

Connected in Distance:

Exploring the Role of Social Networking Sites in Maintaining Long-Distance Romantic Relationships

Student Name: Evangelia (Zizel) Angelidou

Student Number: 538685

Supervisor: Dr. Timmermans

Erasmus School of History, Culture and Communication

Erasmus University Rotterdam

Master's Thesis

June 2023

Word Count: 14.626

Connected in Distance: Exploring the Role of Social Networking Sites in Maintaining Long-Distance Romantic Relationships

ABSTRACT

Long-distance relationships appear to be more prevalent in modern societies, even though are accompanied with a number of challenges that could affect satisfaction between the partners. In the context of this study, long-distance relationships (LDRs) can be defined as relationships where physical contact cannot happen on a daily basis as a result of geographic. Because of this lack of physical contact, geographic distance is challenging for the maintenance of a relationship. Due to the lack of physical proximity, Social Networking Sites are used to minimize the distance between partners, who might follow maintenance strategies to facilitate an overcoming process against existing challenges. The present thesis explores the SNS use for long-distance relationships and assess the mediating role of maintenance strategies on relationship satisfaction. In addition, technology can play a significant role in maintaining romantic relationships. Couples can use technology to express affection, support, and positivity through various digital channels such as texting, video calling, and social media interactions. Furthermore, special emphasis is given on the maintenance strategies and in particular the threat mitigation strategies, as a way of sustaining an LDR in relation to the use of SNS. The three maintenance strategies as the mediators of this study; derogation of alternatives, idealization, and positive attributions and their relationship with SNS use, shed light on the different psychological mechanisms through which the SNS use influences relationship satisfaction for couples in LDRs. Specifically, the derogation of alternatives seems to emphasize commitment and satisfaction within the relationship. Idealization helps to minimize conflict and influences the satisfaction of the relationship. Lastly, positive attribution promotes trust and intimacy. For the examination of these concepts, a quantitative study was conducted which made use of an online questionnaire and the final sample consisted of 172 participants. Finally, for the examination of the concepts a regression analysis was conducted and showed evidence of strong direct effects of derogation of alternatives and positive attributions in relationship satisfaction, while there is no direct effect of the SNS use to the person's satisfaction from an LDR.

KEYWORDS: Long-Distance Romantic Relationships, Maintenance Strategies, Threat Mitigation Strategies, Social Networking Sites

Table of Contents

1. Introduction.....	4
2. Theoretical Background.....	8
2.1 SNSs Affordances for Couples in LDRs.....	8
2.2 SNS and Relationship Satisfaction.....	11
2.3 SNS Usage.....	12
2.4 Relationship Maintenance Strategies in LDRs.....	14
2.5 SNS use and maintenance strategies in LDRs.....	16
2.5.1 Derogation of Alternatives on Relationship Maintenance.....	16
2.5.2 Positive Illusions/ Idealization.....	17
2.5.3 Attributions.....	19
2.4 Research question and hypotheses.....	20
3. Methodology.....	21
3.1 Description and justification of the method.....	21
3.2 Sampling.....	22
3.3 Procedure of analysis.....	23
3.4 Operationalization of concepts into variables.....	25
4. Results.....	29
5. Discussion.....	34
5.1 Theoretical and Societal Implication.....	38
5.2 Practical Implications.....	38
5.3 Limitations and Directions for Future Research.....	39
6. References.....	44
Appendices.....	59
Appendix A: Informed Consent.....	59
Appendix B: Survey Questions.....	60

1. Introduction

The determination of a single definition for Long-Distance Relationship (LDR) is a complicated issue, due to fact that social researchers and academics have provided a great number of alternate definitions of what an LDR really is. For example, Aylor (2003) states that the relationship status of an individual is self-defined by each individual whether it is a Geographically Close Relationship (GCR) or an LDR. Numerous researchers have employed the concept of self-identification by asking the participants the reasons why they think that they are in an LDR (Dainton & Aylor, 2001; Ficara & Mongeau, 2000; Maguire, 1999). Furthermore, other researchers define LDRs based on distance in miles in order to identify the status of the relationship (Carpenter & Knox, 1986; Holt & Stone, 1988; Knox, Zusman, & Daniels, 2002; Lydon, Pierce & O'Regan, 1997). Other scholars identify them by the number of nights two partners spend apart, as well as a number of different criteria like residing in different locations (Holmes, 2004; Rabe, 2001).

In general, a relationship, either long-distance or not, is difficult to survive if the two persons who involve in it do not put in some work, achieve a good level of communication, and reach out to each other (Muntean, 2019). Such incremental actions, usually referred to the literature, as relationship maintenance behaviors or strategies (Neustaedter & Greenberg, 2012), allow communication between partners that are geographically apart, highlighting the important role of social networking sites (SNS) in long-distance romantic relationships (Pistol & Roberts, 2011). In the context of this study, long-distance relationships (LDRs) can be defined as relationships where physical contact cannot happen on a daily basis as a result of geographic distance (Pistol & Roberts, 2011). Because of this lack of physical contact, geographic distance is challenging for the maintenance of a relationship (Billedo, Kerkhof & Finkenauer, 2015).

LDRs tend to generate more stress within the relationship, while partners are prone to higher levels of uncertainty (Martens, 2012). Although computer-mediated communication acts as a supplement for couples in geographically close relationships (GCR), it can be seen as a necessity in the case of long-distance relationships. In fact, represents the technological medium used as a means to sustain the relationship (Billedo et al., 2015). When romantic partners are separated due to distance, strategic maintenance behaviors should be incorporated into relationships in different ways, most commonly facilitated through the use of communication technologies (Martens, 2012). Long-distance relationships lack everyday

physical togetherness, and social media act as a means of bridging the gap between the partners that live separately (Kim et al., 2014).

SNSs are among the various methods of computer-mediated communication (Meier & Reinecke, 2021). Research usually concerns the implications of SNS in proximity relationships, overpassing the role that they can play in LDRs (Zheng et al., 2021). SNS are not limited to direct and private communication, as they expand to private, public, synchronous, and asynchronous interaction, and they make communication possible in both social and interpersonal contexts (Utz, 2015). While both social and interpersonal interactions involve people interacting with each other, social interactions tend to be broader and less intimate (Koo et al., 2011). On the other hand, close proximity interactions tend to be more personal and involve deeper emotional connections, such as among friends, romantic partners, or family members, when they mediated by SNS (Crystal Jiang & Hancock, 2013). Consequently, SNS could be used to communicate everyday activities or display affection towards the partner either when they are in GCRs or in LDRs (Papp, Danielewicz, & Cayemberg, 2012).

Several researchers have investigated the use of SNS, such as Facebook, as a maintenance strategy for couples in GCRs. For instance, Fox and Warber (2014) found that while SNS offer opportunities for couples to connect, also pose challenges such as social comparison, insecurity, lack of trust, and infidelity depending on attachment styles and uncertainty. In another study, Toma and Choi (2016) found that mobile media use was positively associated with relationship satisfaction, due to the feelings of connectedness and closeness that it fostered. The researchers also suggest that SNS may offer new opportunities for emotional expression. This is an example of the majority of research that was identified which places focus on the role SNS plays in GCRs (Harker & Keltner, 2017; Muise et al., 2009; Stafford & Reske, 2017; Utz & Beukeboom, 2011).

While these studies have demonstrated a positive correlation between the use of SNS among romantic partners in GCRs, they do not explore the potential benefits of SNS for couples who are in LDRs. As a result, the concepts introduced above, concerning couples in LDRs, have not been examined in-depth within academic and research studies. However, the extensive body of research concerning couples in GCRs provides academic insights, that could work as a catalyst for bridging the gap, when trying to understand mediating variables in LDR satisfaction. For this reason, this thesis specifically focuses on the role SNSs have in maintaining LDRs (Miczo et al., 2011; Rivera Aragón et al., 2022; Taylor, Zhao, & Bazarova.,

2022). The effects of technology on these relationships are not yet fully understood, and further research is needed for the development of technological means that could better support couples in long-distance relationships (Stafford & Merolla, 2007).

The core societal relevance of this research is to provide insights, on how SNS appears, could be effective or not, in the context of maintaining LDRs. LDRs have become a growing trend in modern societies, particularly with the rise of global mobility, as well as factors mediated by SNS, such as the growth of online dating as a mode (Frändberg & Vilhelmson, 2011; Stoicescu, 2019; Rivera Aragón et al., 2022; Wiederhold, 2021). Firstly, globalization and mobility have brought about an increase in long-distance relationships (Frändberg & Vilhelmson, 2003). This demographic trend has societal implications for supporting couples who are separated by distance, as it poses unique challenges such as physical separation, trust and jealousy, emotional strain, and limited shared experiences (Merolla, 2012; Pélikh & Kulu, 2018; Stafford & Merolla, 2007), that need to be understood and addressed. Secondly, demographic shifts, such as marrying later and prioritizing personal growth, have resulted in more individuals entering long-distance relationships (Kelmer et al., 2013; Merolla, 2012; Pelikh & Kulu, 2018). Furthermore, as mentioned previously, academic research concerning the maintenance of LDRs is not up to date with the current rate they are becoming increasingly prevalent in society. Understanding the dynamics of these relationships can inform policies and services that support emerging adults and individuals in similar situations (Stafford & Merolla, 2007).

By addressing this gap in the literature, this study will aim to provide insights into how technology can be used to maintain a long-distance relationship, specifically by the examination of strategies that go beyond the promotion of healthy and effective communication between partners who are physically apart (Belus et al., 2019; Johnson et al., 2008; Neustaedter & Greenberg, 2012). Thus, this study will explore the various ways in which technology can be leveraged by partners, in order to navigate the challenges that arise from distance and also help sustain their relationship. By exploring the use of SNS as a maintenance strategy, this study may provide insights into how technology can be used to support the well-being of those in LDRs since studies have shown that partners in long-distance relationships may experience higher levels of anxiety, depression, and stress, and thus, lower levels of satisfaction making them vulnerable to separation (Waterman et al., 2017). Therefore, the focus on the use of SNS concerning maintenance strategies will allow the further exploration of the proposed topic aiming to address the following research

question: *To what extent are maintenance strategies mediating the relationship between SNS use and relationship satisfaction for couples in LDRs?*

2. Theoretical Background

2.1 SNSs Affordances for Couples in LDRs

Technology can play a significant role in maintaining romantic relationships through the five categories of maintenance strategies, as identified by Ogolsky and Monk (2019). Couples can use technology to express affection, support, and positivity through various digital channels such as texting, video calling, and social media interactions (Arikewuyo et al., 2021; Hertlein, 2012).

Computer-mediated technology concerns the use of electronic devices, such as smartphones, computers and tablets which facilitate communication and interaction between users (Yao & Ling 2020). This involves the use of software applications, digital platforms such as SNS which includes texting as well as services that afford face-to-face interaction like video calling (Yao & Ling 2020). Furthermore, SNSs fall under the category of technology use which affords facilities such as texting and video calling between individuals (Citrawati et al, 2021; Gazit et al, 2020; Lugman et al, 2020; Yao & Ling, 2020). This would mean that applications primarily associated with texting behaviors such as WhatsApp and Viber fall under the category of SNS. A categorization that this study will use as the research methodology progresses.

More specifically, according to the research of Janning, Gao, and Snyder (2018), partners in long-distance relationships use different communication formats, such as video chat and instant messaging, to create a meaningful shared reality when they are apart. In recent years, texting has become increasingly popular as a way for people to stay in touch with one another (Subrahmanyam & Greenfield, 2008). Furthermore, couples are afforded the ability to bridge the gap in LDRs by sharing affectionate and sweet messages throughout the day as a means to express their love, appreciation, and admiration of the other person through the use of emojis or even virtual kisses and hugs (Chai et al., 2022). This is due to the feeling of immediacy which texting facilitates as it affords instant communication between couples (Ferris, 2022). The convenience and speed of message transfer foster a climate of frequent and uninterrupted communication (Ferris, 2022). This is useful in romantic relationships because it allows partners to check in with one another throughout the day, providing a sense of connection and support. In regards to LDRs, texting serves a variety of purposes that aid in relationship maintenance behaviors. This is due to how texting as part of technology use offers a number of different affordances that have been proven effective for the emotional support of individuals in LDRs. These affordances include firstly asynchronous communication which

allows individuals to carefully craft their ideas and express their emotions effectively, without the need for an immediate response (Chen & Lu, 2023). Secondly, textual cues may include the use of images that help in the expression of empathy, understanding, and affection (Chen & Lu, 2023; Ruppel, 2015). Lastly, when engaging in texting people engage in the preservation of the messages which allows them to create a sense of continuity and reference which provides a reminder of emotional support from the other person as well as a sense of connection that is created over time (Lim et al., 2013).

Secondly, video calling affords face-to-face communication between partners. Allowing partners to see each other's expressions and hear their partner's voice which can foster feelings of emotional connection as well as intimacy (Dziabiola et al., 2022). Especially, in the case of LDRs where face-to-face communication is limited, video calling facilitates a means of having direct one-on-one communication between partners. Hampton et al. (2017) explored the impact of different computer-mediated communication channels on satisfaction in long-distance relationships. They found that partners who used video chat were more satisfied with their communication and relationship than those who used other channels. This is due to how video chat adds a visual component to communication that other forms of communication, such as texting or phone calls, lack. This allows partners to see each other's facial expressions and body language, which can enhance the emotional connection between them (Keck et al., 2022). Additionally, video chat provides a more intimate and personal experience, allowing partners to feel closer to each other despite the physical distance (Keck et al., 2022).

Furthermore, research by Chen and Lu (2023) suggests that texting and face-to-face communication in LDRs have unique affordances that play different roles in the support-seeking process. They found that texting may be more effective for providing emotional support, while face-to-face communication may be more effective for providing tangible support. It is important to recognize that these affordances cater to different dimensions of support-seeking in LDRs (Chen & Lu, 2023). Regardless, SNS as a means of communication has shown that they provide a shared space for partners to communicate and maintain their relationship despite the distance between them (Toma, 2018; Wang, Roaché, & Pusateri, 2019).

On the other hand, face-to-face communication despite the physical distance between the partners still includes important affordances which provide tangible support (Chen & Lu, 2023). Firstly, non-verbal cues for example body language, facial expressions, and tone of

voice can enhance the interpretation of emotions and empathy (Fox & McEwan, 2017). Secondly, when people engage in face-to-face communication, this communication takes place in real time, and thus immediate feedback and clarifications may be offered. This practice can be seen as valuable for situations that require immediate support (Fox & McEwan, 2017). Lastly, physical presence is important as it contributes to greater feelings of intimacy and connectedness through simple actions such as holding hands and hugs. This is because they are able to provide a sense of security and comfort between partners (Collins & Feeney, 2002; Collins & Feeney, 2004).

