00393.x

Bozarth, M. (1994). Pleasure systems in the brain. In *In D.M. Warburton (ed.), Pleasure: The politics and the reality*. New York: John Wiley & Sons. https://doi.org/10.1016/j.neuron.2015.02.018

Brown, A. S., & Venkatesh, V. (2005). Model of Adoption of Technology in Households: A Baseline Model Test and Extension Incorporating Household Life Cycle. *MIS Quarterly*, *29*(3), 399–426.

Caci, B., Cardaci, M., Scrima, F., & Tabacchi, M. E. (2017). The Dimensions of Facebook Addiction as Measured by Facebook Addiction Italian Questionnaire and Their Relationships with Individual Differences. *Https://Home.Liebertpub.Com/Cyber*, *20*(4), 251–258. https://doi.org/10.1089/CYBER.2016.0073

Chin, W. W. (1998). Issues and opinion on structural equation modeling. In *MIS Quarterly: Management Information Systems* (Vol. 22, Issue 1). https://www.jstor.org/stable/249674?casa_token=in8pLS85fsoAAAAA%3AwcJ2u_zE-Pr3X7CBfXHUZEyVSz1GPCY36JVErrOEvZl0QbUlmeNewaR0bZ6Jb-XDRdqiEhORrDlgRVaCoC5Oe4VM0UKcRtpeyTZ48e2gmn_ZdDGjrTQ&seq=1

Cho, S. C., Kim, J. W., Kim, B. N., Lee, J. H., & Kim, E. H. (2008). Biogenetic Temperament and Character Profiles and Attention Deficit Hyperactivity Disorder Symptoms in Korean Adolescents with Problematic Internet Use. *Http://Www.Liebertpub.Com/Cpb*, *11*(6), 735–737. https://doi.org/10.1089/CPB.2007.0285

Davis, F. D. (1986). A technology acceptance model for empirically testing new end-user information systems: Theory and results. In *Massachusetts Institute of Technology*. https://doi.org/oclc/56932490

Dhir, A., Kaur, P., Chen, S., & Pallesen, S. (2019). Antecedents and consequences of social media fatigue. *International Journal of Information Management*, *48*(April 2018), 193–202. https://doi.org/10.1016/j.ijinfomgt.2019.05.021

Dodds, W. B. (1991). In search of value: how price and store name information influence buyers' product perceptions. *Journal of Consumer Marketing*, *8*(2), 15–24. https://doi.org/10.1108/07363769110034974

Duggan, M., & Brenner, J. (2013). *The Demographics of Social Media Users-2012/Social-media-users.aspx*. www.pewresearch.org

Ellemers, N., Kortekaas, P., & Ouwerkerk, J. W. (1999). Self-categorisation, commitment to the group and group self-esteem as related but distinct aspects of social identity. *European Journal of Social Psychology*, *29*(2-3), 371–389. https://doi.org/10.1002/(SICI)1099-0992(199903/05)29:2/3<371::AID-EJSP932>3.0.CO;2-U

Enders, A., Hungenberg, H., Denker, H. P., & Mauch, S. (2008). The long tail of social networking. Revenue models of social networking sites. *European Management Journal*, *26*(3), 199–211. https://doi.org/10.1016/j.emj.2008.02.002

Gass, R. H. (2015). Social Influence, Sociology of. *International Encyclopedia of the Social & Behavioral Sciences: Second Edition*, 348–354. https://doi.org/10.1016/B978-0-08-097086-8.32074-8

Granovetter, M. S. (1973). The Strength of Weak Ties. *Source: American Journal of Sociology*, *78*(6), 1360–1380. https://about.jstor.org/terms

Greenhalgh, T., Wherton, J., Shaw, S., & Morrison, C. (2020). Video consultations for covid-19. *The BMJ*, *368*(March), 1–2. https://doi.org/10.1136/bmj.m998

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, *19*(2), 139–152. https://doi.org/10.2753/MTP1069-6679190202

Hair, J. J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Sage Publications. https://books.google.pt/books?hl=pt-PT&lr=&id=JDWmCwAAQBAJ&oi=fnd&pg=PP1&ots=ejIPKlJSVH&sig=aYPirIHWiNAqeHWqSChI5QsIx6c&redir_esc=y#v=onepage&q&f=false

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8

Hu, T., Kettinger, W. J., & Poston, R. S. (2015). The effect of online social value on satisfaction and continued use of social media. *European Journal of Information Systems*, *24*(4), 391–410. https://doi.org/10.1057/ejis.2014.22

Huang, C.-C., Wang, Y.-M., Wu, T.-W., & Wang, P.-A. (2013). An Empirical Analysis of the Antecedents and Performance Consequences of Using the Moodle Platform. *International Journal of Information and Education Technology*, *3*(2), 217–221. https://doi.org/10.7763/ijiet.2013.v3.267

Islam, A. K. M. N., Laato, S., Talukder, S., & Sutinen, E. (2020). Misinformation sharing and social media fatigue during COVID-19: An affordance and cognitive load perspective. *Technological Forecasting and Social Change*, *159*(May), 120201. https://doi.org/10.1016/j.techfore.2020.120201

Kaczmarek, L. D. (2020). Encyclopedia of Personality and Individual Differences. *Encyclopedia of Personality and Individual Differences*, *March*. https://doi.org/10.1007/978-3-319-28099-8

Karasek, R. A. (1979). Job Demands, Job Decision Latitude, and Mental Strain: Implications for Job Redesign. *Administrative Science Quarterly*, *24*(2), 285. https://doi.org/10.2307/2392498

Kim, J. H. (2018). Psychological issues and problematic use of smartphone: ADHD's moderating role in the associations among loneliness, need for social assurance, need for immediate connection, and problematic use of smartphone. *Computers in Human Behavior*, *80*, 390–398. https://doi.org/10.1016/j.chb.2017.11.025

Lau, W. W. F. (2017). Effects of social media usage and social media multitasking on the academic performance of university students. *Computers in Human Behavior*, *68*, 286–291. https://doi.org/10.1016/j.chb.2016.11.043

Leigh-Hunt, N., Bagguley, D., Bash, K., Turner, V., Turnbull, S., Valtorta, N., & Caan, W. (2017). An overview of systematic reviews on the public health consequences of social isolation and loneliness. *Public Health*, *152*, 157–171. https://doi.org/10.1016/j.puhe.2017.07.035

Limayem, M., Hirt, S. G., Cheung, C. M. K., & Hirt, S. G. (2007). How Habit Limits the Predictive Power of Intention: The Case of Information Systems Continuance. *MIS Quarterly*, *31*(4), 705–737.

Malik, A., Dhir, A., Kaur, P., & Johri, A. (2020). Correlates of social media fatigue and academic performance decrement: A large cross-sectional study. *Information Technology and People*, *34*(2), 557–580. https://doi.org/10.1108/ITP-06-2019-0289

Matook, S., Cummings, J., & Bala, H. (2015). Are you feeling lonely? the impact of relationship characteristics and online social network features on loneliness. *Journal of Management Information Systems*, *31*(4), 278–310. https://doi.org/10.1080/07421222.2014.1001282

Niehaves, B., & Plattfaut, R. (2014). Internet adoption by the elderly: employing IS technology acceptance theories for understanding the age-related digital divide. *Https://Doi.Org/10.1057/Ejis.2013.19*, *23*(6), 708–726. https://doi.org/10.1057/EJIS.2013.19

Perlman, D., & Peplau, L. A. (1981). Toward a Social Psychology of Loneliness. *In K. Duck, & R. Gilmour (Eds), Personal Relationships*, *London: Academic Press*, 31–56. https://doi.org/10.1037/0003-066X.41.2.229

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *The Journal of Applied Psychology*, *88*(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

Ponnusamy, S., Iranmanesh, M., Foroughi, B., & Hyun, S. S. (2020). Drivers and outcomes of Instagram Addiction: Psychological well-being as moderator. *Computers in Human Behavior*, *107*(January). https://doi.org/10.1016/j.chb.2020.106294

Przybylski, A. K., Murayama, K., Dehaan, C. R., & Gladwell, V. (2013). Motivational, emotional, and behavioral correlates of fear of missing out. *Computers in Human Behavior*, *29*(4), 1841–1848. https://doi.org/10.1016/j.chb.2013.02.014

Ravindran, T., Yeow Kuan, A. C., & Hoe Lian, D. G. (2014). Antecendents and Effects of Social Network Fatigue. *Journal of the Association for Information Science and Technology*, *65 (11)*, 2306–2330. https://doi.org/10.1002/asi

Ringle, C. M., Wende, S., & Becker, J.-M. (2015). *SmartPLS 3*. https://www.smartpls.com

Russel, D., Peplau, L. A., & Ferguson, M. L. (1978). UCLA Loneliness Scale review. *Journal of Personality Assessment*, *42*, 290–294.

Russell, D., Peplau, L. A., & Cutrona, C. E. (1980). The revised UCLA Loneliness Scale: Concurrent and discriminant validity evidence. *Journal of Personality and Social Psychology*, *39*(3), 472–480. https://doi.org/10.1037/0022-3514.39.3.472

Ryff, C. D., & Keyes, C. L. M. (1995). The Structure of Psychological Well-Being Revisited. *Journal of Personality and Social Psychology*, *69*(4), 719–727. https://doi.org/10.1037/0022-3514.69.4.719

Sadagheyani, H. E., & Tatari, F. (2020). Investigating the role of social media on mental health. In *Mental Health and Social Inclusion* (Vol. 25, Issue 1, pp. 41–51). https://doi.org/10.1108/MHSI-06-2020-0039

Salanova, M., Llorens, S., & Cifre, E. (2013). *technologies*. *48*(3), 422–436.

Schlagwein, D., & Hu, M. (2018). Correction to: How and why organisations use social media: five use types and their relation to absorptive capacity (Journal of Information Technology, (2017), 32, 2, (194-209), 10.1057/jit.2016.7). *Journal of Information Technology*, *33*(4), 361–362. https://doi.org/10.1057/s41265-018-0057-y

Sleuwaegen, L. (1992). Advances in international marketing. *International Journal of Research in Marketing*, *9*(4), 319–323. https://doi.org/10.1016/0167-8116(92)90003-4

Social Media Statistics & Facts | Statista. (n.d.). Retrieved January 3, 2022, from https://www.statista.com/topics/1164/social-networks/#dossierKeyfigures

Talwar, S., Dhir, A., Kaur, P., Zafar, N., & Alrasheedy, M. (2019). Why do people share fake news? Associations between the dark side of social media use and fake news sharing behavior. *Journal of Retailing and Consumer Services*, *51*(May), 72–82. https://doi.org/10.1016/j.jretconser.2019.05.026

Turel, O., & Serenko, A. (2012). The benefits and dangers of enjoyment with social networking websites. *European Journal of Information Systems*, *21*(5), 512–528. https://doi.org/10.1057/ejis.2012.1

U.S. Study Finds COVID-19 Pandemic Transforms Cell Phone Usage. (n.d.). Retrieved May 3, 2022, from https://www.prnewswire.com/news-releases/us-study-finds-covid-19-pandemic-transforms-cell-phone-usage-301066502.html

Vargo, D., Zhu, L., Benwell, B., & Yan, Z. (2021). Digital technology use during COVID-19 pandemic: A rapid review. *Human Behavior and Emerging Technologies*, *3*(1), 13–24. https://doi.org/10.1002/hbe2.242

Venkatesh, V., & Davis, F. D. (2000). Theoretical extension of the Technology Acceptance Model: Four longitudinal field studies. *Management Science*, *46*(2), 186–204. https://doi.org/10.1287/mnsc.46.2.186.11926

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information

technology: Toward a unified view. *MIS Quarterly: Management Information Systems*, *27*(3), 425–478. https://doi.org/10.2307/30036540

Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. *MIS Quarterly*, *36*(1), 157–178.

APPENDIX A. ITEMS LIST

Constructs	Code	Items	Source
Performance Expectancy (PE)	PE1	I find social media useful in my daily life.	(Venkatesh et al., 2012)
	PE2	Using social media helps me accomplish things more quickly.	
	PE3	Using social media increases my productivity.	
Effort Expectancy (EE)	EE1	Learning how to use social media is easy for me.	(Venkatesh et al., 2012)
	EE2	My interaction with social media is clear and understandable.	
	EE3	I find social media easy to use.	
	EE4	It is easy for me to become skillful at using social media.	
Social Influence (SI)	SI1	People who are important to me think that I should use social media.	(Venkatesh et al., 2012)
	SI2	People who influence my behavior think that I should use social media.	
	SI3	People whose opinions that I value prefer that I use social media.	
Facilitating Conditions (FC)	FC1	I have the resources necessary to use social media.	(Venkatesh et al., 2012)
	FC2	I have the knowledge necessary to use social media.	
	FC3	Social media is compatible with other technologies I use.	
	FC4	I can get help from others when I have difficulties using social media.	
Hedonic Motivation (HM)	HM1	Using social media is fun.	(Venkatesh et al., 2012)
	HM2	Using social media is enjoyable.	
	HM3	Using social media is very entertaining.	
Price Value (PV)	PV1	Social media is reasonably priced.	(Venkatesh et al., 2012)
	PV2	Social media is a good value for the money.	
	PV3	At the current price, social media provides a good value.	
Habit (HT)	HT1	The use of social media has become a habit for me.	(Venkatesh et al., 2012)
	HT2	I became addicted to using social media.	
	HT3	I must use social media.	
Use (U)	U	Please choose your usage frequency for each of the following	(Venkatesh et al., 2012)
	U1	Facebook	
	U2	Intagram	
	U3	Facebook Messenger	
	U4	WhatsApp	
	U5	LinkedIn	
	U6	Tiktok	
	U7	Twitter	
	U8	Snapchat	
	U9	Other	
	LL1	During the COVID-19 isolation I felt in tune with people around me (virtually or physically).	(Russell et al., 1980)

UCLA Loneliness Scale (LL)	LL2	During the COVID-19 isolation I lacked companionship.	
	LL3	During the COVID-19 isolation I did not feel alone.	
	LL4	During the COVID-19 isolation I felt a part of a group of friends or coworkers.	
	LL5	During the COVID-19 isolation I was no longer close to anyone.	
	LL6	During the COVID-19 isolation I felt left out.	
	LL7	During the COVID-19 isolation I felt isolated from others (friends, family, coworkers, daily encounters).	
	LL8	During the COVID-19 isolation I could find companionship when I wanted it.	
Social Media Fatigue (SMF)	SMF1	I find it difficult to relax after continually using social media.	(Karasek, 1979)
	SMF2	After a session of social media use, I feel fatigued.	
	SMF3	Due to social media use, I feel exhausted.	
	SMF4	After using social media, it takes an effort to concentrate in my spare time.	
	SMF5	During social media use, I often feel too fatigued to perform other tasks well.	

APPENDIX B

	Moderating Effect	Age	EE	FC	HM	HT	LL	PE	PV	SI	SMF	SM Use
8. Use * 10.												
LL	**1**	-0.098	-0.018	-0.077	0.079	0.082	-0.072	0.093	0.075	0.058	0.007	0.232
AGE	-0.098	**1**	-0.111	0.033	-0.088	-0.276	-0.066	-0.126	-0.219	-0.119	-0.265	-0.269
EE_1	-0.053	-0.023	**0.856**	0.444	0.358	0.223	-0.019	0.254	0.21	0.074	-0.023	0.08
EE_2	0.011	-0.023	**0.752**	0.399	0.365	0.08	-0.005	0.298	0.258	0.042	-0.115	0.076
EE_3	-0.037	-0.092	**0.92**	0.495	0.42	0.245	-0.03	0.231	0.271	0.053	-0.019	0.08
EE_4	0.004	-0.183	**0.884**	0.448	0.325	0.221	-0.001	0.253	0.29	0.111	0.059	0.132
FC_1	-0.1	-0.029	0.47	**0.914**	0.296	0.041	-0.059	0.121	0.272	-0.012	-0.022	-0.099
FC_2	-0.027	0.048	0.566	**0.858**	0.38	0.105	-0.069	0.15	0.223	0.039	0.008	-0.082
FC_3	-0.037	-0.082	0.512	**0.558**	0.349	0.058	-0.06	0.15	0.288	0.105	-0.012	0.041
HM_1	0.074	-0.106	0.432	0.315	**0.934**	0.274	-0.137	0.431	0.393	0.204	-0.016	0.192
HM_2	0.09	-0.057	0.367	0.284	**0.93**	0.259	-0.098	0.392	0.328	0.2	-0.045	0.179
HM_3	0.054	-0.079	0.357	0.316	**0.886**	0.261	-0.081	0.233	0.247	0.112	0.062	0.201
HT_1	0.063	-0.206	0.367	0.25	0.333	**0.701**	-0.027	0.319	0.319	0.087	0.125	0.316
HT_2	0.035	-0.224	0.15	0.015	0.195	**0.873**	0.149	0.112	0.054	0.127	0.427	0.348
HT_3	0.098	-0.238	0.073	-0.052	0.19	**0.844**	0.204	0.279	0.085	0.263	0.329	0.391
LL_2	-0.112	-0.006	-0.002	-0.016	-0.059	0.236	**0.779**	-0.015	-0.085	0.142	0.219	0.138
LL_5	-0.029	-0.003	-0.05	-0.113	-0.049	0.074	**0.818**	-0.041	-0.099	0.05	0.215	0.099
LL_6	-0.02	-0.133	-0.037	-0.051	-0.167	0.083	**0.845**	-0.089	0	0.068	0.221	0.091
LL_7	-0.072	-0.07	0.049	-0.032	-0.097	0.069	**0.799**	-0.074	-0.036	0.064	0.2	0.048
PE_1	0.081	-0.129	0.339	0.174	0.381	0.299	-0.05	**0.97**	0.292	0.312	-0.04	0.205
PE_2	0.077	-0.084	0.127	0.008	0.258	0.181	-0.131	**0.728**	0.179	0.331	-0.051	0.046
PE_3	0.101	-0.048	0.021	-0.08	0.186	0.12	-0.021	**0.599**	0.11	0.342	-0.053	0.035

Table 7 - Crossloadings

	Moderating Effect	Age	EE	FC	HM	HT	LL	PE	PV	SI	SMF	SM Use
PV_1	0.015	-0.134	0.269	0.27	0.34	0.157	-0.017	0.163	**0.849**	0.09	0.056	0.083
PV_2	0.097	-0.214	0.272	0.208	0.311	0.182	-0.067	0.322	**0.949**	0.207	-0.003	0.152
PV_3	0.07	-0.243	0.303	0.194	0.32	0.134	-0.101	0.242	**0.913**	0.16	0.008	0.079
SI_1	0.064	-0.097	0.118	0.074	0.214	0.131	0.08	0.382	0.194	**0.871**	0.016	0.128
SI_2	0.059	-0.122	0.107	0.011	0.177	0.217	0.094	0.308	0.163	**0.931**	0.061	0.17
SI_3	0.041	-0.108	0.039	-0.095	0.141	0.2	0.099	0.32	0.151	**0.946**	0.031	0.207
SMF_1	-0.062	-0.133	0.006	0.024	0.059	0.313	0.202	0.002	-0.029	0.076	**0.831**	0.159
SMF_2	-0.023	-0.173	-0.005	-0.043	-0.057	0.279	0.239	-0.037	-0.027	0.031	**0.883**	0.199
SMF_3	0.018	-0.231	-0.022	-0.056	-0.042	0.314	0.235	-0.071	0.025	0.033	**0.913**	0.226
SMF_4	0.052	-0.31	-0.027	0.087	0.012	0.375	0.221	-0.056	0.068	0.011	**0.822**	0.231
SMF_5	0.016	-0.268	-0.005	-0.046	0.045	0.326	0.25	-0.04	0.013	0.039	**0.913**	0.24
Use_2	0.078	-0.151	0.087	0.001	0.192	0.347	0.034	0.081	0.009	0.05	0.1	**0.609**
Use_3	0.1	0.029	0.105	-0.078	0.036	0.151	0.115	0.175	0.127	0.133	0.04	**0.365**
Use_6	0.198	-0.199	0.029	-0.148	0.125	0.292	0.089	0.112	0.059	0.127	0.251	**0.762**
Use_7	0.103	-0.133	0.111	-0.058	0.076	0.13	0.056	0.112	0.114	0.154	0.024	**0.332**
Use_8	0.164	-0.35	0.045	-0.068	0.086	0.128	0.025	0.03	0.192	0.161	0.148	**0.433**

Table 8 - Crossloadings (continuation)