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**The impact of social media interaction on the emotions of individuals who create content for Instagram**

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# Abstract

So far, the literature has neglected to explore the negative impact of social media on content creators. The aim of this thesis is to find out which emotions are triggered by negative interaction on the social media platform Instagram on content creators and how they cope with it. The focus is on negative interaction which the content creators receive after contributing on Instagram e.g., with a post. This will answer the research questions of how social media interaction affects the emotional well-being of Instagram content creators and how content creators respond to this negative interaction. For this purpose, a mixed method approach was chosen. First, a pre-study was conducted using qualitative research. Through semi-structured interviews with 19 interview participants, stressors related to posting content on social media were identified. In addition, social media-specific coping strategies were found that content creators use to cope with the stress caused. Coping strategies deletion, offence, denial and blocking, which emerged as central were further used and explored in more detail in the main study. In this main study, a quantitative online survey generated 139 responses for evaluation. It was found which coping strategies are evoked by the emotions anger and sadness and how effective the use of these strategies is. The research shows that interaction with other social media users can trigger negative emotions in the content creator. Receiving less likes than expected is a significant contribution to this stress and emotional effect. Anger leads to destructive coping strategies whereas sadness leads to coping strategies that lead to further content. Furthermore, the use of coping strategies elicited by the emotion of anger does not lead to subsequent satisfaction of the content creator. In contrast, the application of the studied coping strategies in the case of sadness leads to satisfaction. With this investigation a first step was performed to fill the gap on how social media users cope with negative user interaction on the social media platform Instagram. Although the results offer many insights into the topic, the findings indicate potential for future research.

*Keywords: Social media, Instagram, (negative) user interaction, negative emotions, coping*

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# List of Abbreviations

| | |
|---|---|
| UGC | User Generated Content |
| Efc | Emotion-focused coping |
| Pfc | Problem-focused coping |
| WWW | World wide web |
| FOMO | Fear of missing out |
| SEM | Structural equation modeling |
| PLS | Partial least squares |

# 1  Introduction

Even in the last century, many letters were written to keep in touch with family and friends living to a greater distance. Today, things are different. Due to digitalisation, people all over the world are more connected than ever before. In 2022, almost 5.3 billion people worldwide already use the internet (Statista 2023), with a global population of around eight billion (ARD alpha 2023). This gives the possibility to share information and communicate with other people in real time, no matter where they are on the globe. A common medium to connect with others are social media platforms. As of October 2022, approximately 4.74 billion people use social media, representing 59.3% of the world's population and growing (Kepios 2022). Approximately 47% of 16-64 year olds use social media to stay in touch with family and friends (Kepios 2022). Despite the numerous benefits that social media can provide, they also bring disadvantages for their users.

Some studies report on the negative side of social media and how it can cause stress (Rodríguez-Hidalgo et al. 2020). Especially the young age group of 14-29 use social media platforms the most (ARD/ZDF-Forschungskommission 2022). Therefore, it is important to research in this area to learn more about the negative effects of social media and to educate and protect the youngest in society in particular. Hancock et al. (2019) found that social media use causes symptoms of depression and loneliness in adolescents. In their study, Barry et al. (2017) discovered a correlation between frequent social media use and symptoms of depression. Twenge et al. (2018) further concluded that such a correlation was specifically observed among girls. Additionally, other research conducted by Hunt et al. (2018) and Tromholt (2016) demonstrated that abstaining from social media or limiting its usage resulted in increased life satisfaction and reduced feelings of loneliness.

The majority of published studies mainly address negative aspects of social media as a whole. A detailed investigation on negative experiences of content creators has been neglected so far. However, it is important to gain a deeper understanding of them, as they shape the social media environment. Wolfers and Utz (2022) argue for a targeted study of the different functions of social media to identify the aspects that trigger stress in users and to investigate potential coping mechanisms. The primary reasons for being active on social media are social regocnition and approval of others (Utz et al. 2012). User of social media define themselves through the approval mechanisms of social media and use this to determine their personal worth and self-esteem (Burrow and Rainone 2017). One cause of negative emotions on social media has already been identified: unsatisfying recognition (Gahagan et al. 2016). Previously there is no research that takes comments and shares into account. Social media offer different forms of use: passive consumption by scrolling through the feed and looking at others content and active participation through creating own posts. Because of the differences in user behaviour, social media should be researched more comprehensively. To gain more insights, this research looks at the interaction and their influence on the emotional well-being of content creators. Since this research deals with the downside of social media, it focuses on negative emotions. In the context of negative emotions, research suggests a categorisation into high arousal (e.g., anger) and low arousal (e.g., sadness) emotions. In this context, this research defines negative interaction as the failure of meeting certain interaction expectations (e.g., a certain number of likes) and the presence of negative comments towards content creators.

Together with WhatsApp, Instagram is the third most used platform in the world with 2 billion monthly active users (Kepios 2022). A special characteristic of the platform is the focus on publishing images. It

is known for the egocentric presentation of consumer preferences. The platform provides filter and editing tools to create appealing pictures (Krause et al. 2019). Thus, Instagram is a good social media platform comprehending user responses and its effects towards self-presentation.

The coping theory of Folkman and Lazarus (1985) serves as the basis for this scientific work. The coping theory deals with how people cope with stress in different situations (Liang et al. 2019). Stress is defined as a relationship between a person and his*her environment in which the person's resources are exceeded. Thus, there is a disturbance between a person and their environment (Folkman and Lazarus 1985). In literature stress can be divided into distress and eustress. Distress refers to the appraisal of challenging situations and can be associated with negative emotions, tension and burnout (Lazarus 1993; Rodríguez et al. 2013). Eustress refers to the evaluation of demands as challenges. It can have a positive impact on physical health and well-being (Scheck et al. 1997; Simmons and Nelson 2007). This thesis refers exclusively to the negative form of stress - distress. The coping theory presents a transactional model that includes stressors (causes of stress), resources (structures already in place to buffer stress) and coping tools (strategies for dealing with stress). For example, a social media stressor can be a negative interaction with another user. A resource can be a good online friend. The person knows they can always rely on the friend and reaches out to them if they have a problem. The coping strategy would be to talk to the friend to relieve the stress that has arisen. The research focuses on the creation of content and the following interaction. A two-fold study were conducted. The pre-study gets deeper insights into the aspects of stressors, resources and coping tools. The main study focuses on negative emotions and how they arise of negative interactions after a content creator posted something. It was investigated whether negative emotions can occupy an equal position as stressors in the transactional model of Folkman and Lazarus (1985). Existing research neglect how distinct emotional states influence the coping behaviour of social media content creators. This thesis closes this gap by investigating how the negative emotions of "anger" (high arousal) and "sadness" (low arousal) result from negative user interaction and how they lead to different coping strategies.

The following two research questions are at the center of the investigation:

RQ1: How does social media interaction influence the emotional well-being of Instagram content creators?

RQ2: How do Instagram content creators react to negative interaction?

To answer the research questions, a mixed method approach was picked. Through the application of mixed method research, the advantages of qualitative and quantitative methods are combined to develop new theoretical perspectives. This can provide comprehensive insights into the research field (Venkatesh et al. 2016). First qualitative semi-structured interviews with a total of 19 interview partners were conducted. The target group of the interviews were active users of social media platforms, which participated ten males and nine females. The aim is to find out how users have reacted in the past when confronted with interactions on content they have posted. The aim of qualitative research is to find out what coping strategies content creators use after experiencing negative interaction. The coping strategies identified in the pre-study, are further used in the quantitative study. The aim of the quantitative study is to find out how the negative emotions anger and sadness affect which coping strategies and how effective they are.

The following thesis consists of seven parts. After the introduction, literary backgrounds and already existing research are presented in chapter 2, serving as a basis. The development as well as the definition of social media are covered. In the further course, different types and the prevalence of social media are presented. To get a better understanding of Instagram and its algorithm, this is explained separately. Then, emotions, the coping theory of Folkman and Lazarus (1985) and stress on social

media are explained. Subsequently chapter 3, deals with the qualitative pre-study. The exact procedure of the qualitative survey and the evaluation of the qualitative content analysis according to Mayring (2022) are explained in this chapter. After that, the results of the pre-study as well as their discussion is presented. Subsequently the quantitative main study is subject of chapter 4. At the beginning of this chapter, the quantitative research approach will be explained, followed by the research model of the present research. In the further course of chapter 4, the procedure of the quantitative survey, the evaluation as well as its results and discussion are presented. The general discussion of the pre-study and main studies results is covered in chapter 5: contribution to research and contribution practice. Chapter 6 deals with limtations of the present research and points out further research needs. Finally, the last chapter summarizes main research findings and draws a conclusion.

# 2 Literature Review

The following chapter 2 is the basis of this research and serves to provide up the necessary background understanding for further analysis. The first part of the literature review deals in depth with the topic of social media and the second part with emotions.

## 2.1 Social Media

In order to get deeper insights, the subsequent part focuses on social media in more detail. For this purpose, the origin, definition and spread of social media are examined more precise. In the further course, different forms of social media as well as various platforms of social media will be discussed. Since this research work refers to the platform Instagram, the platform and its algorithm will be described.

### 2.1.1 Development of social media

Social media have become indispensable in the age of digitalization. The origin of today's connected world can be traced back to 1969, when the United States Department of Defence was able to connect the growing system of military computers worldwide. In the early 1980s, the spread of the Internet accelerated due to the introduction of communication standards. This allowed academic institutions to connect to the internet for the first time (Glowniak 1998). As early as the 1970s, a computer technician presented the messaging system e-mail, which already represented interpersonal communication via internet (Großkortenhaus 2020). The origins of social media probably lie in the "Open Diary" invented by Bruce and Susan Abelson. In this early form of social networking website, online diarists were brought together in a community. In the same period, the term "weblog" appeared. Due to a blogger who changed "weblog" into the phrase "we blog", the term was abbreviated to "blog" short time later. In 1979, the "Usenet" was launched. It is an internet platform that allows internet users worldwide to exchange messages publicly. The emergence of social networking sites such as MySpace (2003) and Facebook (2004) was significantly influenced by the increasing availability of high-speed internet access. This development has shaped the term "social media" in its current meaning (Kaplan and Haenlein 2010).

### 2.1.2 Definition of social media

In literature, there is a consensus that the definition of social media is not as trivial as it seems. Numerous different definitions can be found. Definitions like: "digital media that allow users to interact with each other" (Pein 2020, p. 26) miss the core component of social media and highlight the misunderstandings in common usage. According to Pein (2020), the main point of social media is how people use and interact with the platforms. In the following, different definitions are considered.

Web 2.0 is mentioned in many different definitions of social media. Web 2.0 originates from Web 1.0, which is generally known as the world wide web (WWW). It is also called the web of documents because web pages are connected to each other by hyperlinks. Web 1.0 is seen as the core, which is extended by Web 2.0 to include the dimension of collaboration (Blumauer and Pellegrini 2009). Hettler (2010) relates the term social media to Web 2.0 and traces Web 2.0 back to the beginning of the WWW. People and changed user behaviour are the focus of Web 2.0. Tim Berners-Lee, the inventor of the WWW, planned a web in which every internet user could participate and contribute content passively or actively. Thus, Web 2.0 contains the original basic ideas of the internet: openness for participation, standardisation and freedom. It becomes a worldwide communication medium. Hettler (2010) defines social media as personally created content aimed at interaction, in form of text, pictures, video or audio. They are

published via online media for a specific group of addressees for a virtual community or for the general public. This is done using the underlying as well as supporting services and tools of Web 2.0. Technological, content-related and creative perspectives are combined in order to communicate in virtual communities. For example, online media or channels publish text-based information in weblogs, photos in photo platforms, videos in video portals and audio clips in podcasts.

Also, Kaplan and Haenlein (2010) include Web 2.0 in their definition of social media. Web 2.0 describes a major change in the way people use the internet. They emphasise that not only media companies can now publish content. With the development of newsrooms and social networks, the user, who previously only consumed content, became more and more a contributor to the medium. Thus, users were given the opportunity to create and share content themselves, turning consumers into prosumers. A Prosumer is a consumer who is also a producer and contributor (Grabs and Bannour 2013; Kaplan and Haenlein 2010). In the classical media like newspapers or TV, only one-to-many / unidirectional communication was possible. It's the communication in one direction. The advent of Web 2.0 changed this to many-to-many and bidirectional communication. All users could now communicate with each other independently of time and space. Web 2.0 is the combination of people and technology (Pein 2020).

In regards to the definition of social media, Kaplan and Haenlein (2010) state it is also important to explain the term User Generated Content (UGC). "UGC can be seen as the sum of all ways in which people make use of Social Media" (Kaplan and Haenlein 2010, p. 61). The term already became common in 2005 and is generally used to represent various types of media content shared publicly by end users (Kaplan and Haenlein 2010). In this context, Kaplan and Haenlein refer to the Organisation for Economic Cooperation and Development (OECD) and declare that UGC must fulfil three essential characteristics to fall into the category of UGC: First, the contribution must be shared on a website or social networking site open to the public and accessible to a certain group of users. Furthermore, it should have an appropriate level of creative effort. Lastly, the content should have been created without professional processes and procedures. The three requirements of UGC described above exclude content that is transmitted in e-mails or instant messages, pure replication of existing content and content created for a commercial purpose. Compared to the early 1980s, UGC differs in the today's world by various factors. These include technological factors, such as the increasing availability of broadband and hardware, economic factors, like the increasing availability of software to realise UGC, as well as social factors, like the development of generations of digital natives (Kaplan and Haenlein 2010). "Digital natives" are people who were born after 1980 into the digital age. They grow up with digital technologies, are connected with others and are familiar with the use of digital technologies (Palfrey and Gasser 2008). The clarification of the terms Web 2.0 and UGC form the basis for the definition of social media (Kaplan and Haenlein 2010). Thus Kaplan and Haenlein (2010, p. 61) define social media as "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content."

According to Pein (2020) social media adds the social aspect to the Web 2.0 equation presented above (Web 2.0 = people + technology). Tools like social networks map real relationships, such as friendships and acquaintances, virtually. In addition, they create digital forms of bonds with, for example, the follower or the fan. They arise through the exchange of created content. However, relationships can be entered into not only with people, but also with companies and brands. Pein (2020) defines social media as a term that describes the interactive virtual mapping of relationships and the accompanying digital communication that takes place on the basis of Web 2.0 technologies such as social networks, blogs, forums and multimedia platforms.

Similar to Kaplan and Haenlein (2010) and Hettler (2010), Grabs and Bannour (2013) relate the definition of social media to Web 2.0. It gives all users the possibility to create content and share it on different

platforms. That's why they name the internet "participate web". Like Pein (2020), Grabs and Bannour (2013) add a social component to their definition of social media. People share, inform, and communicate with other social media users. They have a special kind of relationship with each other through social networks like Facebook, Instagram or Twitter. The content creates interaction and thus gets a social component. Those platforms are just a tool to create communication and build relationships (Grabs and Bannour 2013).

Ellison and Vitak (2015) describe social media as independent online platforms characterised by several functions, especially peer-to-peer communication. The term includes, for example, social network and microblogging sites, content sharing and online dating sites. Thus, social media is a new tool to achieve goals, like finding a restaurant or a life partner. Schmidt (2013) adds that the characteristics of easily editing and publishing various content online, combined with easier exchange with others, help to frame the notion of social media. Social media are bringing about a change in mass media and interpersonal communication.

In their definition of social media, Ellison and Vitak (2015) include several functions of the online platforms. Karahanna et al. (2018) mention different functions of social media, called social media affordances. The term affordances refers to the wide range of actions enabled by the features of social media platforms, to which the user is invited to use. In their research, they identified the most popular applications for each social media type and the different features for each application. This resulted in the following social media affordances: self-presentation, content sharing, interactivity, presence signaling, relationship formation, group management, browsing others' content, meta-voicing, communication, collaboration, competition and sourcing (Table 1).

Self-presentation in a social media context is the feature that allows individuals to showcase and disclose information about themselves. It is enabled, for example, by posting content on Facebook, Instagram or Twitter. The capability to distribute and exchange content with others that is not related to oneself is provided by the feature of content sharing in social media. It is promoted by the features uploading videos on YouTube or pictures on Instagram. The affordance interactivity refers to the feature that allows users to modify and navigate their digital environment in real time. This is possible, for example, in a very specific form of social media, the virtual game worlds such as World of Warcraft. The interactivity is expressed by moving around in the virtual environment. Presence signalling is to share or indicate the presence of users, for example by moving around in virtual social worlds. Another function of social media platforms is relationship formation through following on Instagram or subscribing on YouTube for example. Through the function of groups, it is possible to connect with others with same interests, as well as forming groups and online communities. One popular feature is browsing through others' content by going to the profiles of other Instagram users. Meta-voicing describes the ability to participate in conversations by responding to the activities of others. Commenting or liking supports this function. Chatting or commenting allows people to communicate and share directly with others. A platform like Wikipedia offers users the opportunity to collaborate. This is possible through functions such as adding, deleting or editing content. Within virtual game worlds like World of Warcraft, users can compete with others through completing tasks. In social media, it is possible to sourcing. Through crowdsourcing platforms, requests for resources or money can be created or fulfilled (Karahanna et al. 2018).

| Affordance | Explanation |
|---|---|
| Self-presentation | Means that users can share and show information about themselves in social media environment. |
| Content sharing | Means that users can share and spread content that is not about themselves with others in social media environment. |
| Interactivity | Means that users can actively engage with and change their virtual environment in real-time. |
| Presence signaling | Means that users can show if they are available or find out if other users are online and reachable. |
| Relationship formation | Means that users can establish connections and build relationships with other users in social media environment. |
| Group management | Means that users can create groups and online communities, have control over their administration and management. |
| Browsing others' content | Means that users can get notifications that draw their attention to content shared by others, and they can view the content provided by others in a social media environment. |
| Meta-voicing | Means that users can actively participate in online conversations by reacting to the presence, profiles, content, and activities of others, and they can also see how others react to their own presence, profiles, content, and activities. |
| Communication | Means that users can directly talk to each other in social media. |
| Collaboration | Means that users can work together with each other to create content in social media. |
| Competition | Means that users can challenge each other, either on an individual basis or in groups, to see who performs better or achieves higher results. |
| Sourcing | Means that users can either make a request for resources or funds or fulfill someone else's request for resources or funds. |

**Table 1: Social media affordances and their explanation (based on: Karahanna et al. 2018, p. 744)**

### 2.1.3   Forms of social media

The platforms in the social web create the possibility for many-to-many communication. Users publish UGC through which permanent and unlimited exchange with other users takes place (Grabs and Bannour 2013). In literature social media can be devided into different forms: Weblogs, Microblogs, Network platforms, Wikis, Multimedia platforms / Content communities, Social bookmarks, Rating sites, Virtual game worlds and Virtual social worlds. These types are explained in more detail below.

#### 2.1.3.1   Weblogs

Weblogs are the earliest form of social media (Kaplan and Haenlein 2010). The word is composed of "web" and "log", short for diary or logbook (Hettler 2010). They are analogue to personal web pages on

social media. In blogs, authors document their experiences, use it as a personal diary, share all kinds of information or their views. The individual entries are sorted backwards chronologically so that the most recent contribution is at the top. Blogs are often edited by one person, but the entries can be commented on (Kaplan and Haenlein 2010). This makes it possible for individual conversations and mutual references to form within an entry or blog. In terms of content, blogs vary a lot. They have a wide range from everyday narratives to literary blogs, to specialised blogs e.g., reporting from professional fields of expertise (Schmidt 2013).

### 2.1.3.2 Microblogs

Microblogs are a specific kind of blog, contain only short text messages similar to Short Message Service (SMS). Depending on the service, the number of characters is limited to 140-200 characters. The posts are public or accessible for private user. Like in a blog, the posts are displayed in a downward chronological list (Hettler 2010). One of the best-known microblogs is Twitter. On this platform, the posts are called "tweets". As with classical blogs, the topics are freely selectable. The profiles of the individual users can be used to view their published "tweets". Like 2.1.3.3 Network platforms, one can network with others by becoming a "follower" on Twitter. This means that another person can be substibed to and be informed of their posts in real time. All tweets of the people a user follows are bundled and listed in the so-called "timeline" (Schmidt 2013). Twitter is among 556.0 million users around the world the most popular microblog (Datareportal 2023d). On Twitter users have the opportunity to like others content, incorporate a tweet or retweet that means to share a tweet of another person. As mentioned in 2.1.3.5 Multimedia platforms / Content Communities, particularly on microblogs like Twitter, the limited number of characters is a major factor (Coelho et al. 2016).

### 2.1.3.3 Network platforms

Network platforms are also called "online communities" or "social networks". As a user, one registers on a platform and provide information about oneself. This includes, for example, name, interests or professional skills (Hettler 2010). Contact information and a picture are also part of the personal profile (Kaplan and Haenlein 2010). Based on this profile, users can get in touch with each other and interact. The "relationships" must be confirmed by a click and are called "friends", "contacts" or "followers". You can exchange information with your contacts or even strangers via direct messages or in groups. One's own network can be expanded at any time. The best-known networking platform is Facebook. Platforms like XING and LinkedIn also belong to this form of social media (Hettler 2010; Kaplan and Haenlein 2010; Schmidt 2013). The social networking platform Facebook has 2.963 billion users around the world. It is the platform with the most users worldwide (Datareportal 2023b). As already explained above as a user, an account must be created to provide informations about oneself and to connect with others (Hettler 2010). If posting content or interacting with content of others, users can participate via comments, likes or shares. On the platform groups, pages, events and advertisements can be created. To communicate with others, more than one user can be added to a private conversation. The platform is not only available via web but also via application (Coelho et al. 2016). For private communication with others, Facebook provides an extra application: "Facebook Messenger" (931.0 million users around the world). The average age of Facebook users is 25 to 34 years (Datareportal 2023a). Another social networking platform is LinkedIn, which has 900.2 million users around the world. As on Facebook the average age of the users is 25 to 34 years (Datareportal 2023d). Within the platform the user is able to comment, like or share others content. LinkedIn is a business social networking platform, thus relationships are mainly based on professional contacts. The profiles of the individual users also contain professional information. Furthermore, it is possible participate and communicate in groups (Coelho et al. 2016).

#### 2.1.3.4 Wikis

Originally, the term "wiki" comes from Hawaiian and means "fast". Since around the mid-1990s, the term has been used for software programmes that allow websites to be edited easily, without programming knowledge. Every visitor is able to change, delete or add new entries. These changes are immediately visible. A well-known example of such social media platform is the online encyclopaedia "Wikipedia" (Hettler 2010; Schmidt 2013).

#### 2.1.3.5 Multimedia platforms / Content Communities

The main goal of multimedia platforms and content communities is sharing media content with other users. They include a large number of different types of media, for example texts, photos or videos (Kaplan and Haenlein 2010). In contrast to networking platforms, multimedia platforms and content communities do not focus on individual profiles. To post some content the user does not have to create a profil. Thus, these platforms do not focus on individual profiles but on individual content. Users can react to content posted by other users, for example in the form of comments. Examples of such platforms are YouTube, Flickr as well as Soundcloud, whose platforms revolve around video clips, photos and pieces of music (Schmidt 2013). The most popular multimedia platform among 2.514 billion users worldwide is YouTube (Datareportal 2023e). On this multimedia platform users can share videos with others. Next, user can like, dislike, share or comment the posts. Own videos can be produced and than be interacted by others. Furthermore it is possible to enroll in content channels (Coelho et al. 2016). As on Facebook, the average age of the users is 25 to 34 years (Datareportal 2023e).

#### 2.1.3.6 Social Bookmarks

Social bookmarking services, like wikis, enable the shared as well as parallel creation of contributions by many users. Internet references, so-called bookmarks, are recorded. This makes it possible to create collections of links, manage them on the web and access them from anywhere. The best-known social bookmarking web service is Delicious. It allows the saving and sharing of web bookmarks (Hettler 2010; Kaplan and Haenlein 2010).

#### 2.1.3.7 Rating sites

Another type of social media are rating sites (Grabs and Bannour 2013). This allows people to get information about companies and their services. A well-known platform is Holidaycheck.de. Users can share their own experiences regarding certain services on this rating site. In addition, readers can rate reviews of others as "helpful". This contributes to regulate one-sided ratings (Hettler 2010).

#### 2.1.3.8 Virtual game worlds

Kaplan and Haenlein (2010) add virtual worlds to the forms of social media. The platforms recreate a three-dimensional environment. Each user has a personalised avatar to interact with others. Within this world, certain rules exist which users must follow. A popular example of a virtual game world is "World of Warcraft".

#### 2.1.3.9 Virtual social worlds

Another group of virtual worlds are the virtual social worlds. In contrast to virtual game worlds, there are no rules that must be followed. This means that behaviour can be freely chosen. Also here, they act in avatars and live in a three-dimensional environment. It has been observed that with increasing intensity of use, the users of the virtual social worlds show behaviour similar to that in real life (Kaplan and Haenlein 2010).

## 2.1.4   Prevalence of social media

At the beginning of 2023, 4.76 billion social media users were ascertained worldwide representing approximately 59.4% of the total population. The number of users increased about 137 million users in the past year, which means an increase of 3%. Converted, more than 4 users are added every second. An average consumer use circa 7.2 different platforms per month. 93.4% of the total amount of internet users also use some kind of social media (Kepios 2022). During one day the average usage time of social media was just under 2.5 hours in 2018 worldwide. The social media users between 16 and 24 years use social media the most with 3 hours per day on average (Top Media Advertising n.d.).

Since 2022, there are seven social media platforms with more than one billion monthly active users. Meta owns three of these seven platforms. The most used platform worldwide with 2,934 billion monthly active users is Facebook, followed by YouTube with 2,515 billion. WhatsApp counts about 2 billion monthly active users (Kepios 2022). It is interesting to note that high user numbers do not correspond to the users preferences of platforms. Figure 1 shows the most popular social media platforms on a global level. It is striking that although the most used platform is Facebook, then the most popular platform is WhatsApp, followed by Instagram. Facebook is only on third place in this ranking. However, platform preferences differ greatly by age and gender. Younger people prefer to use Instagram, while older generations prefer Facebook and WhatsApp (Kepios 2022). As can be seen in Figure 2, there are different reasons why people use social media platforms. These reasons vary according to the country of origin, age group and the platform. Most people (47.1%) use social media to stay in touch with family and friends. Other common reasons for using social media include filling free time (36.2%), reading new stories (34.2%) or finding content such as articles and videos (30.3%). It is noticeable that posting content from one´s own life counts to the less common motivations (21.3%). Different platforms are used for different reasons. While Facebook users like to send messages to friends and family via the platform, this function finds little interest on TikTok, for example. TikTok users use the platform to consume funny and entertaining videos. Instagram and Snapchat are primarily used to share one's own content with others (Kepios 2022).
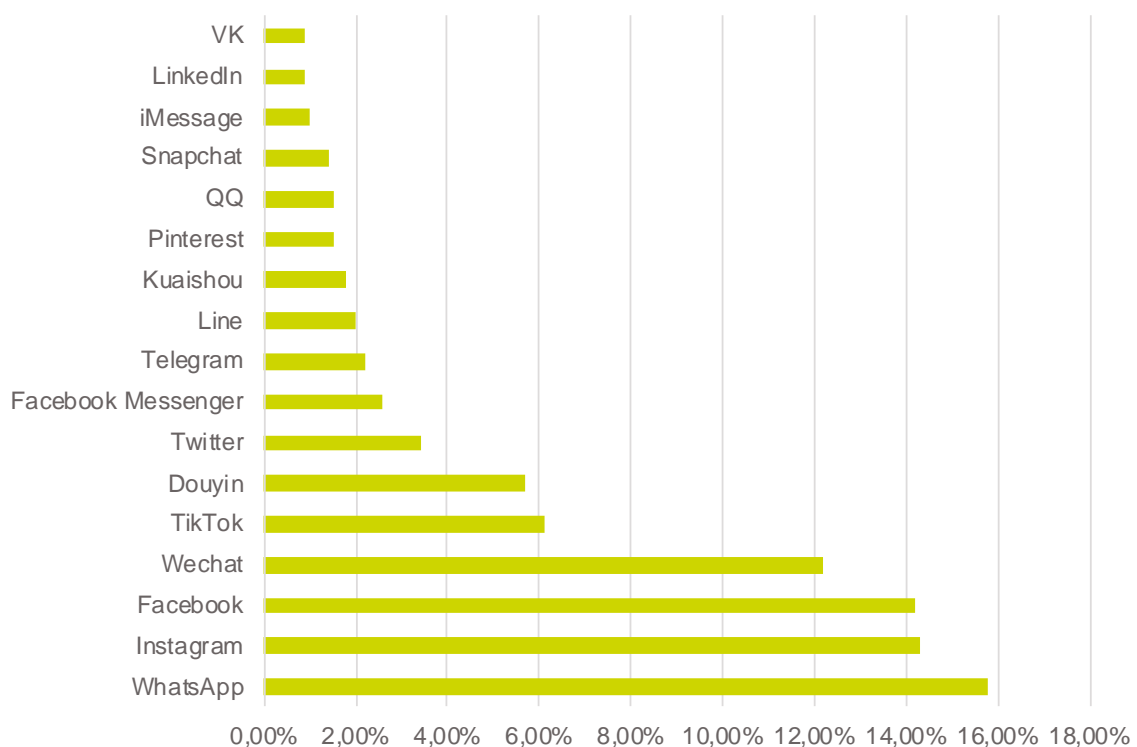


**Figure 1: Favourite social media platforms among 16-64 year olds (based on: Kepios 2022)**
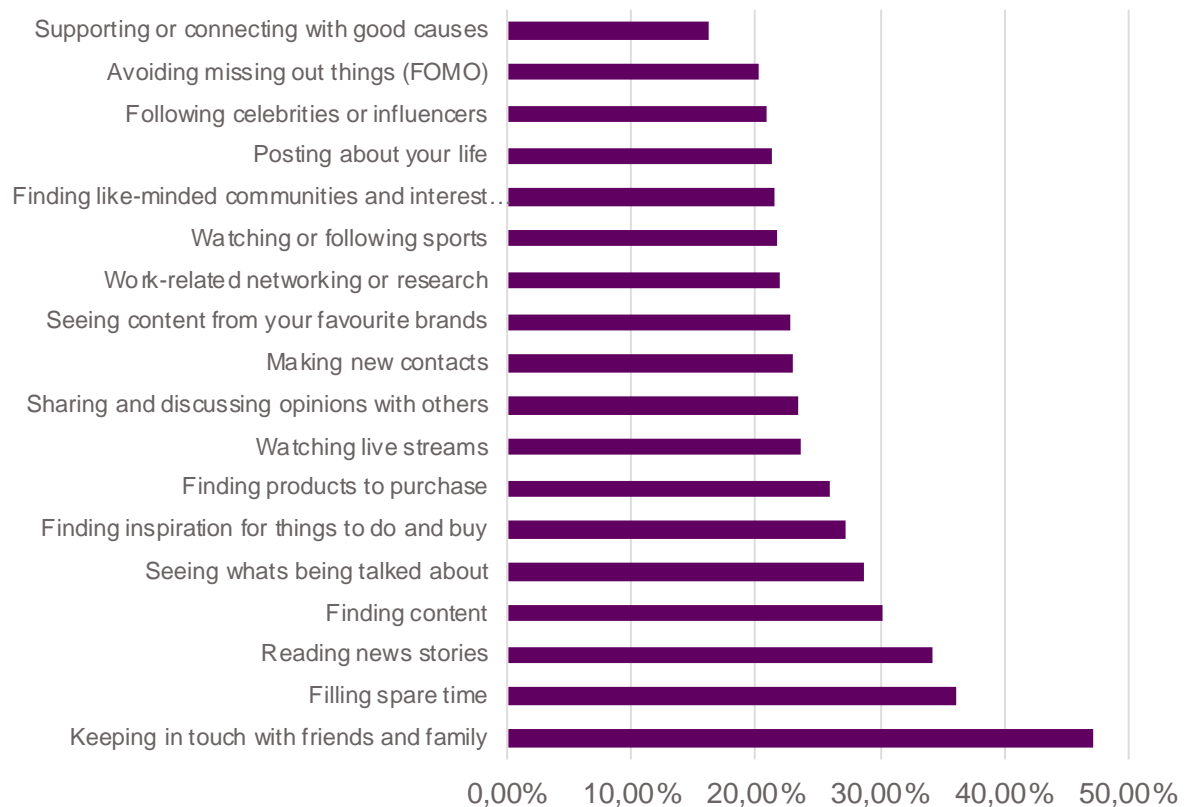
**Figure 2: Main reasons for social media use among 16-64 year olds (based on: Kepios 2022)**

The society was influenced and shaped by classical media like newspapers and television for a long time. The development of the internet is significantly changing the consumption of classical media. They are struggle to retain their target audience. While television does not show a strong decline, the print media report a loss of about 25% for newspapers and 19% for magazines between 2010 and 2014. As a result, they are reporting huge drops in sales (Top Media Advertising n.d.). Figure 3 shows which media an average person uses per day and with what intensity. At almost seven hours, the average consumption of online content via computer or mobile phone is considerable. Linear television, on the other hand, is used less than a third of the time. Radio, game consoles and print media are only used for less than one hour per day. Figure 4 shows how long online media are used per person per day. Social media account for the largest share of the average internet usage time. With an average daily use of almost 2.5 hours, the use of social media exceeds that of television. The remaining forms of online media are all used for about one hour each. As can be seen in Figure 3, the internet and television channels are at the forefront of mass media consumption, while the internet accounts for 73% of total consumption. Social media has drastically changed news consumption in our society. They are used get information about diffentent kinds of news as well as the users social environment at the same time. Many news services have already adapted to this change and created a social media profile to provide the population with news (Top Media Advertising n.d.).

## Share of media time



- Online 06:45
- Broadcast TV 01:54
- Broadcast Radio 00:53
- Games Consoles 00:57
- Print Press 00:40
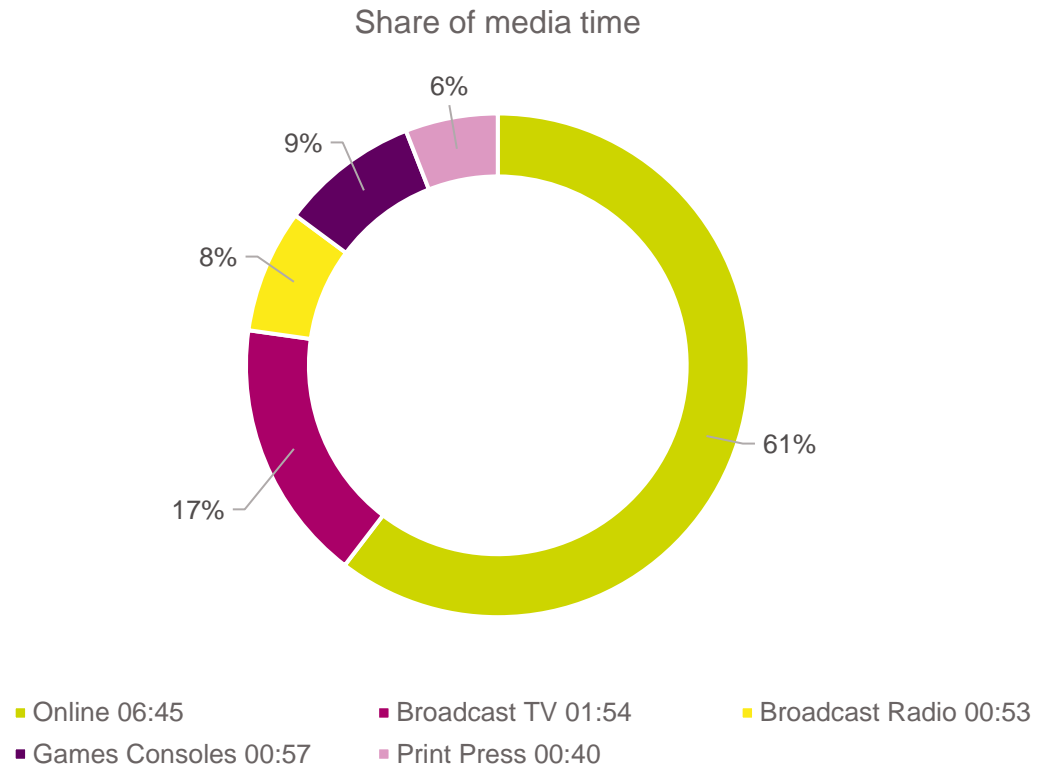
**Figure 3: Breakdown of average media consumption per person per day (based on: Top Media Advertising n.d.)**

## Share of online media time



- Online TV 01:10
- Music Streaming Services 01:14
- Online Press 00:59
- Social Media 02:20
- Other 01:00
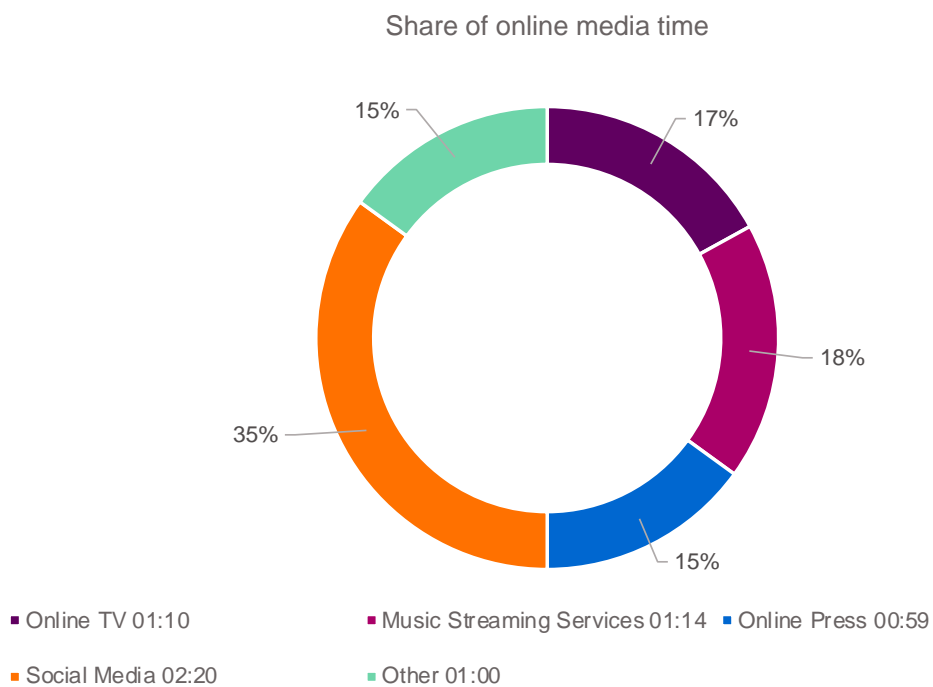
**Figure 4: Breakdown of average online media consumption per person der day (based on: Top Media Advertising n.d.)**

In their study, Kaczinski et al. (2019) discover that in Germany a total amount of 93% of the population has internet access. On average, Germans spend four hours and 18 minutes of their free time on the internet in 2018. This value has been stable since 2014 (4 hours and 35 minutes). Among the population, the value of internet usage intensity fluctuates strongly. Since 2014 the average usage of the internet of 18-24 year olds is strongly increased. In the remaining age groups, consumption has fallen. Figure 5 shows the time spent on the internet on an average weekday by age in 2018 in Germany. With almost 6.4 hours, the youngest age group spends almost twice as much time on the internet as the over 55 years old. The majority of the population spends less time on the internet at weekends than during the week. The youngest age group, on the other hand, spends more time on the internet at the weekend than during the week, with seven hours. This is about half of the day spent in an awake state. Just 5% of the surveyed persons are online for less than an hour a day. This low consumption can not be attributed to any particular age group, as it is common across different groups of the population. Surfing on mobile devices is more popular than ever before. Germans spend 40.4% of their time on the internet via mobile devices such as smartphones or tablets. This corresponds to an increase of around 50% since 2014. It is striking that more and more people own multiple devices. In 2014, the average person owned around 2.5 devices, in 2018 it is already 2.8 devices (Kaczinski et al. 2019).
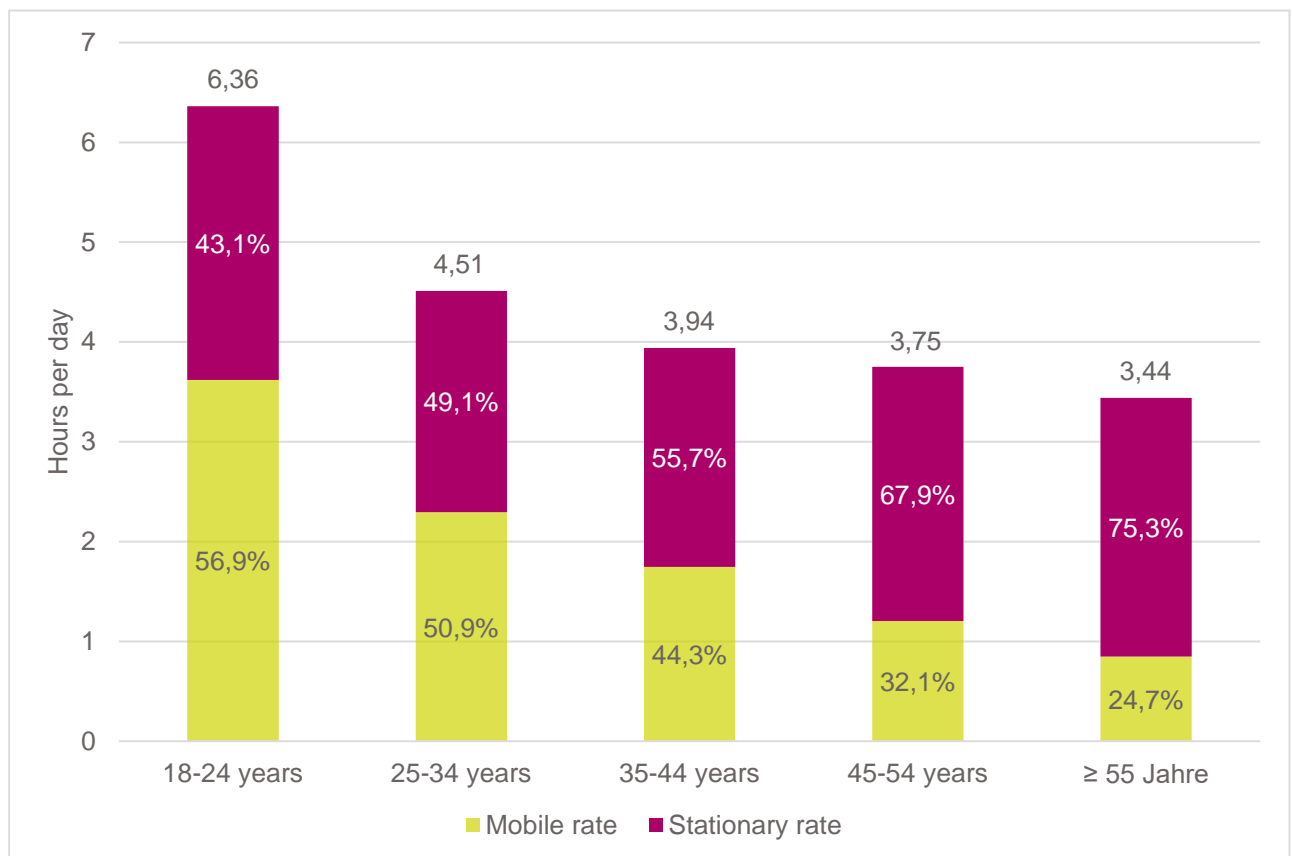


**Figure 5: Time spent on the internet on an average weekday by age in 2018 in Germany (based on: Kaczinski et al. 2019, p. 14)**

Almost the whole german society uses social media in 2019. Social media users are online on four different platforms every day. The most popular platforms are WhatsApp, Facebook, YouTube and Instagram. On average, they spend one hour and 18 minutes on those platforms, which accounts for one third of the total time spent on the internet. 99.7% of young adults (between 18 and 24 years) use social media. On average, they spend three hours on social media and use seven different platforms. Only about 7% of all respondents do not use a single social media platform. Figure 6 shows the share of

social media use of internet use and other activities by age groups and the total population. Looking at different age groups, clear differences can be seen. While the youngest generation of the sample uses social media for three hours a day, the next older group is active online just over an hour. It is striking that pupils use their additional free time for social media. They are online one hour more than their peers who are working or studying. Almost half of the time spent on the internet is spent on social media by young adults, while the older the generation, the less time is spent on social media (Kaczinski et al. 2019).



18-24 years

Internet:
6h 22min

Including 3h on
social media

- Working / school time (est. 8h)    - Sleeping time (est. 8h)
- Other                              - Internet usage
- Social media usage



Total population

Internet:
4h 18min

Including 1h 18min
on social media

- Working / school time (est. 8h)    - Sleeping time (est. 8h)
- Other                              - Internet usage
- Social media usage
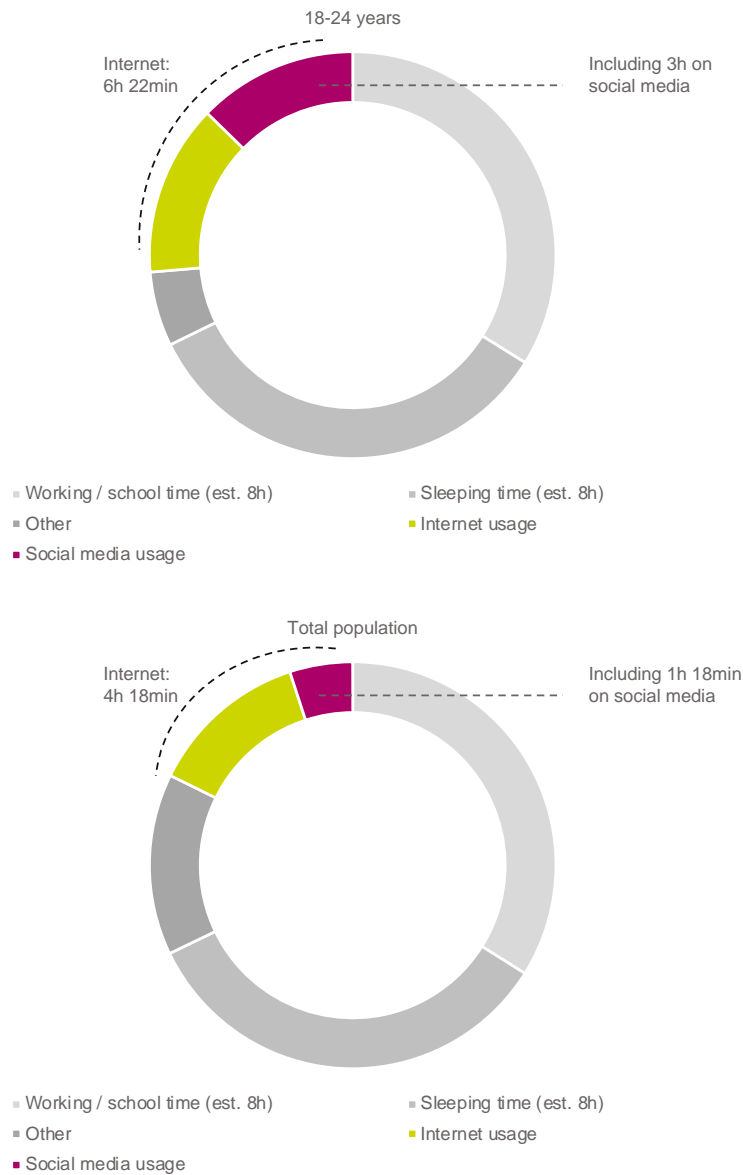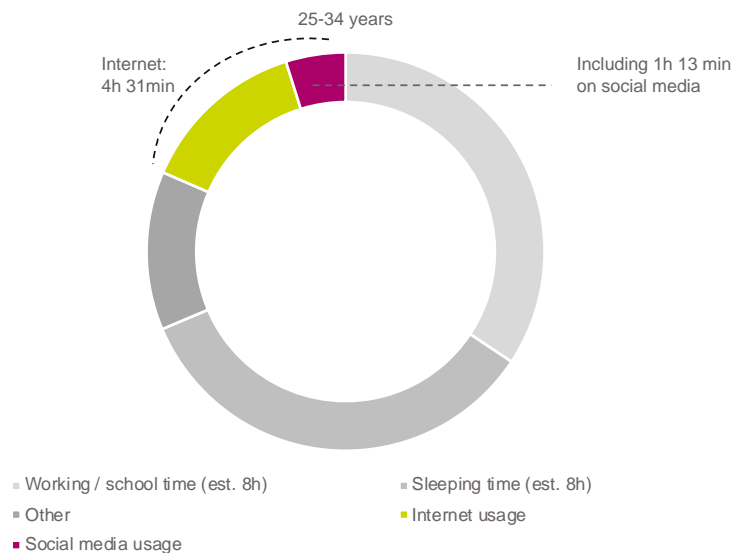
**Figure 6: Share of social media use of internet use and other activities by age groups and the total population (based on: Kaczinski et al. 2019, p. 23)**

## 2.1.5 Instagram and its algorithm

Based on the explanation of Hettler (2010), Schmidt (2013) and Kaplan and Haenlein (2010) the social media platform Instagram can be included to network platforms with a focus on online photo-sharing. The platform is mainly used on smartphones or tablets via app (Coelho et al. 2016). As already explained in 2.1.3.3 Network platforms a user has to create a profile. With this profile, social media users can connect with others. Instagram gives the possibility to post content in the main feed, through stories, reels or IGTV. With direct messages and video calls, users even have communication tools at their disposal. Furthermore, Instagram's sharing of photos and videos is strongly linked with receiving feedback and interaction through likes and comments (Stsiampkouskaya et al. 2021). So, people that are connected via these networks can interact with the posted content of other users. With a like an approval to the post is given. Comments can be used to reply to the post. To start a private conversation with the content creator or others, content can also be shared via private message. Likes and comments are public, i.e., visible to the sender and the other users. Shares are private, i.e., only visible to the people involved. When speaking of interaction in this research work, interaction in form of likes, comments or shares is meant. Around the world approximately 1.318 billion people use Instagram. The 18-24 age range uses Instagram the most (Datareportal 2023c). 18-24 year olds are not only the most represented on the platform, they are also the group with the largest networking size as can be seen in Figure 7 (Kaczinski et al. 2019, p. 33). In their study Lee et al. (2015) found out that people utilize Instagram for several reasons, including engaging with other users, documenting their life and memories, expressing and showcasing their personalities, seeking respite from negative experiences, unwinding, and seeking entertainment. The use of social media platforms like Instagram is strongly influenced by algorithms. Put simply, algorithms are generally instructions to solve a problem. They are used regularly in everyday life, for example in predicting the most efficient travel route. Algorithms are therefore computer procedures that consist of a unique description of steps to solve a task or a problem. Algorithms on social media platforms are compiled from user data, such as behaviour on the platforms (likes, comments written, posts shared or search terms) and other data such as age and occupation. They are constantly changing and adapting (Norström et al. 2020). More precisely, they assess each post through a relevance model. In this way, the algorithms try to predict whether the post is relevant and helps to keep the users on the platform. Posts with the greatest relevance are displayed on the user's homepage. Relevance is evaluated by three different factors: First, by the post itself, how recent it is, whether it includes

an image or video, and by the overall interaction, i.e., how many likes the post has, for example. The second factor is the creator of the post. It is based on previous interactions with the author and the strength of the connection with them. The third factor is the main user. Here it depends on which posts were found interesting in the past, how often and how heavily the platform is used (Li et al. 2019).
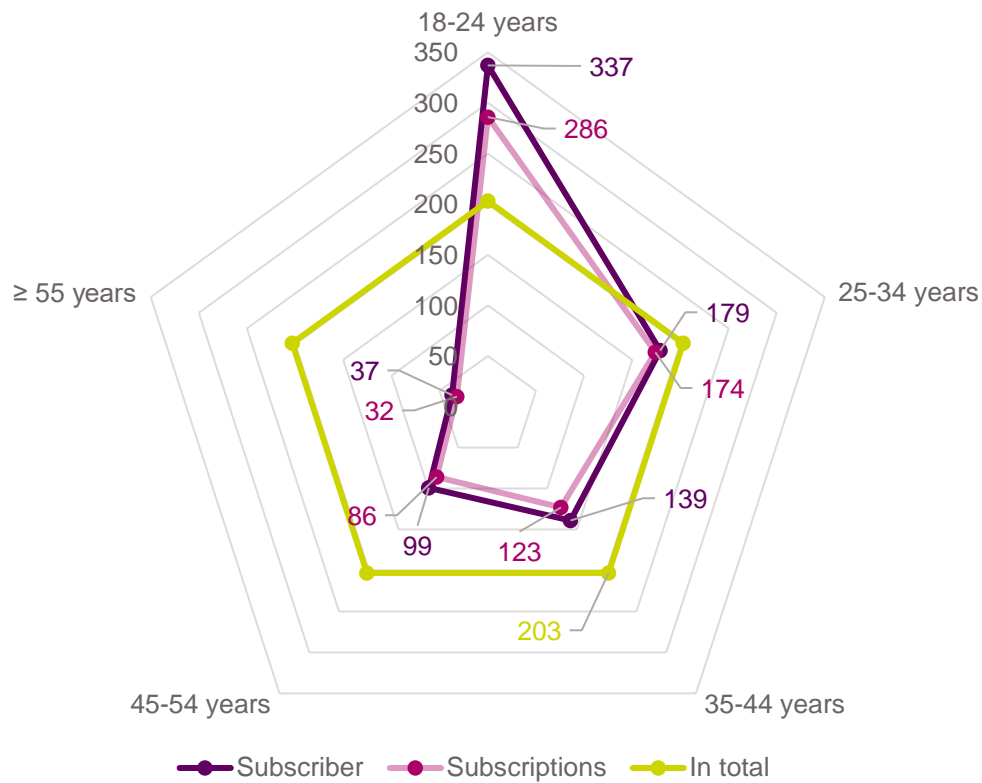


**Figure 7: Network sizes of Instagram users by age (based on: Kaczinski et al. 2019, p. 33)**

## 2.2 Emotions

In order to get deeper insights, the subsequent part focuses on emotions in more detail. For this purpose, the definition, the theory model of emotion regulation and coping and stress on social media are examined more precise.

### 2.2.1 Definition of emotions

According to Gazzaniga et al. (2017) emotions are immediate negative or positive reactions to events in a person's environment or thoughts. They interfere with what is happening at that moment and can trigger changes in thinking and behaviour. Emotions consist of three components: a physiological response (e.g., increase in heart rate), behavioural response (e.g., opening the mouth) and a feeling based on a cognitive evaluation of the situation (e.g., I am afraid.). A feeling is the subjective experience of an emotion, such as the feeling of fear. A mood is a description of a long-lasting emotional state. There is no identifiable trigger for them. Moods influence thinking and behaviour. People who are in a good or bad mood tent to not knowing why they feel that way. Mood is therefore the sensation of feeling a certain way.

In literature, a distinction is made between primary and secondary emotions. Basic emotions are universel (cross-culturally identical), evolutionary adaptive and innate. There are seven different basic emotions: anger, fear, surprise, sadness, disgust, contempt and happiness. The reaction to something getting in the way of achieving a goal people care about is called anger. Anger can also be triggered when someone tries to cause harm to oneself or someone a person cares about, either physically or emotionally. Besides wanting to eliminate the obstacle or prevent the harm, anger often includes a desire to cause harm to the responsible. Fear occurs when there is a threat of harm, either physically or psychologically. It triggers instincts to either freeze in place or run away. Frequently, fear can also lead to the emergence of anger. Surprise is how people react when something unexpected happens. It is the shortest-lasting emotion. Sadness is a reaction to when people lose something or someone that they feel strongly attached to. The most common example is when people experience the death of a beloved child, parent, or spouse. Sadness often brings a sense of acceptance, but it can also transform into anguish, which involves restlessness and expressing distress about the loss. Eventually, it may return to a state of sadness once again. Disgust is the feeling of being strongly repelled by something people see, smell, or taste. It can also be triggered by people whose actions are highly offensive or by ideas that are repulsive. Contempt is the feeling of considering oneself morally superior to another person. Happiness refers to the positive emotions that people enjoy and actively seek. There are various enjoyable emotions, each triggered by different events, accompanied by different signals, and likely leading to different behaviors (Ekman and Cordaro 2011). Secondary emotions are a mix of basic emotions, for example: remorse, guilt, gloating, shame, love, bitterness and envy (Ekman and Cordaro 2011; Gazzaniga et al. 2017).

In the circumplex model (Figure 8) emotions are categorized in different dimensions: valence and arousal. Valence describes how positive or negative the emotions are. Arousal indicates how arousing the emotions are. The term arousal describes the physiological activation (e.g., increased brain activity) or increased autonomic reactions (e.g., increased sweating). If someone finds money on the street, this situation excites the person, which is why one assigns positive valence to it. In addition, the situation can trigger arousal. Finding a lottery ticket worth over a million euros is likely to increase feelings of happiness. The situation is further classified at the positive end of the valence scale. Equally, the arousal will increase. Emotions can be devided into low-arousal and high-arousal. As mentioned in the introduction anger is a high-arousal emotion and sadness low-arousal. There are not only negative high- or low-arousal emotions but also positive ones. (Gazzaniga et al. 2017).
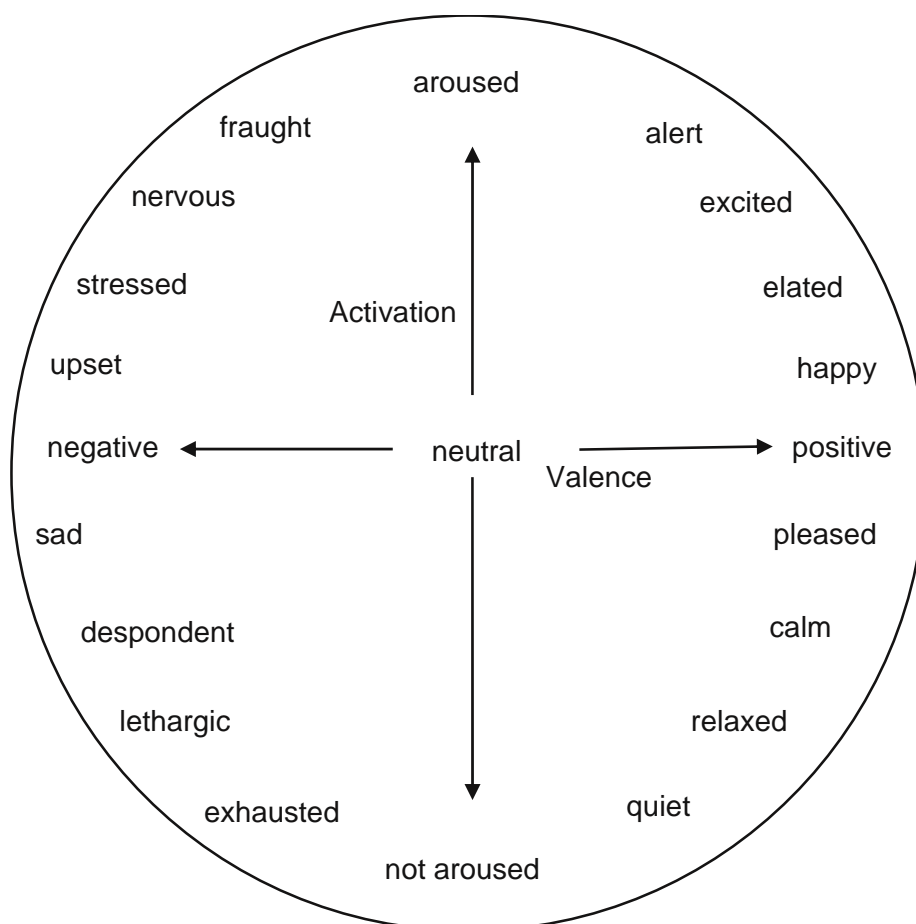
**Figure 8: Circumplex model (based on: Gazzaniga et al. 2017, p. 556)**

## *2.2.2 Theory and model of emotion regulation and coping*

As previously stated, the coping model developed by Folkman and Lazarus (1985) is a well-established framework in literature. Hence, it serves as the foundation for this thesis, which aims to examine coping mechanisms for stress induced by social media, especially by Instagram. The model elucidates the strategies that individuals use to deal with stressful situations in a broad sense. Stress is defined as "[…] a relationship between the person and the environment that is appraised by the person as relevant to his or her well-being and in which the person's resources are taxed or exceeded" (Folkman and Lazarus 1985, p. 152). Consequently, there exists a disrupted relationship between the individual and their environment, as proposed by Folkman and Lazarus (1985). The stress coping model comprises two key stages that necessitate further elaboration: cognitive appraisal and coping itself.

In the first process of cognitive appraisal, individuals evaluate for themselves whether they perceive a situation as stressful and how it affects their own well-being (Folkman et al. 1986a). Furthermore, the first phase of cognitive appraisal can be divided into primary and secondary evaluation. Primary appraisal involves thinking about what is at stake, whereas secondary appraisal involves thinking about harm reduction (Folkman et al. 1986b). As long as stressors and resources are balanced in this phase, a situation is perceived as stress-free. If this balance is out of kilter, the person expiences stress. The imbalance is illustrated by the seesaw model in Figure 9 created by Wolfers and Utz (2022), which depicts Lazarus and Folkman's stress coping model concerning social media.

In the second phase of the model, the individual attempts to handle and cope the experienced stress. Coping is defined as "cognitive and behavioural efforts to manage (reduce, minimize, master, or tolerate) the internal and external demands of the person-environment transaction that is appraised as taxing or

exceeding the person's resources" (Folkman et al. 1986b, p. 572). Thus, strategies are sought to reduce and ultimately cope the stress that has arisen.

To cope with stress, Lazarus and Folkman (1984) cite two different approaches: the problem-focused (pfc) and the emotion-focused coping (efc). The pfc approach looks at the cause of the stress and tries to identify and deal with it. The individual tries to analyse and understand the situation that triggered the stress to deal with the cause and to find a solution. Whereas in the efc approach, individuals merely try to soothe the emotions caused by a stressful situation (Folkman and Lazarus 1985). Thus, it can be said that efc does not deal with the problem itself, but only with the feelings related to the stressful situation. Each person acts differently in certain situations, which is why one or even both approaches are being used.

Research talks about a co-existence of both strategies and a possible influence of the efc on the pfc. For instance, the pfc strategy can be applied after the efc strategy has already been used. Thus, the efc can support the pfc by restoring emotional stability through regulation of emotions, which would hinder the pfc. Conversely, previously performed efc may reduce the motivation to cope through pfc, as emotional stability may already have been established (Folkman and Lazarus 1985; Lazarus and Folkman 1984).

Wolfers and Utz (2022) have depicted the transactional model of stress and coping in relation to social media through an illustration in Figure 9. The figure highlights the role of social media as a stressor, resource, and coping tool in the coping process. During the first phase of the coping theory, social media plays a crucial part and can act as both a stressor and resource. It has the potential to modify the balance between stressors and resources, resulting in an increase or reduction of stress. Furthermore, if stress has already arisen, social media can function as a coping tool in both efc and pfc during the second phase. Thus, social media can be the cause of stress but can also function as a medium to cope with it (Wolfers and Utz 2022).
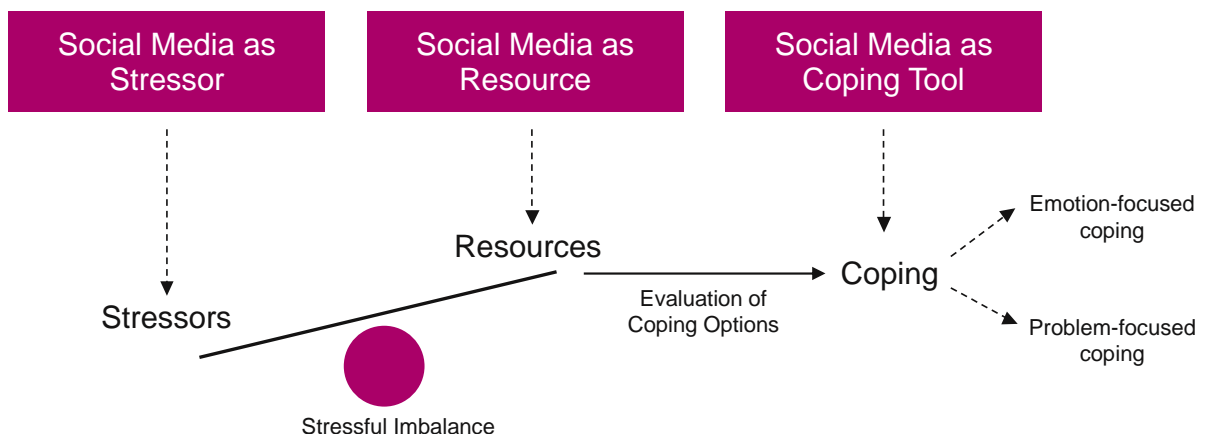


**Figure 9: Transactional Model of Stress and Coping regarding social media (based on: Wolfers and Utz 2022, p. 2)**

### 2.2.2.1 Regarding the transactional model of stress and coping - social media as stressor

As already mentioned, social media can cause stress. The stressors connection overload and availability stress, explained in 2.2.3 Stress on social media, can be triggered by notifications. Thus, they cannot be compared to stressors that primarily stem from the characteristics of social media. Stressors, connection overload and availability stress are rather due to the fact that social media are mainly used via mobile devices. As a result, users experience stress because they constantly receive messages and feel obliged to respond to them directly. Thus, the balance between stressors and resources can be shifted in favour of the stressors, resulting in stress (Wolfers and Utz 2022).

**2.2.2.2 Regarding the transactional model of stress and coping - social media as a resource**

Social media also offers resources that can mitigate stress and thereby reduce it. The function of social media may be relevant during the initial assessment process and causes a change in the balance between resources and stressors. That can prevent or alleviate stress (Wolfers and Utz 2022). The use of social media potentially supports the creation and sustainment of social capital and thereby create access to resources which positively impact coping with stress (Domahidi 2018). The mere awareness of having social capital proves to be a stress buffer (Webber and Huxley 2007). Rus and Tiemensma (2018) confirm this in an experiment. In contrast to reading online magazines, they found that using social media before being exposed to a stressor resulted in reduced feelings of stress in the subsequent stress release.

**2.2.2.3 Regarding the transactional model of stress and coping - social media as coping tool**

The preceded discussion indicates that social media can have both positive and negative effects on the balance of resources and stressors. In case of stress, social media can be utilized as a coping tool during the second phase of the coping process. The available coping options are being evaluated. Stress can stimulate the use of social media, and three principal coping strategies are employed in this regard (Wolfers and Utz 2022): seeking social support (Nabi et al. 2013), reduce negative emotions (Lazarus and Folkman 1984) and problem-solving (Veer et al. 2016). As a result, efc and pfc are employed.

It is questionable whether the use of social media in a stressful situation can sustainably reduce the stress that has arisen. This depends on the extent to which the chosen coping strategy fits the specific circumstances. If a specific problem occurs where a certain solution is mandatory seeking help in a big social network can be an effective option. But according to Wolfers and Utz (2022) seeking for emotional support there, would be the wrong approach.

*2.2.3 Stress on social media*

The use of social media has changed dramatically with the advent of smartphones. Already 98% of German children and young people aged 6-18 use a smartphone or tablet (Bitkom Research 2022). The communication of young people with their peers has changed fundamentally with the development of smartphones and features, like SMS or the possibility of downloading apps (Nesi et al. 2018). Social media platforms such as Instagram, Snapchat and Facebook can be downloaded as apps on smartphones. In Germany, 88% of German 14-29 year olds used social media at least once a week in 2022 (ARD/ZDF-Forschungskommission 2022). In the USA, a representative survey showed that 44% of young people would be online several times a day. Nowadays, a smartphone offers many ways to communicate with others. It can be described as the primary device through which internet-based communication takes place especially among adolescents and young adults (Anderson and Jiang 2018). As consumption is immense, young people are concerned about the effect of heavy use of their smartphones. According to a study from 2018, 54% of the respondents say they use smartphones too much (Jiang 2018). Other studies identified a causality between social media use and depressive symptoms (Shensa et al. 2017). In order to understand how social media affects young people, digital stress is an important component (Hall 2017). Hefner and Vorderer (2016, p. 237) define digital stress as "stress resulting from a strong and perhaps almost permanent use of information and communication technology. [...] that is triggered by permanent access to an inconceivable amount and diversity of (social) content." There are different types of digital stress mentioned in the literature. In the context of digital media, Steele et al. (2020) lists availability stress, approval anxiety, fear of missing out (FOMO), and connection overload as the most significant. Social media create permanent access to social contacts. However, they can also create stress that individuals expect others to be available all the time (Lo

2019). Several studies identify the emergence of stress related to increased availability in social media (Steele et al. 2020). Thomee et al. (2010), for example, cite accessibility as an influencing factor for current stress among adults. Furthermore, social media users change their profile pictures and upload information because they are afraid of not being accepted and not receiving as much social recognition as they expect (Morin-Major et al. 2016). Social media offers users the opportunity to create an authentic self-portrait that they can fully control (Hall et al. 2014). A range of people, particularly friends or family, can view the information and pictures one is sharing on the profile (Steele et al. 2020). The goal of social media users often is to gain peer validation and approval of their make-believe life. This sense of approval derives from social comparison, reflective evaluation and feedback (e.g., likes, clicks, up-votes, comments) (Nesi et al. 2018). Social media users are keen to create a good image to get on well with peers (Hall et al. 2014). They fear lack of recognition because social media posts are permanent and visible. This long-term transparency regarding posts and interaction with posts, enables social comparison. When users decide to post content themselves, this leads to an increase in fear of lack of recognition and an increased desire for public recognition in the form of likes (Steele et al. 2020). Users measure the popularity of their content through likes or clicks, which leads to a direct evaluation of their offering (Lee et al. 2020). In summary social media interaction and the way individuals portray themselves are significantly influenced by fear of not being recognised. A significant role in digital stress is played by the FOMO, which is the idea the one fears to miss worthwhile experiences others are having (Steele et al. 2020). Digital media is a place where social communication occurs and offline activities are shared publicly through, for example, posts (Hall 2018). In a study, Przybylski et al. (2013) found that FOMO leads to lower mood and life satisfaction. The last form of digital stress, connection overload, is highly influenced by technical aspects. Smartphone and social media users can feel overwhelmed and thus stressed by information, communication and connection that originate in social media. Past research has shown, the visibility and frequency of the provision of information is highly influenced by the specific platform as well as individual smartphone settings (Halfmann and Rieger 2019; Steele et al. 2020). In general, previous research defines connection overload as exceeding the ability to receive, process and understand information (Hefner and Vorderer 2016). Additionally, it is noteworthy that Steele et al. (2020, p. 20) argue that subjective perception must be included in the definition as well: "The distinction between the objective quantity of communications received and the subjective experience of receiving too many is important, as individuals that receive equal numbers of communications may vary in terms of their subjective experience of stress". Table 2 gives a short overview about the digital stress components and their definition.

| *Digital stress component* | *Working definition of the component* |
| --- | --- |
| Availability stress | Distress (including guilt and anxiety) resulting from beliefs about others' expectations that the individual respond and be available by digital means |
| Approval Anxiety | Uncertainty and anxiety about others' responses and reactions to one's posts or to elements of one's digital footprint |
| Fear of Missing Out (FOMO) | Distress resulting from the real, perceived, or anticipated social consequences of others engaging in rewarding experiences from which one is absent |
| Connection Overload | Distress resulting from the subjective experience of receiving excessive input from digital sources, including notifications, text messages, posts, etc. |

**Table 2: Digital stress caused by social media (Steele et al. 2020, p. 20)**

# 3 Pre-study – qualitative research

There are two approaches for writing a scientific paper. It can be written exclusively as a literature work or with the inclusion of applied empirical research (Berger-Grabner 2013). Thus, in scientific work, a distinction is made between primary and secondary research. Primary research (field research) is when data is collected in field as well as laboratory situations. Secondary research (desk research) is the evaluation of already existing information from the literature on the research field of interest. (Riesenhuber 2009; Töpfer 2012). To gain a deeper understanding of the overarching topic, the decision was made in this thesis to conduct literature research as secondary research and empirical research as primary research.

In empirical research, which can draw on a range of different techniques and methods for conducting scientific investigations, a distinction can be made between quantitative and qualitative research methods. The task of quantitative research is to be able to make statistically evaluable and above all, generalizing statements through representative obtained empirical data (Misoch 2019). Compared to quantitative research, qualitative research is much more flexible. Empirical facts should be described and understood. In addition, hypotheses are to be generated and classifications or typologies should be established. Qualitative research is characterized by an unpredetermined, non-standardized and wide-ranging information-providing method. During the execution of such research often a guideline is present, however the question is very flexible and the interviewees are completely free in their answer. In comparison, the quantitative survey is unflexible, as no open questions are formulated and they have to be answered in order. Through the flexible qualitative interviews an in-depth information content is achieved, which makes it impossible to provide representative and numerical data (inductive approach). Then detailed descriptions of opinions and impressions can be made. The sample is selected according to whether it can advance the object of investigation. After a certain number of interviewed persons, a theoretical saturation occurs, which means that no new insights are gained by interviewing further persons. In qualitative investigations, the required sample size is much smaller than in the quantitative approach. With the help of qualitative research, the subjective viewpoint of the sample is to be mapped in order to understand any causes of the behaviour (Berger-Grabner 2013; Braunecker 2021; Misoch 2019; Riesenhuber 2009).

For the pre-study, a qualitative methodology was chosen because there are no hypotheses to be tested, but new insights should be gained (Berger-Grabner 2013; Braunecker 2021; Misoch 2019; Riesenhuber 2009). This requires an explorative, inductive approach. Various methods are available for qualitative data collection, which differ mainly in their degree of standardization of the questions. Individual interviews or group discussions are available for selection. In a group discussion, also called a focus group, attitudes and opinions on a certain topic are to be determined. The group dynamics that develop within the discussion reduce the inhibitions of the participants, which makes it possible to gain deeper insights into the attitudes of the interviewees. This forms a major advantage of focus groups (Berger-Grabner 2013; Scholl 2009). Since deeper insights into the attitudes of the respondents are not relevant and individual interviews are judged to be purposeful, individual interviews are suitable as a research method.

Individual interviews can be conducted in a guided or narrative manner. The main difference between the two methods is the degree of structuring. Narrative interviews have the lowest degree of structuring. They are conducted without an interview guideline because they are hardly structured. They have a narrative style, since lived experiences are presented. As a result, the course of the interviews varies greatly. Guided interviews, on the other hand, are much more structured. They are described as a semi-structured method (Berger-Grabner 2013; Misoch 2019).

In order to facilitate a targeted, structured, but still open-ended survey, guided individual interviews were conducted in this research.

## 3.1 Data collection method: semi-structured interview

The so-called guided interview is a semi-structured interview form for the collection of empirical data. The predeveloped interview guidline provides control and structure during the interview. It is prepared with prior theoretical knowledge to be able to better compare the collected data in the evaluation The guidline ensures that the necessary topics are addressed during the interview and creates a structure in the communication process. There is no fixed order of the interview questions in semi-structured guided interviews. The interviewer decides sponanteously which topic or question will be addressed next, depending on the course of the conversation. In qualitative empirical data collection, it is important to formulate open questions, so that the interviewee has the necessary freedom to answer the questions. Thus, the guideline serves to guide the interview in terms of content, which should nevertheless leave enough space for unknown insights (Berger-Grabner 2013; Braunecker 2021; Misoch 2019). A guideline based on the research questions was designed for conducting the interviews (Appendix A: Interview guide).

### 3.1.1 Research target group

In order to collect relevant data for the research, it is essential to define and select the appropriate target group for qualitative interviews. In the first step, active social media users who only use these media for private purposes were interviewed in the context of this research. The focus is on content creators who place their own person in the centre of their social media profile and market themselves. The recruitment process followed a snowball approach. The survey began with the researcher's circle of friends and acquaintances. People who fulfilled these two criteria were asked to suggest other people from their circle of acquaintances who also fulfilled these criteria (Schreier 2011). At the beginning of the recruitment process, only these two criteria were applied. After some interview partners had no negative experiences on social media, the search was expanded to include people who have a larger number of followers, regularly create their own posts on social media and whose profile is publicly accessible. The survey did not define a certain minimum number of followers or the regularity of the posts. Influencers were deliberately not interviewed, as receiving negative interaction is part of their job. Care was taken to recruit approximately the same number of male and female interview partners to be able to determine eventual gender differences in the use of social media later in the evaluation.

| Participant-No. | Gender | Age | Platforms |
|---|---|---|---|
| P1 | Female | 25 | Insta, Sc, Fb |
| P2 | Male | 25 | Insta, Sc |
| P3 | Male | 29 | Insta, Sc, TT |
| P4 | Male | 23 | Insta, Sc, LI, Fb, Twi |
| P5 | Female | 23 | Insta, Sc, Fb |
| P6 | Male | 22 | Insta, LI |
| P7 | Male | 22 | Insta, LI, Fb |
| P8 | Male | 22 | Insta, Sc, LI |
| P9 | Female | 24 | Insta, Pin, YT |
| P10 | Female | 25 | Insta, Sc, LI |
| P11 | Male | 23 | Insta, TT |
| P12 | Male | 27 | Insta, Fb |
| P13 | Female | 25 | Insta, Sc, Fb, Twi, Pin, Mast |
| P14 | Male | 24 | Insta, Sc, LI, TT |
| P15 | Female | 25 | Insta, LI, Fb |

| P16 | Male | 32 | Insta, Xi |
|-----|------|----|-----------|
| P17 | Female | 22 | Insta, Sc, LI, Xi |
| P18 | Female | 26 | Insta, Sc, LI, Fb, TT |
| P19 | Female | 23 | Insta, Sc, TT |

**Insta = Instagram, Sc = Snapchat, LI = LinkedIn, Fb = Facebook, TT = TikTok, Twi = Twitter, Xi = Xing, Pin = Pinterest, YT = YouTube, Mast = Mastodon**

**Table 3: Overview of sample of the pre-study**

### 3.1.2 Interview guide

To conduct the interviews, a guideline was prepared in advance that covered the topics to the research. This chosen methodology represents more of a framework for the interview than a fixed sequence of questions. Within the interview structured, semi-structured and unstructured questions were used. It is important to ask open questions to obtain as much relevant information, personal experience and various perspectives on the research topic as possible (Braunecker 2021).

To make it easier for the interviewees to get into the topic and interview, a general question about social media use was asked at the beginning of the conversation. In preparation for the main part, the next section included the sharing behaviour. Here, they were asked how active they are on social media in general, i.e., how often posts are liked or shared, commented on, or posted themselves. The most relevant part of the guide for the research relates to the topic of user reactions. Here, an attempt was made to find out which form of interaction with other social media users triggeres stress or has already been experienced. The next block of topics deals with the area of resources of the coping model. The interviewees were asked to give insights into any falling back on the resource of their social media network to buffer stress. At the end of the guide, questions are asked about conceivable or already applied coping strategies (Appendix A: Interview guide).

### 3.1.3 Conducting the interviews

Most of the interviews conducted as part of the survey were executed via the software Zoom due to the large geographical distances with interview participants. The remaining interviews were conducted in persona or by telephone due to scheduling difficulties. Recording of the interviews is necessary for analysis of the data collected. The interviews that took place online via Zoom or by telephone were recorded using Zoom. The face-to-face interviews were recorded via the "Voice Memos" app of an iPhone XS. All interview partners were informed in advance about the recording of the interviews and the data protection guidelines. Consent to the recording of the interviews and the processing or use of the data for scientific evaluation was given verbally after the data protection guidelines were read out and was also recorded during the interviews with Zoom. No technical difficulties occurred at any time during the recording of the interviews. The interviews were conducted in a period from 30.04. - 15.08.2022. The interviews were scheduled for approximately 30 minutes. The length of the interviews varied from about 17 to 57 minutes. The average duration of the interviews is about 35 minutes. All interviews took place in German and were conducted based on a previously prepared interview guide. In most of the interviews there was a flow of conversation and a lively exchange. In a few cases, despite follow-up questions, there was no open exchange, but rather a working through of the questions in the interview guide.

## 3.2 Evaluation method

After the interviews are completed, they are evaluated using the qualitative content analysis method according to Mayring. Mayring (2015) defines the goal of content analysis as the analysis of material

that comes from any kind of communication. The method is based on the evaluation of text-based data from the interviews and aims to answer the research questions from the introduction. The execution of the qualitative content analysis follows a specific procedure determined by Philipp A. E. Mayring, which will be discussed below.

### 3.2.1 Presentation of the method

For the evaluation of the interviews the qualitative content analysis according to Mayring (2015) is used. The aim here is to analyse fixed communication in a systematic and rule-guided manner and to draw conclusions from it. Through certain analysis steps and rules, the analysis is carried out systematically, which in turn makes it intersubjectively verifiable for outsiders. Mayring (2015) distinguishes between three different approaches in the analysis of material: summary, explication, and structuring. Depending on the research question and the material, the appropriate form of analysis should be applied. The basic form of summarizing is to decimate the source material in such a way that basic content remains. Explication is used to analyse a particular text passage and to better understand the passage with the help of new material. In structuring, criteria are determined before the analysis is made to get an overview of the material and to use defined criteria for detailed analysis.

For the analysis and the evaluation of the interviews, a mixed method is chosen in this research. Mayring (2022) suggests three forms for this purpose: Theme analysis, type analysis and parallel forms. The approach of theme analysis is suitable for narrative interviews or descriptive material, whereas type analysis strongly reduces heterogeneous material. In addition, various parallel forms can be used. In this research work the most common parallel form, the deductive category application and inductive category formation, are applied.

### 3.2.2 Procedure

In the first step, the structuring content analysis is used. Mayring (2022) has developed a process model (Figure 10), how to proceed with the analysis. The transcripts of the interviews serve as a basis.

In this procedure, a certain structure is to be extracted from the materials. This is done with the help of a category system that was created deductively in advance based on the coping literature. To organize the classification of the text passages in a rule-guided manner, a coding guide is created for this procedure. It is essential for the analysis and the following evaluation. For the coding guide (Figure 11), categories are first defined, and anchor examples of text passages are selected. If delimitation problems should arise, coding rules are established. In the case of trivial and unambiguously identifiable categories, Mayring (2022) leaves the definition of anchor examples and coding rules free. Since this is given in the present research work, this was deliberately skipped.
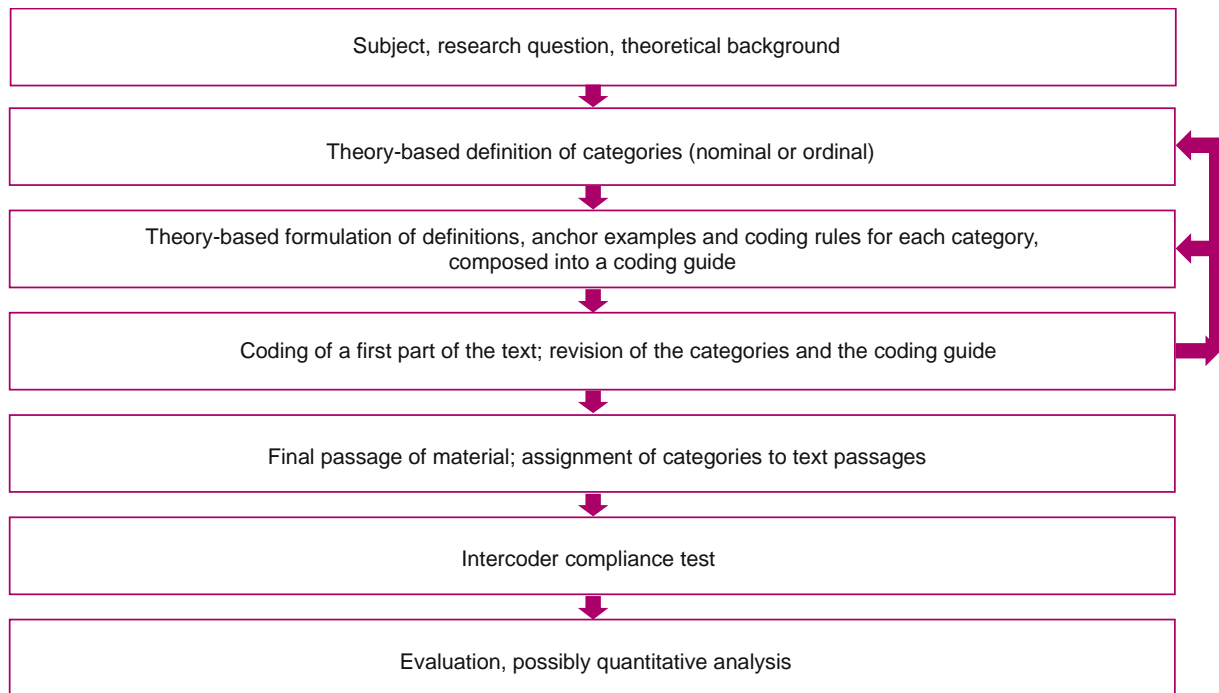
**Figure 10: Process model of deductive category usage (based on: Mayring 2022, p. 96)**

The aim of this research is to identify stressors of social media and resources that they offer as well as present coping strategies. Based on this, the categories Stressors, Resources and Coping are deductively formed from the coping literature. In order to gain a deeper understanding of social media use and behaviour on the platforms via the interview participants, the categories Social Media Use and Interaction Behaviour are additionally formed. For the systematic creation of the category system and further qualitative analysis the software MAXQDA was used. Figure 11 shows a screenshot of the category system from MAXQDA with nominal character that was deductively created from coping literature. A nominal scale is the scale level with the lowest information content. It is data that cannot be placed in any logical order. In this case, a characteristic either applies or does not apply (Mayring 2015). After creating the categories, the transcripts are processed according to the categories and suitable text passages are assigned to the individual codes.



**Figure 11: Deductive basic category system (Screenshot from MAXQDA software)**

After a first round of coding, subcategories are inductively created from the transcripts. This refines the category system and makes it more suitable for the evaluation. To conduct an inductive category formation according to Mayring (2022) the first step is to define which material is the basis for the category definition. Due to the preceding deductive approach, this selection criterion is already defined by the created super-categories Social Media Use, Interaction Behaviour, Stressors, Resources and Coping. Next, the level of abstraction for the subcategories is determined and the material is worked through accordingly. If a selection criterion applies, a category is defined in accordance with the previously defined level of abstraction. In this way, the material is worked through and, if necessary, new categories

are formed or text passages are assigned to existing categories (subsumption). After about 10% of the material, the created category system is checked to see if the goal of the analysis can be achieved. Since no changes are necessary, the procedure described above is followed. Figure 12 gives an overview of this procedure. Through the dedictive-inductive approach, 78 subcategories could be identified.
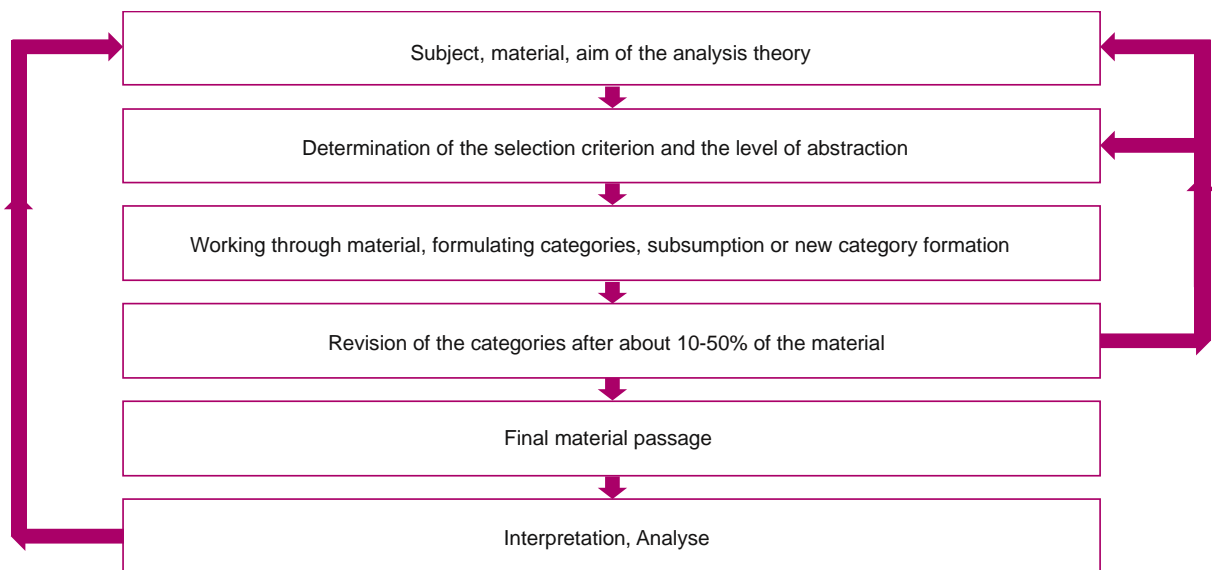


**Figure 12: Process model of inductive category creation (based on: Mayring 2022, p. 68)**

As already mentioned, the interviews took place via the Zoom video conferencing platform, by telephone or in person. The recordings of the conversations are available as MP3 files as well as written transcriptions in the folder structure provided. The transcripts were prepared manually by the author. At the beginning of the evaluation there is a definition of the unit of investigation or evaluation. These define the created interviews. After the interviews were conducted, they are analysed chronologically. Therefore, the coding unit forms short words in individual cases. Mayring (2022) defines a coding unit as the smallest possible part of text that can be assigned to a certain category in the analysis. However, most of the coded text are passages, as the mostly open-ended questions only allow answers in complete sentences.

As noted, the interviews are analysed in chronological order. The aim is to select certain factors from the material and to reduce the material in such a way as to obtain a manageable picture of the overall material (Mayring 2022).

## 3.3 Results

The formation of categories enables a presentation of the results with regard to answering the research questions. The analysis serves as a data basis for the testing of these results presented later. The analysis of the interviews using the software MAXQDA, as well as the corresponding transcripts, are provided in the folder structure. Based on the resulting categories, the following can be evaluated.

### 3.3.1 Description of the sample

In order to estimate the sample, data on use and interaction behaviour on social media was asked for. The general reason for using social media is to network and to share with friends and acquaintances. The interviewees state that social media is a good way to be connected with others and to exchange ideas with people. It also would be easy to keep in touch with others and stay up-to-date. This is especially true for people who do not belong to the inner circle of friends. Furthermore, the reasons for using

social media can be divided into passive consumption and active participation. In passive consumption, the participants explain that they like to use social media to obtain information, for example regarding the daily news. They report that they get inspired by other users, for example, about fashion, travel destinations or recipes to cook. When they are bored, they like to be entertained by videos. The interview participants cite self-expression as a reason for active participation in social media, as they like to produce and publish posts to show others what they experience. They also enjoy creating new content, such as making creative videos. Another reason for active participation on social media is that users like to offer inspiration to others. Other individuals should be shown that they can experience beautiful things too. Regarding the frequency of social media use, all participants state that they visit one or more platforms several times a day. All interview participants use Instagram, more than a half Snapchat and less than half use LinkedIn. The remaining platforms used are Facebook, TikTok, Twitter, Xing, Pinterest, YouTube and Mastodon.

In terms of interaction behaviour, interview participants report that they most often like posts from others. This includes content from their friends, but also posts from news sites or other topics that interest them. In general, users press like when they like the post. This does not apply to posts by friends, which some users also press like if they do not like them. The reason for this is that they feel compelled to support the posts of their friends. Many also report that they like to share content like funny videos with their friends via direct message. Participants are least likely to comment on other users' posts. They occasionally comment on a friend's post or to support other users. It is striking that the frequency of use of a metric decreases the more cognitive resources must be used for the interaction. In terms of their posting behaviour, participants report that they distinguish whether they set up a post or a story. A post on social media is content that persists on the profile. Users' posts can be viewed at any time via their profiles. A story is content that is only available for 24 hours, after which it can no longer be viewed. The interview participants report that they post stories much more often than a post, because stories disappear after 24 hours. They want to use this function to spontaneously share beautiful moments with their friends from time to time. In contrast, users are more concerned about a post. The hurdle for them to post is higher than with a story, as it can be viewed on the profile at any time and persists until it is deleted by the creator. They are more concerned about the content and the presentation than with a story.

### 3.3.2  Stressors

The subsequent section outlines stress factors related to the use of social media and provides explanations for each one. The identified stress factors can be divided into two categories: social media specific stressors and stressors that extend beyond social media. Social media specific stressors are those that occur directly in connection with social media usage, while stressors that cause stress and have an impact on the user's life outside of social media are classified as beyond social media stressors.

#### 3.3.2.1  Social media specific

The social media specific stressors can be further divided into the subcategories: expectations and interactions. Expectation based stress, relates to the state before posting content, while interaction happens after publishing a post.

##### 3.3.2.1.1  Expectations

A stressor of social media can be the expectations that users have of themselves and of others regarding to activity and interaction. What is striking here is that these expectations, interviewees mentioned, are always related to contribution e.g., a post. These stress factors occur before users post in social media. The expectations identified in this research that can cause stress can be divided into expectations of oneself and expectations regarding likes, shares and comments.

**Expectations of Oneself**

Some social media users tend to have high expectations of themselves. They do not want to leave anything to chance but want to show their best side on social media. Thus, they only post "perfect" pictures (P7) or plan content so that content on the profiles fits together (P2).

*"I try to post every day. But I also try to think about what this profile looks like, almost like a website. This means, if I were to start posting pictures from Australia, I would first have to collect a few pictures and see that they fit together. For example, as far as colours are concerned. When posting, I always put a lot of thought into it [...]." (P2)*

*"You always make sure that the picture is perfect and that you show yourself from your best side [...]. (P7)*

Based on the above quotations, the following hypothesis can be made:

Social media users can tend to have high expectations of themselves, putting themselves under pressure.

**Expectations regarding Likes**

Expectations regarding likes were found to be particularly important. 17 out of 19 participants reported that they anticipate receiving likes when they post something on social media. These users have a specific number of likes in mind that they hope to achieve with their post, which is influenced by the number of likes they have received on previous posts (P18). The number of likes is a measure of success for the users and affects how they rate themselves and the quality of their post (P2, P7). The users' mood can change depending on whether they receive the expected number of likes or not (P3). Since the expected number of likes is based on past posts, reaching the expected number of likes does not necessarily result in happiness. The content creators tend to take the expected number of likes as a neutral stance, because they perceive this number as normal.

*"For a while, it was simply the number of likes that was important. It should ideally go over 200, or if it goes over 300, it's super great. Then you know, on the one hand, that it was a good picture in total and, on the other hand, that you might have gotten likes from people you don't usually get." (P2)*

*"Sadly, you develop experience. That a picture of mine gets 200-300 likes is actually normal for me by now." (P18)*

*"So 200, 220 likes was important for me and I used to define myself very strongly by that as a young person." (P7)*

*"There is a range. Anything below 400 makes me a bit sad. Between 400 and 700 it's ok. Anything above 700 I'm happy and above 1000 I'm excited." (P3)*

If a less successful post follows a very successful post, this triggers disappointment and dissatisfaction among users because they can no longer maintain the level previously achieved (P11, P9). In addition, likes function as a kind of compensation for effort since there is also a certain amount of effort behind posting (P18).

*"[...] if you're used to getting thousands of likes or views, it's sometimes not easy when you have videos that have a much smaller reach than you expected. You're disappointed and can very quickly slip into a spiral where you become dissatisfied and then you say I have to get weaving. (P11)*

*"It had a maximum of 2000 views when I made our balcony and I thought it was a pity. It's a pity that it doesn't reach so many people. That also was unrealistic expectations I had [...]." (P9)*

*"In principle, there is always a general effort behind a post and you would like to have the effort appreciated. The expectation is that you get likes, of course." (P18)*

Social media users do not only want to provide posts for other users, but they also want to receive feedback in form of likes. Evaluation of the data has shown that likes are the most frequently mentioned factor for stress regarding the interaction with other social media users. Therefore, likes can have a big impact on social media users and play a major role regarding expectations, their fulfilment and stress that may come up. Based on the quotes given, the following hypotheses can be made:

Social Media users have certain expectations regarding the amount of likes a post receives. Content creators tend to see receiving the expected number of likes as neutral. Thus, this does not cause stress. Only when an outstanding amount of likes are achieved is pleasure generated. On the other hand, if no likes are achieved or the expectation does not fulfil, stress can be triggered.

**Expectations regarding Shares**

In contrast to likes, content creators do not expect their posts to be shared. Only one participant (P3) explicitly stated that he expects that his posts are shared. The other participants did not mention any expectations in this respect that could lead to stress. As a result, content creators do not expect in advance that a post will be shared when it is published. Therefore it plays a lower role in causing stress.

*"Or also on other Insta-pages that share pictures of guys that my pics will be shared too." (P3)*

Since only one person talked about the expectation regarding shares, the following hypothesis can be made:

Only a little number of social media users have expectations about sharings of their posts. For this reason, shares can be excluded as a stressor.

**Expectations regarding Comments**

Expectations regarding comments is of lower importance than expectations regarding likes. Most of the interviewees do not expect comments on their posts, because they do not comment on others´ posts either (P8). They are perceived as time-consuming or annoying, as comments may need to be answered. (P16). Similar to the number of likes, the type of comment can evoke different feelings. On the one hand, content creators are happy about positive comments, which trigger positive emotions. This makes users feel like their content has been noticed and appreciated. They feel more valued (P5). On the other hand, comments can also evoke negative emotions if the user receives a negative comment, e.g., an insult (P10).

*"Emotionally and realistically, I don't care about comments because I don't expect it because nobody does it to me. I'm not used to it, that's why I don't expect it." (P8)*

*"I don't care about comments, then I have more of an effort to edit them or answer them, so to speak. (P16)*

*"I think comments are nice, I'm happier when I get a comment from you than a like. Because then I think the picture is more appreciated and is really seen and someone is happy about it or something." (P5)*

*"Of course, insults. Or any insults towards my family, friends or something, for example if it's a photo where a girlfriend is with me." (P10)*

Based on the quotations given, the following hypothesis can be made:

Comments are generally not expected from users. Positive emotions can be triggered by a positive or a neutral comment whereas negative emotions can follow by negative comments.

In summary, it is taken for granted to receive likes, and social media users thus expect a certain number of likes. Receiving a lower number of likes than expected is unsatisfactory for Social Media Users and can cause stress. Regarding to comments, there are no or only very little expectations. As a result, comments can trigger proportionally more joy among users than likes. In the interviews, many participants mentioned that they scroll through their feed and like posts out of automatism without realising what they are actually tapping on. This behaviour could be an explanation for why comments, apart from a negative interaction, can trigger more joy than likes. Therefore, a higher value is attributed to comments.

### 3.3.2.1.2 Interactions

Besides the expectations, also interaction or non-interaction can trigger negative emotions and stress in different ways. This is possible through positive interaction, no interaction or negative interaction.

**Positive interaction**

What is particularly surprising in the evaluation is that positive interactions can trigger stress. At first, one would assume that positive interaction triggers satisfaction. For some participants, posting became more successful than usual. In the long run, this had a negative effect in two directions. On the one hand, likes were in focus again. Expectations for future posts increase when a post has generated a lot of attention. Future likes then have to correspond a similar number. In addition, it was mentioned that a growing number of followers promises further increasing success, as posts are potentially seen by more people. This can make positive interaction act as a stressor for future posts (P11). Overwhelming positive comments can trigger a response behaviour in the content creator. Social media users may feel obliged to reply and thank their audience. For one interviewee, this even led to fatigue (P9).

*"Your bar, which you then set yourself, then keeps getting higher and that's just a kind of psychological pressure that you definitely have to learn how to deal with. And you also want to use this success. There are lots of new people on your profile, then the probability that your next video will be watched even more often is automatically higher." (P11)*

*"I was also challenged by positive comments because it was just so much at once. At some point it just didn't work anymore. I wanted to do justice to these comments, but eventually I can't. I can't lie in bed for 3 hours every night and reply to the comments from the day." (P9)*

Based on the quotations given, the following hypothesis can be made:

Positive interaction, for example in the form of many clicks and likes, can trigger stress.

**Non-interaction**

It was mentioned in the interviews that content creators want others to think they have a large interest group that supports them (P7). More than half of the interview participants are disappointed if there is no interaction with their post. This stressor is strongly related to user expectations. Thus, the individuals react with frustration (P1). Here, the mismatch between the self and the environment manifests, creating stress. On a positive note, some users are only disappointed on social media. As soon as they put their smartphone away, they are back to real life and the frustration is gone (P9).

*"If I were to post a picture now and I didn't get a Like at all, then I think I would be very disappointed and would delete it too. Well, if there really wasn't anything to come, I'd be fine, no, that probably wasn't good." (P1)*

*"I was disappointed. I was very disappointed [...] it was an illusory world where I wanted people to see at all costs that I have a broad interest group [...]" (P7)*

*"When I'm on Instagram, I'm normally disappointed, but when I put my phone away, I'm not disappointed anymore. There are so many other things that count"* (P9).

Based on the quotes given, the following hypothesis can be made:

No interaction can trigger disappointment in users and can be a stress factor of social media.

**Negative interaction**

All interview participants state that negative interaction in the form of comments would stress them. Nine people have already had experiences with negative comments. They cannot understand the comments, get upset about the sender and are annoyed (P8). One interview participant reports massive reproaches below a post. These trigger sadness and helplessness that must be dealt with (P9). The negative comments create a direct mismatch between expectations and their environment. The stress can be triggered by familiar people as well as strangers.

*"Yes, I got a stupid comment, [...] but it wasn't personally attacking or hurtful. [...] I perceived it as unnecessary and therefore already a negative experience. It's never pleasant when others get upset with you and then make a comment that you can't necessarily understand."* (P8)

*"I have noticed that people want to tell you if they don't like what you did. Even without asking you for permission. That was the first time that I realised, because I wasn't used to it, that it did something to me. I wanted to defend myself. [...] firstly I had to handle with that, but there were a lot of emotions. Sadness, I was so helpless."* (P9)

*"[...] kind of burdened. I posted a picture when I was hiking and you can see me from behind. Then someone replied to the story 'juicy'."* (P15)

Based on the quotes given, the following hypothesis can be made:

Negative interaction can hurt social media users and thus trigger stress.

All types of interactions listed can trigger negative emotions and lead to some kind of stress in the recipient. Positive interaction can cause a feeling of pressure and non-interaction a feeling of disappointment. On the other hand, negative interaction in the form of comments can cause problems for users. It is noticeable that positive interaction is mainly targeted to likes, i.e., clicks, and negative interaction happens on a textual level.

### 3.3.2.2  Beyond social media

Since social media is not an encapsulated environment that only exists online, it can cause stress not only within the platform, but also across platforms. Not only within social media do users have to deal with negative experiences, but also outside. The activities on the platforms thus also affect the users' real lives. Since the offline network is also active in social media, things that happen on the platforms can trigger stress in private. For example, if the other person does not agree with the content that is posted. Receiving negative comments outside of social media can have a greater impact on the recipient because they come from the immediate environment.

*"When I started posting more and it was fun, [...] my boyfriend at the time didn't like it and at some point forbade me to post things. [...] and his dad didn't like it either and they both asked why I was doing it. Whether I needed attention [...] I felt very restricted because I wanted to do it [...] I questioned myself, although I am actually very self-confident and know what I want. I questioned myself whether it was okay and allowed to do that. It led to not doing it anymore."* (P15)

Based on the above, the following hypothesis can be made:

Social media can cause interpersonal distortions that go beyond the platform on which the stress arises.

### 3.3.3 Resources

Resources are supposed to dampen the stress that social media triggers. As resources, people should offer a safe environment and help to the affected people. The following chapter describes the support that resources offer inside and outside of social media.

#### 3.3.3.1 Outside social media

Social media users have a personal network they can rely on. Whether stress arises in social media or stress arises outside social media, the offline network supports content creators beyond social media.

*"I have a very strong personal network. That simply means everything that is not connected to the internet and of course people are also on social media and that means that if I needed anything, then my [offline] network would definitely support me." (P2)*

*"That other people can refer to you to third parties, for example when looking for a job [...]" (P11)*

Based on the quotes given, the following hypothesis can be made:

The offline network can buffer stress both within and outside social media.

#### 3.3.3.2 Within social media

Within social media, online networks can buffer stress. Users expect that someone would defend them in case of public negative interaction.

*"Yes, likes, comments, then retweets so that's what to share. But even if I were attacked now, I know that there are people who would defend me." (P4)*

*"But I would expect that someone besides me would intervene." (P8)*

The expectation is derived from previous situations where users have already received help via social media. A popular example was finding a flat.

*"I'm currently looking for a flat in Florence and I also posted it on Instagram and then I got feedback and a friend also reposted it, actually an acquaintance, but that's also a kind of support that wouldn't be possible without social media. Or, for example, if you have no idea, if you say I travel here and there, does someone have tips and someone is always writing something." (P15)*

Based on the quotations given, the following hypothesis can be formulated:

The online network can buffer stress that has arisen in the social media.

### 3.3.4 Coping

As mentioned in chapter 2, the coping theory of Lazarus and Folkman (1984) can be divided into two approaches: efc and pfc. Coping strategies articulated by participants in the interviews are listed below. The strategies can be assigned into the different approaches.

#### 3.3.4.1 Emotion-focused coping

Efc attempts to control the emotions that have arisen from the stressful situation (Lazarus and Folkman 1984). In the data identifyed efc shows differences in how much effort they take on the platform to be enacted.

### 3.3.4.1.1 Getting Upset

In the case of negative experiences in form of comments, the coping strategy of getting upset is used. The user cannot understand a different opinion and is upset. He tries to calm down by getting upset. This leads to a short-term stress reduction.

*"I had to get upset for a short time and then it was well again." (P8)*

Getting upset is ranked as the coping strategy with the lowest effort as it is platform independent.

### 3.3.4.1.2 Distraction

The distraction strategy is to leave the "place" of stress. Users turn off social media and thus distract themselves from social media. This strategy can be triggered by insufficient likes or negative comments. In context, seeking **social support** was identified as a sub-form of distraction. It involves people who are not part of the origin of the stress. For example, family and friends can provide social support.

*"Well, my consequence is actually that I then switch off TikTok or Instagram and just do something else to clear my head, because I don't want my mood to depend on it.[...] I dealt with it, mainly because maybe I... well, I told my parents about it, for example, my family back then, then you have your support there." (P11)*

Like getting upset, distraction is a coping strategy with the low effort as well.

### 3.3.4.1.3 Blocking

Blocking people is a social media specific function. It turns out to be the most used coping strategy in the sample. The participants state that blocking is an emotion-driven behaviour for them, and they act in affect. Blocking leads to a short-term reduction of stress. The strategy is used when receiving negative interaction in the form of comments.

*"Which was also childish behaviour, but that's mostly in the mood. When you block someone, you don't do it in a rational mind. It's unnecessary, but some people get on your nerves until they get blocked." (P7)*

*"If it really doesn't work at all, then I block the person because sometimes there are also spam accounts among them." (P13)*

*"Now I'm annoyed by it. I don't even go into that anymore. I've developed a very pleasant mechanism. I block people directly." (P18)*

The view that blocking is an emotionally oriented coping strategy is further reinforced by unblocking behaviour. The participants state that they have gained some distance from the incident through time and blocking. As a result, they unblock users again. Due to the temporal distance, they seem to have built up a certain distance and no longer feel emotionally attacked.

*"At some point I looked into the list and saw that I had people being blocked for years. So, I just unblocked them because I knew I wouldn't hear from them anymore." (P12)*

*"Yes, I did, especially as far as I was concerned about hiding my story, but also unblocked it again after a certain time, because then I didn't care whether the person saw it or not." (P18)*

The effort spent for blocking incorporates a simple click on the associated user and therefore ranks low in effort.

### 3.3.4.1.4 Content deletion

The content deletion coping strategy can be categorised as an emotion-focused approach. Instead of addressing the original problem, the user tries to forget the content by deleting it, thus eliminating the

stress. The strategy is used due to negative or insufficient interactions. It also eliminates potential stress that could occur in the future if the content remains online. By deleting, the user admits to himself the lack of quality of the posted content.

*"Well, I've already taken down posts, but that was actually the case, because I didn't think the post was that cool, if I'm honest." (P6)*

*"It may also be that I delete it." (P8)*

Deleting content is as easy as clicking a button, but it comes with a greater cost because all the effort put into creating that content is lost when it's deleted. As a result, deleting content is considered more significant than just blocking a person.

### 3.3.4.1.5 Acting out of spite

The coping strategy acting out of spite is based on the idea that other users should have the same negative experience. In the interviews, this strategy was reported in connection with likes. Content of other users is not liked if one's own content is not liked. Another form is a motivating reaction after insufficient interaction in the form of likes. The user produces more of the content that was negatively reacted to.

*"Even if that would be a childish reaction, but that you might not like back sometimes." (P19)*

*"That's exactly why I want the post so that it pushes me emotionally, that I want to write more about it or have more pictures." (P15)*

Engaging in spiteful behavior leads to complex actions, such as decreased interaction with other content and increased promotion of one's own content. This means that creating more content requires more effort than simply deleting it.

### 3.3.4.1.6 Defence

Another efc strategy is defence. It is used exclusively in negative interaction in form of comments. The individual tries to provide more context to other users in order to deal with the negative interaction. It is assumed that the audience has not understood the whole context of the situation. By explaining, the user tries to resolve the negative interaction.

*"Then I started... I had a message. I wanted to copy it under the comments and insert that I wanted to explain to them how the situation is (...)." (P9)*

This approach involves actively engaging with other users. It requires reading and responding to comments, particularly negative ones, in a thoughtful manner. This type of active participation demands more effort than simply acting out of spite.

### 3.3.4.1.7 Self-sabotage

Another strategy is denial that the content was not well received. The sender does not want to acknowledge this. To achieve the goal of anticipation, likes can be bought. By buying likes, the user reassures himself because the other users think he has a broad interest group.

*"It was such an illusory world where I wanted people to see at all costs. I have a broad interest group that celebrates me and if that wasn't achieved, let's say manually added a few more likes. Mostly maybe with a small ad spend or maybe 1/2 Euro or just via bots or something." (P7)*

This type of self-sabotage involves **denying** reality and going to great lengths, including using external services, to reshape it to fit one's own mindset. Over time, this coping mechanism requires significant

effort and resources to manipulate how content is perceived. As money is also involved in this type of coping strategy, it is considered the most extreme and requires the greatest amount of effort.

### 3.3.4.2 Problem-focused coping

The pfc strategy deals directly with the situation that caused the stress (Lazarus and Folkman 1984). For pfc, the strategies were found to differ in how well they facilitate further content creation.

#### 3.3.4.2.1 Changing posting behaviour

To address the issue of not receiving enough likes, changing posting behaviour was proposed to elicit more positive reactions. This approach involves analyzing how the target audience is most likely experiencing the content and tailoring it to their preferences in order to secure a minimum number of likes. Another aspect of this strategy is reconsidering whether to post content in the future that did not receive much attention in the past. The primary motivation for this coping mechanism is to deal with a lack of approval in the form of likes and to ensure that future like thresholds are met.

*"Or I always try to post the pictures a little differently or try to post at a different time." (P3)*

*"Being in the cycling bubble, I know that if I tweet anything related to cycling, it gets at least 50/60 likes. These are my consequences that I sometimes adapt it directly to the target group." (P13)*

*"I was [re-]thinking about posting something like this [topic] when I get comments like this." (P15)*

Modifying content to increase engagement not only addresses the underlying problem but also encourages more content creation on the platform. Therefore, this strategy is ranked as the most effective in this category. A related tactic is **confronting** specific individuals who have posted negative comments. This approach is only feasible in certain situations as it requires a significant amount of effort to reach out to people and understand their perspectives. The purpose of this strategy is to understand why certain content was not well received and use that knowledge to improve future postings. Although similar to changing posting behavior, this approach involves directly engaging with individuals rather than simply observing their reactions. As a result, this strategy is typically only used in cases where negative comments have been received.

*"Yes, really, in order to confront the person, of course. As I said, of course that depends on how bad the comment would be, but since I only have more or fewer friends and acquaintances in my profile, I would of course like to get to the bottom of the matter." (P10)*

#### 3.3.4.2.2 Mindset change

This strategy is about the idea that the content stands for itself and is not diminished by the reaction of others. Users try to distance themselves from most social media users and focus more on themselves. This change in mindset can be achieved, for example, by learning more about the human psyche, as one participant suggested. The strategy is used to cope with insufficient likes and negative comments.

*"It doesn't matter what negative people say about it, because I am behind what I post and you just have to distance yourself from it a bit." (P9)*

*"That you ultimately just work on your personality development, that you know that you can deal with it much better ... read books where you learn to understand the human psyche and when you have more experience you can generally react better to it in life." (P11)*

If social media users are able to shift their perspective, it can lead to increased content creation and decreased susceptibility to stress. One specific tactic within this coping strategy is to **turn off metrics** of approval, such as likes. This approach aims to establish a healthy distance between social media users and the metrics of success on the platform. The goal is to focus more on the content itself rather

than the numbers associated with it. This strategy is primarily employed to deal with a lack of interaction in the form of likes.

*"That's why I turned off the likes on both accounts, because I noticed that I defined myself a bit through the likes and always tried to get a certain number of it." (P2)*

*"You can hide the likes individually for the pictures." (P3)*

### 3.3.4.2.3   Breaking habits

In terms of pfc strategies, participants saw the origin of stress in social media habits. These habits force users to constantly visit social media to check on how others are reacting to their content. Therefore, habit breaking has been discovered as a coping strategy in this context. These habits are broken by limiting screen time or changing the position of the application on the device screen. By doing this, they try to make themselves aware that they want to look something up on social media. This strategy was mainly used to break the habits on the metric of likes.

*"Yes, absolutely, so I also set a screen time limit for Instagram." (P4)*

*"I also have to be honest; I sometimes force myself not to use Instagram that often by placing it somewhere else on my home screen. Do you know that? That you always automatically click on a spot where an app is?" (P9)*

This coping mechanism involves spending less time on the platform, which in turn reduces the opportunity to create content. As a result, this strategy is not particularly effective for users who want to remain active on the platform.

### 3.3.4.2.4   Deletion of social media application

A radical approach is the complete deletion of social media applications. The individual understands that social media interaction is the cause of stress and therefore deletes the application as a problem-oriented coping strategy. In both cases, mental dependence on likes and negative interaction through comments led to this strategy.

*"Then I just deleted Instagram and Facebook. Snapchat, don't think so because I can control that. I don't have that much exchange there." (P5)*

This strategy is the least effective because it ultimately leads to no further content creation on the platform.

### 3.3.4.2.5   Retreat

The coping strategy retreat takes place when negative comments are received. In this context, one interview participant reports about discussion partners who cannot accept other's opinion and quickly get emotional. Similar to chapter 3.3.4.1.6 Defence, this situation arises because of others. To receive negative comments from other users, they withdraw and keep their own opinion to themselves.

*"My biggest prio is not to waste my time. And since you can't have a discourse with many in this respect, I simply save my time and that is the consequence I have drawn from this. My effort, my knowledge, my opinion then it just stays with me." (P12)*

## 3.4   Discussion

This study uses coping theory (Folkman and Lazarus 1985) to investigate how social media users cope with stress through interactions with other users. In this context, not the social media as a whole, but specifically the social interactions based on original postings of social media users are examined. The

study aims to give a detailed overview of the transactional model of stress and coping (Wolfers and Schneider 2021) in the specific context of social interaction. In this context, stressors, resources and coping strategies are analyzed when social media users create content and interact with other users. In the following, the results of this research will be discussed in more detail and related to each.

### 3.4.1 Stressors

First, the stressors and their meaning will be discussed in more detail. As in 0 As already mentioned, the interviews took place via the Zoom video conferencing platform, by telephone or in person. The recordings of the conversations are available as MP3 files as well as written transcriptions in the folder structure provided. The transcripts were prepared manually by the author. At the beginning of the evaluation there is a definition of the unit of investigation or evaluation. These define the created interviews. After the interviews were conducted, they are analysed chronologically. Therefore, the coding unit forms short words in individual cases. Mayring (2022) defines a coding unit as the smallest possible part of text that can be assigned to a certain category in the analysis. However, most of the coded text are passages, as the mostly open-ended questions only allow answers in complete sentences.

As noted, the interviews are analysed in chronological order. The aim is to select certain factors from the material and to reduce the material in such a way as to obtain a manageable picture of the overall material (Mayring 2022).

Results, they are divided into social media specific stressors and stressory beyond social media.

#### 3.4.1.1 Social media specific stressors

The social media specific stressors can be subdivided again into expectations and interactions. In the following, the individual points are discussed in more detail and connections are made.

##### 3.4.1.1.1 Expectations

In line with previous research (Lee et al. 2020), it is shown that likes can be the main cause of stress. This form of stress occurs before social media users even become active. The reason of stress is expectations that users have before they post something. This expectation is based on the likes received from previous posts. In the literature, this type of stress is called approval anxiety. Only one interview participant in the sample expects his posted content to be shared. According to the interview partners, comments are generally not expected. Based on the expectations of the social media users, sharing and commenting on posts were not rated as stressors with the same intensity as likes. Thus, sharing and commenting play a rather subordinate role as stressors. However, negative comments are excluded from this. This result underlines the perceived importance of likes from the perspective of social media users. Likes seem to be an easy-to-understand metric to measure approval or endorsement of content. Commenting and sharing require higher cognitive processing power. Negative and positive interactions can occur. Positive and negative sentiments can also occur during sharing. Therefore, likes were found to be the main factor of stress when posting content of any kind, based on the expectations of social media users. This also underlines the motivation why people engage with other social media users in the first place. They expect social acceptance and approval for the posted content.

Besides the expectation of interaction with others, expectations of oneself were identified as a possible stressor. The cause for the high expectations could be the prevailing situation of self-promotion on Instagram. Because everyone only posts supposedly "perfect" content, one also only posts "perfect" posts oneself. In this context, three interviewees report that they only post on Instagram, if they are completely convinced by the picture and it fits into their overall feed. The high expectations that some social media users have of themselves may be related to expectations of likes and approval anxiety. Users have a certain idea of the number of likes when they post something. They are afraid of how others will react

to the content they post. As a result, they may have high expectations of themselves and their posts, thinking they will get more likes if their posts are "perfect".

### 3.4.1.1.2 Interactions

In the interaction, it was found that all mentioned types of interaction can be reasons for stress. As already explained in chapter 0 In summary, it is taken for granted to receive likes, and social media users thus expect a certain number of likes. Receiving a lower number of likes than expected is unsatisfactory for Social Media Users and can cause stress. Regarding to comments, there are no or only very little expectations. As a result, comments can trigger proportionally more joy among users than likes. In the interviews, many participants mentioned that they scroll through their feed and like posts out of automatism without realising what they are actually tapping on. This behaviour could be an explanation for why comments, apart from a negative interaction, can trigger more joy than likes. Therefore, a higher value is attributed to comments.

Interactions, positive interaction can create stress by raising one's own bar. Users expect their future posts to be as successful as the previous one. They therefore create stress in the future. The cause of the stress triggered by positive interaction could be, as in chapter 3.4.1.1.1 Expectations, approval anxiety when social media users post. They have an expectation of themselves that they will achieve this amount of likes again. The stress of no or negative interaction can also be attributed to approval anxiety, as the goal of a post is to generate approval and thus likes or positive comments. As defined earlier, approval anxiety is the fear people have about how others will react to their posts (Steele et al. 2020). In positive interaction, this fear still exists. Users are afraid that others will not react or will react negatively to their content. In the case of no interaction or negative interaction, the situation users are afraid of has already occurred.

### 3.4.1.2 Beyond social media

Social media can not only trigger negative interactions within the platform, but also beyond platforms. This is possible because people from their offline environment are also active in social media. If they disagree with the content of a post, they can trigger stress in the user. Thus, a resource would become a stressor. If social media users know that a resource can also become a stressor, it may trigger stress in the individuals even before a post. The stress can again be attributed to approval anxiety, as users are afraid of the reaction to their post.

## 3.4.2 Resources

This paper illustrates that social media can provide social resources to buffer stress. This is consistent with the transactional model of stress and coping (Folkman and Lazarus 1985; Wolfers and Utz 2022).

### 3.4.2.1 Outside social media

Beyond social media, it was found that social networks are also frequently used in an offline scenario as a resource to cushion social media stress. In addition, the interviewees noted that social media activities can also trigger stress in offline networks such as friendships, families and acquaintances. Offline networks may criticise online activities. The relationships outside social media can therefore function as a stressor and resource.

### 3.4.2.2 Within social media

Individuals use social media as a social resource. From it, they can expect to be able to return to a certain safe environment when content creators face ignorance, rejection, or negative interactions with other social media users. Users still have their existing and consolidated communities or social networks

that can offset this potential stress. Social media thus have two facets in terms of interaction: on the one hand as a stressor, e.g., through the expectation of likes and negative comments, but on the other hand also as a resource to counteract stress.

### 3.4.3  Coping

Finally, different coping strategies are discussed, which according to Liang et al. (2019) are divided into efc and pfc.

#### 3.4.3.1  Emotion-focused coping

It should be noted that efc in particular aims at short-term, easy-to-process stress reduction. This approach concentrates on aspects that are detached from the underlying problem. In this respect, efc strategies will not be able to reduce stress in the future, as the underlying problem will still exist. Examples of this form of coping strategy are distraction or self-sabotage. In particular, "blocking" showed a very emotional short-term reaction to interactions that social media users do not like. Social media users who use "blocking" as a coping approach act out of affect. The willingness to unblock after some time underlines this assumption. Users state that after they have gained some distance from the situation, they are more willing to unblock these people again.

#### 3.4.3.2  Problem-focused coping

Pfc, in contrast, offers a more rational approach to stress reduction. This form requires more cognitive effort. The individual has to think about the problem to find out the cause. In this context, users ask themselves questions such as "Why didn't I get more likes?", "Was the content of my post not well received or did I just post the picture at the wrong time?" or "What are my expectations when I post on social media?". As described with the coping strategy of changing posting behaviour, working on these approaches requires more attention. The coping strategies require more effort, but they have a lasting effect on similar situations. This is because the individuals address the underlying problem, which can be seen, for example, in the change in mindset. They try to lower their own expectations and thereby reduce potential stress in the future.

# 4 Main study – quantitative research

As already mentioned in the pre-study, this research paper conducts literature review and empirical research to gain a deeper understanding of the overarching topic. In a first step, a background understanding is built up through the secondary research. In the second step, new knowledge in the field of social media is generated through the qualitative study. Stressors in the interaction on Instagram are identified and the associated coping strategies are discovered. Based on the coping strategies, a quantitative study is conducted to find out how the negative emotions anger and sadness influence coping strategies within social media. In addition, the effectiveness of the coping strategies are tested.

In academic dialogue, qualitative and quantitative research are often referred to as a mutually exclusive pair of opposites, claiming that the underlying paradigms are incompatible. However, although the approaches are different, both methods aim to provide in-depth insights into the surrounding social reality. They differ in the methodological implementation of their goal and diverge in the underlying paradigms. Specifically, in the views on social reality, its detectability, and the treatment of subjectivity (Misoch 2019).

As already mentioned in the pre-study, quantitative research aims to generate statistically evaluative and generalizable statements based on representative empirical data (Misoch 2019). One tries to outline a certain behaviour through models, correlations and numerical expressions as precisely as possible and make it predictable. This is done using a representative sample, in which the numerical form (expression) of specific characteristics is measured. The measured values are then correlated with each other or in combination with other variables, whereupon the result is transferred to the population (deductive approach). To guarantee identical bases for the collection of the measured values, quantitative methods are standardized and structured so that statements can be compared with each other. This makes the method suitable for testing hypotheses or measuring facts. For example, a survey, observation, panel or experiment can be conducted (Berger-Grabner 2013; Braunecker 2021; Riesenhuber 2009). In a quantitative study, large samples are used to obtain representative results. These results are expressed in numbers. The approach demonstrates a high degree of objectivity, as it is not possible to individually address subjects. Quantitative studies pursue two different goals: descriptive and explanatory investigations. In a descriptive investigation, populations are described. For example, median, frequencies, and proportions of properties of a population are examined. The aim is to discover unknown characteristic features of a population. In contrast, in an explanatory investigation, well-founded hypotheses are tested and explained. The focus is on identifying relationships, differences, changes, or individual cases. Based on the coping strategies to be tested, set out in section 3, the explanatory approach is chosen for the quantitative study. Since a full survey of the entire population is not possible, a partial survey is conducted through a sample. The entire population represents the set of all individuals who possess characteristics relevant to the study (Berger-Grabner 2016).

Three criteria are essential for assessing the quality of quantitative research. The first criterion is the objectivity of the measurement, which means that the results are independent of the researcher. Secondly, the execution of the investigation must be reproducible. It must be precise and independent of external influences, thus exhibiting a high degree of reliability. The third criterion is validity, which ensures that the chosen method measures what it is supposed to measure. This means that it is suitable for answering the research question and that the correct data is generated during the data collection process (Berger-Grabner 2016).

The research model forms the basis for the deductive research approach in the quantitative analysis and is explained in the following chapter. After that the research procedure of this study is illustrated and results are presented and discussed.

## 4.1 Research Model

The research model in Figure 13 consists of the emotional response to the negative user interaction, namely anger and sadness. According to Stsiampkouskaya et al. (2021), users may experience these emotions if they have less interaction than they anticipated. In addition, the interview participants mention the emergence of these emotions when they experience negative user interaction. They may become angry when arousal is high and sad when arousal is low. These emotions influence the coping strategies derived from the interviews. The coping strategies that emerge as the central strategies in the pre-study are further used in the main study. They are called: deletion, denial, offence and blocking. These coping strategies can be seen in the middle of the research model. As indicated by Folkman et al. (1986b), coping strategies are supposed to lead to a positive outcome. In other words, people should be satisfied after using the coping strategies. This is measured in order to be able to state whether and to what extent the coping strategies have positively influenced the users. The research model only refers to efc strategies, as this approach involves acting quickly and in affect. Pfc involves conscious action, which can take time. Since the aim of the study is to directly find out which coping strategies are used, the study has to be limited to efc strategies.

There are four coping strategies in the center of the research:

**Deletion**: If users do not get enough likes and/or negative comments, one coping strategy is to delete the published Instagram post. By deleting it, they are no longer confronted with the situation.

**Denial**: The coping strategy denial means that user keep on posting the same kind of content despite the fact that they had a negative experience with this type of content beforehand.

**Offence**: When receiving negative comments, interview participants stated that they comment on others' comments below their own post and justify and defend themselves

**Blocking**: When negative comments are received, the function of blocking is used. This completely excludes the authors of the negative comment from future interactions.
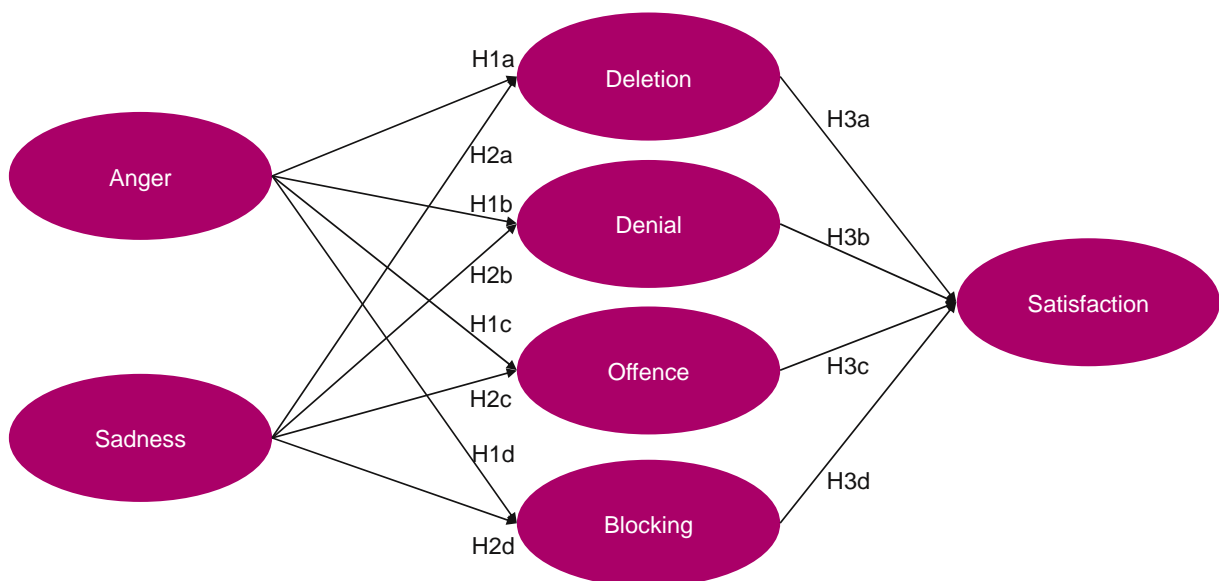


**Figure 13: Research model**

According to Ekman and Cordaro (2011) anger is a basic emotion. They define **anger** as "The response to interference with our pursuit of a goal we care about. Anger can also be triggered by someone attempting to harm us (physically or psychologically) or someone we care about. In addition to removing the obstacle or stopping the harm, anger often involves the wish to hurt the target." (Ekman and Cordaro 2011, p. 365).

Carver and Harmon-Jones (2009) argue that anger is an expression of the effort to eliminate the harm. A negative interaction on social media can be perceived as psychological harm, causing individuals to feel anger. The emotion may result in the deletion of posts. This behavior was already observed in the previous qualitative study. Several participants reported that they deleted a post due to negative interaction. Based on this, the following hypothesis can be formulated:

H1a: *Anger positively influences the coping strategy of deleting.*

When posting on Instagram, the focus is on presenting oneself. When receiving a negative interaction, conflict arises. Carver and Harmon-Jones (2009) add that in the emotional state of anger, people strive to pursue the desired goal again. In the previous study, it was found that social media users are more motivated to continue posting the same content after receiving insufficient or negative interaction. In this context, they react out of defiance. Based on the literature and the first study, the following hypothesis is formulated:

H1b: *Anger positively influences the coping strategy of denial.*

As mentioned earlier, people who feel angry want to remove the obstacle or stop the harm (Ekman and Cordaro 2011). In the interviews conducted, interviewees reported receiving negative comments. In the comments, the interviewee was judged and offended for a certain behaviour. The users assumed a certain situation and judged the interviewee on this basis. However, the users' assumption did not correspond to the truth. To stop the damage, the interviewee defended herself by commenting on the insults and explaining the situation.

H1c: *Anger positively influences the coping strategy of offence.*

In their article, Shaver et al. (1987) write that the emotion anger fosters the need to harm or inflict pain on the offending person. In the previous qualitative interviews, it was found that this was already used as a coping strategy. A social media user blocked a person who offended them in order to punish them and show the other person that the behaviour was wrong. Plant and Devine (2003) reinforce thoughts of wanting to block people after a negative interaction. They found that people who are angry also feel a desire to avoid the interaction. In the context of social media, this could mean that the person concerned wants to avoid further interaction with the offending person and therefore blocks them. The following hypothesis can be derived from this:

H1d: *Anger positively influences the coping strategy of blocking.*

**Sadness** is a basic emotion, just like anger. Ekman and Cordaro (2011, p. 365) define sadness as "the loss of an object or person to which you are very attached." Transferred to the social media context, sadness could be triggered by the loss of followers or likes, for example.

Underwood et al. (1980) and Amrhein et al. (1982) state that people have lower self-esteem when they are sad. The low self-esteem could lead them to believe other social media users their post is bad. Out of insight, they would rather eliminate the post. Interviewees report exactly this behaviour. In the case of negative interaction, they would trust the opinion of others and delete the post as a result. Based on this, the following hypothesis is made:

H2a: *Sadness positively influences the coping strategy of deleting.*

The previous study shows that social media users act out of spite when there are too few likes and/or negative comments. On the one hand, out of revenge, in order to inflict the same pain on other people as they experienced themselves. On the other hand, out of defiance by continuing to post the content. This leads to the following hypothesis:

H2b: *Sadness positively influences the coping strategy of denial.*

As already stated in hypothesis H2a, according to Underwood et al. (1980) and Amrhein et al. (1982) people have low self-esteem when they are sad. Another way of dealing with the situation of too few likes and/or negative comments would be to comment below the own post to explain why one posted the post. With this strategy, the content creator tries to defend and explain himself. In H1c, the behaviour of defence has already been mentioned. Thus, the following hypothesis can be made:

H2c: *Sadness positively influences the coping strategy of offence.*

In the previously described pre-study, it was found that some social media users block the offending person when they receive negative comments. This can happen in the affect or to protect themselves from further negative experiences. Based on this, the following hypothesis can be made:

H2d: *Sadness positively influences the coping strategy of blocking.*

As already explained in 2.2.2 Theory and model of emotion regulation and coping, stress arises when the stressors and resources become imbalanced. A person then tries to cope with the stress and manage it. Coping strategies are therefore used to deal with a situation and to create a balance between stressors and resources again (Folkman et al. 1986b). After coping with a stressful situation, a person's emotions should therefore turn positive. The following four hypotheses result from this:

H3a: *The coping strategy deleting leads to subsequent satisfaction.*

H3b: *The coping strategy keep posting leads to subsequent satisfaction.*

H3c: *The coping strategy commenting leads to subsequent satisfaction.*

H3d: *The coping strategy blocking leads to subsequent satisfaction.*

## 4.2   Quantitative statistical investigation: survey

As already mentioned, there are several quantitative research methods e.g., survey, observation, experiment, and panel. In this research, an explanatory approach was chosen to test the coping strategies obtained earlier. For achieving the research objective of this study, a survey is the most appropriate method, as it can easily reach a large group of people. A fully structured online survey was chosen, where all questions are asked in predetermined response categories in a specific order to collect comparable results. For the online survey, respondents receive a link to complete the questionnaire online. The online survey approach is suitable for collecting data from a larger sample with participants who are geographically dispersed (Berger-Grabner 2016). The survey was hosted on surveymonkey.com.

### *4.2.1   Research target group*

All the survey participants are Instagram users. The sample consists of the researchers' wider circle of acquaintances and of US American citizens approached via Amazon Mechanical Turk (mTurk). To ensure quality but not focus on professional mTurkers, the minimum past approval rating of tasks was set to 97% while already needing 500 tasks approved. Each participant acquired via mTurk was paid above the minimum wage of the US. This gives the researcher a total of 139 responses for evaluation. The research sample consist of 77 males, 58 females and four with no answer. The age range is from 22-59 years. In the range of 22-30 years there are 80 participants, from 31-40 years 53 participants and

from 41-59 years 6 participants. Since the quantitative study consists of mainly younger participants as well as the qualitative study, the assumption was made that the coping strategies identified in the semi-structured interviews should apply in the qualitative study.

| Full sample | Male | Female | Other |
|---|---|---|---|
| 139 | 77 | 58 | 4 |

**Table 4: Sample characteristics with 139 replies**

### 4.2.2 Scenario-based survey

The quantitative study was conducted in early 2023 in which Instagram users were confronted with three scenarios.

First, there was a question on the gender the participants identify with to get transparency about the composition of the sample.

The first social media related exercise for the participants was to imagine that they have posted an Instagram post which was shown at the beginning, the "anchor-post". On this screenshot of a dummy Instagram post a certain number of likes were shown. The qualitative study gave indication that 234 likes were the average for a non-commercial Instagram user. This 234 likes served as an anchor for likes in the minds of the participants to simulate positive and negative aberrations (Kahneman et al. 1982). Regarding the "anchor-post" the participants were also asked how positive or negative they perceive the situation with this number of likes. The procedure of setting the anchor worked, as the results showed that all participants were satisfied with the amount of likes they received in the anchor treatment. After they have seen the "anchor-post", they needed to imagine that they have posted a second one which only received one third of the likes of the "anchor-post". Following Stsiampkouskaya et al. (2021) study, it was decided to use one third of the likes of the "anchor-post". In the last step, in addition to the reduced likes they also experienced a negative comment: "Just stop posting content… no one cares about your life…". As well as the number of likes for the anchor post, the negative comment originates from the qualitative interviews. The participants of the quantitative survey were asked how they felt regarding the negative emotions anger and sadness. In addition, there were questions on their respective coping strategy in the individual treatments. Finally, they were asked how satisfied they are after their coping strategy. The study procedure described above is visualized in Figure 14. To make it easier for the participants to complete the survey, simple as well as closed questions were asked.
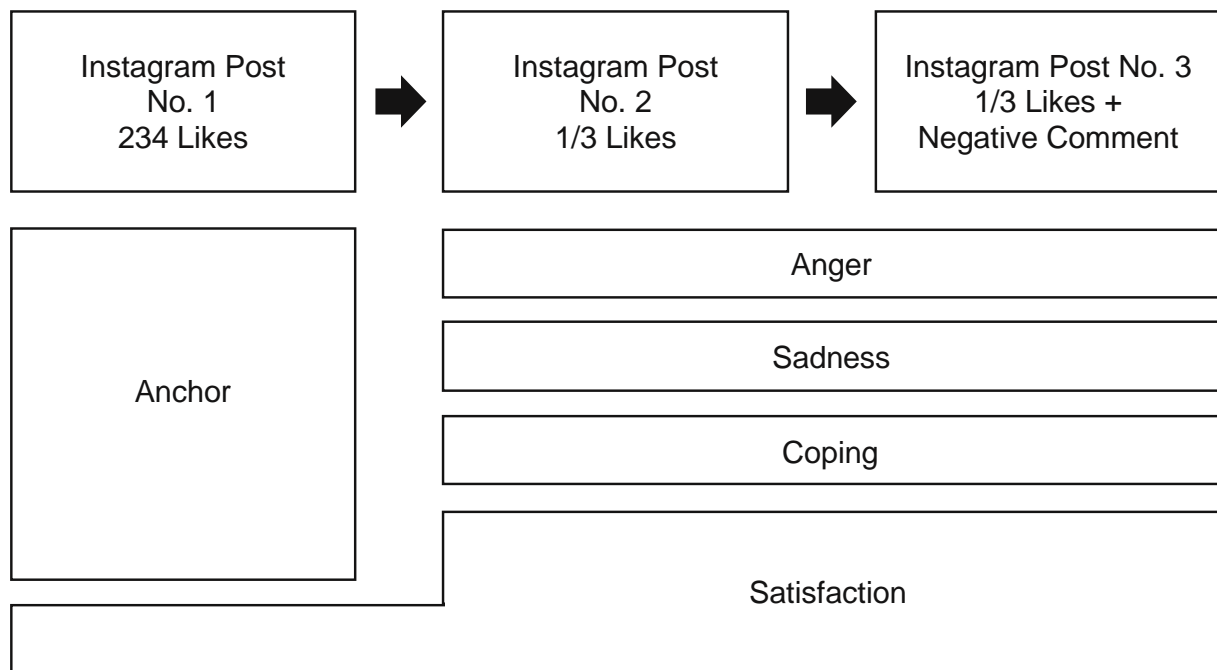
**Figure 14: Survey procedure with three Instagram posts**

So that the participants identify with the scenario, Instagram posts matching their gender were shown, in accordance to the study of Stsiampkouskaya et al. (2021). Male posts were assigned to male participants, while female participants were assigned to female posts. People who did not assign themselves to a binary gender were randomly assigned to the male or female group. In Figure 15 and Figure 16 the dummy posts of the study can be seen. According to Stsiampkouskaya et al. (2021) an "explorer-type" picture for the posts were selected, featuring a person alongside the backdrop of a landscape. Explorer-type images are among the most frequently shared pictures on Instagram, as they are connected with most popular Instagram hashtags such as #nature, #travel, #photography or #me (Top-Hashtags 2023). When selecting the images for the three scenarios, care was taken to ensure that faces were not recognisable in order to enable respondents to identify more strongly with the contribution. The images used come from the licence-free platform unsplash. In the Appendix B: Online survey screenshots of the survey can be found.
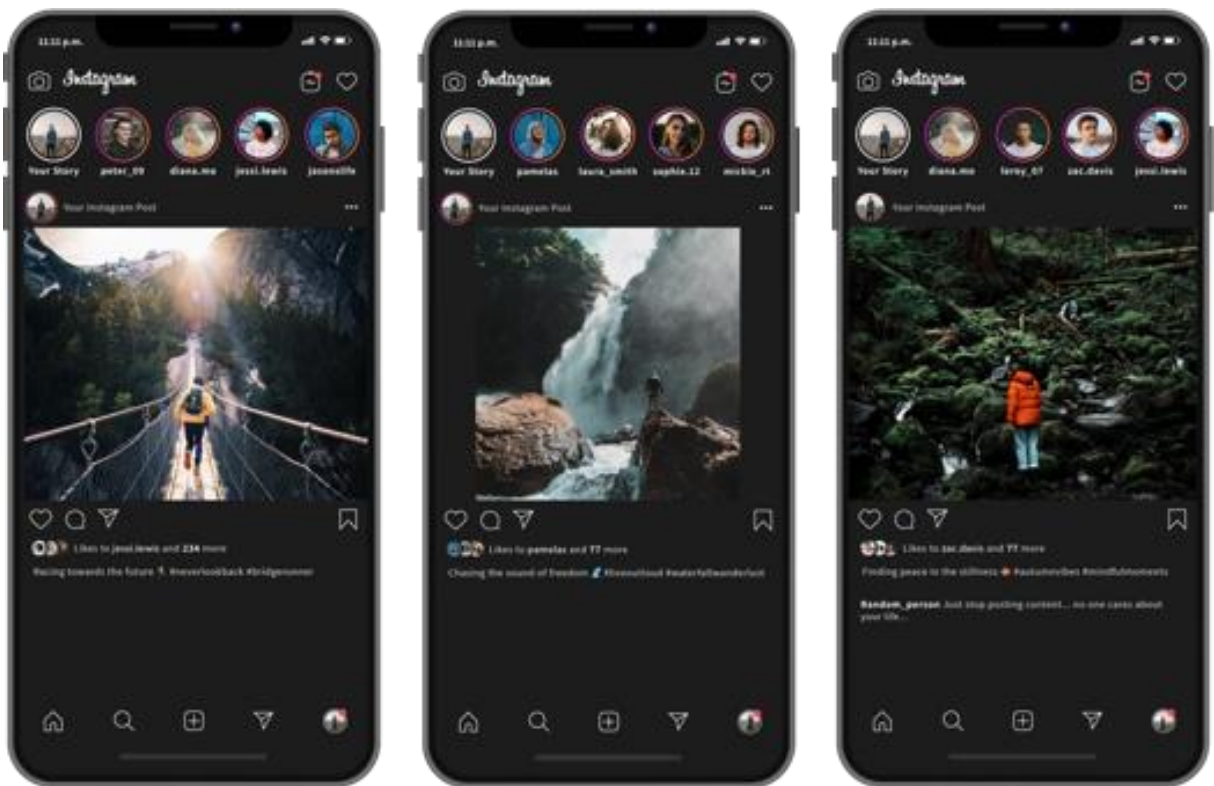
**Figure 15: Instagram-Posts for women**



**Figure 16: Instagram-Posts for men**

### 4.2.3 Measurement and operationalization

Anger, Sadness: The negative emotions were measured by applying the instrument "Discrete Emotions Questionnaire" of the postdoctoral researcher on emotion and motivation Cindy Harmon Jones. It aims to capture individual emotions rather than looking at them as a general concept. This should enable more precise and differentiated emotional states to be recorded (Harmon-Jones et al. 2016). Participants were asked: "While viewing the Instagram post to what extent did you experience these emotions?". The items were, anger, mad, pissed off, rage, and grief, empty, lonely, sad. Due to discriminant validity the items of "pissed off" and "lonely" were not further included in the analysis. The possible answers ranged from "not at all" (1) to "an extreme amount" (7).

Coping: For most relevant coping strategies derived from the pre-study, the likelihood of using specific coping strategies was measured according to (Ajzen 2006). Therefore, participants were confronted with the statement: "I intent to perform the following behaviour: Delete, the post (delete); Keep on posting this form of content despite bad reaction; start to comment in order to clarify why I posted this; block negative comments." The participants answered on a likert-scale from (1) "Very unlikely" to (7) "Very likely".

Satisfaction: Regarding eventual positive outcomes from using coping strategies, relaxation and happiness was measured in accordance to Harmon-Jones et al. (2016) as a proxy. In line with the measures of anger and sadness, the participants were asked: "After this engagement with the Instagram post, to what extent did you experience these emotions?" The emotions that were evalutated were the following: "chilled out, calm, easygoing, relaxation, satisfaction, enjoyement, liking, and happy". The possible answers for every emotion ranged from "not at all" (1) to "an extreme amount" (7).

### 4.2.4 Implementation and realization

As mentioned earlier, surveymonkey.com was used for the online survey. The high data security standards of surveymonkey.com ensures anonymity. It also makes it possible to survey people regardless of time and place. The tool also provides clear results which can be analysed more easily. The survey was online from the middle of March until the end of March. Before the survey officially started, a pretest was conducted among the researchers' close friends. Pretests are used to check the suitability and length of the questionnaire (Kaya 2009). The carried-out pretest showed that the wording of one question was misleading, whereupon it was changed. After the pretest and subsequent adjustments, the survey was distributed among the researchers' wide circle of friends and on mTurk.

### 4.2.5 Structural equation modeling

When using a quantitative research approach, structural equation modelling (SEM) can be used to empirically test hypotheses. A structural equation model is a statistical method for assessing relationships between constructs and indicators. Measurement errors are taken into account in this model (Hair Jr. et al. 2021).

One advantage of SEM is that it works with latent variables. Latent variables are theoretically interesting factors that cannot be directly observed or measured. They are inferred through observable indicators (measures). An example of a latent variable in this thesis is anger. To measure anger, the survey asks how strongly various negative emotions are felt. The respondents answer the indicators on a 7-point scale from "not at all" to "an extreme amount". This allows to evaluate relationships between unobservable latent variables. Depending on whether the indicators reflect the latent variable or form the construct, they are set as either reflexive or formative measurement models (Bagozzi 2011). In addition to these basic constructs, which consist of a latent variable with a reflexive or formative measurement model, higher-level constructs are also used to create more complex constructs that are more abstract

than their individual components. These higher-level constructs are considered as a latent model where the dimensions are the indicators of the construct (Law and Mobley 1998) and measured with their own reflective or formative measurement model. This final paper uses the reflective measurement model (Polites et al. 2012).

The SEM consists of the measurement model and the structural model. The two parts are used because the measurement model must be correctly specified before the structural model can be analysed. The measurement model specifies the relationship between the latent variable and the indicators. The structural model defines the relationships between latent variables by describing hypothetical causal dependencies between endogenous and exogenous variables (Anderson and Gerbing 1982).

The measurement model and the structural model are validated and evaluated against different criteria. For reflective measurement models, reliability and validity are checked. The reliability of the indicators determines how much of the variance comes from the latent variables: at least 50 percent of the variance of a latent variable should be explained by the indicators (Carmines and Zeller 2008). The assessment of construct reliability focuses on composite reliability. It is a measure of internal consistency and should be higher than 0.70 (Nunnally and Bernstein 1994). For the validity of reflective measurement models, convergent and discriminant validity are examined. One criterion for convergent validity is the average extracted variance (AVE), which should be 0.5 or higher. This ensures that a latent variable can explain on average at least half of the variance of its indicators (Henseler et al. 2009). There are two ways to ensure discriminant validity. The first possibility is the Fornell-Larcker criterion, which is fulfilled when each latent variable is higher than the squared correlations with all other latent variables (Fornell and Larcker 1981). The second option is crossloading, where each indicator should have the highest correlation with its latent variable and not with other latent variables (Henseler et al. 2015).

The structural model can be evaluated by looking at the coefficient of determination ($R^2$) and the significance level of the individual path coefficients. $R^2$ shows how well the model can explain the data. If $R^2$ is high, the model can explain the variance of the endogenous latent variables well. There are thresholds for $R^2$ that determine whether an $R^2$ value is significant (67%), moderate (33%) or weak (19%) (Chin 1998). The path coefficients can be understood as standardised beta coefficients that are calculated in least squares regressions. One can then use the bootstrapping technique to determine whether a path coefficient is significant and at what level it is significant (Chin 1998).

A common type of SEM is path modelling with partial least squares (PLS). PLS has few requirements on sample size or data distribution. A disadvantage is that the variance of the measurement errors is not explicitly modelled. For this thesis, PLS is used because it is predictive and suitable for exploratory research (Gefen et al. 2011).

The software application SmartPLS 4.0 is used for the application of PLS path modelling (Ringle et al. 2005). SmartPLS 4.0 is a software to analyse statistical data using structural equation modelling. This means that even small deviations between hypotheses and factual data can be calculated (SmartPLS n.d.). The measurement models are tested regarding validity and reliability.

## 4.3   Results

As already stated, the data was evaluated using SEM with the PLS method using SmartPLS 4.0. To determine the minimum sample size to run the statistical analysis the rule of ten was applied. According to the rule of ten, the minimum sample size should be ten times the number of arrows leading into the construct with the most arrows. In this case, the dependent variable "satisfaction" is the construct with the most arrows, of which a total of four lead to it. This results in a minimum sample size of 4x10 = 40 (Hair Jr et al., 2016). Thus, the sample size, which is n=139, satisfies the rule of ten. Since the sample

size exceeds the value, various quality criteria are presented in order to run the SEM: internal consistency reliability, convergent validity, and discriminant validity.

"Internal consistency reliability is a form of reliability used to judge the consistency of results across items on the same test. It determines whether the items measuring a construct are similar in their scores (i.e., if the correlations between items are strong)" (Hair Jr. et al. 2021, p. 186). Cronbach's alpha and composite reliability (CR) are applied to determine consistency reliability. Both represent a measure of internal consistency reliability. Cronbach's alpha assumes equal indicator loadings, CR does not. The threshold for these quality criteria is above 0.70 (Hair Jr. et al. 2021). The table below shows that in both cases the values are above the threshold, concluding internal consistency reliability for the like and the comment scenario. The like scenario refers to the second post where the participants only received a third of the likes of the anchor post. The comment scenario refers to the third post, where only a third of the likes were achieved and there was also a negative comment.

| | Cronbach's alpha | CR | AVE | Anger | Sadness | Satisfaction |
|---|---|---|---|---|---|---|
| **Scenario Like** | | | | | | |
| Anger | 0.912 | 0.917 | 0.850 | 0.922 | | |
| Sadness | 0.880 | 0.880 | 0.807 | 0.791 | 0.898 | |
| Satisfaction | 0.934 | 0.936 | 0.688 | 0.391 | 0.454 | 0.830 |
| **Scenario Comment** | | | | | | |
| Anger | 0.856 | 0.863 | 0.777 | 0.881 | | |
| Sadness | 0.872 | 0.873 | 0.796 | 0.774 | 0.892 | |
| Satisfaction | 0.934 | 0.940 | 0.688 | 0.331 | 0.413 | 0.830 |

**Table 5: Internal consistency, Average Variance Extracted (AVE), and Fornell-Larcker Criterion (right side) suffice all quality criteria**

| HTMT | Anger | Sadness | Satisfaction |
|---|---|---|---|
| **Scenario Like** | | | |
| Anger | | | |
| Sadness | 0.878 | | |
| Satisfaction | 0.421 | 0.498 | |
| **Scenario Comment** | | | |
| Anger | | | |
| Sadness | 0.893 | | |
| Satisfaction | 0.363 | 0.453 | |

**Table 6: HTMT values <0.9 suggest discriminant validity**

Convergent validity is designed to explain the variance between indicators of a construct (Hair Jr. et al. 2021). To assess convergent validity average variance extracted (AVE) and factor loadings were applied. The threshold for the AVE are values above 0.5, which were exceeded in this sample (Hair et al. 2016). Furthermore, the factor loadings are above 0.708 (Hair et al. 2016) and are significant at the

0.001 level which also suggest convergent validty. Therefore, convergent validity based on the two criteria is concluded.

| Cross load-ings | Anger | Sadness | Deletion | Denial | Offence | Block | Satisfaction |
|---|---|---|---|---|---|---|---|
| Anger1 | **0.841** | 0.632 | 0.572 | 0.328 | 0.291 | 0.527 | 0.214 |
| Anger2 | **0.886** | 0.686 | 0.596 | 0.315 | 0.328 | 0.470 | 0.212 |
| Anger3 | **0.916** | 0.725 | 0.631 | 0.485 | 0.456 | 0.457 | 0.430 |
| Sadness1 | 0.730 | **0.892** | 0.640 | 0.404 | 0.493 | 0.417 | 0.411 |
| Sadness2 | 0.661 | **0.890** | 0.579 | 0.322 | 0.446 | 0.448 | 0.335 |
| Sadness3 | 0.677 | **0.894** | 0.574 | 0.436 | 0.367 | 0.465 | 0.355 |
| Delete | 0.681 | 0.671 | **1.000** | 0.319 | 0.470 | 0.490 | 0.366 |
| Denial | 0.432 | 0.435 | 0.319 | **1.000** | 0.478 | 0.481 | 0.546 |
| Offence | 0.411 | 0.489 | 0.470 | 0.478 | **1.000** | 0.233 | 0.627 |
| Block | 0.548 | 0.496 | 0.490 | 0.481 | 0.233 | **1.000** | 0.204 |
| Sat1 | 0.203 | 0.238 | 0.221 | 0.456 | 0.468 | 0.107 | **0.823** |
| Sat2 | 0.275 | 0.230 | 0.392 | 0.312 | 0.414 | 0.180 | **0.660** |
| Sat3 | 0.302 | 0.383 | 0.332 | 0.521 | 0.561 | 0.178 | **0.832** |
| Sat4 | 0.320 | 0.412 | 0.292 | 0.447 | 0.539 | 0.159 | **0.866** |
| Sat5 | 0.230 | 0.337 | 0.343 | 0.373 | 0.556 | 0.159 | **0.859** |
| Sat6 | 0.265 | 0.373 | 0.293 | 0.469 | 0.513 | 0.193 | **0.841** |
| Sat7 | 0.315 | 0.349 | 0.288 | 0.532 | 0.592 | 0.173 | **0.884** |
| Sat8 | 0.283 | 0.390 | 0.292 | 0.474 | 0.493 | 0.212 | **0.852** |

**Table 7: Cross-Loadings**

Hair Jr. et al. (2021, p. 184) states that "Discriminant validity is the extent to which a construct is empirically distinct from other constructs in the model." To determine discriminant validity three criteria were observed: cross-loadings, Fornell-Larcker-Criterion, and heterotrait-monotrait ratio (HTMT). The cross-loadings suggest discriminant validity since (Henseler et al. 2015) the items correlate with their associated constructs the most. In the Fornell-Larcker criterion, the main diagonal shows the highest value for the respective construct. Here, the squared AVE is highest for the respective construct, which shows discriminant validity. The HTMT is a way to compare the average correlations between different measures with the average correlations within the same measure (Hair Jr. et al. 2021). The HTMT values are also below 0.90 and therefore show discriminant validity (Hair et al. 2016). The quality measures show that all constructs are distinguishable from each other and can describe their items well.

Since the quality criteria were sufficient, the hypotheses were tested using SEM (PLS). For the hypotheses H1, the analysis shows a significant influence of anger on coping strategy deletion in both scenarios: H1a: Scenario Like: β=0.631***, Scenario Comment: β=0.402***. For the coping strategies of keep on posting content (denial) and start commenting (offence) these influences were not significant (H1b: Scenario Like: β=0.089 n.s., Scenario Comment: β=0.054 n.s.; H1c: Scenario Like: β=0.201 n.s., Scenario Comment: β=0.081 n.s.). In the comment scenario, however, it significantly influences the blocking coping behavior (H1d: Scenario Comment: β=0.408***).

Sadness showed to influence the coping strategies of "denial" and "offence" in the like scenario, while this is also the case for "deletion" strategy in the comment scenario (H2a: Scenario Like: β=0.167 n.s., Scenario Comment: β=0.360***; H2b: Scenario Like: β=0.364**, Scenario Comment: β=0.250*; H2c Scenario Like: β=0.380**, Scenario Comment: β=0.427**). For the blocking strategy in the comment scenario, sadness was not found to be a significant influence (H2d Scenario Comment: β=0.180 n.s.).

For the influence of the outcome, the analysis shows significant influences of "denial" and "offence" in both scenarios (H3b Scenario Like: β=0.266*, Scenario Comment: β=0.365***; H3c Scenario Like: β=0.306***, Scenario Comment: β=0.431***). For the coping strategies of "deletion" and "blocking" these influences were not significant (H3a: Scenario Like: β=0.134 n.s., Scenario Comment: β=0.108 n.s.; H3d: Scenario Comment: β=-0.125 n.s.).
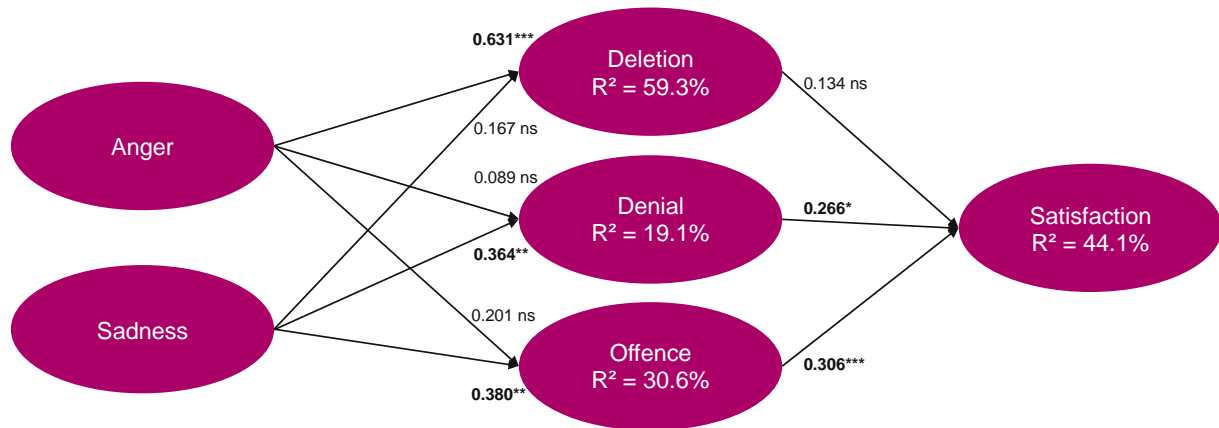


**Figure 17: Structural equation modelling results of the like scenario, Significance key: *** p < 0.001; ** p < 0.01; * p < 0.05**
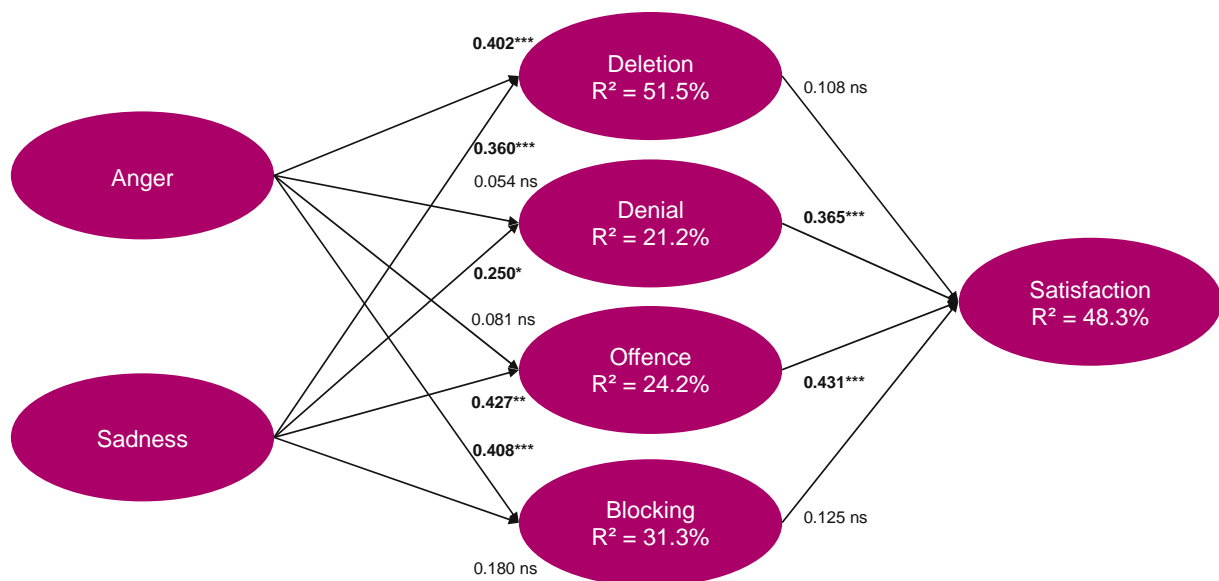


**Figure 18: Structural equation modelling results of the comment scenario, Significance key: *** p < 0.001; ** p < 0.01; * p < 0.05**

| Number | Hypotheses | Scenario Like | Scenario Comment |
|--------|-----------|---------------|------------------|
| H1a | Anger positively influences the coping strategy of deleting. | Supported | Supported |
| H1b | Anger positively influences the coping strategy of denial. | Not supported | Not supported |
| H1c | Anger positively influences the coping strategy of offence. | Not supported | Not supported |
| H1d | Anger positively influences the coping strategy of blocking. | - | Supported |
| H2a | Sadness positively influences the coping strategy of deleting. | Not supported | Supported |

| | | | |
|---|---|---|---|
| H2b | Sadness positively influences the coping strategy of denial. | Supported | Supported |
| H2c | Sadness positively influences the coping strategy of offence. | Supported | Supported |
| H2d | Sadness positively influences the coping strategy of blocking. | - | Not supported |
| H3a | The coping strategy deleting leads to subsequent satisfaction. | Not Supported | Not supported |
| H3b | The coping strategy keep posting leads to subsequent satisfaction. | Supported | Supported |
| H3c | The coping strategy start to comment leads to subsequent satisfaction. | Supported | Supported |
| H3d | The coping strategy blocking leads to subsequent satisfaction. | - | Not supported |

**Table 8: Hypotheses and their significance**

## 4.4 Discussion

The aim of this thesis is to find out how content creators on the social media platform Instagram cope with negative user interaction and how effective these coping strategies are. For this purpose, the study uses a mixed method approach. First, coping strategies in the context of social media were identified by interviewing 19 instagram users. In the next step, the high arousal emotion anger and the low arousal emotion sadness, as well as their influence on the coping strategies, are investigated. This is done by confronting Instagram users with different dummy scenarios of user interaction on an Instagram post. In the second scenario, the creator receives a small number of likes and in third scenario, an addional negative comment.

The findings show that high- and low arousal emotions lead to different coping strategies.
As the results illustrate anger can lead to deleting content (H1a) and blocking people (H1d) in both scenarios. The strategies of denial and offence show in both scenarios no significant influence in coping with the emotion anger. Deleting and blocking are coping strategies that do not promote the creation and posting of further content. In the literature, the emotion anger is described as having the characteristic that people like to harm the source of their anger. It tends to trigger something destructive (Ekman and Cordaro 2011). Present research work achieves the same result. This behaviour is reflected in the coping strategies. The strategies dealing with anger destroy content or potential future content by blocking people. It can be said that anger in this context can trigger destructive coping strategies rather than generating further content.

As well as anger, sadness can lead to deleting content when conten creators receive negative comments on their posts (H2a). In the liking scenario hypothesis 2a is not supported. What is striking, however, is that sadness can increasingly promote the strategies denial (H2b) and offence (H2c) in both scenarios. This means that sadness can be a promoter for content creators to continue posting the same content without changing anything. A possible explanation for this phenomenon could be that the content creators experience an inner conflict. Initially, they thought that their created content was valuable, but were disappointed by the scenario. However, since they have already had positive experiences with the anchor content, there is a possibility that further content could also be received positively again. Sadness does not affect the posting behaviour, and low emotional activation does not affect the "anchor-

post". Therefore, content creators are more likely to continue posting content that they think is valuable. In addition, sadness leads creators to be more likely to engage directly with users to deal with the situation. This fits with the idea of a low arousal state, which does not necessarily dampen the content creators' perspective. However, because of their sadness and willingness to learn, they seek interaction and validation for their content.

Regarding the effectiveness of the coping strategies mentioned, different results can be recorded. The results show that the destructive coping strategies deleting and blocking have no significant influence on satisfaction. These strategies are predominantly influenced by the emotion anger. This suggests that these strategies are less suitable for dealing with anger in social media, as the emotion may be difficult or impossible to cope with. In order to deal with anger in this context, other strategies should be found. The coping strategies denial and offence were shown to be very effective in dealing with negative user interaction. The strategies can be traced back to the low-arousal emotion sadness. Creation of more content makes it easier for people to cope with their sadness. A possible explanation for this would be that creating content is a conscious act and could provide a sense of control to the content creators. Posting behaviour and interaction with other users can be controlled, whereas deleting and blocking can be seen as a dead end. The control user feels when they keep posting content, could potentially affect satisfaction.

# 5  Discussion

The discussion on the qualitative study has already been covered in 3.4 Discussion and that on the quantitative study in 4.4 Discussion. In the following, the overarching discussion is presented in the form of the contribution to research and the contribution to practice.

## 5.1  Contribution to Research

This research provides further details on the characteristics of coping and builds on the existing literature on coping in social media (Wolfers and Schneider 2021; Wolfers and Utz 2022). The focus of the study is on social media interaction after content has been provided. Stressors, resources, and coping strategies are specifically addressed. Contributions to different phases of the transactional coping model could be identified (Figure 19). These are described in the following.

The study contributes to the Lazarus and Folkman (1984) model by addressing the main cause of stress in social media interaction through the provision of content. Previous research has looked at social media as a whole, as a stressor or coping tool. This research focuses on different aspect within social media and provides insights into the expectations of social media users when they post content. The number of likes is a much greater stressor than shares or comments. Even taking into account the rest of the stressors that this research was able to find, the likes metric acts as the main stressor of social media. Likes seem to be a hygiene factor of posts. Hygiene factors cannot lead to dissatisfaction, but neither lead to satisfaction (Maier n.d.). The user already expects likes before posting a picture. If they are missing, this increases the stress significantly. Receiving as much likes as expected, however, does not lead to much satisfaction. Users expect a certain basic amount of likes and feel stressed if this number is not reached.

If content is shared or commented on positively, this does not have a great impact on the well-being of the content creators. Both actions are either ignored or perceived positively. Comments attacking the author himself are an exception. If there are no shares or comments, however, this does not contribute to an increased burden in contrast to the lack of likes. The basic value of receiving likes varies from individual to individual, as it depends on the personal likes received in the past. In the study, only a few participants were "lucky" enough to have a post with a large positive response, e.g., a high number of likes. With a lot of likes, the basic value increased. The following post must exceed the number of likes of the previous post. If the new, increased threshold is not reached, people experience stress. This result underlines that not only insufficient interaction with the content, but already the expectation creates stress.

In the further course, the problem of how stress is transferred from social media to the offline world in the case of negative interaction will be discussed. When stress arises from interacting with technology, one coping strategy may be to stop using the technology. In these cases, the stress is directly related to the use of the technology. With social media, it seems to be different. Because social media is linked to personal social networks, behaviour on the platforms has impacts beyond social media. If individuals disagree with the content of posts on social media, they might demand changes or disconnect. Therefore, creating content on social media can cause stress within the platform and beyond. Social media is special in this respect because it creates new stressors outside the platform, regardless of the offline behaviour of the content creator. In this process, resources are compromised and become stress triggers instead of buffers.

Furthermore, insights into different coping strategies based on efc and pfc are provided. Within the study, different coping strategies emerged. On the one hand, emotion-driven behaviour, such as not liking back if one's own content is not liked. On the other hand, pfc strategies, like trying to change one's attitude and not expecting so many likes. A hierarchy of coping strategies is established. For the efc strategies the hierarchy is based on the effort required and for pfc, the hierarchy is based on the extent to which the strategy facilitates creation of further content.

| Coping Strategy | Stressor |
|---|---|
| Getting upset | Comments |
| Distraction | Likes, Comments |
| Blocking | Comments |
| Content deletion | Likes, Comments |
| Acting put of spite | Likes |
| Defence | Comments |
| Self-sabotage | Likes |

*(left margin: Effort)*

**Table 9: Emotion-focused coping strategies with associated stressors and effort**

| Coping Strategy | Stressor |
|---|---|
| Changing posting behaviour | Likes |
| Mindset change | Likes, Comments |
| Breaking habits | Likes |
| Deletion of app | Likes, Comments |
| Retreat | Comments |

*(left margin: Facilitates Content)*

**Table 10: Problem-focused coping strategies with associated stressors and content facilitation**
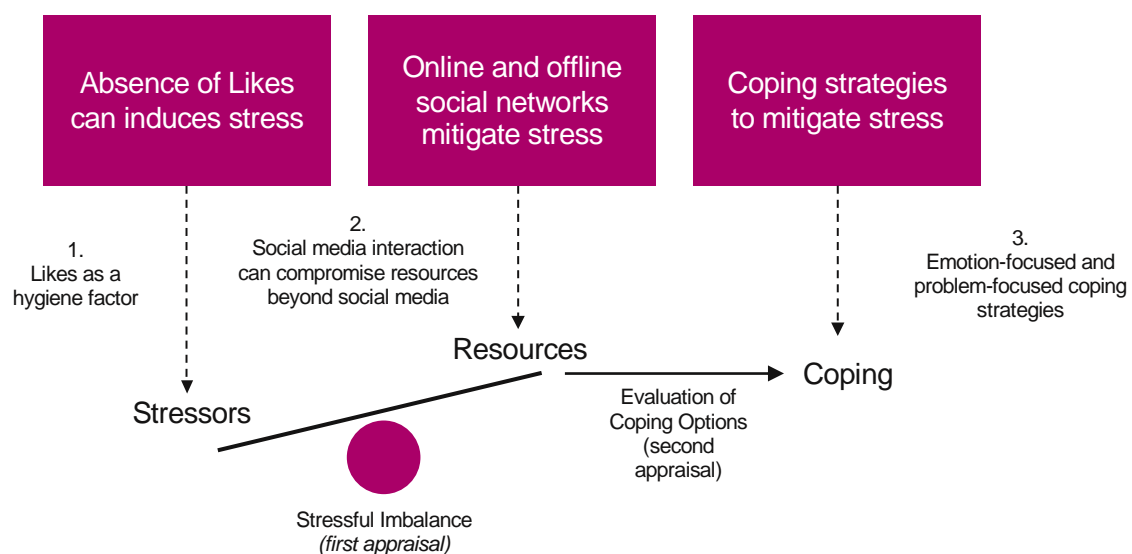


**Figure 19: Classification of the contribution in the Transactional Model of Stress and Coping (based on: Wolfers and Utz 2022, p. 2)**

In the second part of the study, the emotions anger and sadness are introduced within the coping theory. Within this study, coping theory is expanded to include how negative emotions lead to coping behaviour

on social media. The study is limited to the platform Instagram. It examines how negative user interaction causes negative emotions and how the content creator deals with them. This is important to understand how social media can negatively influence users. Furthermore, the research provides insights into how high and low arousing emotions can influence different coping strategies. The research offers the possibility that individuals choose coping strategies not only on the basis of personality traits. They can also be chosen based on the emotions they are coping with. The results show that anger tends to influence destructive coping strategies in social media. Sadness is more likely to lead to strategies that lead to further content. Existing research shows that positive interaction promotes interaction and the creation of further content (Zell and Moeller 2018). This thesis shows that negative emotional reactions can also lead to the creation of more content. This extension is important to better understand social media behaviour. Although the four efc strategies are from the pre-study, whether they actually lead to a positive outcome is tested by the second study. The results show that not all coping strategies are successful. It is particularly striking that the functions of Instagram are not suitable for coping with the emotion of anger. One wonders whether deleting content or blocking people can be considered coping strategies at all. The purpose of such a strategy is to successfully cope with the negative event. The two strategies mentioned do not fulfil this purpose in the context of anger. It turns out that destructive strategies can deal neither with anger nor with sadness. In contrast, content-facilitating strategies enable satisfaction. Thus, through denial and offence, sadness can be managed, whereas anger cannot. This finding is important because it shows that the characteristics of coping strategies can determine how well they work. Here, the effectiveness of the coping strategy is supported by facilitating the creation of additional content.

## 5.2   Contribution to Practice

The study looks at social media users and their emotional well-being after getting negative interaction. As mentioned earlier, likes or the expectation to receive likes are the main cause of stress. The exclusive focus on likes also has a negative impact on social media as a whole. In order to generate likes, social media users will make an effort to target specific groups. For example, they might try to produce or present more extreme content for certain political currents in order to attract the attention of the masses. Balanced content is not as effective in this regard as polarising or emotionally charged content, as research on fake news shows (Molina et al. 2021). Platforms could take measures to reduce the focus on likes and encourage a focus on interaction in the form of comments. Possible implementations would need to be tested in advance. In the past, YouTube, for example, displayed the number of "thumbs down". In the meantime, this has been dispensed with. Such changes have an impact. It is more difficult to judge whether a post is popular, for example.

One way to solve this problem would be to make likes a less prominent metric. It is known from previous research that the presentation format can bias the attention and evaluation of posts in certain directions (Kim and Dennis 2019). If likes are no longer as salient, this could reduce the focus on likes. This could be done by, for example, adding an additional click to display the likes of the post. This shift away from the metrics of likes and clicks would possibly encourage behaviour towards more comments. It is known from research on the theory of the silence spiral that engagement decreases when a dominant opinion prevails (Kushin et al. 2019; Noelle-Neumann 1974; Wu et al. 2020). Shifting attention could be a first step in this direction, on the one hand to reduce the stress of social media content senders and on the other hand to promote engagement on social media platforms.

In terms of practical effects, the study looks at whether social media platforms like Instagram are suitable for coping with emotions. It was found that the Instagram platform can trigger negative emotions such

as anger and sadness in content creators in the context of user interaction. For sadness, there is evidence that the Instagram-specific features of engaging in the comments section or providing more content can help. However, it is not possible to process anger appropriately when it is triggered by negative interaction. This leads to individuals on social media who do not have adequate means to manage their anger to slip further and further into an anger-fuelled mindset, which can lead to a toxic environment for users.

# 6 Limitations & Further Research

This research has several limitations. First, as already mentioned in chapter 5.2 Contribution to Practice, it is not possible to derive any concrete changes in the social media landscape with regard to the visibility of likes from the available data. The reason for this is that such mechanisms would have to be tested beforehand in order to make a conclusive statement. An attempt is made to provide a basis for a coping theory in relation to social media interaction from the perspective of content creators. Due to the qualitative nature of the pre-study, it is possible that there are other unknown coping strategies that may be very rare. In the pre-study, only Germans were interviewed and in the second study also US-Americans-Cultural differences could possibly lead to other coping strategies being used. With an age range of 22-32 years, the age of the sample is limited. Including younger and older people may impact the results. All participants use the Instagram platform. Social media users who have a strong presence on other platforms, such as Twitter or Reddit, may have a different relationship to the metrics or perceive them differently. Thus, when using other social media platforms maybe other coping strategies arise. In addition, the sample size is limited. As already mentioned in point 0 The so-called guided interview is a semi-structured interview form for the collection of empirical data. The predeveloped interview guidline provides control and structure during the interview. It is prepared with prior theoretical knowledge to be able to better compare the collected data in the evaluation The guidline ensures that the necessary topics are addressed during the interview and creates a structure in the communication process. There is no fixed order of the interview questions in semi-structured guided interviews. The interviewer decides spontaneously which topic or question will be addressed next, depending on the course of the conversation. In qualitative empirical data collection, it is important to formulate open questions, so that the interviewee has the necessary freedom to answer the questions. Thus, the guideline serves to guide the interview in terms of content, which should nevertheless leave enough space for unknown insights (Berger-Grabner 2013; Braunecker 2021; Misoch 2019). A guideline based on the research questions was designed for conducting the interviews (Appendix A: Interview guide).

Research target group, the interview partners had quite little experience with negative interactions at the beginning of the survey phase. If interviews had been conducted at the beginning of the research with active social media users who have a larger number of followers, often post their own contributions and whose profiles are publicly accessible, more negative experiences might have been made on social media. This, in turn, could have led to more diverse results of this research.

Furthermore, the quantitative study is a scenario-based study. It is possible that some participants were not able to identify with the study and the scenarios. To make this as easy as possible for the participants, a mock up was created for each Instagram post.

Further studies should follow on how the focus of likes could be shifted to create a healthier way of interacting on social media. As mentioned earlier, new ways of presenting likes could be a first step in understanding how this metric is perceived. Furthermore, in this context, one could explore how a more meaningful kind of interaction in the form of comments could be promoted. In terms of coping theory, it is suggested that in-depth research be conducted. It would be important to find out which situations trigger which coping strategies. This could be done quantitatively in order to be able to make well-founded statements about which form of stress leads to which coping strategy. It would also be interesting to find out whether there are certain personality types that prefer to use certain coping strategies. In this context, it could also be investigated whether there are differences in the use of social media and coping with stress with regard to age and gender. In this respect, the coping strategies from the present

study can serve as a basis. Finally, it would also be compelling to investigate to know whether different forms of interaction could cushion the stress of missing likes. For example, at what level of positive comments would likes become less relevant or even irrelevant to the content creator? On the other hand, it could also be that the stress triggered by likes cannot be mitigated with any other positive action. This could be investigated in a qualitative way through a scenario-based study.

Further research should explore a broader range of emotions and their influence on coping strategies. It would also be interesting to understand why strategies that do not work are used in the coping process. Another point for future research could be to find out whether certain personality types can enhance and reduce emotions, and if so, which ones. Finally, to improve the social media environment, functionalities could be developed to help users cope better with negative experience.

# 7  Conclusion

This thesis provides different insights through the mixed method approach. In the pre-study, active social media users are asked about their negative experiences on Instagram in qualitative interviews. The negative experience is supposed to have occurred after posting content. In the next step, the interview partners are asked about their coping strategies. The aim is to find out what triggers stress in the content creator after posting content and how to deal with it. The coping theory of Lazarus and Folkman (1984) forms the basis for further analysis. In the quantitative scenario-based study, respondents experience a negative interaction with their presented posts which lead to anger, sadness and coping behaviour. The pre-study aims to find out what coping strategies are used for on Instagram. The scenario-based study targets to find out which strategies are influenced by which emotions. In the last step, the effectiveness of four different coping strategies in several scenarios is investigated.

Research shows, that social media can be a cause of stress. One major origin of stress is the extent and content of interaction between users. It is striking that all types of interaction mentioned, i.e. positive, no and negative interaction, can trigger stress in users. Likes play a major role and can cause stress for content creators. It is related to users' expectations of how others will react to their posts. Based on the amount of interviewees who reported this stressor, the likes metric was found to be the main cause of stress in social media interaction, in line with existing literature (Lee et al. 2020). These types of stress can be attributed to the phenomenon of approval anxiety. Coupled with one's own expectations, like related stress arises even before a post was published and without any direct influence of others. Social media can therefore be the source of stress. In the case of prevailing stress, the user can fall back on his online network to cope with the situation. Social media can therefore function as a stressor and a resource. However, not only social media can be the stressor. Because the analogue network of users is also active in social media, the stress can also arise across platforms outside of social media. This is possible because the analogue network may disagree with the posted content. It has also been found that when stress arises on social media, people also turn to the offline network to cope with the stress that has arisen. The offline network can therefore be a reason for stress in connection with social media. However, it can also cushion the stress that has arisen. Thus, the online network, like social media, can function as a stressor and as a resource. To cope with the stress that has arisen, users can resort to efc and pfc strategies. They range from commonly known strategies to social media specific strategies.

It is interesting to note that the results of the study of emotions provide dichotomous results. The high arousal emotion of anger tends to favour destructive coping strategies, such as deleting content (H1a) and blocking users (H1d). In contrast, the low-arousal emotion of sadness tends to promote strategies that generate more content, such as posting more content (H2b) and interacting with users in the comments (H2c). It is striking that the destructive coping strategies are not successful (H3a, H3d). The use of these strategies can lead to not being able to establish satisfaction. The strategies that promote the emotion sadness show a positive influence on the satisfaction of the respondents (H3b, H3c). These findings show a new perspective on how social media can be viewed in dealing with emotions. It shows that sadness can be managed directly with the features on Instagram. To manage the emotion of anger, strategies outside the platform are needed. In the long run, this can become a problem if people interact socially mainly through social media, as such platforms become more and more toxic.

As social media is widely used in today's society, it can have a great impact within as well as beyond the platforms and can significantly influence the emotional state of its users. As a result, they can have a great impact on a personal level. Further research is needed to better understand behaviour and

different effects on social media for an early education of social media users and purposeful changes of social media features if needed.

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# Appendix

## Appendix A: Interview guide

**Interviewleitfaden**

    a. Die Interviews werden mit einem Aufnahmegerät aufgezeichnet und anschließend in Schriftform überführt.

    b. Für die weitere wissenschaftliche Auswertung der Interviewtexte werden alle Angaben anonymisiert.

    c. Sie haben jederzeit das Recht auf Auskunft, Berichtigung, Sperrung oder Löschung dieser Daten. Dazu wenden Sie sich an die Datenschutzbeauftragte der HNU (dsb@hnu.de).

    d. Sind Sie damit einverstanden, dass Ihre Daten zu Forschungszwecken genutzt werden?

**Demografische Variablen:**
Geschlecht
Alter

**Social Media Use:**
Wie häufig nutzt du Social Media?
Welche Plattformen nutzt du?
→ Was nutzt du davon lieber? Warum?
Auf Social Media gibt es unglaublich viele Communities, sei es politische, berufsbezogene, gaming Communities oder Film und Musik. Bist du denn in Communities unterwegs?
Falls ja:
→ In welchen Communities bist du unterwegs?
→ Wie kann man sich das vorstellen in der Community? Was wird da geteilt bzw. was ist der Sinn der Community?
→ Wie kam es dazu, dass du in Communities unterwegs bist?
→ Was erhoffst du dir davon? Bzw. warum bist du in den Communities unterwegs?
→ Interagierst du mit den Leuten oder liest du nur mit?
Falls nein:
→ Wieso nicht? Also gibt es einen bestimmten Grund, warum du nicht in Communities unterwegs bist?

**Teilverhalten:**
Wie würdest du dein Liking-, Sharing-, Posting-Verhalten beschreiben?
→ Was tust du davon am meisten? Und warum?
→ Du bist aktiv auf Social Media, warum postest/ likst/ sharest du überhaupt Dinge?

**User Reactions**
**Stressoren:**
Aus welchem Grund bist du auf Social Media unterwegs?
Hattest du bereits eine negative Erfahrung auf SM? Was war da?

Denke mal an deine letzten Social Media Posts zurück... Was erwartest du, wenn du etwas auf Social Media postest? (Story, Beitrag, Reel, Tweet).
Was schaust du als erstes an? Also achtest du mehr auf Kommentare oder auf Likes?

Erwartest du Likes? Erwartest du Kommentare? Erwartest du einen Repost? Erwartest du vielleicht eine bestimmte Anzahl von Likes/ Kommentaren oder von bestimmten Personen?

**Ressourcen:**

Wie stark bist du mit anderen vernetzt? Hast du in den sozialen Medien ein großes Netzwerk zu denen du dich nicht verbunden fühlst, vielleicht auch Leute, die du gar nicht kennst? Oder hast du eher ein kleines Netzwerk bestehend aus Freunden und Bekannten, also ein Netzwerk mit dem du dich eher verbunden fühlst?

Im realen Leben unterstützen Freunde und Familie ja einen, aber denkst du dein Netzwerk in den Sozialen Medien unterstützt dich auch?

Falls ja:

→ Wie sieht diese Unterstützung aus? Sei es bei einem Post in Form von Likes oder bei negativem Feedback in Form von Verteidigung oder einfach zu wissen, dass sie hinter dir stehen?

Falls nein:

→ Wieso glaubst du wirst du nicht unterstützt?

**Coping:**

Was tust du, wenn du negative Reaktionen/keine Reaktion/Erwartungen nicht erfüllt werden/ bekommst? Welche Konsequenzen ziehst du daraus, oder hast du daraus gezogen? Änderst du dein Posting-Verhalten oder bleibt es gleich? Oder nutzt du dann einfach kein Social Media mehr?

In welcher Situation hast du schon mal Leute geblockt und warum?

Hast du mal jemanden geblockt und dann wieder entblockt? Warum?

# Appendix B: Online survey



**Social Media Study**

Introduction

Thank you for agreeing to take part in this academic survey about Instagram.

We seek to understand your honest thoughts and opinions in order to better understand how people engage on Instagram.
Thus, please bear in mind that there are no wrong or right answers to the questions asked!

In the following you will be introduced to three scenarios.

This survey should take around **3 minutes** to complete. Be assured that all answers you provide will be kept in the strictest confidentiality.

Please click 'Next' to begin.

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**Social Media Study**

* 1. What is your gender? If you do not identify as male or female, choose one of the other options.

○ Female

○ Male

○ Other

○ Other

* 2. What is your age?

[                              ]

* 3. What is the highest degree or level of school you have completed?

○ No schooling completed

○ Nursery school to 8th grade

○ Some high school, no diploma

○ High school graduate, diploma or the equivalent (for example: GED)

○ Some college credit, no degree

○ Trade/technical/vocational training

○ Associate degree

○ Bachelor's degree

○ Master's degree

○ Professional degree

○ Doctorate degree

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## Social Media Study

### Please read the following scenario and answer the questions below according to it.

Imagine you post the following Instagram Post. After some time you get the depicted reactions in forms of likes.
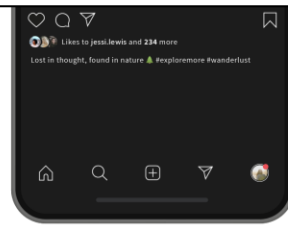


* 4. How do you feel?

| | Strongly Disagree | Disagree | Moderately Disagree | Neither Agree nor Disagree | Moderately Agree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|---|
| As a whole, you are satisfied with this situation. | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| You are happy about your experience with this situation. | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| You are satisfied with this situation. | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Please click "Strongly Disagree" | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

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**Social Media Study**

**Please read the following scenario and answer the questions below according to it.**

Now you think about posting another picture. This time you receive way less reactions in terms of likes.





* 5. While witnessing the reaction to your Instagram post to what extent did you experience these emotions?

| | Not at all | Slightly | Somewhat | Moderately | Quite a bit | Very much | An extreme amount |
|---|---|---|---|---|---|---|---|
| Anger | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Mad | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Pissed | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Rage | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Grief | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Empty | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Lonely | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Sad | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

* 6. Please rate how likely it is that you inten to perform the following activity.

| | Very Unlikely | Unlikely | Moderately Unlikely | Neither Likely nor Unlikely | Moderately Likely | Likely | Very Likely |
|---|---|---|---|---|---|---|---|
| Delete the post. | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Keep on posting this kind of content in order to make a point. | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Start to comment in order to explain why you posted this. | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

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**Social Media Study**

**Please read the following scenario and answer the questions below according to it.**

Now you think about posting another picture. This time you receive the following reactions in terms of likes. In addition you get the following comment from a random Instagram User.



Likes to **zac.davis** and **77** more
Embracing the simple things in life ☀ #adventuretime #enjoythelittlethings

**Random_person** Just stop posting content... no one cares about your life...



Likes to **zac.davis** and **77** more
Embracing the simple things in life ☀ #adventuretime #enjoythelittlethings

**Random_person** Just stop posting content... no one cares about your life...

* 7. While witnessing the reaction to your Instagram post to what extent did you experience these emotions?

| | Not at all | Slightly | Somewhat | Moderately | Quite a bit | Very much | An extreme amount |
|---|---|---|---|---|---|---|---|
| Anger | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Mad | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Pissed | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Rage | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Grief | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Empty | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Lonely | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Sad | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

* 8. Please rate how likely it is that you intent to perform the following activity.

| | Very Unlikely | Unlikely | Moderately Unlikely | Neither Likely nor Unlikely | Moderately Likely | Likely | Very Likely |
|---|---|---|---|---|---|---|---|
| Delete the post. | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Keep on posting this kind of content in order to make a point. | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Start to comment in order to explain why you posted this. | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Block users of negative comments. | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

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**Social Media Study**

* 9. To what extent do you experience the following emotions after this engagement.

| | Not at all | Slightly | Somewhat | Moderately | Quite a bit | Very much | An extreme amount |
|---|---|---|---|---|---|---|---|
| Chilled out | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Calm | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Easygoing | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Relaxation | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Satisfaction | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Enjoyment | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Liking | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Happy | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

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**Social Media Study**

**Are you a human?**

10. Click the following link and insert the number shown below (this is a captcha not the mturk Code. mTurk Code will follow on the next page):
https://www.instagram.com/researchlab.berlin/

[                    ]

11. If you have any additional comments on the survey, please leave them here.

[                    ]

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# Eidesstattliche Erklärung

Ich versichere, dass ich die vorliegende Abschlussarbeit selbständig angefertigt, nicht anderweitig für Prüfungszwecke vorgelegt, keine anderen als die angegebenen Quellen und Hilfsmittel benutzt, sowie wörtliche und sinngemäße Zitate als solche gekennzeichnet habe und die Überprüfung mittels Anti-Plagiatssoftware dulde.

Schwegenheim, 17.05.2023

_____          _____
Ort, Datum                                Unterschrift