Lastly, public social media interactions can be used between partners to express their support and love for each other (Lüders et al., 2022). Furthermore, Goldberg et al. (2022) investigated the online construction of romantic relationships on social media and found that social media platforms such as Facebook and Instagram provide partners with opportunities to express their affection and love publicly. The online public expression of affection and love on social media platforms, such as Facebook and Instagram identified by Goldberg et al. (2022) and can be classified under the category of positivity in the five relationship maintenance strategies identified by Ogolsky and Monk (2019). When couples utilize technology as such, they manage to foster positivity, create a sense of closeness and express their affection (Taylor, Zhao, & Bazarova, 2022; Quiroz & Mickelson, 2021). However, public displays of affection can have negative effects on the maintenance of relationships. While sharing affectionate posts or pictures on SNS can be a way to express love and affection for one's partner, it can also be viewed as excessive or performative, which may lead to jealousy, insecurity, or embarrassment (Asuncion, 2021; Kocur et al., 2022).

According to a study by Arpin et al. (2014), excessive or public displays of affection on Facebook were associated with lower levels of relationship satisfaction. Dunn and Langlais (2020) conducted a mixed-methods study analyzing the dark side of Snapchat and found that it can lead to jealousy, mistrust, and relationship dissatisfaction. Zhafira, Dimiyati, and Shukla (2021) explored the use of Instagram in different stages of romantic relationships and found that Instagram was used primarily in the initiation and intensification stages of the relationship, but its use decreased in the maintenance and decline stages.

Overall, while computer-mediated technology has its benefits and drawbacks, it's important to consider how it can impact communication in romantic relationships. According to Suwinyattichai et al. (2017), individuals who were more committed to their online

relationships were more likely to engage in maintenance behaviors such as expressing affection and providing support via engaging with SNS.

2.2 SNS and Relationship Satisfaction

SNS use is integral to the maintenance of relationships, due to the communication that it facilitates between couples in LDRs. This is due to how engaging with these facilities encourages self-disclosure, positivity, assurances, and social network discussions between partners (Daniel, 2022; Johnson et al., 2008). These factors seem to be beneficial to relationship satisfaction and foster a closer bond between partners (Toma & Choi, 2013). Furthermore, SNS has also been shown to have a positive impact on relational satisfaction, specifically in the areas of openness, supportiveness and assurance (Anandarajan & Simmers, 2003; Fuss et al., 2022; Tidwell & Walther, 2002). Furthermore, technology can promote openness in relationships by providing partners with a platform to share their thoughts and feelings (Li, 2010).

Technology can also facilitate shared tasks by allowing couples to work on projects or solve problems remotely allowing partners to support each other over distance (Olson & Olson, 2000). It can also help maintain assurance in relationships by allowing partners to reaffirm their commitment to each other, even when they are physically apart (Porche & Purvin, 2008). This is corroborated by Chien and Hassenzahl (2020), who emphasize the crucial role of technology in maintaining LDRs. They believe that technology offers various benefits that can help maintain relationship satisfaction. By using technology, couples can feel more connected despite the distance between them (Singhal et al., 2017). When considering the different ways of communicating with others, the benefits and drawbacks of face-to-face interactions versus online communication are prominent (Qiu & McDougall, 2013).

Moreover, an important aspect is the consideration of intimacy. While texting offers the benefit of being able to communicate frequently, it may not provide the same level of emotional closeness as face-to-face interactions. In romantic relationships, partners may feel more connected when they can communicate in person. Tidwell and Walther (2002) and Schouten, Valkenburg, and Peter (2007) discuss how computer-mediated communication can affect self-disclosure and interpersonal evaluations, highlighting the importance of face-to-face interactions for building intimacy which cannot be solely conveyed with the texting because of the lack of non-verbal cues (McGee, 2014). As a result, video calling as an affordance of SNS, whilst not a replacement for in-person communication, serves partners in

LDRs as a means of facilitating face-to-face communication (Dziabiola et al., 2022). As a result, the use of SNS may lead to higher levels of relationship satisfaction for couples in LDRs, compared to geographically close couples, due to the positive attributions from their communication processes (Li et al., 2020).

Finally, control is an aspect which needs to be taken into consideration. Texting provides greater control over the timing and content of messages, which can be both positive and negative (Littman & Kalanthroff, 2022). On the one hand, partners can carefully craft their messages and respond at a time that works best for them (Morozov, 2023). However, this can lead to misunderstandings and misinterpretations as the lack of tone and context can make it difficult to accurately convey emotions (Keynan et al., 2022). Research by Jin and Park (2013) and Kruger et al. (2005) highlight the impact of mobile communication on loneliness and egocentrism, respectively.

Overall, Li et al. (2020) found that individuals who used SNSs for relationship maintenance reported higher levels of satisfaction and lower levels of frustration. Fonseca et al. (2021) investigated the relationship goals of intercultural romantic couples and found that social networking sites played a crucial role in maintaining the relationship for partners who had different cultural backgrounds. Kirk (2013) investigated the effect of newer communication technologies on relationship maintenance and satisfaction in long-distance dating relationships. The study showed that partners who used SNS reported higher relationship satisfaction than those who did not.

2.3 SNS Usage

The intensity of SNS use has been found to play a crucial role in LDRs. This is because individuals in long-distance relationships may rely on SNS as a primary means of communication and connection with their partners (Bröning & Wartberg, 2022). For instance, a study by Toma and Choi (2013) found that the amount of time partners spent communicating on SNS positively predicted relationship satisfaction and intimacy among individuals in long-distance relationships. Similarly, another study by Orr et al. (2009) showed that the frequency and depth of communication on SNS were positively associated with relationship satisfaction and closeness. For example, individuals who use SNS for relationship maintenance purposes (e.g., sharing personal information, expressing affection) are more likely to experience greater relationship satisfaction and trust than those who use SNS for self-promotion or entertainment purposes (Dainton & Aylor, 2002; Kim & Lee, 2011). Therefore, it is important to consider

the intensity of SNS use in long-distance relationship research, as it can significantly impact the quality and outcomes of the relationship.

In line with intensity of SNS use, research suggests that it can lead to high amounts of relational load, which refers to the amount of stress and responsibility placed on an individual in a relationship due to communication and interaction on SNS (Afifi et al., 2016). The study suggests that individuals who experience high levels of relational load may have difficulties managing their romantic relationships, leading to lower relationship quality. Additionally, Nesi and Prinstein (2015) found that individuals who use SNS for social comparison and feedback-seeking may be at a higher risk for developing depressive symptoms, particularly when engaging in upward social comparison with others who appear to have more positive and successful relationships.

Finally, excessive use of social media can lead to addiction and may result in neglecting one's partner, decreasing communication and intimacy, and even leading to conflict (Kuss & Griffiths, 2017). According to a study by Elphinston and Noller (2011), individuals who reported high levels of social media addiction experienced more jealousy and relationship dissatisfaction.

It is important to note that SNS usage varies interpersonally and is highly dependent on the user's intentions. While SNS can be a valuable tool in maintaining and strengthening relationships (Burke & Kraut, 2014), excessive social media use can have negative impacts on relationships (Utz & Beukeboom, 2011). The same holds for LDRs. Although SNSs play a significant role in the maintenance of LDRs (Turner & Prince, 2020), their use can have both positive and negative effects on relationships, depending on various factors, including the communication channels used, and the attachment style of partners (Bazani et al., 2022).

In a study by Gogos (2022) found that problematic social media use was associated with lower attachment and emotion regulation in romantic relationships. These are factors that vary interpersonally. Reiss, Curbow, and Wang (2022) similarly found that intimate partner cyberstalking was associated with lower attachment and social support. Jealousy is also a common issue in relationships that can be exacerbated by social media use, especially when couples in LDRs are reliant on SNS use in order to stay connected (SOURCE). Van Ouytsel et al. (2019) found that adolescents perceived digital media as a potential trigger for jealousy, conflict, and monitoring behaviors in romantic relationships. This goes to show that whilst SNS use affords partners a variety of facilities which aid in relationship maintenance, usage of SNS varies interpersonally, both positively and negatively.

Social comparison is another factor to be considered as social media platforms provide users with the opportunity to compare their lives to others, which can lead to feelings of envy, jealousy, and insecurity, especially if the user perceives their partner as being more successful, attractive, or happy than themselves (Verduyn et al., 2020). This, in turn, can create relationship dissatisfaction and decrease commitment (Appel et al., 2016). According to a study by Muise et al. (2009), social comparison on Facebook was associated with lower relationship satisfaction and more negative emotions in romantic relationships. Taking this into account SNS usage is a significant factor in determining relationship satisfaction. As a result, the hypothesis is posed:

H1: SNS usage has a significant positive relationship with relationship satisfaction.

2.4 Relationship Maintenance Strategies in LDRs

Maintenance strategies refer to actions that individuals in romantic relationships undertake in order to sustain their connections over time and distance (Stafford & Canary, 1991). The question of how SNS are used as a maintenance strategy for geographically separated partners has been investigated by numerous researchers in recent years (Rivera Aragón et al., 2022; Stöven & Herzberg, 2021; Toma, 2018). These strategies can take many forms, including verbal communication, physical intimacy, and shared activities (Stafford & Canary, 1991). Further research into the field has led to the identification of other maintenance strategies that couples use to strengthen their relationships such as openness, positivity, and assurances (Dainton & Stafford, 2003).

According to scholars, maintenance strategies are essential for the survival and satisfaction of romantic relationships (Stafford & Canary, 1991). When individuals in romantic relationships are geographically separated, these strategies become even more crucial. In such situations, the use of technology can play a critical role in maintaining relationships. For example, communication technologies afford couples the ability to use video chat, instant messaging, or social networking sites to stay connected with each other (Toma & Choi, 2016). Understanding which maintenance strategies work best for couples in different situations can inform the development of supportive technologies and interventions that can help couples sustain their connections over time and distance (Dainton & Stafford, 2003).

Canary and Yum (2015) outline various approaches that individuals may use to maintain their relationships and these strategies include positivity, openness, assurances, social networks, and sharing tasks. Through a systematic literature review, Ogolsky and colleagues (2017), aimed to define the core concept of relationship maintenance strategies and identified a considerable number of relative articles, and highlighted the diverse ways that partners may engage to maintain their relationships. In doing so, Ogolsky and Monk (2019), identified five categories.

The first category, positivity, refers to the use of verbal and nonverbal behaviors that promote positive effects such as affection, humor, and compliments. The second category, which is openness involves disclosing personal information, sharing emotions, and being responsive to one's partner's needs. On the third category, assurances involve verbal and nonverbal behaviors that signal commitment and trust, such as expressing love and affection, making promises, and demonstrating faithfulness. The fourth category social networks refer to the involvement of social support systems such as friends and family in the relationship (Ogolsky & Monk, 2019). The last but not least category which refers to shared tasks discusses the division of labor and cooperation in accomplishing daily tasks and goals.

Ogolsky et al. (2017) presented a conceptual model, based on previous research, aiming to study maintenance in a more integrated way. According to their model, they reconceptualize maintenance strategies into two main categories including threat mitigation and relationship enhancement. In this study, the focus will be placed on threat mitigation strategies which primarily correlate with the maintenance of relationships as discussed above. Threat mitigation strategies act as different approaches that couples take aiming to either address or overcome the challenges that come along with being geographically separated. These strategies intend to maintain a fulfilling and healthy relationship while also reducing the negative impact of distance in their relationships.

Additionally, these could be ways that couples manage and address potential threats to their relationship demonstrated both in individual and interactive practices and can be seen as embedded within the broader framework of relationship maintenance strategies. For example, if a couple is experiencing a conflict or disagreement, they might use communication strategies to express their feelings and concerns openly and honestly, when engaging in an in-person conversation is not an option (Dorison & Minson, 2022). Partners might also use problem-solving strategies to find a mutually agreeable solution to the issue at hand (Toma &

Choi, 2016). To add to that, emotional support strategies can be used to provide comfort and reassurance during times of stress or difficulty (Dorison & Minson, 2022).

Overall, threat mitigation strategies are an important part of relationship maintenance. This is because they both serve as psychological and cognitive tools that help to cope with the inherent difficulties that come along with LDRs. The physical separation and the lack of regular face-to-face communication could act as factors that both stress and strain the relationship. Thus, the employment of mitigation strategies can work to counteract the potential threats resulting from maintaining LDRs. This is because it helps couples navigate challenges and build stronger, more resilient relationships and greater relationship satisfaction despite distance being a problematic factor. Ogolsky et al (2017), provide a framework for threat mitigation strategies which include techniques relating to the derogation of alternatives, idealization, and attributions, as explained below.

2.5 SNS use and maintenance strategies in LDRs

Given that access to the Internet is greater than ever (Pew Research Center, 2021a) and people spend a significant amount of time on SNS (She et al., 2023), individuals have the opportunity to compare to other relationships; and thus, experience altered relationships standards, and enable the derogation mechanism (Brady & Baker, 2022). As Christofides, Muise, and Desmarais (2009) note, information disclosure and control are two different processes on SNS, and partners should be mindful of how their actions on SNS may affect the trust and security of their relationship.

2.5.1 Derogation of Alternatives on Relationship Maintenance

The maintenance of a romantic relationship may primarily be enhanced by derogating alternatives, which refers to minimizing the attractiveness of other potential alternative partners (Linardatos & Lydon, 2011). For example, this can be the result of simple ignorance of other potential partners (Ritter et al., 2010). However, this varies based on interpersonal factors. Regardless, based on cross-sectional findings, derogation of alternatives is positively associated with secure attachment (Le et al., 2010), and demonstrated by partners who achieve higher levels of commitment (Etcheverry et al., 2013).

The allure of alternative mates has been shown to threaten the stability of a relationship. While SNSs offer a means for partners to stay connected in LDRs, partners need to communicate openly and maintain trust to prevent the allure of alternative mates (Koranyi

& Rothermund, 2012). Research by Birnbaum et al. (2019) found that relationship threats can increase the allure of alternative mates, which can lead to infidelity and relationship dissolution. In response, partners may engage in self-protective strategies to resist the temptation of attractive alternatives (Gonzaga et al., 2008). Plant, Kunstman, and Maner (2010) found that individuals may engage in self-protective responses when in contact with attractive alternatives, to maintain their current relationship.

Perceived partner responsiveness may also play a moderating role in the relationship between implicit theories of relationships and romantic relationship satisfaction, according to a study by Li, Chen, and Zhang (2023). This suggests that partners who feel their needs are being met by their significant other may be less likely to consider alternatives and thus “prove” that they have greater relationship satisfaction (Seidman, 2012). This is important because mitigation strategies are investigated aiming to see how they can positively contribute to greater relationship satisfaction. Relationship satisfaction helps to provide a more concrete understanding of the impact which the above-mentioned strategies have regarding contributing to the overall commitment and stability of the romantic relationship. This is the aim of the mitigation strategies and why they are relevant to this study.

Although online alternatives may be perceived as non-threatening, Vossler and Moller (2020) point out that online threats pose the same threat as in-person alternatives. According to Lee and O’Sullivan (2019), couples in an LDR have 51.1% higher probabilities of facing romantic infidelity compared to couples in close-geographic proximity; thus, they have greater difficulty in applying strategies associated with the derogation of alternatives.

H2: Derogation of alternatives mediates the relationship between SNS use and LDR satisfaction.

2.5.2 Positive Illusions/ Idealization

Another threat mitigation strategy is idealization, also called the creation of positive illusions. According to Ogolsky et al. (2017), it is based on the fear of their partner being average; thus, partners experiencing this take steps towards idealizing their partner. This is commonly achieved by overestimating the strengths and minimizing the weaknesses of their partner. Idealization is positively correlated with relationship satisfaction and unrealistic optimism for the future (Hauptert et al., 2017).

Research suggests that positive illusion/idealization is increased in long-distance relationships, where partners often tend to avoid or postpone a potential conflict (Hillard, 2017). Partners in long-distance relationships report having more positive experiences due to engaging in less destructive communication whilst also avoiding heated arguments when compared to couples with relatively close proximity (Sahlstein, 2004). Furthermore, couples in LDRs are more likely to idealize their partners compared to GCR, due to the limited contact and the postponement of realistic assessments (Hillard, 2017). According to Vaterlaus et al. (2015), individuals who use SNS to maintain their relationships may engage in selective self-presentation, presenting themselves in a way that reflects their desired self-image.

Although research has found that positive idealization of one's partner can lead to greater relationship satisfaction, the process of idealization may also have negative effects on a long-distance relationship, such as when reality fails to meet expectations (Warren, Donaldson, & Lee, 2018). For example, Conley et al. (2009) tested positive illusions versus shared reality models of relationship satisfaction amongst couples and found that idealization was associated with higher relationship satisfaction. In addition, Barelds and Dijkstra (2011) found that idealizing a partner's personality was associated with higher relationship quality.

Moreover, when one intends to maintain a relationship, alongside being inattentive to attractive alternatives, further tends to consider his/her partner as the ideal one (Lewandowski et al., 2011). Maner et al. (2009) found that individuals in relationships were less attentive to attractive alternatives compared to single individuals. It is worth noting, however, that the love-is-blind bias, or the tendency to view one's partner through rose-coloured glasses, can also be associated with negative consequences such as jealousy (Swami et al., 2012). The love-is-blind bias refers to the tendency of individuals in romantic relationships to view their partners positively, often ignoring or rationalizing negative qualities (Swami, et al., 2009). For example, a study by Knobloch and Solomon (1999) and Foster (2021) found that individuals who viewed their partners more positively and idealized their relationships were more likely to experience jealousy and engage in self-protective behaviours such as monitoring their partner's activities and restricting their partner's social interactions.

Overall, idealization can lead to an increase in relationship satisfaction and relationship quality, but it can also be problematic. It is important for individuals in LDRs to be aware of the potential consequences of positive illusions and to strive for a balanced view of their partners (Eastwick, Finkel, & Eagly, 2011). Lastly, according to England (2018), couples who were in an LDR expressed higher idealization levels compared to couples in a GCR.

H3: Idealization mediates the relationship between SNS use and LDR satisfaction.

2.5.3 Attributions

The third threat mitigation strategy is the assignment of positive attributions when individuals are interpreting their partners' behavior. According to Ogolsky et al. (2017), when in a romantic relationship, couples add a positive attribution in order to explain their partners' behavior, and then they act accordingly. For example, if Partner A does not respond to Partner's B text message for a couple of hours, then Partner B to avoid getting upset, will attribute the delay in the text to Partner's A busy work schedule. The attribution to partner A's behavior from partner B helps maintain trust and prevents conflict. This is an unconscious process and assumes predictability on behalf of the partner's behavior (Hillard, 2017). During dating, the process is positively associated with higher levels of relationship satisfaction (Durtschi et al., 2011).

When individuals encounter a behavior from their partner that is either ambiguous or negative, they have two options. They either attribute their partner's behavior to something negative or positive. This process is automatic and unconscious (Joel et al., 2023). The negative attributions include negatively interpreting the partner's behavior. Positive attributions include positively interpreting the partner's behavior assuming that the partner's behavior has positive intentions or there are other circumstances behind their actions (Zoppolat et al., 2020). Furthermore, once the individual has assigned a positive attribution to their partner's behavior, the individual's response to said action is likely to be more forgiving, understanding, or accommodating. On top of that, they are more likely to give their partner the benefit of the doubt and exhibit patience (Zoppolat et al., 2020), while responding positively can aid in the maintenance of a healthy and stable relationship (Joel et al., 2023).

Research suggests that social media usage is positively associated with positive attributions in LDRs. According to Naudé (2022), emerging adults use social media as a means to "protect their positivity," highlighting the positive aspects of their relationship on social media platforms. This is because by showcasing the most positive experiences and moments they manage to create a positive image of their relationships in an online space (Hidayanto & Sarwono, 2021). This positive presentation can lead to a tendency to assign positive attributions when it is needed to explain the partner's behaviour as in the example above. Similarly, Hidayanto and Sarwono (2021) suggest that social media can help maintain

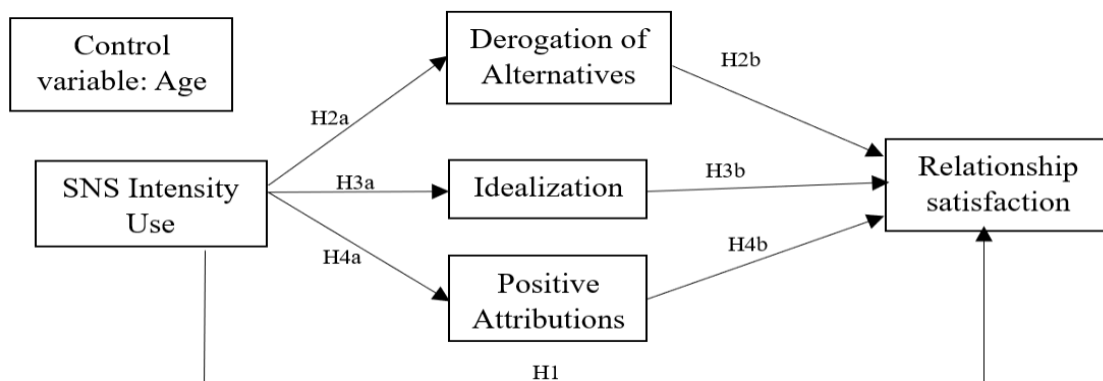
relationships. This is done by facilitating communication as well as building emotional intimacy. Emotional intimacy is fostered due to feelings of closeness and connectedness which social media has shown to improve. Allowing for more positive perceptions of one's partner to be made, thus causing more positive attributions which have been shown to aid in maintaining LDRs. This is due to how they encourage feelings of commitment and happiness, leading to lower levels of relationship desolation (Adamczyk & Segrin, 2015). For example, Fletcher and Kerr (2010) found that couples in LDR tend to avoid negative attributions more frequently when compared to GCRs, in an attempt to regulate the relationship's negative aspect, and maintain the relationship in its current state.

H4: Positive attributions mediate the relationship between SNS use and LDR satisfaction

2.4 Research question and hypotheses

This study examines the association between SNS intensity use and relationship satisfaction. Threat mitigation strategies are examined as mediators of this relationship. The following diagram presents the conceptual model.

Figure 2.1: Hypothesized Conceptual model



3. Methodology

3.1 Description and justification of the method

So that we could answer the research questions and the hypotheses which have been determined, a quantitative study was conducted. To this extent, an augmented questionnaire was created (Saunders, Lewis, & Thornhill, 2009), aiming to cover all necessary aspects of this thesis, as described in the previous section. The questionnaire was designed in Qualtrics, the approved website by Erasmus University.

To conduct the quantitative research, an online questionnaire was constructed, which included validated scales, using a multi-item approach where each construct was measured by several items. Participants were requested to fill in the survey after providing their consent, according to the form presented in Appendix A. Informed consent is placed at the beginning of the survey to provide the purpose of the research and make sure that the participants understand their role in the study (Nijhawan et al., 2013).

Furthermore, through informed consent, participants are given important information such as the inclusion criteria for the proposed research and ensures the participants' understanding that their participation is voluntary (Hardicre, 2014). This ensures the participants' willingness to participate in the research. The developed questionnaire was divided into sections, following the concepts that the present work aimed to study, along with the corresponding relationships between them. The corresponding sections of the questionnaire are explained in detail below in this subsection and displayed in Appendix B.

Incorporating the research ethics at the beginning of the questionnaire, there is a short text (informed consent), explaining the aim of the study and ensuring the participants that their answers are confidential and anonymous. It also includes the information that this research is taking place in order to write their Master Thesis. Moreover, the introductory text includes the estimated completion time which is about 10 minutes. Finally, a definition of what is meant by long-distance relationships for the particular study (i.e., to be in a relationship currently and not be able to physically meet each other on a daily basis due to geographical restrictions) is provided according to Guldner and Swensen's (1995) terms.

The questionnaire was distributed to adults above the age of 18 years old, avoiding the extra documentation to be provided since younger participants would have required parental consent to participate in the study. Furthermore, minors are less likely to be involved in a LDR, and also due to the nature of the research, several questions would not be age appropriate

for minors. Lastly, parental consent would also be necessary for the participation of the minors.

In terms of selecting participants who use SNSs, it is important to consider that there are many different platforms available, each with their own unique features and user demographics. A study published in 2021 found that Facebook is the most popular social media platform among adults, followed by YouTube and Instagram (Anderson, 2021). However, the use of social media can vary significantly by country and cultural context. For example, in China, WeChat is the dominant social media platform, with over 1.2 billion monthly active users (Statista, 2022) (usage worldwide). Taking into account this information, in the survey a number of different SNS were listed but the option to specify which SNS participants use the most was also made available.

Consequently, the researcher decided to include a variety of SNS options in the questionnaire to ensure that participants from different countries and cultural backgrounds have access to a platform they are familiar with. Therefore, there are no requirements with respect to the number of SNS platforms that participants use in order to complete the questionnaire. For the greater generalizability of the study, different SNS options are used to ensure that participants from all countries have access to as there are countries that ban certain SNS.

3.2 Sampling

The online survey was distributed by the researcher and the researcher's network on social media, having this way a convenience sampling technique, i.e., a non-probability sampling technique where the subjects are selected just because of their convenient accessibility and proximity to the researcher (Stratton, 2021). More specifically, snowball and virtual sampling techniques were used because the survey was distributed by social media by the researcher and her network as well (He et al., 2022). The survey was distributed between 05 and 24 of May of the year 2023, collecting 257 answers in total. The survey link was posted on an Instagram story both by the researcher and the researcher's network. Because of mutual connections, the stories were published 3 days apart from each other, to avoid confusing respondents, and ending up with respondents answering it twice.

This empirical analysis relied on web-based data obtained from a sample of 172 responses after data cleaning. The sample size follows the methodological guidelines for a Master's thesis (Janssen & Verboord, 2022). Due to the compulsory mode of all questions,

data cleaning consisted only by deleting the responses that were not completed (41 participants), or because respondents did not give their consent (4 participants). With respect to compliance with the inclusion criteria, 2 participants were younger than 18 years old and 38 participants were not in a LDR; thus filtered out of the analysis.

The final number of the participants in the data set was 172. The age of the participants ranged from 18 to 56 years old ($M = 25.53$, $SD = 8.06$). Since the study examines peoples' social life, as a mechanism explaining people of 50 + were defined as older adults considering declining employment and stabilizing social life around this age, so 56 was considered a representative maximum age for respondents. The majority of respondents (59.9%) identified as female, 38.4% as male, and three participants (1.8%) identified as non-binary or third gender or they prefer not to identify.

The sample consisted of a variety of different nationalities, most prominent being the Europeans (70.9%), and more specifically Greeks (34.3%), followed by Dutch (15.7%), and Cypriots (6.4%). All of them were currently involved in a long-distance relationship, 39.5% for more than a year, 29.7% for less than a year, 20.3% for less than half a year, and 10.5% for a duration smaller than two months. The reason why is mostly due to education (54.1%), followed by work (34.3%). They are visiting their partners at least once per month, and while being apart they consider the use of technology in their LDR was rated as very important ($M = 4.63$, $SD = .64$) and the most used way of communicating was via SNS and text messaging, most frequent being WhatsApp (37.8%), followed by Instagram (27.3%).

3.3 Procedure of analysis

The online questionnaire followed the skip logic function for all questions regarding the completion criteria (i.e., providing informed consent, being older than 18 years, and being involved in an LDR). Participants that were not redirected to the end of the survey, were asked to fulfill questions related to their demographic characteristics, their LDR and the use of SNS. All questions had the function of “force response” on Qualtrics. This function makes each question necessary to answer for the participants to move on. The “force response” option on one hand enables the researcher to ensure the completion of entire questionnaire and also makes sure that the participants would not skip any questions by accident but on the other hand intervenes with the rights of the participants as the as participants could come across questions that they might could have not felt comfortable with answering. In regards to that, in the informed consent that the participants had to read and agree to in order to participate in

was made clear that they had the right to quit the survey at any given time with no consequences. Such information was placed in the beginning of the survey to allow the participants to understand their rights and also make them feel comfortable about their replies.

Furthermore, all items used in each validated scale measuring the concepts of this thesis were randomized using the function question randomization provided by Qualtrics. Randomization is a solution to order bias, avoiding the skewness of data and leading to reliable insights, simply by mixing up the order of the questions randomly (McLeod, Zhang, & Yu, 2003).

When the required number of participants were reached, the data were extracted and transferred to SPSS for the creation of a database, where every question corresponded to a new variable. SPSS is a software package that is being used for the analysis of statistical data (Hinton et al., 2014). For an in-depth understanding of the data, the first step of analysis was the use of general descriptive statistics, where each variable was presented by its mean value, frequency, and/or percentages. The analysis of the database took place and the appropriate tests were run. There are several assumptions for the linear regression, including the sample size, the normal distribution of the dependent variable, the absence of outliers in all variables, a linear relationship between independent variables and dependent variable, and an absence of multicollinearity between the independent variables (Osborne & Waters, 2002). All assumptions can be checked as part of the linear regression procedure, except for the normal distribution of the dependent variable (Charalambous et al., 2019).

To perform mediation analyses, the PROCESS macro plug-in developed by Hayes (2013) for SPSS was installed and utilized. This plug-in allows for the testing of more complex models and is especially suitable for moderation and mediation analyses (Hayes, 2013). In the context of this study, it was proven to be especially helpful for testing multiple hypotheses at the same time. After the tests were completed, the results were analyzed and either the acceptance or the rejection of the different hypotheses was possible.

To better understand initial findings, descriptive statistical analyses were initially applied, using frequency tables, and correlation analysis. To ensure the reliability and internal consistency of the scales and check whether all items can be grouped into one dimension, the items were analyzed using the principal component analysis (Drost, 2011) and the variables were tested through the Cronbach- α coefficient which is a commonly used measure of internal consistency that assesses how well a set of items in a scale or questionnaire measure the same underlying construct (Pallant, 2020).

3.4 Operationalization of concepts into variables

According to the literature for methodological procedures, the use of validated scales in designing the questionnaire enhances the validity and reliability of the study, thereby ensuring that the data collected is both accurate and informative (Strauss & Corbin, 2015). This study, in order to ensure both validity and reliability of the research findings, used multi-item validated scales when designing the questionnaire. Every construct was measured by a number of different items aiming to improve the reliability and validity of the study (Kline, 2016). This approach is in line with part of the literature where experts stress the importance of using multi-item validated scales to improve the accuracy of the data collected (Furr & Bacharach, 2014).

There are many choices of rotation method, orthogonal rotations for producing factors that are uncorrelated and oblique methods that allow the factors to correlate (Pallant, 2020). Traditionally, researchers have been guided to orthogonal rotation because uncorrelated factors are more easily interpretable and varimax rotation is by far the most orthogonal rotation, likely because it was developed as an incremental improvement upon prior algorithms quartimax, and equamax (Osborne, 2015). It is the default rotation in many software packages and the most preferred one, as all tend to produce similar results (Fabrigar et al., 1999).

In order to minimize the time that each participant needed for the completion of the questionnaire, all questions were categorical or Likert-scaled, thus each participant had to choose the answer that better described his or her situation. The variables that were used are following the instructions per scale, as presented to Appendix B. Each participant was requested to fill each one of the following sections:

Demographic characteristics. Participants were asked to provide information with respect to variables such as age, nationality, country, and sexual orientation. Among all demographic variables, *Age* is a continuous variable ($M = 25.53$, $SD = 8.06$) and used as covariate in the regression analysis.

SNS intensity use. The intensity of SNS use was measured based upon the Facebook Intensity Scale (Ellison et al., 2007), also known as FIS, which consists of eight items. For the present study, the items were rephrased to suit looking at SNS usage in general, instead of solely on Facebook. The same approach was used by Morey et al. (2013) who developed the Technology Use Questionnaire (TUQ), assessing various aspects of technology use and its impact on individuals. In the present study, participants were firstly asked to state how often they use each type of technology when communicating with their romantic partner by

choosing the appropriate frequency among the given ones and secondly, focusing only on SNSs, I used the modified 8-items FIS scale to measure SNS intensity use. A sample item is “I rely on SNS to complete my daily tasks and activities.” Items are rated on a 5-point Likert-type scale ranging from 1 (Not at all) to 5 (Extremely). Ellison et al. (2007) combined the Likert statements with the frequency of login; the present study used only the Likert items for the scale SNS intensity. The items were entered into factor analysis using Principal Components extraction with Varimax rotation based on eigenvalues (>1.00), $KMO = .663$, $X^2 (N = 172, 7) = 207.69$, $p < 0.001$. The items loaded into one factor, explaining 49.4% of the variance in participants’ SNS intensity use. Based on Principal Components Analysis, the scale named “SNS Use” demonstrated a stronger internal consistency reliability (Cronbach’s $\alpha = .61$) and the average score of the scale was computed into a new variable ($M = 3.75$, $SD = 0.39$).

Relationship satisfaction. The 7-items Relationship assessment scale developed and validated by Hendrick, Dicke & Hendrick (1998) was used in order to measure relationship satisfaction. It is widely used to evaluate different aspects of romantic relationships. A sample item is “To what extent has your relationship met your original expectations?” Items are rated on a 5-point Likert-type scale ranging from 1 (completely disagree) to 5 (completely agree). The items were entered into factor analysis using Principal Components extraction with Varimax rotation for producing factors that are uncorrelated based on eigenvalues (>1.00), $KMO = .873$, $X^2 (N = 172, 7) = 587.09$, $p < 0.001$. As expected, the items loaded into a single factor, explaining 57% of the variance. Moreover, the scale demonstrated a strong internal consistency reliability (Cronbach’s $\alpha = .88$). Following the reliability analysis, the average score of the scale was computed into a new variable – Relationship Satisfaction ($M = 4.08$, $SD = .63$).

Derogation of alternatives. The 4-item subscale by Stafford & Canary (1991) was used and all items are rated on a 5-point Likert-type scale ranging from 1 (Never) to 5 (Constantly). Example items include “My needs for intimacy [sharing personal thoughts, secrets, etc.] could be fulfilled in alternative relationships,” and “The people other than my partner with whom I might become involved are very appealing”. The items were developed based on previous research regarding the Investment Model (Rusbult et al., 1991) and tested by Drigotas and Rusbult (1992). The items were entered into factor analysis using Principal Components extraction with Varimax rotation for producing factors that are uncorrelated based on eigenvalues (>1.00), $KMO = .618$, $X^2 (N = 172, 4) = 97.97$, $p < 0.001$. The items

were loaded into one factor, explaining 41.8% of the variance. Based on the Principal Components Analysis, a new scale was constructed and consisted of 3 items (one item was dropped in order to increase the internal consistency reliability. The scale named “Derogation of Alternatives” demonstrated a stronger but still moderate internal consistency reliability (Cronbach’s alpha = .61) and the average score of the scale was computed into a new variable ($M = 2.66$, $SD = .83$).

Idealization tendencies. The 5-item Idealistic Distortion Scale (Olson, 2005), a subscale of the ENRICH Marital Satisfaction scale, views idealization as a tendency to describe the relationship in an unrealistically positive way (Fowers & Olson, 1993). The scale has been used to measure the tendency of individuals to idealize their romantic partners to maintain their relationship and has been validated by Lee and Pistole (2012). A sample item is “My partner and I understand each other completely.” Items are rated on a 5-point Likert scale ranging from 1 (completely disagree) to 5 (completely agree). High scores indicate an idealistic view; low scores indicate realistic perceptions. Midpoint scores indicate moderate idealization, somewhat realistic perceptions, and some minimizing of problems (Olsen, 2005). The items were entered into factor analysis using Principal Components extraction with Varimax rotation for producing factors that are uncorrelated based on eigenvalues (>1.00), $KMO = .685$, $X^2 (N = 172, 4) = 96.08$, $p < 0.001$. As expected, the items loaded into a single factor, and the scale demonstrated moderate internal consistency reliability (Cronbach’s alpha = .65). Following the reliability analysis, the average score of the scale was computed into a new variable – Idealization ($M = 3.48$, $SD = .64$). Interpretation holds and the mean value of the new variable indicates a midpoint score, showing moderate idealization between participants, meaning that some of them have somewhat realistic perceptions, and some of them tend to minimize problems.

Positive Attributions. The 3-item subscale of attributions by Fincham and Bradbury (1992) was used. It has been used to measure the extent to which individuals make positive attributions about their partners to maintain their relationship. A sample question is “I criticize something my partner does.” Items are rated on a 5-point Likert-type scale ranging from 1 (never) to 5 (constantly). So that we could indicate the high scores of a positive attribution when interpreting a partner's behavior, the last variable was reversed.

Using SPSS, the variables were entered into factor analysis using Principal Components extraction with Varimax rotation for producing factors that are uncorrelated based on eigenvalues (>1.00), $KMO = .553$, $X^2 (N = 172, 3) = 20.681$, $p < 0.001$. As expected, the items

loaded into a single factor, although the scale demonstrated a small internal consistency reliability (Cronbach's alpha = .42). Following the reliability analysis, the average score of the scale was computed into a new variable – Positive Attributions ($M = 2.57$, $SD = .64$). Even though Cronbach's alpha is low and does not reach the significant level of .6 to be considered of high reliability (Shrestha, 2021), the scale used as it was validated in other studies and seemed to be an important maintenance strategy, taking into account that findings cannot be generalized and lead to specific results based conclusions. In addition, since Cronbach's alpha is simply an overall reliability coefficient for a set of variables questions and reflects different underlying personal qualities among the participants in the research, we can not drop the variable based on the results of the principal components analysis (PCA), initially performed.

4. Results

Table 4.1 displays the means and standard deviations as well as the intercorrelations between the measures.

Table 4.1. Means, standard deviations, and Pearson correlations between variables

	M	SD	1	2	3	4	5	6
1. SNS intensity use	3.75	.39						
2. Relationship satisfaction	4.08	.63	-.05					
3. Derogation of alternatives	2.66	.83	.39**	-.27**				
4. Idealization	3.48	.64	.01	.48**	-.12			
5. Positive attributions	2.57	.64	.31**	.32**	.49**	-.16*		
6. Age	25.53	8.04	.06	-.05	.09	.01	.09	.09

Note: Significance: * = $p < .05$ ** $p < .01$ *** $p < .001$

Respondents in our sample stated that their use of SNS is quite intense ($M = 3.75$, $SD = .39$) and they are very satisfied with their relationship ($M = 4.08$, $SD = .63$). Between the maintenance strategies, idealization is most frequently presented ($M = 3.48$, $SD = .64$) compared to the derogation of alternatives ($M = 2.66$, $SD = .64$) and positive attributions ($M = 2.57$, $SD = .64$). Pearson correlations were significant between SNS intensity use and two out of three maintenance strategies, and between relationship satisfaction and all maintenance strategies. With respect to the correlations' direction, SNS intensity use is negatively correlated with relationship satisfaction ($r = -.05$) but not at a statistically significant level, and positively and statistically significant correlated with derogation of alternatives ($r = .39$) and positive attributions ($r = .31$).

Furthermore, relationship satisfaction is negatively and statistically significant correlated with derogation of alternatives ($r = -.27$) and positive attributions ($r = -.32$), and positively correlated at a statistically significant level with idealization ($r = .48$). With respect to age, it seems to be statistically insignificant in all correlations but it is included in the model as a control factor. Although several variables were significantly related to one another in both

groups, correlations were not above .80, which indicates there is likely not a multicollinearity problem (Tabachnick & Fidell, 2007).

Mediation analysis was used to test whether the proposed causal effect of SNS intensity use on relationship satisfaction may be transmitted through a mediating variable (Preacher et al., 2007). When mediation occurs, the effect of the independent variable can be explained by using a third mediator variable which is caused by the independent variable and is itself a cause for the dependent variable (Creswell, 2009).

In this conceptual model, maintenance strategies are considered to be mediators, since cross-sectional approaches to mediation typically do generate substantially biased estimates, spurious results and misleading conclusions. All paths represent the direct effect of one variable on another (independent on mediator and mediator on the outcome), and the indirect effect of SNS intensity use (independent) on relationship satisfaction (outcome variable) is calculated as product of paths *a* and *b* for each one of the hypotheses. In order to test whether SNS intensity use has an indirect effect on relationship satisfaction through maintenance strategies, mediation analysis was performed by using the PROCESS function in SPSS.

Results demonstrate that SNS intensity use has a significant impact on the derogation of alternatives ($b = .83$, $t = 5.47$, $p < .001$), while age is found to have an insignificant impact on the derogation of alternatives ($p = .39$). Additionally, SNS use has no significant impact on idealization ($b = .01$, $t = .01$, $p = .991$) and the same holds for age ($b = .01$, $t = 1.62$, $p = .105$). With respect to path *a*, SNS intensity use has a significant impact on positive attributions ($b = .49$, $t = 4.12$, $p = .001$), while age is found to have an insignificant impact on positive attributions ($p = .34$).

Furthermore, SNS intensity use has no significant impact on relationship satisfaction ($b = .10$, $t = .88$, $p = .376$), alongside derogation of alternatives ($b = -.11$, $t = -1.90$, $p = .058$), positive attributions ($b = -.18$, $t = -2.47$, $p = .014$), and age ($b = -.01$, $t = -1.20$, $p = .232$). The only variable with a significant impact on relationship satisfaction is idealization ($b = .43$, $t = 6.59$, $p < .001$). There is no effect of age on any variable (mediators and outcome), suggesting that it might be better not to include it in the model.

Total effect of the model refers to the impact of SNS intensity use on relationship satisfaction, with the inclusion of direct and indirect effects. Direct effect is the impact of SNS intensity use on relationship assessment with the presence of mediators and indirect effect is the impact of SNS intensity use on relationship assessment without the presence of mediators. Table 4.2 presents the summary reporting of the mediation analysis, where age was excluded

since it had no statistically significant correlation with any of the variables (See Table 4.2 below).

Table 4.2. Mediation Analysis Summary

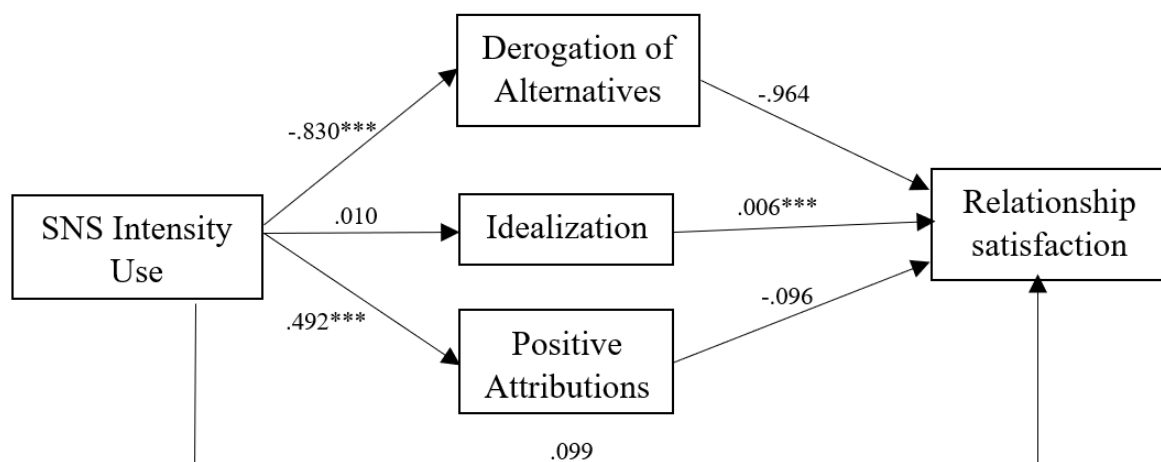
Total effect	Direct effect		Indirect effect	Confidence interval	t-stat	
SNS intensity use → Relationship satisfaction	SNS intensity use → Relationship satisfaction	Relationship	effect	interval		
				Lower	Upper	
		H2: SNS intensity use → Derogation of alternatives → Relationship satisfaction	→ -0.964	-1.998	.002	-1.916
-0.0864 (.487)	.099 (.387)					
		H3: SNS intensity use → Idealization → Relationship satisfaction	→ .006	-.112	.136	.099
		H4: SNS intensity use → Positive attributions → Relationship satisfaction	→ -.096	-1.927	-.025	-2.196

In summary, this study has assessed the mediating role of maintenance strategies on the relationship between SNS intensity use and relationship satisfaction. Results revealed a significant indirect impact of SNS intensity use on relationship satisfaction through idealization ($b = .006$, $t = .099$), supporting H3. The indirect impact of SNS intensity use on relationship satisfaction through the derogation of alternatives is borderline insignificant ($b = .006$, $t = .099$), as well through positive attributions ($b = -.096$, $t = -2.196$), thus, rejecting H2

and H4, respectively. Furthermore, the direct effect of SNS intensity use on relationship satisfaction in the presence of mediators is insignificant ($b = .099$, $t = .387$), rejecting the H1. Hence, maintenance strategies partially mediate the relationship between SNS intensity and relationship satisfaction, while SNS intensity use has a significant effect on mediators and age was found to be an insignificant covariate throughout all relationships.

Using model 4 from PROCESS, hypotheses H1, H2, H3 and H4 were tested simultaneously. This model tests direct effects of SNS intensity use on maintenance strategies (a-path), indirect effect of SNS intensity use on relationship satisfaction through mediators (b-path), and also calculates the direct effect of SNS intensity use on relationship satisfaction. The 95% confidence interval of the analysis was generated with 5000 bootstrap samples. SNS intensity use was entered as the predictor and relationship satisfaction as the outcome variable, with derogation of alternatives, idealization, and positive attributions as mediators. The following figure depicts the coefficients for all relationships

Figure 4.1. Parallel mediation model



For the linear regression model, all assumptions were tested. The Kolmogorov-Smirnoff test of normality results suggest we can assume that data are normally distributed since ($p\text{-value} > .005$). Correlations presented in Table 1 show that there are no multicollinearity issues among independent variables ($r < .70$). Model summary statistics show that there is at least one variable that has a statistical significance on explaining change of the dependent variable ($R^2 = .30$, $F(4, 167) = 18.14$, $p = .000$). Table 3 presents the coefficients of the multiple linear regression analysis.

Table 3. Multiple linear regression analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t-stat	sig.
	b	se	Beta		
Constant	3.033***	.460		6.589	.000
SNS intensity use	.100	.115	.062	.867	.387
Derogation of alternatives	-.115	.059	-.152	-1.961	.052
Idealization	.422***	.065	.426	6.480	.000
Positive attributions	-.190**	.074	-.194	-2.566	.011

Note: Significance levels: * = $p < .05$ ** $p < .01$ *** $p < .001$

The model explained 30.3% of the variance of relationship satisfaction and is a statistically significant finding. The ANOVA table for the slopes estimated which tests the null hypothesis that the slope of relationship satisfaction is zero is also statistically significant ($p = .000$). Unstandardized coefficients are the values used in the regression equation and standardized coefficients are used for standardizing the contribution of all variables which can be compared to each other. Finally, from the final regression table we can easily notice that idealization has a greater impact on relationship satisfaction. In addition, idealization and positive attributions made a significant change in relationship satisfaction ($p < .050$), while the derogation of alternatives is borderline statistically insignificant.

5. Discussion

This study aimed to understand how maintenance strategies can be applied as mediators in LDRs. More specifically the study also explores the importance of SNSs in facilitating a space in order for couples in LDRs to maintain relationship satisfaction.

Specifically, for the first hypothesis “*SNS usage has a significant positive relationship with relationship satisfaction.*” The findings of the research indicate that there is no significant positive relationship with relationship satisfaction like one would expect based on previous research by scholars (Schade, 2013). This is because previous research emphasizes the importance of SNS as a way to demonstrate relationship satisfaction rather than treating SNS as a facilitator. However, after the analysis was conducted with the sample of participants that were collected from the open survey that was published did not show a strong enough correlation to be able to say that the use of SNS could show a positive relationship satisfaction.

This could be because the measurement that was used to measure SNS usage did not capture the whole range and complexity of engagement that individuals have with SNSs. It is important to take into consideration different factors associated with SNS use, such as the content, the frequency, the duration, and the quality of interactions. It would be beneficial to use measures that assess the different dimensions of SNS usage, for example, the intensity of posting or different communication patterns to provide a more accurate relationship between SNS use and relationship satisfaction with maintenance strategies as a mediating variable (Lee & Hwang, 2019). Moreover, the influence of other interpersonal variables such the individual differences in attachment style and relationship commitment or communication quality could influence the relationship between relationship satisfaction and SNS use (Aisha, 2014). Such variables would be beneficial if considered in future studies because they provide a more nuanced understating of the relationship.

Furthermore, the exploration of other theoretical frameworks such as the Social Information Processing Theory (SIPT) could offer additional insights. This is because SIPT suggests that online verbal cues in computer-mediated interactions can be compensated (Walther, 2008). With the particular framework research could be conducted that examines how SNS use affects relationship satisfaction and information processing. Additionally, the research only used a quantitative design, which only offers information about a certain point in time (cross-sectional data) (Wang & Cheng, 2020). Therefore, the employment of different designs such as the use of a longitudinal study and/or combining self-reported data and objective data such as tracking the SNS behavior of the participants can provide a more

comprehensive understanding of the relationship. Such research would be able to establish stronger causal inferences.

Moreover, the second hypothesis “*Participants who have been in LDR for less than 6 months will use SNS more intensively.*” was also rejected. This outcome was not expected based on the previous research that was conducted by scholars. Several scholars (Dainton & Aylor, 2002; Kim & Lee, 2011; Orr et al., 2009) have explored the intensity and depth of conversations on SNSs and concluded that such behaviors among couples are likely to lead to relationship satisfaction and trust. It is important to acknowledge that while some research like the ones mentioned suggest a positive association between SNS use and relationship satisfaction, however, some other studies suggest that relationship satisfaction can be influenced by other contextual factors (Gao et al., 2017; Merkle et al., 2017), establishing mixed findings in the particular area of research.

Furthermore, scholars also pointed out that the increased SNS use can act as maintenance strategies for the maintenance of the relationship when the communication on SNS includes the sharing of personal information as well as the expression of affection (Dainton & Aylor, 2002; Kim & Lee, 2011; Orr et al., 2009) However, the findings of this research did not come to the same conclusions as previous research. A reason for such an outcome could either be the result of the age groups of the participants but it could also be the due to the easier travel experiences that are now available compared to when the previous research was conducted.

To elaborate further, changes in travel experiences and technology could contribute to the changes in the findings compared to previous research. For example, the improved travel options that are now available and developing communication technologies offer increased availability of video calling may change the way that partners in LDRs maintain their relationships (Thompson, 2019). For example, the participants of this study may have relied more on face-to-face interactions, diminishing the up-to-now perceived need for increased SNS usage. Also, the duration of the relationship, may not be the best indicator of their SNS use, as their use may increase or decrease over time in the relationship (D’Arienzo et al., 2019).

Interestingly, the third hypothesis of this research “*Derogation of alternatives mediates the relationship between SNS use and LDR satisfaction.*” was also rejected. Such an outcome is not in line with previous research such as the one conducted by Lee and colleagues (2010), which demonstrated that the derogation of alternatives can achieve higher levels of

commitment and relationship satisfaction. Other scholars like Plant, Kunstman, and Maner (2010) in their research found that individuals that engage in self-protective responses when they are in contact with their partner are more likely to maintain their relationships. Similarly, Koranyi and Rothermund (2012) also found that partners who communicate openly and trust each other prevent the allure of the alternatives. However, this was not shown in this research, probably due to the idiosyncratic characteristics (moral and cultural, socioeconomic etc.) of the sample that could lead to the rejection of this hypothesis.

Different populations may exhibit different patterns in SNS use and relationship satisfaction compared to others (Baloğlu et al., 2020; Choi & Mahoney, 2020; Poyrazli & Devonish, 2020). Also, the particular sample could have unique cultural and demographic features compared to other populations because more than 40% of the sample was Greeks and Cypriots and these two countries share common values, and beliefs and are very close in terms of culture (Hu et al., 2019). Therefore, it is important to keep in mind that the generalisability of the findings may not apply to all populations or LDRs.

Moreover, the findings of this research and previous research could be the result of different methodological techniques. For instance, the measurement and operationalization of the derogation of alternatives could vary among studies. Examining different measures of derogating alternatives might be able to capture different aspects of these constructs. Such aspects could be emotional responses, cognitive processes as well as behavioural tendencies (Brady & Baker, 2022). Therefore, variations in the way the construct was measured can impact the observed relationship especially if such relationship is solely measured with self-reported data. This is because the derogation of alternatives involves a cognitive process where the individual has to devalue as well as discount the potential attractiveness of the potential alternative partner (Brady & Baker, 2022; Urganci, 2022). This is why implicit measures and/or behavioural observations may provide a comprehensive understanding of the presented phenomenon.

In the framework of LDRs, idealization can serve as a psychological mechanism that can help maintain relationship satisfaction despite partners being separated by physical distance (Chien & Hassenzahl, 2020). Idealization refers to the notion that individuals have the tendency to perceive their partner with overly positive eyes (Goldsmith & Byers, 2020). Moreover, scholars have studied how idealization and positive attributions influence LDRs and concluded that they postpone their conflicts. This is because partners who are separated by distance engage in less destructive communications and avoid heated arguments compared

to couples in GCRs (Sahlstein, 2004). The fourth hypothesis that was proposed “*Idealization mediates the relationship between SNS use and LDR satisfaction.*”, was accepted and the findings are in line with the findings of previous research like the one conducted by Hillard (2017). This research along with other studies, has demonstrated that idealization allows individuals to maintain a positive outlook on their relationship as it helps to enhance feelings of commitment, closeness, and satisfaction (Wang et al., 2019).

Additionally, the study of Sahlstein (2004) indicated that when individuals engage in the idealization of their partners tend to avoid heated arguments and have less destructive communications, especially in the context of LDRs. This has psychological benefits which include, the navigation of the challenges that arise from being physically separated. This consequently contributes to the fostering of optimism and hope for the future, creating and maintaining a strong feeling of emotional connection leading to relationship satisfaction (Chien & Hassenzahl, 2020). When it comes to the use of SNS, one might say that they play a significant role in the maintenance of an LDR because through the use of SNS platforms individuals can share supportive messages and experiences, providing a more idealized version of their relationship (Holtzman et al., 2021; Leistner & Mark, 2020).

Moreover, the findings of this research showed that partners who are in an LDR tend to avoid negative attributions more frequently compared to couples in GCRs as a means to maintain their relationship at the current state. These findings are supported by previous research by Fletcher and Kerr (2010). Additionally, Hidayanto and Sarwono (2021) suggested that SNSs can contribute to the maintenance of the relationship by facilitating emotional intimacy. This was also shown in this research because couples who used SNSs for allocating positive attributions to their partners foster feelings of connectedness and closeness. The findings of this research are in line with the findings of Fletcher and Kerr (2010). Thus the fifth and last hypothesis of this research “*Positive attributions mediate the relationship between SNS use and LDR satisfaction*” was accepted. It is important to mention here that the value of Cronbach’s alpha was 0.42 which is considered a low value for the internal validity of the scale. This is due to when the value of Cronbach's alpha is low, the correlation that is calculated will be lower compared to the true population value (Goodboy & Martin, 2020) and this can lead to estimates of the association being too high (Hayes & Coutts, 2020). In addition, because the findings of this study are cross-sectional which means that they are looking at one point in time, and they cannot claim change over time (Wang & Cheng, 2020).

This is why claims regarding the future effects cannot be made with certainty because

the questionnaire that was conducted only looked at the valid opinion of the participants at one point in time (Wang & Cheng, 2020). However, cross-sectional data allow for the comparison of variables at once, which is exactly what was done in this analysis, and was also done in the research of other scholars such as Hidayanto and Sarwono (2021) and their findings further corroborate the findings of this research.

5.1 Theoretical and Societal Implication

The study has not only theoretical implications, but also empirical upon the understanding of the dynamics of LDRs and the role of technology in shaping relationship satisfaction. The study contributes to the understanding of the different dynamics of LDRs in relation to the role of SNSs in maintaining the relationship and relationship satisfaction. This is because the findings of this study have a specific focus on relationships that are geographically apart, while at the same time, it acknowledges the challenges and opportunities that arise in efforts to maintain intimate connections over distance. The exploration of factors such as communication frequency and SNS use as well as threat mitigation strategies contributes to the in-depth understanding of these complexities which are present in LDRs (Holtzman et al., 2021). Moreover, this study specifically investigated the role that SNS usage plays in the maintenance of an LDR and the impact that it has on relationship satisfaction contributing to a greater understanding of the interplay between SNS use and relationship satisfaction (Bröning & Wartberg, 2022).

Moreover, the present study challenges previous assumptions and findings in the already existing literature of the topic. For example, the study did not find any significant positive relationship between SNS use and relationship satisfaction, which was demonstrated in pre-existing literature. Such an outcome, calls for further investigation regarding the specific concepts and conditions in which SNS use influences relationship satisfaction.

Next to that, the findings of this study can contribute to the bridging of different theories and theoretical perspectives which have been investigated in the field of LDRs. Therefore, investigating the role SNS use in relation to maintenance strategies provides a pathway for integrating other theories related to the topic, such as theories related to trust and uncertainty. This will help with the creation of a more holistic framework that captures the complex dynamics of an LDR.

5.2 Practical Implications

There are also practical implications that arise from this study, suggesting that couples can benefit from using technology, such as SNSs, to foster honest communication, build trust,

and promote relationship satisfaction (Holtzman et al., 2021). Besides that, this study highlights the significance of technology, specifically SNS use in the facilitation of communication and maintenance of LDRs.

This is because the use of SNS can provide a set of functionalities which include the expression of affection, and the sharing of daily updates which facilitate a sense of togetherness despite the physical separation (Lydon & Karremans, 2015) Lastly, the mediators of this study are the maintenance strategies: derogation of alternatives, idealization, and positive attributions and their relationship with SNS use, shed light on the different psychological mechanisms through which the SNS use influences relationship satisfaction for couples in LDRs. Specifically, the derogation of alternatives seems to emphasize commitment and satisfaction within the relationship (Collins et al., 2006). Idealization helps to minimize conflict and influences the satisfaction of the relationship. (Lee & Pistole, 2012). Lastly, positive attribution promotes trust and intimacy (Collins et al., 2006). Therefore, identifying the benefits of the proposed mediators provides practical information on how couples can either enhance or maintain relationship satisfaction despite the geographic distance. Because the particular study focused only on couples who are separated by distance, the presented mediators were examined through the use of SNSs, which indicated that the proposed strategies are taking place online, which is something that couples can take advantage of.

Understanding the role of positive attributions (interpreting the partner's behaviour in a positive way) can help researchers to develop further studies that could contribute to relationship satisfaction. Already existing studies have looked into them such as Anderson and Emmers-Sommer (2006) and Ogolsky et al, (2017), making it clear that further research will be beneficial. Moreover, targeting the maintenance strategies is important because academic research has consistently demonstrated it including studies from Stafford and Canary (1991) and Dainto and Aylor (2002). Therefore, the identification and development of effective interventions for relationship satisfaction can contribute to the enhancement of relationship satisfaction as well as the overall well-being of couples, especially those who are in an LDR.

5.3 Limitations and Directions for Future Research

The current study comes with several limitations. Firstly, the question of relationship satisfaction varies interpersonally which may vary how participants responded to the survey. To further elaborate on this point, there are numerous studies that have looked into the subjective nature of relationship satisfaction, and they have found that there are many

individual differences in how people evaluate and perceive their relationships (Bouffard et al., 2022; Kim et al., 2020; Mostova et al., 2022). For example, the study of Karney and Bradbury (1995) conducted a longitudinal study in order to examine the trajectories of relationship satisfaction and the results indicated high levels of heterogeneity among the patterns that were observed among the couples.

The findings also showed that some couples had stable levels of high satisfaction while some other couples have fluctuations and experienced declines in satisfaction. Therefore, it is important to take into consideration the nature of the relationship as well as the individual differences when aiming to examine relationship satisfaction.

Moreover, there are other studies that placed emphasis on the different factors that could influence relationship satisfaction. Such as the one by Feeney and Collins (2015), which emphasizes the role of the different attachment styles and the way they shape relationship satisfaction. Therefore, this suggests that people with different attachment styles may have different perceptions of relationship satisfaction, and thus their responses to the survey are impacted. As a consequence participants when asked to fill in a survey may bring their unique biases, perspectives as well as interpretations which potentially leads to both diverse and subjective responses (Coughlan et al., 2009). Subjectivity is the result of cultural differences and personal expectations, which may not be captured in an adequate way by standardized surveys (Bertrand & Mullainathan, 2001). Relationship satisfaction can have fluctuations resulting from various different factors, including personal and life events, and changes in personal circumstances (Bradbury & Karney, 2004).

Furthermore, factors such as self-reporting biases and social desirability can further alter the inputs of participants (Bertrand & Mullainathan, 2001). In order to avoid these, anonymity and confidentiality were employed by ensuring the participants that their responses are completely anonymous and they cannot be traced back to them. In this way, participants were encouraged to give honest and accurate responses. On top of that, validated scales and measures were used in order to enhance the accuracy of the self-reported data. These scales have already been tested for both their reliability and validity, and they are designed in a way that minimizes biases and has the ability to capture the construct of interest accurately. In regards to generalizability, the study consisted of 172 participants with the majority of participants identifying as Greek, Dutch, and Cypriot. As a result, generalization within Europe may be negatively affected as the results may vary depending on the proportion of groups examined accounting for intercultural differences. When mentioning that the

generalizability may be “negatively affected” in the particular context, it meant that the ability to apply the findings of this study to the broader population or to make efforts to apply the findings to the entire European population may be limited. That is because the sample consisted mainly of Greek, Dutch, and Cypriot people, who might have cultural differences which could be not representative of other cultural groups within Europe.

In order to be able to generalize the findings of the present study it is necessary to have diverse and presentative samples, that reflect the population of interest. Therefore, including a larger sample of participants from broader cultural backgrounds within Europe would allow for the greater generalizability of the findings as they would also account for potential intercultural differences. However, focusing on an international audience has both its advantages and pitfalls. The first benefit includes cultural diversity, which allows for the exploration and comparison of the different experiences of individuals from various European countries, which could potentially lead to the identification of cross-cultural patterns. The second benefit is the enhanced external validity of the study which allows the broader generalization and applicability of the findings to a larger population. In this way, the results of the study can be applied to individuals from different cultural backgrounds.

On the other hand, there are some disadvantages when using an international sample. Firstly, there are practical challenges such as differences in research protocols, and language barriers which may lead to translation requirements. Secondly, contextual differences need to be kept in mind conducting international research because cultural variations can affect the interpretation and generalizability of the findings. There are factors that be acknowledged, such as the social norms and cultural values that may vary across countries that could have an impact on relationship satisfaction. Therefore, failure in accounting for those could limit the broader applicability of the study.

Despite this, the results of the study are indicative of a greater need for relationship maintenance strategies in LDRs, a topic that has received minimal academic attention despite LDRs becoming more prevalent (Belus et al., 2019; Weber, 2022). Based on the study's results, recommendations for future research include fostering positive attribution and idealization to enhance relationship satisfaction, developing interventions targeting maintenance strategies, and conducting further research to gain a more comprehensive understanding of LDR dynamics. Future studies could incorporate more objective measures, use different study designs to strengthen causal inferences, and explore the relationship between SNS use, relationship satisfaction, and threat mitigation strategies in LDRs more comprehensively.

Moreover, it would be useful to explore the different types of uncertainty; self-uncertainty, relationship uncertainty, and partner uncertainty identified by Knobloch (2007), because this will contribute to well-rounded research. Looking at the different types of uncertainty can provide a more comprehensive understanding of both the dynamics and the sources that could lead up to uncertainty which may influence relationship satisfaction (Sahlstein, 2006). It is necessary to acknowledge the interplay between relationship satisfaction and uncertainty. For instance, higher levels of uncertainty may influence one's self-esteem and overall satisfaction in a relationship (Cameron & Ross, 2007). Relationship uncertainty can create anxiety for the future, therefore, influencing relationship satisfaction.

Lastly, partner uncertainty can lead to trust issues and interpersonal differences, leading to a decrease in relationship satisfaction (Maguire, 2007). Moreover, there are practical for conducting research regarding the different types of uncertainty in a relationship. The recognition and address of such issues can help to enhance relationship satisfaction because by identifying the specific areas of uncertainty, research can conduct research that will suggest strategies that could target these areas effectively.

The findings of the present research only looked at how uncertainty leads to higher levels of idealization without investigating further, the types of uncertainty or the reasons that could to uncertainty already existing research has shown a positive correlation between uncertainty and physical distance (Emmers & Canary, 1996; Holt & Stone, 1988) meaning that further investigation in relation the SNS use can fill in a gap in the literature by either indicating a correlation between the levels of SNS use and the levels of uncertainty. Although uncertainty and jealousy appear to be recurring factors in LDRs in previous research (Stafford & Reske, 1990), this study could not conclude similar results as there is very little evidence that indicated evidence of idealization and there was no specific focus placed on the negative effects (eg jealousy, uncertainty).

The lack of idealization findings in this study could be due to the number of participants. This is because the sample size is relatively small and there might not be enough statistical power that could detect small and subtle effects between idealizations and relationship satisfaction (Lieber, 1990). Moreover, a larger sample would provide greater variability in the responses of the participants as it would allow for a greater range of perspectives and experiences (Cohen, 1992). Therefore, the small sample size of this study makes it more difficult to detect significant associations. Due to the small size, it is also difficult to assess subgroup differences such as the duration of the LDR, the age, and the

gender that could level of idealization that is reported. Therefore, the small sample size limits the ability to come to meaningful conclusions and identify patterns about subgroups.

Moreover, it is important to mention that measuring the levels of idealization in an LDR or GCR is rather difficult because participants may not fully realize that they are idealizing their partner or may not fully accept that they are idealizing their partner and their relationship (Stafford & Merolla, 2007; Stafford & Reske, 1990). Consequently, alternative analysis such as qualitative research or mixed method research which includes both quantitative and qualitative findings may be needed to measure idealization in an LDR, to be able to confidently come to conclusions.

6. References

- Aisha, T. S. (2014). Close friendship maintenance on Facebook: The relationship between dialectical contradictions, Facebook relational maintenance behaviours, and relationship satisfaction in the US and Malaysia (*Doctoral dissertation*, Kent State University).
- Anandarajan, M., & Simmers, C. (Eds.). (2003). *Managing web usage in the workplace: A social, ethical and legal perspective*. IGI Global.
- Anderson, T. L., & Emmers-Sommer, T. M. (2006). Predictors of relationship satisfaction in online romantic relationships. *Communication Studies*, 57(2), 153-172. DOI: 10.1080/10510970600666834
- Appel, H., Gerlach, A. L., & Crusius, J. (2016). The interplay between Facebook use, social comparison, envy, and depression. *Current Opinion in Psychology*, 9, 44-49. DOI: [10.1016/j.copsyc.2015.10.006](https://doi.org/10.1016/j.copsyc.2015.10.006).
- Arikewuyo, A. O., Efe-Özad, B., Dambo, T. H., Abdulbaqi, S. S., & Arikewuyo, H. O. (2021). An examination of how multiple use of social media platforms influence romantic relationships. *Journal of Public Affairs*, 21(3), e2240. DOI: 10.1002/pa.2240.
- Asuncion, A. (2021). "Are My Bikini Pics Bothering You?" *The Uploading of a Romantic Partner's Sexy Photo on Social Media and Its Effects on Jealousy and Relationship Satisfaction* (Doctoral dissertation, University of Hawai'i at Manoa).
- Baloğlu, M., Şahin, R., & Arpacı, I. (2020). A review of recent research in problematic internet use: gender and cultural differences. *Current Opinion in Psychology*, 36, 124-129. DOI: 10.1016/j.copsyc.2020.05.008
- Barelds, D. P., & Dijkstra, P. (2011). Positive illusions about a partner's personality and relationship quality. *Journal of Research in Personality*, 45(1), 37-43. DOI: [10.1016/j.jrp.2010.11.009](https://doi.org/10.1016/j.jrp.2010.11.009).
- Bazani, M., Bakhtiari, M., & Masjedi Arani, A. (2022). An Investigation of Long-Distance Relationship Maintenance in Married Individuals in Tehran, 2020. *The American Journal of Family Therapy*, 50(5), 491-509. DOI: [10.1080/01926187.2021.1941419](https://doi.org/10.1080/01926187.2021.1941419).
- Beckmeyer, J. J., Herbenick, D., & Eastman-Mueller, H. (2021). Long-distance romantic relationships among college students: Prevalence, correlates, and dynamics in a campus probability survey. *Journal of American College Health*, 1-5. DOI: 10.1080/07448481.2021.1978464

- Belus, J. M., Pentel, K. Z., Cohen, M. J., Fischer, M. S., & Baucom, D. H. (2019). Staying connected: An examination of relationship maintenance behaviours in long-distance relationships. *Marriage & Family Review*, 55(1), 78-98. DOI: 10.1080/01494929.2018.1458004.
- Bertrand, M., & Mullainathan, S. (2001). Do people mean what they say? Implications for subjective survey data. *American Economic Review*, 91(2), 67-72. DOI: 10.1257/aer.91.2.67
- Birnbaum, G. E., Mizrahi, M., Kovler, L., Shutzman, B., Aloni-Soroker, A., & Reis, H. T. (2019). Our fragile relationships: Relationship threat and its effect on the allure of alternative mates. *Archives of Sexual Behaviour*, 48, 703-713. DOI: 10.1007/s10508-018-1321-5
- Bouffard, S., Giglio, D., & Zheng, Z. (2022). Social media and romantic relationship: Excessive social media use leads to relationship conflicts, negative outcomes, and addiction via mediated pathways. *Social Science Computer Review*, 40(6), 1523-1541. DOI:10.1177/08944393211013566
- Bradbury, T. N., & Karney, B. R. (2004). Understanding and altering the longitudinal course of marriage. *Journal of Marriage and Family*, 66(4), 862-879. DOI: 10.1111/j.0022-2445.2004.00059.x
- Brady, A., & Baker, L. R. (2022). The changing tides of attractive alternatives in romantic relationships: Recent societal changes compel new directions for future research. *Social and Personality Psychology Compass*, 16(1), e12650. DOI: 10.1111/spc3.12650
- Bröning, S., & Wartberg, L. (2022). Attached to your smartphone? A dyadic perspective on perceived partner phubbing and attachment in long-term couple relationships. *Computers in Human Behaviour*, 126, 106996. DOI: [10.1016/j.chb.2021.106996](https://doi.org/10.1016/j.chb.2021.106996).
- Bröning, S., & Wartberg, L. (2022). Attached to your smartphone? A dyadic perspective on perceived partner phubbing and attachment in long-term couple relationships. *Computers in Human Behaviour*, 126, 106996. DOI: [10.1016/j.chb.2021.106996](https://doi.org/10.1016/j.chb.2021.106996)
- Bryant, C. M., & Conger, R. D. (2002). *An intergenerational model of romantic relationship development*. In A. L. Vangelisti, H. T. Reis, & M. A. Fitzpatrick (Eds.), *Stability and change in relationships* (pp. 57–82). Cambridge, UK: Cambridge University Press.
- Burke, M., & Kraut, R. E. (2014, April). Growing closer on Facebook: Changes in tie strength through social network site use. In *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 4187-4196). DOI: 10.1145/2556288.2557094
- Cameron, J. J., & Ross, M. (2007). In times of uncertainty: Predicting the survival of long-distance relationships. *The Journal of Social Psychology*, 147(6), 581-606. DOI: 10.3200/SOCP.147.6.581-606

- Chai, P. P. D., Chew, Y. E., Hwang, J. Y., Lee, P. E., & Sherwina Deepa, D. (2022). *Dating apps and face-to-face meetings: the quality of relationship among online and offline couples* (Doctoral dissertation, UTAR).
- Chen, Y. A., & Lu, R. M. (2023). Texting or face-to-face for support-seeking in romantic relationships: The role of affordances and attachment. *Journal of Social & Personal Relationships*, 0(0), 1-21. DOI: 10.1177/02654075231152910.
- Chien, W. C., & Hassenzahl, M. (2020). Technology-mediated relationship maintenance in romantic long-distance relationships: An autoethnographical research through design. *Human-Computer Interaction*, 35(3), 240-287. DOI: 10.1080/07370024.2017.1401927
- Choi, C., & Mahoney, T. (2020). Social networking service fatigue and cessation: Focusing on cultural and gender differences. *한국콘텐츠학회논문지*, 20(7), 547-559.
- Christofides, E., Muise, A., & Desmarais, S. (2009). Information disclosure and control on Facebook: are they two sides of the same coin or two different processes?. *Cyberpsychology & Behaviour: the impact of the Internet, multimedia and virtual reality on behaviour and society*, 12(3), 341-345. DOI: 10.1089/cpb.2008.0226.
- Citrawati, N. K., Suwastini, N. K. A., Jayantini, I. G. A. S. R., Artini, N. N., & Dantes, G. R. (2021). Telegram as Social Networking Service (SNS) for enhancing students' English: A systematic review. *Journal of English Language Teaching and Linguistics*, 6(2), 239-260. DOI: 10.21462/jeltl.v6i2.531
- Cohen, J. (1992). Statistical power analysis. *Current directions in psychological science*, 1(3), 98-101.
- Collins, N. L., & Feeney, B. C. (2000). A safe haven: an attachment theory perspective on support seeking and caregiving in intimate relationships. *Journal of Personality and Social Psychology*, 78(6), 1053-1073. DOI: [10.1037/0022-3514.78.6.1053](https://doi.org/10.1037/0022-3514.78.6.1053).
- Collins, N. L., & Feeney, B. C. (2000). A safe haven: an attachment theory perspective on support seeking and caregiving in intimate relationships. *Journal of personality and social psychology*, 78(6), DOI:1053. 10.1037/0022-3514.78.6.1053
- Collins, N. L., & Feeney, B. C. (2004). Working models of attachment shape perceptions of social support: evidence from experimental and observational studies. *Journal of Personality and Social Psychology*, 87(3), 363-383. DOI: 10.1037/0022-3514.87.3.363.
- Conley, T. D., Roesch, S. C., Peplau, L. A., & Gold, M. S. (2009). A test of positive illusions versus shared reality models of relationship satisfaction among gay, lesbian, and heterosexual

- couples. *Journal of Applied Social Psychology*, 39(6), 1417-1431. DOI:10.1111/j.1559-1816.2009.00488.x
- Coughlan, M., Cronin, P., & Ryan, F. (2009). Survey research: Process and limitations. *International Journal of Therapy and Rehabilitation*, 16(1), 9-15. DOI:10.12968/ijtr.2009.16.1.37935
- Crystal Jiang, L., & Hancock, J. T. (2013). Absence makes the communication grow fonder: Geographic separation, interpersonal media, and intimacy in dating relationships. *Journal of Communication*, 63(3), 556-577. DOI: 10.1111/jcom.12029
- D'Arienzo, M. C., Boursier, V., & Griffiths, M. D. (2019). Addiction to social media and attachment styles: A systematic literature review. *International Journal of Mental Health and Addiction*, 17, 1094-1118. DOI: 10.1007/s11469-019-00082-5
- Dainton, M., & Aylor, B. (2001). A relational uncertainty analysis of jealousy, trust, and maintenance in long-distance versus geographically close relationships. *Communication Quarterly*, 49(2), 172-188. DOI: 10.1080/01463370109385624
- Daniel, A. (2022). How do individuals in intercultural romantic relationships use communication strategies to maintain their relationship? A qualitative analysis. *Electronic Thesis and Dissertation Repository*, 8760. Available at: <https://ir.lib.uwo.ca/etd/8760>
- Dorison, C. A., & Minson, J. A. (2022). You can't handle the truth! Conflict counterparts overestimate each other's feelings of self-threat. *Organizational Behaviour and Human Decision Processes*, 170, 104147. DOI: 10.1016/j.obhdp.2022.104147.
- Dunn, T. R., & Langlais, M. R. (2020). "Oh, Snap!": A Mixed-Methods Approach to Analyzing the Dark Side of Snapchat. *The Journal of Social Media in Society*, 9(2), 69-104.
- Dziabiola, M., Steiner, R., Vetter, R., Norskov, D., & Smit, D. (2022, February). Qude: Exploring Tactile Code in Long-Distance Relationships. In *Sixteenth International Conference on Tangible, Embedded, and Embodied Interaction* (pp. 1-7).
- Eastwick, P. W., Finkel, E. J., & Eagly, A. H. (2011). When and why do ideal partner preferences affect the process of initiating and maintaining romantic relationships?. *Journal of personality and social psychology*, 101(5), 1012-1032. DOI: 10.1037/a0024062
- Ellison, N. B., Steinfield, C., and Lampe, C. (2007). The benefits of Facebook "friends:" Social capital and college students' use of online social network sites. *Journal of Computer Mediated Communication*, 12, 1143-1168. DOI: 10.1111/j.1083-6101.2007.00367.
- Elphinston, R. A., & Noller, P. (2011). Time to face it! Facebook intrusion and the implications for romantic jealousy and relationship satisfaction. *Cyberpsychology, behaviour, and social networking*, 14(11), 631-635. DOI: 10.1089/cyber.2010.0318

- Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods*, 4(3), 272-299. DOI: 10.1037/1082-989X.4.3.272
- Fonseca, A. L., Ye, T., Curran, M., Koyama, J., & Butler, E. A. (2021). Cultural similarities and differences in relationship goals in intercultural romantic couples. *Journal of Family Issues*, 42(4), 813-838. DOI: 10.1177/0192513X20929071
- Foster, L. A. (2021). *Rejection Sensitivity Relationship Quality and Adjustment in Late-Adolescent Romantic Relationships and Friendships*. The University of Maine.
- Fowers, B. J., & Olson, D. H. (1993). ENRICH Marital Satisfaction Scale: A brief research and clinical tool. *Journal of Family psychology*, 7(2), 176. DOI:10.1037/0893-3200.7.2.176
- Fox, J., & McEwan, B. (2017). Distinguishing technologies for social interaction: The perceived social affordances of communication channels scale. *Communication Monographs*, 84(3), 298-318. DOI: 10.1080/03637751.2017.1332418
- Fox, J., & Warber, K. M. (2014). Social networking sites in romantic relationships: Attachment, uncertainty, and partner surveillance on Facebook. *Cyberpsychology, Behaviour, and Social Networking*, 17(1), 3-7. DOI: 10.1089/cyber.2012.0667
- Frändberg, L., & Vilhelmson, B. (2003). Personal mobility: a corporeal dimension of transnationalisation. The case of long-distance travel from Sweden. *Environment and Planning A*, 35(10), 1751-1768. DOI:10.1068/a35315
- Frändberg, L., & Vilhelmson, B. (2011). More or less travel: personal mobility trends in the Swedish population focusing gender and cohort. *Journal of transport Geography*, 19(6), 1235-1244. DOI:10.1016/j.jtrangeo.2011.06.004
- Fuss, B. G., Dorstyn, D., & Ward, L. (2022). Social function and psychological wellbeing among older Australian users of computer-mediated communication: does social distancing impact use?. *Behaviour & Information Technology*, 41(14), 3001-3012. DOI:10.1080/0144929X.2021.1968952
- Gazit, T., Aharony, N., & Amichai-Hamburger, Y. (2020). Tell me who you are and I will tell you which SNS you use: SNSs participation. *Online Information Review*, 44(1), 139-161. DOI:10.1108/OIR-03-2019-0076
- Gogos, E. (2022). *Problematic Social Media Use in the Context of Romantic Relationships: Relation to Attachment, Emotion Regulation, and Motivations for Use* (Doctoral dissertation, Rochester Institute of Technology).

- Goldberg, S., Yeshua-Katz, D., & Marciano, A. (2022). Online construction of romantic relationships on social media. *Journal of Social and Personal Relationships*, 39(6), 1839-1862. DOI:10.1177/02654075211067814
- Goldsmith, K., & Byers, E. S. (2020). Maintaining long-distance relationships: Comparison to geographically close relationships. *Sexual and Relationship Therapy*, 35(3), 338-361. DOI:10.1080/14681994.2018.1527027
- Gonzaga, G. C., Haselton, M. G., Smurda, J., sian Davies, M., & Poore, J. C. (2008). Love, desire, and the suppression of thoughts of romantic alternatives. *Evolution and Human Behaviour*, 29(2), 119-126. DOI:10.1016/j.evolhumbehav.2007.11.003
- Goodboy, A. K., & Martin, M. M. (2020). Omega over alpha for reliability estimation of unidimensional communication measures. *Annals of the International Communication Association*, 44(4), 422-439. DOI:10.1080/23808985.2020.1846135
- Guerrero, L. K., Andersen, P. A., & Afifi, W. A. (2017). Close encounters: Communication in relationships. Sage Publications
- Halpern, D., & Drobny, S. (2020). Social media and romantic relationships. *The International Encyclopedia of Media Psychology*, 1-5. DOI: 10.1002/9781119011071.iemp0092
- Hampton, A. J., Rawlings, J., Treger, S., & Sprecher, S. (2017). Channels of computer-mediated communication and satisfaction in long-distance relationships. *Interpersona: An International Journal on Personal Relationships*, 11(2), 171-187. DOI: [10.5964/ijpr.v11i2.273](https://doi.org/10.5964/ijpr.v11i2.273).
- Hardicre, J. (2014). Valid informed consent in research: An introduction. *British Journal of Nursing*, 23(11), 564-567. DOI: 10.12968/bjon.2014.23.11.564
- Hayes, A. F., & Coutts, J. J. (2020). Use omega rather than Cronbach's alpha for estimating reliability. *Communication Methods and Measures*, 14(1), 1-24. DOI: 10.1080/19312458.2020.1718629
- He, Y. L., Hua, Q., Zhu, Q. X., & Lu, S. (2022). Enhanced virtual sample generation based on manifold features: Applications to developing soft sensor using small data. *ISA transactions*, 126, 398-406. DOI: 10.1016/j.isatra.2021.07.033
- Hertlein, K. M. (2012). Digital dwelling: Technology in couple and family relationships. *Family Relations*, 61(3), 374-387. DOI:10.1111/j.1741-3729.2012.00702.x
- Hidayanto, S., & Sarwono, B. K. (2021). Can Technology Replace Human Affection?. In *Asia-Pacific Research in Social Sciences and Humanities Universitas Indonesia Conference (APRISH 2019)* (pp. 234-240). Atlantis Press. DOI:10.2991/assehr.k.210531.029

- Holtzman, S., Kushlev, K., Wozny, A., & Godard, R. (2021). Long-distance texting: Text messaging is linked with higher relationship satisfaction in long-distance relationships. *Journal of social and personal relationships*, 38(12), 3543-3565. DOI: 10.1177/02654075211043296
- Hu, E., Stavropoulos, V., Anderson, A., Clarke, M., Beard, C., Papapetrou, S., & Gomez, R. (2019). Assessing online flow across cultures: A two-fold measurement invariance study. *Frontiers in Psychology*, 10, 407. DOI: 10.3389/fpsyg.2019.00407
- Janning, M., Gao, W., & Snyder, E. (2018). Constructing shared “space”: Meaningfulness in long-distance romantic relationship communication formats. *Journal of Family Issues*, 39(5), 1281-1303. DOI: 10.1177/0192513X17698726
- Janssen, S., and Verboord, M. (2022). *Methodological Guidelines Thesis Research*. Department of Media and Communication, Erasmus School of History.
- Jin, B., & Park, N. (2013). Mobile voice communication and loneliness: Cell phone use and the social skills deficit hypothesis. *New Media & Society*, 15(7), 1094-1111. DOI:10.1177/1461444812466715
- Joel, S., Maxwell, J. A., Khera, D., Peetz, J., Baucom, B. R., & MacDonald, G. (2023). Expect and you shall perceive: People who expect better in turn perceive better behaviours from their romantic partners. *Journal of Personality and Social Psychology*, 124(6), 1230. DOI: 10.1037/pspi0000411
- Johnson, A. J., Haigh, M. M., Becker, J. A., Craig, E. A., & Wigley, S. (2008). College students' use of relational management strategies in email in long-distance and geographically close relationships. *Journal of Computer-mediated communication*, 13(2), 381-404. DOI: 10.1111/j.1083-6101.2008.00401.x
- Keck, J., Zabicki, A., Bachmann, J., Munzert, J., & Krüger, B. (2022). Decoding spatiotemporal features of emotional body language in social interactions. *Scientific Reports*, 12(1), 15088. DOI: 10.1038/s41598-022-19267-5
- Kelmer, G., Rhoades, G. K., Stanley, S., & Markman, H. J. (2013). Relationship quality, commitment, and stability in long-distance relationships. *Family process*, 52(2), 257-270. DOI: 10.1111/j.1545-5300.2012.01418.x
- Keynan, O., Brandel, N., & Slakmon, B. (2022). Students' knowledge on emotion expression and recognition in computer-mediated communication: A comparative case study. *Computers & Education*, 189, 104597. DOI: 10.1016/j.compedu.2022.104597

- Kim, J. J., Muise, A., Sakaluk, J. K., Rosen, N. O., & Impett, E. A. (2020). When tonight is not the night: Sexual rejection behaviours and satisfaction in romantic relationships. *Personality and Social Psychology Bulletin*, 46(10), 1476-1490. DOI:10.1177/0146167220907469
- Kirk, A. (2013). The effect of newer communication technologies on relationship maintenance and satisfaction in long-distance dating relationships. *Pepperdine Journal of Communication Research*, 1(1), 2. Available at: <https://digitalcommons.pepperdine.edu/pjcr/vol1/iss1/2>
- Knobloch, L. K., & Solomon, D. H. (1999). Measuring the sources and content of relational uncertainty. *Communication Studies*, 50(4), 261-278. DOI: 10.1080/10510979909388499
- Koo, C., Wati, Y., & Jung, J. J. (2011). Examination of how social aspects moderate the relationship between task characteristics and usage of social communication technologies (SCTs) in organizations. *International Journal of Information Management*, 31(5), 445-459. DOI: 10.1016/j.ijinfomgt.2011.01.003
- Koranyi, N., & Rothermund, K. (2012). When the grass on the other side of the fence doesn't matter: Reciprocal romantic interest neutralizes attentional bias towards attractive alternatives. *Journal of Experimental Social Psychology*, 48(1), 186-191. DOI: 10.1016/j.jesp.2011.06.012
- Kruger, J., Epley, N., Parker, J., & Ng, Z. W. (2005). Egocentrism over e-mail: Can we communicate as well as we think?. *Journal of personality and social psychology*, 89(6), 925. DOI:10.1037/0022-3514.89.6.925
- Kuss, D. J., & Griffiths, M. D. (2017). Social networking sites and addiction: Ten lessons learned. *International journal of environmental research and public health*, 14(3), 311. DOI: 10.3390/ijerph14030311
- Lee, H., & Hwang, S. J. (2019). The effects of cultural self-construal and self-disclosure on attachment and relationship satisfaction in SNS. *Clothing and Textiles Research Journal*, 37(2), 119-135. DOI: 10.1177/0887302X18820467
- Leistner, C. E., & Mark, K. P. (2020). Positive communication and partner appraisals among mothers and their long-term male partners: Impact on sexual and relationship satisfaction. *Journal of Sex & Marital Therapy*, 46(3), 269-281. DOI: 10.1080/0092623X.2019.1692980
- Lewandowski, G. W., Loving, T. J., Le, B., & Gleason, M. (2011). The science of relationships: Answers to your questions about dating, marriage, and family. *Dubuque, IA*.
- Li, C. (2010). Open leadership: How social technology can transform the way you lead. John Wiley & Sons.
- Li, P., Chen, W. W., & Zhang, L. R. (2023). The Moderating Role of Perceived Partner Responsiveness Between Implicit Theories of Relationships and Romantic Relationship

Satisfaction. *Psychological Reports*, 00332941231165238. DOI: 10.1177/00332941231165238

- Li, R., Chen, Y., Liu, H., & Yao, M. (2020). Need satisfaction and frustration profiles: Who benefits more on social networking sites?. *Personality and Individual Differences*, 158, 109854. DOI: 10.1016/j.paid.2020.109854
- Lieber, R. L. (1990). Statistical significance and statistical power in hypothesis testing. *Journal of Orthopaedic Research*, 8(2), 304-309. DOI: 10.1002/jor.1100080221
- Lim, V. K., Teo, T. S., & Zhao, X. (2013). Psychological costs of support seeking and choice of communication channel. *Behaviour & Information Technology*, 32(2), 132-146. DOI: 10.1080/0144929X.2010.518248
- Lin, J., Lin, S., Turel, O., & Xu, F. (2020). The buffering effect of flow experience on the relationship between overload and social media users' discontinuance intentions. *Telematics and Informatics*, 49, 101374. DOI: 10.1016/j.tele.2020.101374
- Littman, R., & Kalanthroff, E. (2022). Neutral affordances: Task conflict in the affordances task. *Consciousness and cognition*, 97, 103262. DOI: 10.1016/j.concog.2021.103262
- Lüders, A., Dinkelberg, A., & Quayle, M. (2022). Becoming "us" in digital spaces: How online users creatively and strategically exploit social media affordances to build up social identity. *Acta Psychologica*, 228, 103643. DOI: 10.1016/j.actpsy.2022.103643
- Luqman, A., Masood, A., Weng, Q., Ali, A., & Rasheed, M. I. (2020). Linking excessive SNS use, technological friction, strain, and discontinuance: the moderating role of guilt. *Information Systems Management*, 37(2), 94-112. DOI: 10.1080/10580530.2020.1732527
- Maguire, K. C. (2007). "Will it ever end?": A (re) examination of uncertainty in college student long-distance dating relationships. *Communication Quarterly*, 55(4), 415-432. DOI: 10.1080/01463370701658002
- Maner, J. K., Gailliot, M. T., & Miller, S. L. (2009). The implicit cognition of relationship maintenance: Inattention to attractive alternatives. *Journal of Experimental Social Psychology*, 45(1), 174-179. DOI: 10.1016/j.jesp.2008.08.002
- McGee, M. J. (2014). Is texting ruining intimacy? Exploring perceptions among sexuality students in higher education. *American Journal of Sexuality Education*, 9(4), 404-427. DOI: 10.1080/15546128.2014.976353
- McLeod, I., Zhang, Y., & Yu, H. (2003). Multiple-choice randomization. *Journal of Statistics Education*, 11(1). DOI=10.1080/10691898.2003.11910695

- Meier, A., & Reinecke, L. (2021). Computer-mediated communication, social media, and mental health: A conceptual and empirical meta-review. *Communication Research*, 48(8), 1182-1209. DOI: 10.1177/0093650220958224
- Merolla, A. J. (2010). Relational maintenance and non-copresence reconsidered: Conceptualizing geographic separation in close relationships. *Communication Theory*, 20(2), 169-193. DOI: 10.1111/j.1468-2885.2010.01359.x
- Merolla, A. J. (2012). Connecting here and there: A model of long-distance relationship maintenance. *Personal Relationships*, 19(4), 775-795. DOI: 10.1111/j.1475-6811.2011.01392.x
- Miczo, N., Mariani, T., & Donahue, C. (2011). The strength of strong ties: Media multiplexity, communication motives, and the maintenance of geographically close friendships. *Communication Reports*, 24(1), 12-24. DOI: 10.1080/08934215.2011.555322
- Morey, J. N., Gentzler, A. L., Creasy, B., Oberhauser, A. M., & Westerman, D. (2013). Young adults' use of communication technology within their romantic relationships and associations with attachment style. *Computers in Human Behaviour*, 29(4), 1771-1778. DOI: [10.1016/j.chb.2013.02.019](https://doi.org/10.1016/j.chb.2013.02.019).
- Morozov, E. (2023). Nurturing Relationships through Online Dispute Resolution, Information and Communication Technologies, and Social Media. *Communication for Constructive Workplace Conflict*, 211.
- Mostova, O., Stolarski, M., & Matthews, G. (2022). I love the way you love me: Responding to partner's love language preferences boosts satisfaction in romantic heterosexual couples. *PloS one*, 17(6), e0269429. DOI: 10.1371/journal.pone.0269429
- Muise, A., Christofides, E., & Desmarais, S. (2009). More information than you ever wanted: Does Facebook bring out the green-eyed monster of jealousy?. *CyberPsychology & behaviour*, 12(4), 441-444. DOI: 10.1089/cpb.2008.0263
- Muntean, N. (2019). Intimacy and distance in the age of technology: How technology and digital media platforms help couples in long-distance relationships create and nurture intimacy.
- Naudé, L. (2022). "Protecting my Positivity": Emerging Adults as Social Media Actors, Agents, and Authors. *Emerging Adulthood*, 10(6), 1332-1344. DOI: 10.1177/21676968221121379
- Nayak, M. S. D. P., & Narayan, K. A. (2019). Strengths and weaknesses of online surveys. *Technology*, 6(7), 0837-2405053138.
- Nesi, J., & Prinstein, M. J. (2015). Using social media for social comparison and feedback-seeking: Gender and popularity moderate associations with depressive symptoms. *Journal of abnormal child psychology*, 43, 1427-1438. DOI: 10.1007/s10802-015-0020-0

- Neustaedter, C., & Greenberg, S. (2012). Intimacy in long-distance relationships over video chat. In *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 753-762). DOI: 10.1145/2207676.2207785
- Nijhawan, L. P., Janodia, M. D., Muddukrishna, B. S., Bhat, K. M., Bairy, K. L., Udupa, N., & Musmade, P. B. (2013). Informed consent: Issues and challenges. *Journal of advanced pharmaceutical technology & research*, 4(3), 134. DOI: 10.4103/2231-4040.116779
- Ogolsky, B. G., & Stafford, L. (2023). A systematic review of relationship maintenance: Reflecting back and looking to the future. *Personal Relationships*, 30(1), 19-43. DOI: 10.1111/pere.12429
- Ogolsky, B. G., Monk, J. K., Rice, T. M., & Oswald, R. F. (2019). Personal well-being across the transition to marriage equality: A longitudinal analysis. *Journal of Family Psychology*, 33(4), 422. DOI: 10.1037/fam0000504
- Ogolsky, B. G., Monk, J. K., Rice, T. M., Theisen, J. C., & Maniotes, C. R. (2017). Relationship maintenance: A review of research on romantic relationships. *Journal of Family Theory & Review*, 9(3), 275-306. DOI: 10.1111/jftr.12205
- Olson, G. M., & Olson, J. S. (2000). Distance matters. *Human-computer interaction*, 15(2-3), 139-178. DOI: 10.1207/S15327051HCI1523_4
- Osborne, J. W., & Waters, E. (2002). Four assumptions of multiple regression that researchers should always test. *Practical assessment, research, and evaluation*, 8(8), article 2. DOI: 10.7275/r222-hv23.
- Papp, L. M., Danielewicz, J., & Cayemberg, C. (2012). "Are we Facebook official?" Implications of dating partners' Facebook use and profiles for intimate relationship satisfaction. *Cyberpsychology, Behaviour, and Social Networking*, 15(2), 85-90. DOI: 10.1089/cyber.2011.0291
- Pelikh, A., & Kulu, H. (2018). Short-and long-distance moves of young adults during the transition to adulthood in Britain. *Population, Space and Place*, 24(5), e2125. DOI: 10.1002/psp.2125
- Plant, E. A., Kunstman, J. W., & Maner, J. K. (2010). You do not only hurt the one you love: Self-protective responses to attractive relationship alternatives. *Journal of Experimental Social Psychology*, 46(2), 474-477. DOI: 10.1016/j.jesp.2009.12.012
- Porche, M. V., & Purvin, D. M. (2008). "never in our lifetime": legal marriage for same-sex couples in long-term relationships. *Family relations*, 57(2), 144-159. DOI: 10.1111/j.1741-3729.2008.00490.x

- Poyrazli, S., & Devonish, O. B. (2020). Cultural value orientation, social networking site (SNS) use, and homesickness in international students. *Int. Soc. Sci. Rev*, 96(2). Available at: <https://digitalcommons.northgeorgia.edu/issr/vol96/iss3/2>
- Qiu, M., & McDougall, D. (2013). Foster strengths and circumvent weaknesses: Advantages and disadvantages of online versus face-to-face subgroup discourse. *Computers & Education*, 67, 1-11. DOI: 10.1016/j.compedu.2013.02.005
- Quiroz, S. I., & Mickelson, K. D. (2021). Are online behaviours damaging our in-person connections? Passive versus active social media use on romantic relationships. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 15(1). DOI: 10.5817/CP2021-1-1
- Reiss, D. M., Curbow, B. A., & Wang, M. Q. (2022). Intimate Partner Cyberstalking Among Young Adults: Associations with Attachment and Social Support. *Sexuality & Culture*, 26(6), 2202-2221. DOI: 10.1007/s12119-022-09993-3
- Rivera Aragón, S., Villanueva Orozco, G. B. T., Jaen Cortes, C. I., Velasco Matus, P. W., & Villanueva Ramírez, R. I. (2022). Maintenance in Couple Relationships: An Assessment. *Acta de investigación psicológica*, 12(1), 117-138. DOI: 10.22201/fpsi.20074719e.2022.1.431.
- Ruppel, E. K. (2015). The affordance utilization model: Communication technology use as relationships develop. *Marriage & Family Review*, 51(8), 669-686. DOI: 10.1080/01494929.2015.1061628
- Russell, V. M., Baker, L. R., & McNulty, J. K. (2013). Attachment insecurity and infidelity in marriage: Do studies of dating relationships really inform us about marriage?. *Journal of Family Psychology*, 27(2), 242. DOI: 10.1037/a0032118
- Sahlstein, E. M. (2006). Making plans: Praxis strategies for negotiating uncertainty–certainty in long-distance relationships. *Western Journal of Communication*, 70(2), 147-165. DOI: 10.1080/10570310600710042
- Schade, L. C., Sandberg, J., Bean, R., Busby, D., & Coyne, S. (2013). Using technology to connect in romantic relationships: Effects on attachment, relationship satisfaction, and stability in emerging adults. *Journal of Couple & Relationship Therapy*, 12(4), 314-338. DOI: 10.1080/15332691.2013.836051
- Schouten, A. P., Valkenburg, P. M., & Peter, J. (2007). Precursors and underlying processes of adolescents' online self-disclosure: Developing and testing an “Internet-attribute-perception” model. *Media Psychology*, 10(2), 292-315. DOI: 10.1080/15213260701375686

- Seidman, G. (2012). Positive and negative: Partner derogation and enhancement differentially related to relationship satisfaction. *Personal Relationships, 19*(1), 51-71. DOI: 10.1111/j.1475-6811.2010.01337.x
- Singhal, S., Neustaedter, C., Ooi, Y. L., Antle, A. N., & Matkin, B. (2017, February). Flex-N-Feel: The design and evaluation of emotive gloves for couples to support touch over distance. In *Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing* (pp. 98-110). DOI: 10.1145/2998181.2998247
- Stafford, L., & Canary, D. J. (1991). Maintenance strategies and romantic relationship type, gender and relational characteristics. *Journal of Social and Personal relationships, 8*(2), 217-242. DOI: 10.1177/0265407591082004
- Stoicescu, M. (2019). The globalized online dating culture: Reframing the dating process through online dating. *Journal of Comparative Research in Anthropology and Sociology, 10*(01), 21-32.
- Stöven, L. M., & Herzberg, P. Y. (2021). Relationship 2.0: A systematic review of associations between the use of social network sites and attachment style. *Journal of Social and Personal Relationships, 38*(3), 1103-1128. DOI:10.1177/0265407520982671
- Subrahmanyam, K., & Greenfield, P. (2008). Online communication and adolescent relationships. *The future of children, 119*-146. <http://www.jstor.org/stable/20053122>.
- Suwinyattichaiporn, T., Fontana, J., Shaknitz, L., & Linder, K. (2017). Maintaining long distance romantic relationships: The college students perspective. *Kentucky Journal of Communication, 36*(1), 67-89.
- Swami, V., Inamdar, S., Stieger, S., Nader, I. W., Pietschnig, J., Tran, U. S., & Voracek, M. (2012). A dark side of positive illusions? Associations between the love-is-blind bias and the experience of jealousy. *Personality and Individual Differences, 53*(6), 796-800. DOI: 10.1016/j.paid.2012.06.004
- Swami, V., Stieger, S., Haubner, T., Voracek, M., & Furnham, A. (2009). Evaluating the physical attractiveness of oneself and one's romantic partner: Individual and relationship correlates of the love-is-blind bias. *Journal of Individual Differences, 30*(1), 35-43. DOI: 10.1027/1614-0001.30.1.35
- Tabachnick, B. G., & Fidell, L. S. (2007). Using multivariate statistics. Boston: Allyn & Bacon/Pearson Education.

- Taylor, S. H., Zhao, P., & Bazarova, N. N. (2022). Social media and close relationships: a puzzle of connection and disconnection. *Current Opinion in Psychology*, 45, 101292. DOI: 10.1016/j.copsyc.2021.12.004
- Thompson, B. