

Where Am I?

**In-between Online and Offline Social Infrastructures in Everyday
Life**

A qualitative approach on the dynamics of online/offline social infrastructures in social settings
of young adults

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Abstract

Objectives: The development of smartphones has enabled us to be connected with others at any time, and from wherever we are. Even when you are in a conversation with someone, you can connect online with other contacts in the same moment. As our online world increasingly merges with our offline lives and affects our social behavior, it becomes clear that this phenomenon needs to be explored. Few studies have yet conceptualized what the interplay between online and offline social infrastructures mean for individuals in a *social setting*. Henceforth, this study is a first step in exploring the dynamics of online and offline social infrastructures in daily social settings of young adults. **Method:** For this study, a diary was the main research approach, and a secondary survey providing context. Both studies have been conducted throughout three days, with 17 participants, who were mostly German and all from the ages 19-25. **Measurements:** With the diary study, participants online/offline social infrastructures was explored by focusing on their online engagement throughout offline social settings. Open-ended questions conceptualized how and with what feeling participants moved to the online world. Moreover, a focus was laid on making sense of these experiences throughout the day. The additional survey served as further insights and let the participants reflect on their behavior throughout the day. **Results:** The results from the diary study provided a first step into the exploration of individuals' online and offline infrastructures in a social setting. The results established that participants evaluated the aim of their online and offline interactions and found that both serve the same goal of establishing and maintaining social connections. The findings demonstrated that whereas participants' offline connections were viewed as more gratifying and meaningful, their online social interactions were mostly evaluated as distracting during offline social settings. Moreover, the transition of going online and offline, and vice versa, were felt to be unpleasant and stressful. Henceforth, it was impossible for participants to be present in both spheres at the same time, resulting in dissonance and disconnection from both spheres. **Conclusion & Recommendation:** The dynamics of online/offline social infrastructures are experienced differently by the individual. Reciprocal expectations of availability come with smartphone use, which is why individuals engage in more online engagement than they want which has an effect on their social interactions in both spheres. Understanding and directing online interaction is critical to the future of human sociality. **Keywords:** Online/offline social infrastructures, social setting, smartphone use, experience

Table of Contents

Abstract	1
1. Introduction	4
2. Theoretical Framework	8
2.1 Mediatization	8
2.2 Social Infrastructures in the Digital Age	11
2.2.1 Sense-Making in Everyday Life	12
2.2.2 Online/Offline Spheres	13
2.3 Social Settings	14
2.4 Conceptual Framework	16
3. Methods	18
3.1 Participant Recruitment	18
3.2 Main Design	19
3.2.1 Main Procedure	20
3.3 Main Instruments	21
3.3.1 Social Settings	21
3.3.2 Online/ Offline Social Infrastructures	22
3.3.3 Social Media Usage in a Social Setting	22
3.3.4 Sense-making/ Experience	23
3.4 Survey Design	25
3.4.1 Survey Procedure	25
3.3 Survey Instruments	26
3.4 Participants	28
3.5.1 Pre-test	29
3.5.2 Data Preparation and Analysis	30

4. Results	31
4.1 Short Survey	31
4.2 Diary Survey	32
4.2.1 Offline Social Infrastructure	32
4.2.2 Online Social Infrastructure	32
4.2.3 Online/ Offline Social Infrastructures	36
4.3 Summary of findings	40
5. Discussion	42
5.1 Main findings	42
5.2 Limitations and Future Research	46
6. Conclusion	47
7. References	49
8. Appendix	54

1. Introduction

Steve Jobs, the founder of Apple, declared he was going to change everything when the first popular smartphone was released in 2007 (Holland, 2020). Ten years later, billions of people around the world find themselves in the possession of smartphones and therefore also connected to their entire digital social network anywhere they go and during everything they do (Kushlev & Heintzelman, 2017).

Usage of the smartphones has steadily increased over the last years and not possessing one is very rare. Every day the smartphone assists and accompanies human from when they wake up until they go to bed. Smartphone use has become an intrinsic element of everyday life for people around the world (Kushlev & Heintzelman, 2017). The USA is a fitting example, as almost half of the population claimed that they could not live a day without their smartphones, checking them an average of 221 times per day (Perrin, 2015). The technology that we¹ carry with us around every day, has grown to the point of becoming a necessity in today's networked culture (Patterer et al., 2021). A study established that Americans have different views about when and where it is acceptable to use a smartphone. About three-quarters of adults said it was acceptable for people to use their phones while walking down the street, taking public transportation, or waiting in line, but much fewer felt it is acceptable to use their phone while in a meeting, at the movies, or in church. The vast majority of smartphone owners said they used their smartphones during their most recent social event, regardless of how they feel about the appropriateness of using this device in social settings.

Smartphones are more than just objects with which we engage; they also connect us to other people and allow us to interact with them. Smartphones provide people with unprecedented access to information and functions, allowing them to access all of the Internet's resources from anywhere (Kushlev et al., 2017). Through their portability, they provide a point of entry to mass and social media, digital services, and information that permeate and may even alter everyday habits. In particular, socialization, mostly done through social media, is among the most popular uses of internet technology (Pew Project on the Internet and American Life, 2000).

In many circumstances, socialization, as we knew it, has been facilitated by social infrastructures, built to encourage interaction and strengthen ties among groups (Latham &

¹ By "we", this study refers to anyone, who has access to both smartphones and a (mobile) connection to the internet. This is a presupposition for this study.

Layton, 2019). These offline social infrastructures include a situation where you are with one or more other people you interact with. Henceforth, they are *social settings* that one finds himself in.

With the introduction of the smartphone, the offline social infrastructures we knew, have transformed to the building of online social infrastructures. Social infrastructures in the digital age conceive and design user participation in ways that mimic social encounters of in-person social infrastructures (Alaimo & Kallinikos, 2019). This technological environment accommodates social media platforms and places the foundation for online social interaction, by enabling us to interact with each other from anywhere, at any time. It has become an inextricable component of the way we conduct many of the daily interactions and transfers the existing offline social infrastructures into digital social infrastructures. Such changes are becoming increasingly important as social media platforms expand and deepen their impact on the online world (Alaimo & Kallinikos, 2019). Within this thesis, social media is defined as a collective term for websites and applications that focus on communication, community-based input, interaction, content-sharing and collaboration.

Initially founded as websites for sharing content and socializing with friends and strangers alike, social media platforms have progressively expanded and diversified their services throughout the course of their existence (Boyd & Ellison, 2007). For some scholars, this trend constitutes not as a way to bring people together, but more as a threat to more meaningful methods of interaction (Katz et al., 2001). This binary transformation of communication and media resulting from this process has left considerable marks on both society and individual behavior in everyday life (Couldry & Hepp, 2013). More and more social domains are undergoing significant transformations as a result of the rapidly developing communication technology, which may be seen as a key indicator of mediatization, through which our lives have grown more reliant on and adaptable to media (Jansson, 2017).

But the preoccupation with such technology, particularly smartphones, has irreversibly changed how people interact with each other. When interacting on social media, we are considered to be “online”, virtually connected with others. Despite the numerous benefits provided by the smartphone's mobility and multifunctionality, the ongoing fixation on smartphones may come at the expense of real-life, in-person engagements (David & Roberts, 2017). In this digital era, physical presence is not rarely accompanied by smartphone use,

altering the dynamics of face-to-face communication. Smartphones provide their users with the freedom to interact with other users, be entertained, work from remote places, and access information in ways that were unimaginable two decades ago (David & Roberts, 2017). Being always on and always available carries with it a sense of duty, if not obligation, to respond to our technology in a timely manner. In other words, one could argue that through the ever-increasing use of smartphones, we live in a world where we are constantly distracted (Turkle, 2011).

Despite the fact that the development over the past 10 years in communication technology have enabled billions of people to communicate across long distances via smartphones, little is known about how their ubiquitous presence in social settings affects face-to-face interactions (Przybylski & Weinstein, 2012). In order to understand what that means for individuals' participation in their communication with others, this study explores how individuals' online and offline spheres as social infrastructures in everyday life are played out. As our online world increasingly merges with our offline lives, it becomes clear that it is not only of pivotal importance to gain insight into the dynamics of individuals' daily online/offline spheres as social infrastructures, but also how they experience these online/ offline interactions and what meaning they attribute to these experiences.

It has been established that when using a smartphone during social settings, it can lower feelings of social connectedness, the perception of the quality of the encounter, the satisfaction derived from the interaction, as well as the frequency with which people, for example, smile at others (Lieberman & Schroeder, 2020). Nonetheless, few studies have conceptualized what the dynamics of these online and offline spheres as social infrastructures mean for individuals in a *social setting*. Social settings hereby refer to a particular place where another person or other people are, that one might interact with inside this setting. For instance, being at a public place with friends, or at home with your family or roommates.

Henceforth, this research explores how people in everyday social situations perceive the seeming interplay of their online/offline social infrastructure. The study will furthermore examine what function social media plays for participants in social settings, how they perceive this, and how they give meaning to these experiences. The following research question will be used to address this.

RQ: What are the dynamics of online/offline social infrastructures in a social setting for young adults?

For this purpose, the study will first lay out a theoretical framework that includes a deeper theoretical background on the topic and ends with a conceptual framework. Following that, this study's experimental research is presented, analyzed, and debated in order to answer the research questions. Finally, the study's strengths, limitations, recommendations, and conclusions are presented.

2. Theoretical Framework

This study explores everyday online/ offline spheres as social infrastructures in the individuals' life. Specifically, it explores how individuals in typical social settings perceive the interplay between their online and offline spheres. This study will look at smartphones in the context of people's daily lives and their so-called interconnectedness. It will also explore how individuals use and perceive social platforms in social settings, as well as how they interpret these communicative experiences in daily life. Existing literature on the technological development of our society and move to online communication, as well as what effects this may have on our social interactions with others, is being examined. Additionally, it provides the background for this study and paves the way for exploring the communicative processes of the individual in a social setting.

2.1 Mediatization

When considering how our world has changed in recent years, one can see that there has been a gradual increase in society's technological interdependence (Couldry & Hepp, 2017). The technological interconnectedness of media in society is steadily increasing and has been achieved through adopting underlying changes with Jobs' implementation of the smartphone (Couldry & Hepp, 2017). Laptops and smartphones are said to break traditional work boundaries and enable new methods to combine multiple aspects of life while staying in the same place. Through modern information and communication technology, both space and time dimensions have taken on new shapes (Bergman et al., 2017).

With the transition from electronic mass media to digital transmedia systems, the interdependences between media technology and ordinary human existence have grown beyond those communication activities that media formerly referred to. This continuous reliance and eventual irreplaceability of media can be called "mediatization", and is the process by which our lives become dependent on and adapted to media, as well as how it becomes intertwined with and influences fields in society, such as politics, war, or religion (Bengtsson et al., 2019).

In order to grasp mediatization, one needs to look at human-technology relations and the role of technologies in society. Humans are technological consumers by nature since we utilize technology to supplement, enhance, or relieve ourselves. This has the effect of technology

connecting us to the world when we use it, and utilizing it further shapes our relations with the environment (Verbeek, 2006). Taking smartphones as a focus, they connect us to people and allow us to interact with them. As a result, technologies are more than just a bridge between human beings and their world, they also contribute to shaping who we are and what the world looks like for us. The use of technology for our construction of communication is what can be called “technological mediation” (Verbeek, 2006). Different from mediatization, mediation is not the influence of media on society, but rather the use of media for the communication of meaning. Technological mediation shows how technologies mediate human's access to the world. The technological mediation theory aims at evaluating the functions that technologies play in human life and society. Its core premise is that technology, when properly applied, may help to change human-world relationships (Verbeek, 2006).

The distinction between mediation and mediatization is critical, since mediatization describes how media spreads, becomes intertwined, and influences social domains, whereas mediation is arguably about the use of media for communication. The idea of mediation is inherently paradoxical and necessitates to consider communication processes as being institutionally and technologically driven, as well as embedded in society (Silverstone, 2005). With the move to mediatization, fewer aspects of our lives remain untouched by media (Bengtsson et al., 2019). At the most basic level of depth, media are utilized to connect people, integrating it into and legitimizing it by everyday processes or recognition. Behind these processes, however, there could also be irritation, annoyance, void, and constraint brought on by the mismatch between what media are supposed to offer (and frequently pretend to do) and the satisfactions that are really received (Jansson, 2017). This established a symbiotic relationship between daily human life and media technology. With the growing reliance on, and eventually inevitability of media technology, i.e. smartphones, this may be considered a crucial marker of mediatization, in which our lives have become increasingly reliant on and adapted to media (Jansson, 2017).

Some researchers have established that the pervasiveness of digitalization has driven social processes into a stage of *deep mediatization*. It is a stage of mediatization in which algorithms, data, and artificial intelligence analyses become critical to grasping our social world (Hepp, 2019). This shows how our social reality is becoming increasingly entangled with pervasive media technology, such as the smartphone, and highlights the importance of

conducting further research on this topic. The link between the development of media and communication on the one end, and society on the other, is the subject of mediatization study (Couldry & Hepp, 2013). Because of the rising dependence on smartphones and individuals' adaptation to them (Jansson, 2017), the need to explore peoples' daily lives in mediatization studies has earned considerable priority. Every individual that has access to it experiences deep mediatization at some point in their lives, since technology is increasingly transforming conversation into an online context (Bourdon & Balbi, 2021). To understand how and to what degree media shapes the scope of social domains and our daily social lives, it is essential to look at smartphones in the context of individuals' daily lives and the dependence of individuals on this technology. In this context, it will be explored how individuals experience deep mediatization in their social daily lives.

Young adults, in particular, use their smartphones for instant gratification rather than being present in the moment with another person. This hinders mutual fulfillment from occurring in real-world social relationships. Moreover, given the importance of social and communicative development in early adulthood, this inclination may be detrimental (Arnett, 2000). It has been linked to behaviors such as an inability to control one's smartphone usage, which can lead to a variety of negative repercussions in everyday life, such as signs of dependency and instances of social, behavioral, and emotional problems (Eduardo et al., 2012). Young adults are at risk, particularly because of their poor impulse control, which is typical of this developmental period. These young adults exposed to more risk are aged between 18-25 (Turner, 2015), which therefore will be chosen as the target group for this study.

Based on various studies undertaken over the last two decades, there is factual evidence that media technology has become a powerful shaping influence in modern societies as well as in the fundamental dimensions of everyday life and human existence (Jansson, 2017, & Couldry & Hepp, 2013). However, there is presently no longitudinal data that can confirm if and how this process is progressing, that is, whether and how it is possibly deepening and growing into a rising number of aspects of human existence and social environments (Hepp, 2019). Hence, this study will approach mediatization as the perceived experience of humans' online/ offline flow while focusing on how young adults encounter this phenomenon in the social and communicative domain of their daily life.

2.2 Social Infrastructures in the Digital Age

Building on the concept of mediatization in this digital age, it is important to consider societies' building of social infrastructures in everyday life and how that has changed to online/offline spheres as social infrastructures. This abstract will take a look at the development of the social infrastructures of our society.

Social infrastructure is the foundation for real human interaction in a shared physical space. That is, social infrastructure facilitates the formation of social capital (Klinenberg, 2018). Physical spaces such as parks, libraries, and community centers are examples of traditional social infrastructure where people may socialize and meet for a shared cause, which does not necessitate a particular reason (Schmidt & Power, 2021). These physical gathering spaces are important for the social and economic well-being of communities, as well as for individuals, since they allow people to create connections and make friends (Vazonienė and Pakeltienė, 2017). Essential for social support and companionship is a social capital network that is made up of interpersonal ties that are relied upon for social and emotional welfare (Sander & Putnam, 2009).

Nonetheless, since the introduction of social media into society, there has been a move from offline social infrastructures to the building of social capital on digital platforms (Schmidt & Power, 2021). Social media creates online ways of interaction that are strikingly different from traditional forms of behaving, communicating, and connecting. Initially, they were created as websites for sharing content and communicating with friends (Boyd & Ellison, 2007). However, these so-called platforms have progressively expanded and diversified their activities throughout the course of their brief existence (Alaimo & Kallinikos, 2019). Many of the activities connected with social capital can be conducted on these platforms: interacting with friends and family, creating social groups, participating in political debates, and following the news are all things that can be done online just as they can be done offline (Thelwall 2013). One of the most common uses of the internet is to socialize with others. This has sparked a lot of debate and conjecture regarding the nature and repercussions of online social contacts/interaction (Baym et al., 2004). Nowadays, social media not only provides the service of socializing on the platforms with the audio and vision of the other, but also additional services such as buying and selling items, transferring money, direct messaging, collaborating on projects, and so on (Alaimo & Kallinikos, 2019). User input and interaction are central to the operation of social platforms.

Without them, social media operations would not work or expand. People's social contacts and the habits and cultural conventions that condition them are designed in ways that resemble social media user engagement to some extent (Alaimo & Kallinikos, 2019). These methods are tightly linked to social media's technological environment and the standardized forms of user interactions (i.e. following another person virtually, giving a *like*, or tagging someone/someplace) that allow social media to function as economic organizations (Alaimo & Kallinikos, 2019), or as social infrastructures. Much of how people engage in the digital world is similar to how they engage in the real world, and it is a new way for them to feel connected, individuals build new social meaning and memories on social networking pages (Chi 2013).

The redefining of the basic function social contact plays in everyday settings, and the development of social order is an unavoidable consequence of these shifts (Alaimo & Kallinikos, 2019). Individuals' day-to-day experiences in the social domain must be examined in order to understand such changes. This marks the importance of looking at young adults' online and offline activities in daily life and exploring how they give meaning to them.

2.2.1 Sense-Making in Everyday Life

When exploring the daily experiences of individuals it is crucial to consider how they attribute meaning to these experiences. People try to make sense of what is going on in their lives as a reaction and devote meaning to things, people, and events (Langlois, 2014). Meaning in life is a perception that one's life is significant, coherent, and/or has a purpose (Wen & Miao, 2021). Meaning-making is a method of orienting oneself in the world, interpreting it, and understanding it based on previous knowledge and experience (Langlois, 2014). Constructing meaning in life strengthens one's mental health and overall well-being, increasing people's life satisfaction (Steger et al., 2014). The idea of 'meaning' is a result of the cognitive process during an interaction and is influenced by circumstances and culture in everyday life (Lomborg, 2015). Social media functions as an entertainment tool for some, a virtual reality for others, and may be an escape from reality for others. The meaning that a person attaches to social media is determined by the values and qualities that emerge during their identity formation process (Gündüz, 2017). In a sense, people are constantly looking for agreement and acknowledgement in order to validate their meaning-making, possibly by other people sharing it with others. Hence, it is closely related to communication and opening up to others, underlining the

importance of social and emotional support as meaning-making concepts (Langlois, 2014). With time, meaning recurs in certain interpretations, allowing a communication pattern to emerge for research.

Qualitative research allows for a view of meaning-making in situations and in contexts, as well as for observation of how people make sense of their daily lives (Manning & Kunkel, 2014). Henceforth, this research will undertake a qualitative study to address young adults' daily experiences of their online/offline social infrastructures and the sense they make of that. In other words, young adult's practices, understanding, and experiences of social media use in certain situations will be explored.

2.2.2 Online/Offline Spheres

Not only is meaning-making a central underlying part of this study, but the need to establish how young adults move within the online/offline flow is also crucial to understanding the social infrastructures of everyday life. This section will establish how this study links the aforementioned 'online' and 'offline' spheres, as well as its interrelation to the individual's social domain.

As the mediation theory has shown, communication is considered to have changed from in-person interaction to more technology-mediated communication. In day-to-day life, this suggests that offline and online communication blend into one another (Lieberman & Schroeder, 2020). It is precisely this blurring of lines and routineness that makes research on this issue so significant. Since it is arguably pervasively interwoven into our reality, we need to explore how individuals perceive the extent to which social media has become embedded in their daily lives. Additionally, research has shown that social networks are contiguous across the online and offline spheres (Leander, 2008). In other words, conducting online interaction can help to maintain in-person social relationships. Hereby, social relationships in the offline sphere are also supported by the online sphere. These relationships are considered as "transitional" relationships (Leander, 2008). In order to understand the importance of transitional relationships, research has established that rejecting online social ties as irrelevant might lead to the exclusion of relationships that are typically considered important in a person's support system (Hampton, 2004). As a result, sustaining social ties in the online world is as vital as maintaining relationships in the real world. (Leander, 2008). The ability to stay connected with one's social

network from anywhere and at any time has been acknowledged as a key social benefit that smartphones may provide. Nonetheless, research on the social impact of using smartphones for connection has come to the conclusion that it constitutes a social paradox since technology allows for both social advantages and social costs of communication (Patterer et al., 2021). Social gains, on the other hand, refer to the opportunity of feeling close and connected to others, and social costs relate to the reciprocal expectations of availability that come with personal smartphone use (Ling, 2016).

Online technologies complement rather than replace offline connections. Especially when researching the online/offline spheres, it is important to consider online and offline spaces as interpolated and dynamically co-constructed (Leander, 2008). Hence, this study will take into account that online and offline are not two separate spheres, but rather one interconnected, co-constructed *flow*. By exploring how individuals experience their online interactions in daily social life while situated in offline social interactions, this study underlines the importance of considering online and offline as a co-constructed flow.

2.3 Social Settings

When being in a social situation, socializing face-to-face with one another, we are not only drawn into social interaction with the people that are present. We can also be drawn into conversation with anyone in our existing digital social circles, even reaching people beyond it. We carry around our smartphones every day, everywhere we go, and they are designed to connect us with others (Kushlev & Heintzelman, 2017). As a result and as already established, the way individuals interact and socialize with each other has changed dramatically as a consequence of new communication technologies. Smartphones have grown to the point of becoming a necessity to the individual in today's networked culture (Patterer et al., 2021).

In the reviewed literature, the effects of this phenomenon have been extensively studied (Brown et al., 2016). For instance, when offered the opportunity to socialize face-to-face with a close friend in a laboratory environment, it showed that young adults would engage in smartphone usage and not stay in the conversation (Brown, et al., 2016). Through observational research, findings showed that the consequences of smartphone usage in social situations are connected to lower interaction quality (Brown, et al., 2016). Previous research has established the effects of smartphone usage in a social setting. For instance, when investigating the impact of

mobile messaging during an offline conversation, it was revealed that phone users were perceived as less polite and attentive. Especially self-initiated messaging behavior led to more negative impression formation (Abelee, et al., 2016). Put differently, making use of social media in social settings has a negative impact on social relationships.

A number of notable scholars have made the claim that smartphones can have a detrimental impact on social relationships as well. For instance, Sherry Turkle (2012) discusses the relationship people have with technology and the digital environment it has created. The author offers a variety of qualitative evidence gathered through interviews to show that phones draw the focus away from face-to-face interactions by emphasizing the need to maintain larger social networks (Turkle, 2012). When paired with quantitative studies, it shows that environmental signals may activate relationship paradigms and influence a person's behavior without their knowledge (Shah, 2003). One study found that when college students met for the first time, they reported lower feelings of trust and empathic understanding when there was a smartphone in the room, especially while discussing intimate topics. Evidently, the phone reminded participants of other options of interaction, preventing them from completely participating in dialogue with their offline partner (Przybylski & Weinstein, 2013). Hence, there is reason to suspect that simply having a phone around, harms direct social connections, which proves the significance of exploring this topic. Monitoring the daily online and offline flow can reveal how deeply technology has been embedded into our lives (Leander, 2008). This underlying behavior needs to be explored to the extent of how people interact in an everyday social setting in order to address how they move within this setting to the online social world.

To conclude, we are drawn into social engagement with the people around us when we are in a social setting. When interacting with a close friend in person, adolescents continue to use their phones. This has a detrimental influence on their social interactions (Brown et al., 2016). Previous research has established that mobile communication technology can be harmful to social relationships (Abelee et al. 2016; Przybylski & Weinstein, 2013). When individuals text during an offline interaction, they are perceived as being less polite and attentive (Abelee et al., 2016). There's evidence to believe that merely having a phone on hand degrades direct social relationships (Przybylski & Weinstein, 2013). Furthermore, having a smartphone in the room reduces emotions of trust and empathetic understanding, especially when discussing personal matters (Przybylski & Weinstein, 2013).

This emphasizes the importance of studying the balance of media technology use, i.e., the smartphone, and social relationships. It also demonstrates a research gap in combining the offline spheres as social infrastructures, with *being in a social setting*. Henceforth, a social setting differs from a social engagement as that includes only the engagement, whereas a social setting includes the scope of being present in an offline setting that one finds himself in, where one might interact with another person or multiple others.

2.4 Conceptual Framework

With the growing role of mediatization in society and the transformation of conversation into an online context, the perceived experience of everyday life has changed (Bourdon & Balbi, 2021; Hepp, 2019). The reviewed literature will serve as a foundation for the following section, which will not only build on it, but also use it to establish the study's conceptual framework. To fully grasp how and to what extent media shapes the breadth of social domains and our everyday social lives, this study will look at smartphones in the context of people's daily lives and their so-called interconnectedness.

In this regard, it is important to take into account that the social infrastructure of our society is moving from the offline to the online because social media user engagement mirrors people's offline social interactions, which allows social media to function as economic organizations, or as social infrastructures (Alaimo & Kallinikos, 2019). Hence, individuals engage in the digital world just like in the real world, in which they build new social meanings on social networking pages. As a result, people engage in the digital world the same way they do in the physical world, creating new social meaning on social networking sites (Chi, 2013). Furthermore, social media engagement in an offline social setting results in negative impression formation and, as a result, has a negative impact on social relationships (Abelee et al., 2016). As mentioned beforehand, young adults are prone to be at risk the most, especially because of their poor impulse control, which is typical of this developmental period (Turner, 2015). In order to grasp how young adults experience their daily online/offline interactions, it is crucial to consider how they make sense of these experiences. This allows the researcher to get an insight into the participant's understanding of certain situations and how they evaluate these experiences.

Essentially, this study undertakes an exploration of how young adults experience the dynamics of their online/offline social infrastructure in an everyday social setting. Furthermore,

it will look at what role social media use plays for participants, how they experience this, as well as what sense they attribute to these experiences. Henceforth, the following sub-questions, derived from previous literature and the main research question of this paper, will conceptualize this.

Sub-RQ1: To what extent do young adults use their smartphone in a social setting?

Sub-RQ2: How do young adults experience and make sense of the interplay between online/offline social infrastructures in a social setting?

3. Methods

This section explains the participant recruitment procedure and provides information on the two research designs used in this study, meaning a semi-structure diary survey, as well as a short one-minute survey.

3.1 Participant Recruitment

The participant recruitment for this study was based on a selection criteria. First of all, as this research aims to explore the online/offline dynamics of people in their emerging adulthood, participants had to be in the age range of 18 to 25 years old. As established earlier in this thesis, young adults between 18 to 25 are in a phase of interpersonal development in which excessive smartphone use poses an especially high risk (Arnett, 2000; & Lopez-Fernandez, 2014). Moreover, participants had to meet the criterion of being someone who socializes over the internet. Henceforth, they own and use their smartphone. Furthermore, it was decided to include both males and females in the samples as this would allow for examining differences between the gender groups. Nationality was not of importance, as this study does not test differences across borders. Eligible participants were thus young adults who could speak and write sufficient English and were 18-25 years old.

Recruitment of participants has been conducted through convenience sampling, such as asking fellow students and acquaintances or friends of the researcher who would fit the research population. Snowball sampling was the second method used to recruit participants. Moreover, the method of snowball sampling was used, as participants recommended further possible participants. All participants were invited to the study via WhatsApp, as well as all interactions between the researcher and the participants happened via that platform. The invitation text invited participants to join a three-day diary study with open questions, which would need to be filled out every evening on each day. As well as a short survey which would need to be filled out throughout the day, once every time when being in an offline social setting.

3.2 Main Design

The effectiveness of this study depends on the careful consideration of the research design. In order to explore the given research questions, a qualitative approach with a solicited diary methodology has been used. This qualitative approach aims to characterize interconnected processes centered on media-technological, communicative, and socio-cultural change (Berg & Duvel, 2012). Diaries are a suitable approach since this study explores the underlying communicative processes of everyday life. Hence, with help of the diary study, it is possible to test 'self-narratives' which have the goal of inducing description, analysis, and interpretation for the researcher. A diary usually consists of personal and intimate writings by a person, capturing and disputing everyday impressions (Chang 2008). In the field of media and communication research, diaries are used as a means of data collection, generating data about when someone did what. Open-ended questions aim not to elicit answers to specific questions, but make it possible for participants to talk about something in their own words (Matthews, 2005).

On the other hand, the quantitative approach does not tell us how and why someone engaged in a particular communicative activity (Berg & Duvel, 2012), which is another reason for conducting a qualitative diary study. The diary approach is appropriate for grasping everyday phenomena because it gets close to the participants while still allowing them adequate space for personal reflections. Wheeler & Reis (1991) classified three categories; interval-contingent design, signal-contingent design, and event-contingent design. The different designs include the times, participants need to write in their diary, with which it aims to reduce retrospection bias (Wheeler & Reis, 1991). Additionally, it allows for the assessment of unusual or specialized events that might otherwise go unnoticed by fixed or random interval assessments (Bolger et al., 2003).

The disadvantages of the diary method include unstable return rates because of possible gaps or fatigue. High dropout rates are common in this study, since participants must dedicate some amount of their time every day in order to produce valuable content. They also must be actively involved in the research process (Bolger et al, 2003). However, even though this method may be stressful, it also generates positive feedback. Participants have voiced their enthusiasm as they recognized, with a media diary, that for the first time they realized how much they used communication devices or even depended on them. This method allows for grasping the communicative everyday life through the eyes of the diarist. Additionally, with this explorative

approach, it is possible to generate individual data, without having to interfere as the researcher, allowing the participants to reflect and think on their own (Berg & Duvel, 2012).

Since this study focuses on uncovering the everyday processes of individuals' online/offline social infrastructures, the diary method is an effective methodology to gain a precise and in-depth understanding of individual experiences (Milligan et al., 2005).

3.2.1 Main Procedure

Before the daily measurements, information about the study and an informed consent form was sent out to participants (see Appendix A). Informed consent is intended to ensure that the participants are placed in a situation where they can decide, in full knowledge of the risks and benefits of the study, whether and how to participate (Endacott, 2004). This study's research proposal and informed consent have been granted ethical approval by the BMS ethics committee of the University of Twente, to ensure that it complies with all legal and ethical requirements for conducting field research. Before commencing with the research, participants were requested to carefully read over the informed consent, which denoted the purpose, aim, and relevance of this research. They were reassured of their anonymity and confidentiality of any disclosed personal data and reminded that their participation is voluntary. If participants complied with these terms, they indicated their agreement by responding 'Yes' to the first question. It was ensured that participants could always contact the researcher in case of questions or difficulties. Additionally, it was made clear to participants that they have the right to refuse or to withdraw from the study at any time without it affecting them. Since this diary may contain personal information, confidentiality has been ensured, as well as anonymity throughout the study.

The diary approach is appropriate for grasping everyday phenomena because it gets close to the participants while still allowing them adequate space for personal reflections. That is why the effectiveness of this study depended on the careful consideration of the research design. In order to explore these incidents, respondents had to fill out a semi-structured diary, reflecting on their smartphone use and social behavior during these social settings. This needed to be done on three consecutive days. Due to time constraints, the research could not be conducted longer, however it is advised for further research to have representative results over a longer period of time. The aforementioned interval-contingent design was used in throughout the three days. Meaning, the researcher sent the participants a message each evening at 6 pm to fill in a

semi-structured diary, structured with open-end questions, about how they experienced their daily online/ offline flow in the social settings they were in. Respondents were asked to reflect upon their smartphone use and social behavior during these social settings. They had the possibility to reflect and hand in the daily diary survey until 12 pm daily. This way, a controlled and semi-structured research process provided the opportunity to let respondents reflect on this topic. It took participants about 15 to 20 minutes daily to reflect on their experiences in the semi-structured diary. Participants were required to enter their participant number before answering the questions in order to be recognizable throughout the research procedure and to ensure the privacy of the participants.

3.3 Main Instruments

The diary, structured with open-ended questions, addressed how participants experienced their daily online/offline flow in the social settings they were in. The following instruments structure and contextualize the diary study into coherent research, which has been adopted by pre-existing concepts from previous literature mentioned in this study and modified to the context of individuals' everyday online and offline social experiences. Table 1 shows an overview of all the items and the associated scales that they are based on. The questions are mostly open-ended, aiming to let the respondents evaluate their behavior on their own, since this study aims to get an insight into their perceived experiences. For time-constrained reasons, two closed questions were included about participants' offline and online settings. In the following, the semi-structured diary method that participants need to fill out at the end of their day, is framed by items adapted from other relevant research.

3.3.1 Social Settings

For the semi-structured diaries respondents filled out at the end of their day, different open-ended questions structured the exploration. Aiming to explore the online and offline social infrastructures of an individual's everyday life, the offline social settings one has been in, have a need to be included in the research. Taken from a similar study that researched social interactions across interpersonal communication on the internet, telephone, and face-to-face, participants needed to report the location of their interaction (at home, someone else's home, work/university, public space, or others) (Baym et al., 2004). While participants needed to assess their interaction

quality on a scale in the mentioned study, this diary approach asks an open question, as to how participants perceived their offline social interactions during that day (Baym et al., 2004). Furthermore, adapted from a question to report the exact number of minutes, participants used their smartphone applications, where participants were asked to describe how much they used their smartphones during offline social interactions that day (Patterer et al., 2021). Diaries designed to encourage semi- or unstructured replies contain room for diarists to record their own priorities. This allows for a better understanding of a person's behaviors, experiences, ideas, and feelings in relation to the specific issue of their online and offline behavior (Bartlett & Milligan, 2020).

3.3.2 Online/ Offline Social Infrastructures

In order to answer the research question and to explore the online and offline social infrastructure in an individual's daily life, the participant has been asked to report on when they were in social settings that day, how they used their smartphone. The questions have been adapted from literature and allow respondents to assess their social infrastructure on that particular day (Bergman et al., 2017). Specifically, respondents needed to evaluate how they felt about their smartphone use throughout their offline social interactions that day and thus evaluate the perceived importance of said social interactions. Furthermore, another question explored how significant online activity was to respondents when they switched to their smartphones (Bergman et al., 2017). This aimed to gain in-depth evaluations of participants' online and offline spheres. These questions have been adapted and taken from research by the mentioned author related to private and professional life and the role of technology within this infrastructure. These items allow addressing individuals' online and offline social infrastructures in their daily social life.

3.3.3 Social Media Usage in a Social Setting

In order to answer the first sub- research question, the online social infrastructures of individuals' daily online social interactions have been explored through the diary method. Not only did it explore the way an individual uses their smartphone in a social setting, but also how often and when they move to the online world in a social situation.

Social media use has been addressed through the question "How much time did you spend on the following applications while you were in a social setting?" Whereas participants

could answer with a 5-point Likert Scale and rate their usage on the following options: phone/FaceTime, text/instant messaging (e.g. WhatsApp), social networks (e.g. Instagram), email, or other apps (Patterer et al., 2021). Participants were asked from 1 to 5 (1 being none, 2= a little, 3= moderately, 4= a lot, 5= very much) to report an approximation of how much they used these applications during said social settings. Next, adapted from previously mentioned research, participants needed to reflect on how they perceived their online social interactions that day while they were in social settings (Baym et al., 2004). This allowed for exploring respondents' daily online social infrastructures.

3.3.4 Sense-making/ Experience

The meaning and significance respondents attribute to various events and experiences in their lives can be captured using qualitative approaches such as diary recording (Milligan et al., 2005). Taken from a similar research that compared the aims of online interactions to those of face-to-face encounters and phone calls (Baym et al., 2004), this study addresses the dynamics of individuals' experiences of online and offline social infrastructures. The following questions addressed the second sub- research question, exploring participants' online/offline experiences in daily social settings, and how they attached meaning to these experiences and understood them in the everyday social domain of their lives. As a result, each day, participants needed to reflect on the purpose of the interactions they had online while being in offline social settings. This facilitated critical evaluation of one's smartphone behavior in social settings. Continuing, in order to grasp a person's behavior, the next question asked participants how being in an online social setting influenced their offline social behavior (Baym et al., 2004). With this, individuals are asked to critically evaluate their online/offline behavior throughout the day. The next open-ended formulated question looked into what meaning young adults awarded to their online/offline experiences in a daily social setting. A diary question for this study was adapted from research on goals and affective well-being at work (Harris et al., 2003) For this item, respondents needed to evaluate their online activity versus their offline activity throughout the day by comparing them with regard to their purpose. Finally, the last question aims at grasping the switches between online and offline social interactions in everyday life and what they mean to each participant. The study asked them to reflect on their experiences (Wen & Miao, 2021).

In the following, the diary survey questions are summarized (see Table 3). However, they are also summarized into a concept scale table with the adapted questions from cited literature (see Appendix B).

Table 1.
Semi-structured Diary Questions

Construct	Item
Social Setting	Q1: Report the location of your offline social settings today. - At home, someone else's home, work/University, public space, other.
	Q2: How did you perceive your offline social interactions?
Online/Offline Social Infrastructures	Q3: Describe how much you used your smartphone during offline social interactions today.
	Q4: How did you feel about your smartphone use throughout your offline social interactions?
	Q5: How significant was your online activity when you switched to your smartphone during said social situations? Elaborate, please.
Social Media Usage in a Social Setting	Q6: How much time did you spend on the following applications while you were in social settings today? - Phone/ FaceTime, Text/Instant messaging (eg. WhatsApp), Social Networks (eg. Instagram), Email, Other apps?
	Q7: How did you perceive your online social interactions, while you were in offline social settings?
Sense-making/ Experience	Q8: Reflect on the purpose of the interactions you had online while being in offline social settings. Write down, why you went online during a social setting.
	Q9: How did being in an online social setting influence your offline social behavior?
	Q10: Compare your online versus your offline social interactions in regards to their purpose.
	Q11: How did you perceive switches between online and offline social interactions and what did they mean to you? Reflect on your experiences.

3.4 Survey Design

As the effectiveness of this study depends on the careful consideration of the research design, a short survey was sent out to the same participants for further insights into their online/offline behavior in the moment. Respondents had to fill out this survey, once every time they would find themselves in a social setting, such as with family, friends, or other acquaintances. As soon as participants would then move to their smartphones in these settings, they needed to fill out the short survey. The purpose of this additional research measure, was to explore participants' online/ offline flow within the situation. This is the aforementioned event-contingent design, as it requires reporting the event in question each time it would happen (Wheeler & Reis, 1991). These event-contingent notes allow to reduce retrospection bias and help respondents to recall their online/ offline behavior properly (Bolger et al., 2004). Immediately filling out a short survey about the situation that one is currently in, helps the participants to recall for the diary survey, what situations they were in and how they felt, and allows for the researcher to evaluate the situations in retrospection.

This method may have been a great workload for participants. However, it allows for the assessment of unusual or specialized events that might otherwise go unnoticed by fixed or random interval assessments (Bolger et al., 2003).

3.4.1 Survey Procedure

The short survey was to be filled out by participants, each time they would find themselves in a social setting, and on their smartphone, possibly disregarding the current conversation one might have had. If that was the case, participants were required to click on a link, provided via WhatsApp by the researcher, that led them to the online survey on Qualtrics, an online survey website, to note down their current situation. On the first day of the research, participants first had to fill out a short demographical survey beforehand, in order to be able to fill out the situational survey (see Appendix C).

The normal survey took participants one minute to fill out and included closed-ended questions that asked them to quickly define the situation (see Table 2). It could not be supervised whether participants truly did this each time they were in one of these settings, however, with help of a participant number, they had to provide at the beginning of the survey, one could see that in fact, every participant filled out the short survey at least once a day. This was enough data

for this small-scaled study, however proposes further research with a bigger sample size and a method that can control for this. This study used an additional method of sending kind reminders to participants. Throughout the day, participants received a kind reminder to reflect on their online behavior throughout their offline experiences on that day, and to fill out the survey in such situations.

3.3 Survey Instruments

First of all, in order to explore participants' online and offline behavior and to avoid retrospection bias, participants needed to note their social media usage during social interactions every day. This enabled recognition of the online and offline incidents for participants, how they in fact experienced certain situations, and allowed for the researcher to have a better understanding of the individual's daily life.

With a similar research, participants' relative amount of online and offline social interaction was assessed by a communication diary, they had to keep. Participants were asked to log down each *significant voluntary social interaction* in which they engaged during that day, and the results indicated that even though the internet was integrated into the participants' social lives, in-person communication remained the dominating way of interaction (Baym et al., 2004). However, this study will explore the *voluntary online social activity during significant offline voluntary social interaction*. The questions from the mentioned study focused on three aspects of interaction; what types of internet interaction were used, the frequencies of these interactions, and how many, and which combinations of media participants were used for significant social interactions (Baym et al., 2004). In adaptation to this research, and in order to explore the online/offline behavior of participants, the questions are somewhat changed to what type of social setting one is in (with answer possibilities retrieved from the mentioned study as well: At home, someone else's home, work/University, public space, other), as well as the voluntary online social activity, one is currently conducting, hence what types of social medium/s one used and for how long they approximately used it for (Baym et al., 2004). Social media was categorized into phone/ FaceTime, text/instant messaging (e.g. WhatsApp), social networks (e.g., Instagram), email, and other apps (Patterer et al., 2021). With these adapted items, the researcher is able to explore participants' everyday online and offline social interactions. Additionally, the respondent needed to summarize this task with a word describing their current emotion (e.g. stressful,

relaxed, chaos), in order to be able to attribute meaning to this moment later on (Bergman et al., 2017). In the following, the survey questions are summarized (see Table 2). However, a table with concepts citations is in the appendix (see Appendix D). Survey questions were used for the short one-minute survey in-situations, in order to relieve work from participants and to create a common picture of their online/offline flow, but not to retrieve participants' evaluation of it.

Table 2.

One-minute Survey Questions

Construct	Item
Online/Offline Flow	<p>Q1: In what kind of social setting are you in this moment? - At home, someone else's home, work/University, public space, other.</p> <p>Q2: If you are in a social setting, write down the voluntary online social activity you are doing.</p> <p>Q3: What type of social medium/s did you use just now? How long did you approximately use it for? - Phone/ FaceTime, Text/Instant messaging (eg. WhatsApp), Social Networks (eg. Instagram), Email, Other apps?</p> <p>Q4: Summarize the experience you are in, with a word, describing your current emotion (eg. stressful, relaxed, chaos...)</p>

3.4 Participants

The final sample of the study, including both research designs, had 17 participants. Participants' ages ranged from 19 to 25 ($M=22.2$, $SD=5.6$). Moreover, it contained more females than males and most of the participants were German. Both of these facts do not limit this study, however, as it does not aim to detect differences between gender nor nationality. The demographics of the sample can be found in Table 3, as well as the demographical questions in Appendix C.

Table 3.

Demographics of the Online Questionnaire Sample

Characteristics	n	%
Gender		
Male	6	35.39
Female	11	64.71
Nationality		
Dutch	2	11.76
German	13	76.47
Italian	1	5.88
Romanian	1	5.88
Highest education obtained		
High school graduate	7	41.18
Some college but no degree	8	47.06
Bachelor's degree	1	5.88
Master's degree	1	5.88

3.5.1 Pre-test

Various measures have been taken in order to ensure that this study has sufficient validity and reliability. First of all, the used instrument items in this study have been adopted by pre-existing scales from previous literature and modified to the context of this study. The initial validation was conducted through pre-testing the survey and diary questions with 3 participants, using the think-aloud method, in order to assure that the questions were understandable, and resolve potential issues. This resulted in useful insights and feedback for the diary questions. First and foremost, the sequence of the main instruments was adjusted since it made more sense in that context, as indicated by the feedback. Hence, the diary survey started with *social settings*, establishing the offline settings and social situations of the day, and continued with *online/offline social infrastructures*, as in smartphone use throughout an individual's offline social interactions that day. Continuing, the open-ended questions that the diary survey contained were adjusted to some extent. Some questions were formulated more coherently, and wording that could lead the respondent in a certain direction was modified as per the collected responses from the pre-test. Finally, a progress bar was added to show participants where they are in the questionnaire completion process and to create motivation. After the pre-test, the questions for the survey, as well as for the diary study, were suitable for using in the real research (see Appendix C and Appendix D). Furthermore, participants of the pre-test expressed their excitement about the study, as it is a topic they engage with personally in their own time.

A qualitative research method was used to explore participants' online and offline social infrastructures. The analytical strategy included conducting a qualitative analysis based on the content that the participants provided. Hence, a content analysis was the method that was used to analyze the diaries and address the study's research questions. Closed questions about participants' online and offline locations provided context for the researcher, but they were irrelevant for exploring the content. The open-ended diary questions, on the other hand, provided a more in-depth look into respondents' online/offline social lives.

3.5.2 Data Preparation and Analysis

The content of these questions was segmented and coded with the help of the software program ATLAS.ti. The first step was creating a start list of codes prior to information-gathering. That list has been derived from the conceptual frameworks, research questions, problem areas, and key variables indicated by other researchers (see Appendix C and Appendix D). The process of coding was a crucial tool for this analysis because it is a way to manage the collected data by archiving it by code. In this manner, a code is a reference to passages in a text which relate to common themes that were established earlier in this thesis (Boeije, 2014). To prepare the data, all written answers to the open-ended questions were put together in a Word document, which was then uploaded to the software ATLAS.ti, where the qualitative data could be coded and analyzed. Therefore, a codebook (see Appendix D) was created which included three codes, namely offline social infrastructure, online social infrastructure, and online/offline infrastructure. Each of these codes consisted of sub-codes. Offline social infrastructure was sub-coded by offline social settings and offline social interactions, with combined sub-sub-codes to specify the content. Online social infrastructure was subdivided into smartphone use, smartphone use sentiment, significance of online interactions, application use, and perception of online interactions, with sub-sub-codes that focused on specifications. Lastly, online/offline social infrastructure was sub-categorized into online interaction purpose, online influence on offline, purpose of online/offline interactions, and online/offline switches, again with a combination of sub-sub-codes to specify the content of the data. Through this reclassification, the data has been assembled and all aspects of the research questions addressed. Coding the content enabled the exploration and interpretation of the collected and archived data (Boeije, 2014). Finally, coding reassembled the data in a way that the data could be looked at from a new perspective and the research questions could be explored in the discussion section. Intercoder reliability has not been conducted due to valid results and time constraints.

This explorative approach of analyzing the data has benefited not only the depth of exploring the research questions, but it has also benefited both reliability and validity. By labeling the codes as close as possible to the respondent's statements, the internal validity is increased. Moreover, the researcher's own interpretations are also excluded as much as possible. However, due to time constraints, intercoder reliability could not be conducted, which is a crucial denominator of the reliability of this research and a starting point for further recommendations.

4. Results

This study consists of a short survey and a semi-structured diary, which gives more in-depth answers. The data from the survey were analyzed first to provide the context for the diary questionnaire.

4.1 Short Survey

The short 1-minute survey (see Appendix D) was used to assess participants' offline social setting throughout the day. Specifically, it asked respondents in what kinds of social settings they were at this moment, what they were conducting on their smartphones before the survey, as well as what social media platforms they used, and for how long. Respondents reported being at home the most, whereas the other social settings were mentioned similarly often. Voluntary online social activities of participants mostly included staying updated on social networks, informing themselves, or interacting with others. They mostly used social media during their online engagement, which was also reported as the platform, where participants spent most of their time. The second highest-reported activity was texting or instant messaging, which, however, did not take up as much time from participants as social media. Lastly, respondents needed to summarize their current experience with a word, describing their current emotion. Most experiences were described as "relaxed", followed by "stressful". This shows that participants were mostly either in a calm environment, where they would feel comfortable, using their smartphone, especially for social media, or they were with acquaintances in a more exciting environment and smartphone use was perceived as more stressful.

4.2 Diary Survey

For the diary study, participants' answers to the open-ended questions were analyzed to find out more about their online/offline social infrastructures and what meaning they give to these experiences. The diary survey questions can be found in Appendix B and the results of these are discussed below.

4.2.1 Offline Social Infrastructure

In order to explore participants' offline social infrastructure, the survey questions rather served as offline situational information, whereas the diary questions serves as a deeper insight into how participants experienced these offline social infrastructures.

Offline social interactions

The diary aimed to look at how participants perceived their offline social interactions throughout the day rather than numerating them. Most of the participants experienced their offline social interactions as positive, more specifically as interesting. For example, participant 12 said, *"I have had quite a lot of interesting conversations today with very different people, which was really nice"*. Some participants also perceived their offline interactions as rather negative, as they were either "anxious" or "stressed", which led them to *"... be distracted a lot which also made the interactions quite exhausting today"* (Participant 9).

Nonetheless, a few participants did not make use of their smartphone in social settings at all. As for instance, participant 6 said, *"I felt really talkative today, more than usual. I also noticed that my phone stayed in my room the whole time that I was talking to other people"*. Outlier participants, not using their smartphones throughout social settings in a day, were still taken into consideration, as this shows that some respondents felt less dependence on their smartphones than others.

4.2.2 Online Social Infrastructure

For online social infrastructure, numerous items have served as opportunities for participants to reflect on their online behavior. It includes smartphone use, smartphone use sentiment, significance of online interactions, application use and finally, online social interactions. This aims to extent the depth of exploration.

Smartphone use

As for online social infrastructures, this study explored participants' smartphone usage in social settings. For the most part, participants claimed they used their phones not much during social interaction, but rather shortly keeping updated with it. As participant 13 said, *“Not much. I just checked my notification once during the interaction”* or participant 17, *“I would occasionally glance on it and sometimes pick it up to check one or two things for a second”*.

Fewer participants did use it more, which was because of checking important messages or when they perceived their offline engagement as not necessary at the moment. Participant 8 is a representation for this, as he claimed: *“Since there weren't many conversations, I was actively engaged in using my smartphone more often”*.

This shows that participants judged the situation, and accordingly used their smartphone. However it needs to be noted that within the situations, participants were rather pulled out of their offline social setting with incoming messages, in order to be available in the online environment, instead of deciding themselves to move to the online world.

Smartphone use sentiment

Continuing, smartphone use was to be associated with participants' feelings towards it in these social settings. This had the purpose of exploring the sentiment, that respondents used their smartphone with.

Most participants experienced positive encounters with their smartphone usage in offline social settings, as for instance participant 13, *“As I only used my smartphone once during the social offline interaction, it felt like an exception. It was not appropriate to use the phone today. Therefore, I did not. But it was also so exciting that I didn't even think about using my phone”*, or participant 5: *“Good, because I didn't use it in a manner where it affected the offline social interaction”*.

However, negative experiences were very well a lot represented, as for example, participant 16 experienced: *“It became a habit to me, so I felt quite bad when I pulled it out without any reason”*, or participant 2: *“I used it too often which made it hard for me to follow a conversation”*, or participant 8: *“Not good. Since I didn't really need to use it. I always feel pressured to finish using my phone quickly in offline social interactions”*.

Nonetheless, for some participants, this was somewhat irrelevant as they used their smartphones in a manner where it did not affect their offline social interactions (Participant 9: *“I could have used it less, but at that moment I was not bothered since I did not know the person and think he would care.”*). These outlier participants were nonetheless taken into considerations due to their independence to their smartphone.

This shows, that when the smartphone was connected with a negative sentiment, it was because it served rather as a distraction or a burden to participants. However, the smartphone was used, mostly with a positive sentiment, as participants reported a mindful use. Moreover, notably participant 14 experienced anxiety in his offline social environment and being online helped him: *“I felt ok, I used it because I was a bit anxious and I needed a distraction”*. Henceforth, using the smartphone in stressful situations can serve as a tool to distract oneself. Thus, distraction by smartphone adds a positive sentiment to smartphone use.

Significance of online interactions

With significance of online interactions, this study aimed not to explore participants’ feelings toward their smartphone use, but rather how significant their online interactions were to them in offline social settings. Most times participants rated their online interactions as insignificant to them. For instance, participant 4 said, *“It was not important, just part of a habit”* or, participant 8 said, *“It was completely redundant and not important at all. I wish I would not have looked on my screen so much and not actually done anything like texting”*, or participant 10 mentioned, *“It was irrelevant. I felt mad at myself for using it”*.

Nonetheless, when it did seem significant to participants, it was when they had to check something important or communicate with others. As for instance participant 17 claimed, *“It was rather significant since I planned something and no one was really engaging with me or needed my attention.”*, or participant 1, *“I had to check something important.”*. However, another reason was that *“it was significant in a way that it was hard for me to put my phone away. I stayed longer on my phone than I wanted and it was mostly just unnecessary interaction”* (Participant 5). The distribution of significant and insignificant was about the same amount, with insignificant being higher reported.

These results show that participants did view their online interactions as insignificant mostly because they were unconsciously using their smartphones in these situations. However, it

was significant to them when it was either important online interaction or because they significantly realized the length of their smartphone use.

Application use

Next, how much time participants spent on which application allowed to compare participants' online social engagement. This concept aimed to explore on what platforms participants spent their time on, during offline social settings.

Due to time constraints, this was researched with pre-defined answer categories, where participants had to provide a number of the Likert Scale, from 1 to 5 (1 being none, and 5 being very much). When being in the online world, most participants reported using their smartphones for texting (N=17, M=2.48), and secondly for social networking (N=17, M=2.62). Using it for calling someone (N=17, M=1.77), other applications (N=17, M=2.36), such as for Netflix, Google, or Spotify, or emailing (N=17, M= 1.88), were secularly, but equally representative.

With looking at respondents' application use, it became clear that participants used their smartphones mostly for texting in offline social interactions, which is in line with previous results.

Online social interactions

By asking how participants perceived the online social interactions, they had while being in offline social settings, exploring the online social infrastructure was concluded. Most of the participants perceived the online interactions they had as rather distracting. Taking as an example, participant 2, *"I perceived it as not important and distracting, creating more stress for me and making me more nervous than I was"*. The second highest-rated answer was stressful, as for instance the situation participant 8 had, *"They were interesting and important. I was, however, a bit stressed out as I feel overwhelmed sometimes when I get texts from 5 different people, as I also want to be emotionally/ mentally present at that moment and not get distracted by my phone."*, as well as the one from participant 12, *"My online interactions were not synchronized, which means to me, that I was not able to respond timely in my online social interactions. I was mostly late with replying or being online, or missed out on messages or calls"*.

Nonetheless, multiple participants perceived their interactions also positive, more specifically as beneficial with regard to taking time for oneself during offline engagements

(Participant 16: *“A bit impolite but I needed some space. Online interaction was easier to follow”*, or participant 14: *“I was glad to disconnect for a while”*), or for entertainment reasons (Participant 11: *“I perceived them as more entertaining, that is why I went online”*). Finally, online social interactions were also perceived as necessary, when they were conducted during offline social interactions (Participant 7: *“I only did the ones which were urgent and important”*).

These results show that online social interaction mainly served as a distraction for participants, creating additional stress. However, positive experiences included disconnection, entertainment or conducting important interaction.

4.2.3 Online/ Offline Social Infrastructures

As aforementioned, online/offline social infrastructures are intertwined. Henceforth, this study explored participants’ online/offline flow in relation. This includes participants’ online interaction purpose, online influence on offline, purpose of online/offline interactions, and most importantly online/ offline switches.

Online interaction purpose

In order to get a better understanding of participants’ online and offline social infrastructures, it is crucial to look at the purpose they give to their online interactions. Participants went online during offline social settings, due to social or informational reasoning. Most of the time, it was because of social reasons, such as planning, keeping updated, or updating others (Participant 10: *“I tried to organize and plan something with a friend. I felt obligated to respond timely, because time pressure was a factor and I didn’t want to let my friend down.”*). Informational reasoning was also included, but lesser times, for instance by participant 17, *“I needed more information on my meeting today, so I went online”*.

However, very few times, was also perceived as a means against boredom in the offline social setting (e.g., participant 9: *“I was bored and looked for entertainment on my phone”*, or participant 5: *“Just because my mind drifted from the conversation. I guess, I needed more stimulation in some way”*). One participant summed their online engagement up with; *“Because I want to know what is going on, I want to stay connected, answer my friends, see what my friends are doing, and stay informed”* (Participant 15). As mentioned beforehand, outliers were also taken into account, as all experiences mattered in this analysis.

As analyzed from researched concepts before in this study, the purpose of online engagement during offline social settings was mostly texting for important information exchange, entertainment, and connecting with others.

Online influence on offline

Continuing, the effect that said online engagement during offline social settings had, on the offline social interactions was explored with this concept. When being asked, how being in an online context influenced participants' offline behaviors, for some, this was insignificant because it did in fact not influence their behavior much, as they did not use their smartphone a lot throughout their offline interactions. As for instance participant 6: *"My smartphone use did not influence my offline life today so much. It was a very special day. I was very present in the moment and did not connect to the online world"*, or participant 10, *"As I said, I did not use my smartphone that much because I wanted to stay disconnected and in-the-moment with my friends"*.

Moreover, most significant was that participants experienced their online engagement as distracting and disconnecting from the real world, such as for instance, participant 13, *"I was not engaging in interactions anymore because my attention was online, and it is hard to do both"*, or participant 4, *"The other individual started to mind his own business again until I was finished using my smartphone. Our conversation has stopped rapidly after I engaged in an online social context"*, or participant 1, *"I lost track of what someone said and I was shortly out of the conversation"*.

This shows, that online engagement can be disconnecting from the moment and distracting from the offline setting. This has the effect of dividing the attention and conversations ending. Some participants go to the length of not taking their smartphones with them, when being in social settings, because they know that they can not be engaged in both at the same time.

Purpose of online/offline interactions

In regard to how participants compare the purpose of their online and offline interactions, most of the participants evaluated their online interactions as more irrelevant than their offline interactions. Taking as an example the answer of participant 11, *"The offline social interactions I had, had a higher purpose as opposed to the online social interactions"*, or participant 7, *"My*

offline situations were way better and more meaningful". Offline social interactions were often rather seen as necessary, interesting, and more fulfilling, whereas online interactions were used as a distraction or for fun, as for instance, participant 9 puts it, *"My online interactions are mostly for planning and entertainment while offline I give my life meaning and purpose"*, or participant 16, *"My offline interaction had way more depth and was thus more important to me"*.

Nonetheless, many respondents realized that both online and offline were used to take care of social relationships, as participant 10 puts it, *"Offline I saw my best friend again, meaning that I was taking care of my relationship with her, whereas online I checked in with my boyfriend, meaning I also took care of our relationship in this way"* or participant 13, *"In both, I want to connect with others, but offline is more personal because of real-life contact, so I feel more connected offline"*.

This shows that online interactions rather had a lower purpose, such as for distraction or fun. Whereas offline interactions served a higher purpose, by being seen as necessary, interesting and more fulfilling. However, both engagements are means to stay connected, with offline engagements connecting on a deeper level.

Online/offline switches

In order to get a full understanding of participants' online and offline flow in social settings, participants were asked how they experienced switching between online and offline social interactions. The striking result was that most participants experienced the switch from offline to online and vice versa as harsh. This included for instance, participant 14, *"The switches to my smartphone made me lose track of the conversation going on in real life"*, or participant 6, *"The switches were hard because I want to be present with other people and not be on my phone a lot. It is hard to find a good balance between going online and offline with friends"*. These harsh switches had the effect of some dissonance between engaging in the online or offline world.

This had an effect on a lot of participants, for instance, participant 11 said, *"I felt mad at myself for going online. I realized that made me distracted and disconnected. In addition, I felt as if I was dragged out of the offline interaction, which in retrospect made me feel less autonomous"*, or participant 3 stated, *"It was confusing because different topics were important in either interaction"*, or participant 17, *"Switching was hard because I kept missing out on the*

opposite, each time I switched". This shows that switching back and forth between online and offline spheres can result in disconnection from both spheres.

Nonetheless, some respondents also experienced the switches between online and offline as positive, as for instance participant 10 claimed, "*Switching back and forth is no problem for me, and sometimes even a nice change and more interesting to have a bit of both*", or participant 15 stated, "*The changes were quite okay, because I switched pretty quickly and because of the relationship, I have with the person, I feel like it really wasn't a problem that there was a short absence. We are like siblings*". Sometimes, switching between online and offline spheres was done unconsciously, as for instance, participant 1 said; "*The switches were rather unconscious and quick*", or participant 13, "*They are a bit 'automatic' and you often check your phone instinctively*". Henceforth, the online/offline flow can be quick, unconscious and without consequences.

Notably, a few participants felt the connectivity between both online and offline, as one participant, for instance, wrote, "*Sometimes being online distracts me from being present, but I also talk offline with my friends about what is happening online, so everything is connected and in close relation*". On the other hand, few participants realized that being present in both online and offline social interactions does not seem possible for participants. For instance, participant 8 said, "*It's actually quite easy to switch back and forth, But concentrating on both at the same time is nothing I can do*".

The results show that participants' online/offline flow was mostly harsh, resulting in dissonance or even disconnection from both spheres. Said flow was experienced as unconscious, quick and without effects on the offline social interactions as well. Moreover, it could connect and take the offline context to the online and vice versa. However, engaging in both at the same time creates dissonance and disconnection in turn.

As a peculiar conclusion, participant 8 wrote, "*I wish there would be ways to handle this experience because whenever I am in a situation like this, I feel the dissonance between me and the other person that I am spending time with. Having said that, switching from offline to online social interactions, feels as if I have to switch a role*". This provides a starting point to think about this from different angles.

4.3 Summary of findings

To sum up, the analysis of the survey results showed that the majority of participants were in a relaxed social setting where they would feel at ease using their smartphone, particularly for social media, which took up the most of their time. Secondly, they were most in an exciting setting where smartphone use was seen as more stressful and participants used their smartphone most for texting.

Moreover, the analysis of the diary results deepened the exploration of participants' offline social infrastructure, online social infrastructure and their interconnection. First of all, as explained above, the survey established a first context to participants' offline and online infrastructures throughout the day. Additionally the offline social interactions participants had, were reflected upon and largely participants perceived this experience as positive, mostly because it was interesting to them.

Furthermore, the online social infrastructures have been explored and presented considerable results. First, regarding participants' smartphone usage, mostly they only went on their smartphones to briefly check messages. However, in these scenarios, participants were more often dragged away from their offline sphere by incoming messages and thus wanted to be available in the online world, more than they chose voluntarily to move there. When they used it consciously more during their offline social setting, it was because they needed another source of stimulation because the situation was boring to them.

Moreover, when being asked what feelings respondents used their smartphones with, during their offline interactions, the smartphone was used mostly with a positive sentiment as participants reported a mindful use and a manner which did not affect their offline social engagement. It could even serve as a distraction against anxiety in stressful situations. Nonetheless, a lot of participants had negative experiences, as their smartphone rather served as a distraction or a burden for them and they felt guilty for using it for too long.

Consequently, it was explored how significant their online interactions were when they moved to the online world. The findings demonstrated that individuals mostly considered their online interactions to be unimportant, primarily because they were using their smartphones unintentionally at the time. However, it was meaningful to them when there was either important online engagement or when they recognized how much time they had been spending on their smartphones.

Continuing, the study explored how much time participants spent on each application of their smartphones, and it occurred that mostly participants used it for texting, and secondly for social media. Combining this result with conclusions from the survey, it can be stated that when participants used social media in an offline social setting, this was the application that they spent most time on.

Looking closer at texting, meaning the online social interactions, participants had in offline social settings, it was striking that the online interactions they had were mostly perceived as distracting, making respondents feel rather stressed out. On the other hand, positive experiences included beneficial disconnection, entertainment or conducting important interaction.

Furthermore, the online/offline social infrastructures were explored. With regard to what meaning participants give to their online/ offline experiences in everyday life, it was analyzed with what purpose in mind, participants choose to move to the online world in an offline social setting. Most of the participants had reasons of important information exchange, entertainment and the opportunity to connect with others.

However, when looking closer at participants' online/offline flow, it became clear that they could not engage in the offline world anymore, as soon as they moved to the online world.. This shows that when staying connected to the online world, it might influence the offline world. Online engagement can be disconnecting from the conversation and the moment and distracting from the offline setting.

Participants compared their online interactions to their offline interactions with regard to their purpose and established that both are used to connect with others and maintain social relationships. Nonetheless, their online interactions rather had a lower purpose, such as for distraction or fun, whereas their offline interactions served a higher purpose, by being seen as necessary, interesting and more fulfilling. Most participants regarded their offline interactions as more relevant and more in-depth, than their offline interactions.

Finally, to explore participants' online/offline flow, the switches between going online and offline have been explored. For some participants, it was an unconscious switch, as they did not use their smartphones in a behavioral changing way. However, mostly, the switches were experienced as harsh and concentrating on both at the same time was not possible for participants, resulting in dissonance or even disconnection from both spheres.

5. Discussion

This study aimed to explore individuals' experience of their online/offline social infrastructures of everyday life. As previous literature provided the conceptual framework for this study, it was established that social media engagement during offline social interactions leads to numerous negative impacts, such as negative impact on social relationships (Abelee, et al., 2016). Especially young adults between 18 and 25 are at risk, because of their poor impulse control (Turner, 2015). Thus, the online/offline behavior of young adults was examined, in a three-day diary study with open-ended questions. The results served to answer the following research question: what are the dynamics of online/offline social infrastructures in a social setting for young adults, as well as two sub-research questions: to what extent do young adults use social media during a social setting, and how do young adults experience/ make meaning of their dynamics of online/offline social infrastructures in a social setting. The main findings of the research will now be looked at closer and discussed in greater detail.

5.1 Main findings

The first research question regards participants' dynamics of online and offline social infrastructures in a social setting. To analyze this, the study is built on exploring both the online and the offline social infrastructures of daily social life. The results of this study show that participants moved to the online world in offline social situations when they were either bored, to stimulate themselves, or because they needed necessary information. In other words, for entertainment reasons or socialization reasons. Previous research showed that these are, in fact, the common reasons for engaging in the online world when being in offline social settings (Przybylski & Weinstein, 2013). Henceforth it can be stated that individuals move to the online world while being in offline social settings, when they need further stimulation, or when they need to conduct important social interactions. Some participants also reflected that they felt somewhat responsible for answering their social contacts on their smartphones when being contacted. As mentioned literature established, the social impact of using smartphones for connection relates to the reciprocal expectations of availability that come with personal smartphone use (Patterer et al., 2021).

When participants used their smartphone in offline interactions, they mostly conducted unnecessary activities, according to them. Only when they needed important information or had interactions regarding an important issue, did participants not feel *guilty* for moving to the online sphere for too long in an offline social setting. This is related to strong willingness to be available to others, as the smartphone provides a constant source from being available to feeling closer to family and friends and expressing care by being available (Leung & Wei, 2000). The question arose to what extent participants might have been influenced by the smartphone's presence in offline social situations. As literature established, the presence of smartphones has the ability to affect a person's behavior, without their awareness, because individuals may be influenced to thinking of other people and events outside their current social setting (Shah, 2003; & Przybylski & Weinstein, 2013). Henceforth, participants might have been influenced by their smartphone use, in regard to whether they influenced their offline social interactions first-hand without being able to reflect on their behavior. This provides a starting point for further research, as this phenomena needs to be explored further, with more resources available.

Furthermore, the findings of this study revealed that when individuals used their smartphone in an offline social setting, they spent more time on social media than on any other activity on their smartphones. This raises the question as to how unconsciously time-consuming social media truly is for young adults and what effects this may have.

As for the second research question, the results of this analysis revealed that when individuals used their smartphone in an offline social setting, they spent more time on social media than on any other activity on their smartphones. This raises the question as to how unconsciously time-consuming and disconnecting social media truly is for young adults and what effects this may have. This question is supported by previous research, as social media platforms exist for instituting online engagement and sociality, as well as it shows that social media is made for people to spend a lot of time on (Alaimo & Kallinikos, 2019). Participants reported feeling uncomfortable about their social media usage in social circumstances, which raises concerns about how subconsciously time-consuming social media may be for young adults.

Finally, for the last research question, the diary study served the purpose of letting participants give meaning to their experiences of daily online/offline social interactions. Henceforth, the respondents had the liberty of reflecting on their smartphone usage in social settings throughout the day and exploring how they experienced it, with regard to what meaning

they might present these experiences. Most of the participants experienced their online interactions during offline social settings as distracting. This made them feel more stressed out and somewhat disconnected from the in-person engagements participants had before they moved to the online world. It is important to note that the extent to which individuals use the internet and other media seems to be driven by their underlying sociability (Baym et al., 2004). This partly explains why some participants experienced their smartphone use as an overload and some participants did not encounter extra stress. Nonetheless, it can now be stated that smartphone use during social settings, mostly leads the individual to feel distracted and disconnected from their in-person interactions, which consequently leads to greater stress.

Moreover, when using the smartphone unconsciously and not for long, participants experienced no overload or negative feelings towards either their smartphone use nor their offline social interaction. Again, the reciprocal expectations of availability that come with personal smartphone use may have influenced their assessment of how their smartphone use in social settings influenced their offline social behavior. This is why individuals engage in more online engagement than they want and end up in some form of dissonance between wanting to be in the online world versus in the offline world. Notably, one participant in this study indicated that their smartphone usage reduced their anxiety during their offline social setting. Previous literature has established, that text messaging can reduce anxiety during a negative experience (Lieberman & Schroeder, 2020).

However, some participants, who willingly did not partake in much online interaction during offline social settings, reported that their online activity did not much affect their offline behavior. Other participants, however, did use it for entertainment purposes or because of important social engagements. As the aforementioned research shows, smartphones are mostly used as a source of entertainment and a means of social interaction (Przybylski & Weinstein, 2013). However, it is yet to be determined how this is experienced by individuals. This study established that participants perceived the situation as positive, not affecting them negatively, when they used their phones for reasons they themselves justified as important. As demonstrated before, the presence of smartphones does have the power to influence a person's behavior without their knowledge (Przybylski & Weinstein, 2013). As a result, participants' presence of their smartphones may have affected their judgement of how their smartphone use in social settings affected their offline social behavior.

Overall, participants reflected that both online and offline social interactions were perceived as a means to stay connected and maintain their social relationships. As previous literature established, smartphone use also enables the social benefits of communication in the form of staying in touch with social contacts (Patterer et al., 2021). Maintaining relationships through the online sphere is similarly important to maintaining relationships through the offline sphere (Leander, 2008). However, being present in the online world, as well as the offline world placed a challenge for participants, as they reported, that one cannot be mindfully present in both worlds at the same time. The study showed that being present in the online world influences the offline world in a negative way. This can be seen in literature, as the consequences of online interaction are that there are meaningful differences between online interaction and other means of socializing (Baym et al., 2004). Participants experienced this in the form of disengagement from offline social interactions, not being able to partake in the offline conversation, or disconnecting from the offline social setting until they put the smartphone away. However, it is crucial to mention that participants regarded their offline interactions as more important to them and more in-depth than their online engagements. Literature has also established that using a smartphone during offline social interaction is distracting and can reduce the effectiveness of offline connection, meaning the perceived quality of the interaction and the enjoyment of it are lowered directly (Lieberman & Schroeder, 2020).

Finally, switching continuously from online social interactions to offline social interactions created some difficulties for participants. This is because they couldn't concentrate on both, meaning, listening actively to the offline conversation and, at the same time, engaging in online conversations. Some participants, however, reported doing this unconsciously since their online activity was kept to a minimum, and this way, it was possible for them to switch between the online and offline world, without it affecting their social behavior. However, constantly switching between both the online and offline worlds, or actually being present in both at the same time, is very difficult and has negative effects on social interactions in both worlds. The outcomes of socially embedded interactions are the foundation of social existence. Individuals' aspirations and identities are shaped by the social exchanges that underlie such encounters, which constantly establish, reaffirm, and validate certain social stances and behavioral expectations. Individuals form their own identities as a result of their interactions with others (Alaimo & Kallinikos, 2019). Henceforth, understanding how the dynamics of online and offline

social infrastructures influence individuals' social interactions is what this study recommends as further research. The future of human sociality lies in understanding, and consequently shaping, online interaction. It is more important than ever for science to maintain pace with this social evolution (Lieberman & Schroeder, 2020).

5.2 Limitations and Future Research

The main theoretical strength of this study is that it is one of the first to explore individuals' online/offline infrastructures of everyday life in a *social setting*. While earlier researches have revealed the consequences of being online while in an offline social setting, there is a need to discover more about how individuals perceive this. Hence, this study timidly uncovered the dynamics of online/offline social infrastructures in daily life. The semi-structured diary collected in-depth data on the online/offline social infrastructures of everyday life, from a small set of young adults over a short period of time. Henceforth, it provided a deep insight into their experience of their relative use of smartphones in daily social settings.

Nonetheless, as with most studies, this study still has a couple of limitations and aspects of improvement, which can, however, serve as a starting point for recommendations for future research. Both the sample size and the duration of the research limited the generalizability of this study. First, the research sample included emerging adults in the age range of 18 to 24. This indicates that 'older' emerging adults (25-29) were underrepresented in the study. As a result, the outcomes of this study will most likely apply to 'younger' emerging adults rather than 'older' ones. Furthermore, the sample revealed an unbalanced distribution of nationality. Because the researchers' network includes a lot of Germans, this study included more Germans than Dutch or other participants. Henceforth, it is advised to conduct a similar study with a larger and more diverse research sample, as well as to test this for a longer period of time. Additionally, a study that researches this phenomenon with different age groups is advised in order to gain even more behavioral insights for future research. In addition, convenience and snowball sampling strategies were utilized to recruit respondents. However, these procedures have disadvantages. Using one's network to recruit participants can have the effect of making the study's findings less generalizable to the entire research population, since it involves a non-random selection of participants. Furthermore, these techniques of recruitment make it more difficult to replicate the study. In addition, an online survey and a diary study were used in this research. Participants'

self-reporting is relied upon in this type of study. The danger of invalid replies due to response bias is one of the main drawbacks of self-reported data. Participants, particularly in well-being studies, have a tendency to give socially desired responses to assessments, which might affect the data's validity.

While this study served as a first exploration of individuals' experiences of online/offline social infrastructures in daily life, future steps need to be taken to research the extent of how the smartphone influenced participants intrinsically and the effects this might have on their social relationships

6. Conclusion

This study aimed to explore the dynamics of online and offline social infrastructures in the everyday lives of young adults. It started by illustrating the growing role of mediatization and what that means for the social infrastructuring of the individual. By reviewing literature, it was highlighted that smartphone use during offline social settings leads to a negative impact on social relationships, especially among young adults. Based on these findings, the research question was formulated as to what the dynamics of online/offline social infrastructures in a social setting are for young adults, as well as to what extent their smartphone plays a role in this, and how they experience and make sense of the interplay between online and offline social infrastructures in social settings.

By sending out a short survey and a semi-structured diary survey, participants were asked to reflect on their experiences for three days. The results of this qualitative research showed, that the dynamics of online/offline social infrastructures are experienced differently by the individual. Reciprocal expectations of availability come with smartphone use, which is why individuals engage in more online engagement than they want and end up in dissonance between being in the moment, as being in the offline world, and being available for other social contacts, as in the online world. Literature suggests that individuals might get influenced by the presence of smartphones, which poses as a starting point for future research. The study also revealed, that social media is the application that takes up most of the individuals' time when on their smartphone. This also poses a need for further research, as the infrastructures of user participation on social media have been intrinsically time-consuming for participants, and the extent and effects of this should be further explored. Disconnection and greater stress have

factored into smartphone use in offline social settings for young adults. Finally, the study has explored that both online and offline social interaction are means to stay connected and interact with others. However, doing both at the same time can lead to negative effects on individuals' social interactions. As a result, this study suggests that more research be done to understand how the dynamics of online and offline social infrastructures impact people's social interactions. Understanding and directing online interaction is critical to the future of human sociality. It is now more crucial than ever for science to keep up with societal change and to conduct research in this field.

7. References

- Abelee, M.M.P.V., Antheunis, M.L. & Schouten, A.P. (2016). The effect of mobile messaging during a conversation on impression formation and interaction quality. *Computers in Human Behavior*, 62, 562-569. <https://doi.org/10.1016/j.chb.2016.04.005>
- Alaimo, C., & Kallinikos, J. (2019). Social media and the infrastructuring of sociality. *Research in the Sociology of Organizations*, 62, 289–306. <https://doi.org/10.1108/S0733-558X20190000062018>
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 55, 469–480. <https://doi.org/10.1037//0003-066X.55.5.469>
- Bartlett, R., & Milligan, C. (2020). *Diary Method: Research Methods*. Bloomsbury Publishing. <https://doi.org/10.5040/9781472572578>
- Baym, N. K., Zhang, Y. B., & Lin, M. (2004). Social interactions across media: Interpersonal communication on the internet, telephone and face-to-face. *New Media & Society*, 6(3), 299-318. <https://doi.org/10.1177/1461444804041438>
- Bengtsson, S., Fast, K., Jansson, A., & Lindell, J. (2020). Media and basic desires: An approach to measuring the mediatization of daily human life. *Communications*, 46(2). <https://doi.org/10.1515/commun-2019-0122>
- Berg, M., & Düvel, C. (2012). Qualitative media diaries: An instrument for doing research from a mobile media ethnographic perspective. *Interactions: Studies in Communication & Culture*, 3(1), 71-89. https://doi.org/10.1386/iscc.3.1.71_1
- Bergman, A., Palm, K., & Rosengren, C. (2017). Mixing work and private activities in the digital working life. A diary study. In *Work2017*.
- Bianchi, A., & Phillips, J. G. (2005). Psychological predictors of problem mobile phone use. *CyberPsychology & Behavior*, 8(1), 39-51. <https://doi.org/10.1089/cpb.2005.8.39>
- Boeije, H. (2014). *Analysis in Qualitative Research*. SAGE Publications.
- Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual review of psychology*, 54(1), 579-616. <https://doi.org/10.1146/annurev.psych.54.101601.145030>
- Bourdon, J., & Balbi, G. (2021). Questioning (deep) mediatization: A historical and anthropological critique. *International Journal of Communication*, 15, 2807-2826.

- <https://ijoc.org/index.php/ijoc/article/view/15929/3472>
- Boyd, D.M. and Ellison, N.B., (2007). Social network sites: Definition, history, and scholarship. *Journal of computer-mediated Communication*, 13(1): 210-230.
<https://doi.org/doi:10.1111/j.1083-6101.2007.00393.x>
- Brown, G., Manago, A.M. & Trimble, J.E. (2016): Tempted to text: college students' mobile phone use during a face-to-face interaction with a close friend. *Emerging Adulthood*, 4(6), 440-443. <https://doi.org/10.1177/2167696816630086>
- Chang, Heewon (2008), *Autoethnography as Method*, Walnut Creek: Left Coast Press.
- Chi, J. L. (2013). Network Societies and Internet Studies: Rethinking Time, Space, and Class. *The Oxford Handbook of Internet Studies*.
<https://doi.org/10.1093/oxfordhb/9780199589074.013.0006>
- Couldry, N., & Hepp, A. (2013). Conceptualizing mediatization: Contexts, traditions, arguments. *Communication Theory*, 13(3), 191–202. <https://doi.org/10.1111/comt.12019>
- Couldry, N., & Hepp, A. (2017). *The mediated construction of reality*. London, UK: Polity.
- David, M. E., & Roberts, J. A. (2017). Phubbed and alone: Phone snubbing, social exclusion, and attachment to social media. *Journal of the Association for Consumer Research*, 2(2), 155-163. <https://doi.org/10.1086/690940>
- Eduardo, P. P., Teresa, M., Monje, R., María, J., Sanchez, R., & León, D. (2012). Mobile phone abuse or addiction. A review of the literature. *Adicciones*, 24(2).
- Ellison, N.B. & Boyd, D.M. (2013). Sociality through social network sites. *The Oxford Handbook of Internet Studies*. <https://doi.org/10.1093/oxfordhb/9780199589074.013.0008>
- Endacott, R. (2004). Clinical research 2: legal and ethical issues in research. *Intensive and Critical Care Nursing*, 20(5), 313-315. <https://doi.org/10.1016/j.iccn.2004.04.006>
- Gündüz, U. (2017). The effect of social media on identity construction. *Mediterranean Journal of Social Sciences*, 8(5), 85-92. <https://doi.org/10.1515/mjss-2017-0026>
- Hampton, K. N. (2004). Networked sociability online, off-line. *The network society: A cross-cultural perspective*, 217-232.
- Harris, C., Daniels, K., & Briner, R. B. (2003). A daily diary study of goals and affective well-being at work. *Journal of occupational and organizational psychology*, 76(3), 401-410. <https://doi.org/10.1348/096317903769647256>
- Hepp, A. (2019). *Deep mediatization*. Routledge.

- Holland, P. (2022). *The iPhone at 15: Steve Jobs revealed his greatest product in 2007*. CNET. Retrieved March 24, 2022, from <https://www.cnet.com/tech/mobile/the-iphone-at-15-steve-jobs-revealed-his-great-product-15-years-ago/>
- Jansson, A. (2017). *Mediatization and mobile lives: A critical approach*. Routledge.
- Klinenberg, E. (2018). Social Media Can't Replace Social Infrastructure. *The Nation*. Retrieved May 27, 2022, from <https://www.thenation.com/article/archive/social-media-cant-replace-social-infrastructure/>.
- Kushlev, K. & Heintzelman, S.J. (2017). Put the phone down: Testing a complement-interfere model of computer-mediated communication in the context of face-to-face interactions. *Social Psychological and Personality Science*, 9(6), 702-710. <https://doi.org/10.1177/1948550617722199>
- Langlois, G. (2014). *Meaning in the age of social media*. Palgrave Macmillan. Springer.
- Latham, A. & Layton, J. (2019). Social infrastructure and the public life of cities: Studying urban sociality and public spaces. *Geography Compass*, 13(7). <https://doi.org/10.1111/gec3.12444>
- Leander, K. M. (2008). Toward a connective ethnography of online/offline literacy networks. *Handbook of research on new literacies*, 3365.
- Lieberman, A., & Schroeder, J. (2020). Two social lives: How differences between online and offline interaction influence social outcomes. *Current Opinion in Psychology*, 31, 16-21. <https://doi.org/10.1016/j.copsyc.2019.06.022>
- Ling, R. (2016). Soft coercion: Reciprocal expectations of availability in the use of mobile communication. *First Monday*, 21(9). <https://doi.org/10.5210/fm.v21i9.6814>
- Lomborg, S. (2015). "Meaning" in social media. *Social Media+ Society*, 1(1). <https://doi.org/10.1177/2056305115578673>
- Manning, J., & Kunkel, A. (2014). Making meaning of meaning-making research: Using qualitative research for studies of social and personal relationships. *Journal of Social and Personal Relationships*, 31(4), 433-441. <https://doi.org/10.1177/0265407514525890>
- Matthews, S. H. (2005). Crafting qualitative research articles on marriages and families. *Journal*

- of marriage and family*, 67(4), 799-808. <https://doi.org/10.1111/j.1741-3737.2005.00176.x>
- Milligan, C., Bingley, A., & Gatrell, A. (2005). Digging deep: Using diary techniques to explore the place of health and well-being amongst older people. *Social science & medicine*, 61(9), 1882-1892. <https://doi.org/10.1016/j.socscimed.2005.04.002>
- Patterer, A. S., Yanagida, T., Kühnel, J., & Korunka, C. (2021). Staying in touch, yet expected to be? A diary study on the relationship between personal smartphone use at work and work nonwork interaction. *Journal of Occupational and Organizational Psychology*, 94(3), 735-761. <https://doi.org/10.1111/joop.12348>
- Perrin, A. (2015). Social media usage. *Pew research center*, 125, 52-68. Retrieved on 12th May: <http://www.pewinternet.org/2015/10/08/2015/Social-Networking-Usage-2005-2015/>
- Przybylski, A. K., & Weinstein, N. (2013). Can you connect with me now? How the presence of mobile communication technology influences face-to-face conversation quality. *Journal Of Social and Personal Relationships*, 30, 237–246. <https://doi.org/10.1177/026540751245382>
- Rosenberger, R., & Verbeek, P-P. (2015). A field guide to postphenomenology. In *Postphenomenological Investigations: Essays on Human-Technology Relations*, 9-41. Lexington Books.
- Sander, T. H., & Putnam, R. D. (2009). Still bowling alone?: The Post-9/11 Split. *Journal of Democracy*, 21(1), 9–16. <https://doi.org/10.1353/jod.0.0153>.
- Schmidt, D., & Power, S. A. (2021). Offline world: The internet as social infrastructure among the unconnected in quasi-rural Illinois. *Integrative Psychological and Behavioral Science*, 55(2), 371-385. <https://doi.org/10.1007/s12124-020-09574-9>
- Shah, J. (2003). The motivational looking glass: How significant others implicitly affect goal appraisals. *Journal of Personality and Social Psychology*, 85, 424-439. <https://doi.org/10.1037/0022-3514.85.3.424>
- Silverstone, R. (2005). The sociology of mediation and communication. *The SAGE handbook of sociology*, 188-207.
- Smith, D. W. (2008). Phenomenology. *The Stanford*.
- Steger, M. F., Shim, Y., Barenz, J., & Shin, J. Y. (2014). Through the windows of the soul: A pilot study using photography to enhance meaning in life. *Journal of Contextual Behavioral Science*, 3(1), 27–30. <https://doi.org/10.1016/j.jcbs.2013.11.002>

- Tecmark (2014), “Tecmark Survey Finds Average User Picks Up Their Smartphone 221 Times a Day. Retrieved on June 7th, from:
<https://www.tecmark.co.uk/insights/uk-smartphone-usage-data-2014>
- Thelwall, M. (2013). Society on the Web. In *The Oxford handbook of internet studies*.
<https://doi.org/10.1093/oxfordhb/9780199589074.013.0004>.
- Turkle, S. (2011). *Alone together: Why we expect more from technology and less from each other*. New York, NY: Basic Books.
- Vazononienė, G., & Pakeltienė, R. (2017). Methods for the assessment of rural social infrastructure needs. *European Countryside*, 9(3), 526–540.
<https://doi.org/10.1515/euco-2017-0031>.
- Verbeek, P-P. (2006). Materializing morality: Design ethics and technological mediation. *Science Technology, & Human Values*, 31(3), 361-380.<https://doi.org/10.1177/0162243905285847>
- Wen, J., & Miao, M. (2022). Relationships between meaning in life, positive and negative affect, and eating behaviors: A daily diary study. *Journal of Happiness Studies*, 23(4), 1315-1331.
- Wheeler, L., & Reis, H. T. (1991). Self-recording of everyday life events: Origins, types, and uses. *Journal of personality*, 59(3), 339-354.
<https://doi.org/10.1111/j.1467-6494.1991.tb00252.x>

8. Appendix

Appendix A

Informed Consent

Thank you for participating in my study!

The purpose of this research study is to gain in-depth information on your smartphone usage in everyday social situations, and how you experience going online during these social interactions. Furthermore, the study aims to find out through a **diary study** how you use your smartphone in everyday social settings, such as at home, work, University, or with friends.

Everyday, for 3 days in a row, please ALWAYS fill out a one-minute survey on Qualtrics (that I will provide you with via WhatsApp), when you are in social settings during the day. Each evening at 6pm, I will send you a Qualtrics survey which you have time to fill out for until 12pm that night. By filling out the survey diary, I want you to reflect on your online/offline behavior throughout the day and think about how you experience this each day.

Throughout the day, please pay attention to your online behavior while you are in offline settings! Don't forget to do the online survey ONCE, every time when you are currently in a social situation.

Please contact me on WhatsApp in case of questions or complications!

I appreciate you very much, taking part in this study <3

If you comply with the following terms, you agree by responding 'Yes'

- I have read the study description and am aware of the study process.
- I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and I can withdraw from the study at any time, without having to give a reason.
- I understand that I can withdraw permission to use data from my diary, in which case the material will be deleted.
- I understand that I will not benefit directly from participating in this research.
- I understand that all information I provide for this study will be treated confidentially.
- I understand that under freedom of information legislation I am entitled to access the information I have provided at any time.
- I understand that information I provide will be used for a Bachelor thesis.

- I agree that my information can be quoted in research outputs.
- I understand that I am free to contact the researcher (s.sina@student.utwente.nl) to seek further clarification and information, as well as on WhatsApp.

I hereby confirm that I have read the terms, and wish to participate voluntarily in this research.

Appendix B

Semi-structured Diary Questions

Main concepts	Existing Concept Citation	Existing Measurement Concept	Adapted Concept from Cited Scale
Social Settings	Baym et al., 2004	Participants reported the location of this interaction (1 item; 1 = at home, 2 = someone else's home, 3 = work/school, 4 = public space, 5 = others)	Q1: Report the location of your in-person social settings today. - At home, someone else's home, work/university, public space, others.
	Baym et al., 2004	Participants were asked to evaluate interaction quality on a four-item semantic differential scale of 1–5: the extent to which the interaction was boring/interesting, dissatisfying/ satisfying, distant/intimate, and unpleasant/pleasant.	Q2: How did you perceive your offline social interactions?
Online/Offline Social Infrastructures	Patterer et al., 2021	Participants were asked to report the exact number of minutes they used their smartphone applications.	Q3: Describe how much you used your smartphone during offline social interactions today.

	Bergman et al., 2017	The questions entail what kind of task has been performed, with what technology, how long it did take, when and where it was performed, who else was in the room, and with what feeling it was made.	Q4: How did you feel about your smartphone use throughout your offline social interactions?
	Bergman et al., 2017	The questions entail how important and with what feeling the task has been performed.	Q5: How significant was your online activity when you switched to your smartphone during said social situations? Elaborate, please.
Social Media Usage in a Social Setting	Patterer et al., 2021	How much time did you spend this morning [this afternoon] using the following applications for private communication with others (e.g. partner, family member, friends): (1) Phone, (2) Text/Instant messaging (e.g. SMS, WhatsApp, iMessage, Signal, Facebook Messenger), (3) VoIP services (e.g. Skype, Facetime), (4) Social networks (e.g. Twitter, Instagram, Facebook), (5) Emails, (6) Other applications for communication?	Q6: How much time did you spend on the following applications while you were in social settings today? - Phone/ FaceTime, Text/Instant messaging (eg. WhatsApp), Social Networks (eg. Instagram), Email, Other apps?
	Baym et al., 2004	All respondents were asked to report the purpose of the interaction by indicating whether or not the interaction was social (i.e. facilitating some social objective such as arranging an activity, becoming better acquainted or interacting just for the sake of interacting).	Q7: How did you perceive the purpose of your online social interactions, while you were in offline social settings?

**Sense-making/
Experience**

Baym et al., 2004	Their question examined the purposes of online interactions in relation to face-to-face interactions and telephone conversations	Q8: Reflect on the purpose of the interactions you had online while being in offline social settings. Write down, why you went online during a social setting.
Baym et al., 2004	Their set of questions examined social circles sustained through social media as well as the correlations between the estimated percentages of online interaction within their social circles and interaction using other media. They also examined the contexts of online interaction and those conducted face-to-face as well as on the telephone.	Q9: How did being in an online social setting influence your offline social behavior?
Harris et al., 2003	Research on goals and affective wellbeing at work. Affective well-being was measured by asking participants to rate mood adjectives describing how they felt at the time or how work had made them feel that day.	Q10: Compare your online versus your offline social interactions in regard to their purpose.
Wen & Miao, 2021	They used items to assess daily meaning in life; “Today, I understand my life’s meaning” and “Today, my life has a clear sense of purpose”.	Q11: How did you perceive switches between online and offline social interactions and what did they mean to you? Reflect on your experiences.

Appendix C

Demographics Survey Questions

Construct	Item
Gender	What gender do you identify with? a) Female b) Male c) I wish not to say d) Other
Nationality	What is your nationality? a) Dutch b) German c) Italian d) Other
Age	Q1: How old are you?
Highest education obtained	What is your highest education obtained? a) High school graduate b) Some college but no degree c) Bachelor's degree d) Master's degree

Appendix D

One-minute Survey Questions

Main concepts	Existing Concept Citation	Existing Measurement Concept	Adapted Concept from Cited Scale
Online/Offline Flow	Baym et al., 2004	Participants reported the location of this interaction (1 item; 1 = at home, 2 = someone else's home, 3 = work/school, 4 = public space, 5 = others)	Q1: In what kind of social setting are you in this moment? - At home, someone else's home, work/University, public space, other.
	Baym et al., 2004	Log down 'what types of internet interaction were used for significant voluntary social interactions'?	Q2: If you are in a social setting, write down the voluntary online social activity you are doing.
	Baym et al., 2004; Patterer et al., 2021	It was asked; what types of internet interaction were used, the frequencies of these interactions, and how many, and which combinations of media participants used. Answer possibilities adapted from Patterer et al.	Q3: What type of social medium/s did you use just now? How long did you approximately use it for? - Phone/ FaceTime, Text/Instant messaging (eg. WhatsApp), Social Networks (eg. Instagram), Email, Other apps?
	Bergman et al., 2017	The respondents needed to summarize each time slot with words like stressful, relaxed, and chaos.	Q4: Summarize the experience you are in, with a word, describing your current emotion (eg. stressful, relaxed, chaos...)

Appendix E

Codebook

<i>Codes</i>	<i>Sub-codes</i>	<i>Sub-sub-codes</i>	<i>Definition</i>	<i>Example</i>
1. Offline Social Infrastructure	1.1 Offline social setting	1.1.1 At home	Refers to the location of participants	Other: At the park
		1.1.2 Someone else's home		
		1.1.3 At work/ University		
		1.1.4 Public space		
		1.1.5 Other		
	1.2 Offline social interaction	1.2.1 Negative	Refers to how participants perceived their offline social interactions	"As I met quite lovely people, who are very close to me, I was happy in the social offline interactions. We did some catching up and were talking a lot"
		1.2.2 Casual		
		1.2.3 Relaxing		
		1.2.4 Interesting		
		1.2.5 Positive		
2. Online Social Infrastructure	2.1 Smartphone use	2.1.1 None	How much participants perceive, they used their smartphone	"I really tried to minimize my usage and just check my phone when I really thought it was necessary"
		2.1.2 A little		
		2.1.3 Moderately		
		2.1.4 A lot		
		2.1.5 Very much		
	2.2 Smartphone use sentiment	2.2.1 Negative	Refers to how participants feel about their smartphone use throughout the day	"I used it too often, which made it ahrd for me to follow a conversation. I felt like a bad listener"
		2.2.2 Not relevant		
		2.2.3 Positive		
		2.2.4 Relevant		
	2.3 Significance of online interactions	2.3.1 Insignificant	How significant participants' online social interactions were in offline settings	"It was very significant because I had to write an important email"
		2.3.2 Not that significant		
		2.3.3 Significant		
2.3.4 Very significant				

	2.4 Application use	2.4.1 None 2.4.2 A little 2.4.3 Moderately 2.4.4 A lot 2.4.5 Very much	How much time participants spend, on what application, during these situations: Phone/FaceTime, Text/instant messaging, Social Networks, Other apps	E.g., 15 minutes on social media
	2.5 Online social interactions	2.5.1 Distracting 2.5.2 Stressful 2.5.3 Passively 2.5.4 Normal 2.5.5 Beneficial 2.5.6 Impactful	How participants perceived the online social interactions, they had	“I perceived it as not important and distracting, creating more stress for me and making me more nervous than I was”
3. Online/Offline switches	3.1 Online interaction purpose	3.1.1 Insignificant 3.1.2 Boredom 3.1.3 Informational 3.1.4 Social	Why participants went online during offline social settings	“I went online because I needed information for a meeting later that day”
	3.2 Online influence on offline	3.2.1 Insignificant 3.2.2 Disconnection 3.2.3 Positive	How being in an online context influenced participants’ offline behavior	“I lost track of what someone said and I was shortly out of the conversation”
	3.3 Purpose online/offline interactions	3.3.1 Both relevant 3.3.2 Offline irrelevant 3.3.3 Online irrelevant 3.3.4 Both irrelevant	Refers to how participants compared their online/ offline interactions in regard to their purpose	“My offline interactions were way better and more meaningful”
	3.4 Experience switches	3.4.1 Dissonance 3.4.2 Fluent 3.4.3 Harsh 3.4.4 Unconscious	How participants experienced switching between online and offline	“The switches were harsh because I kept missing out on the opposite, each time I switched”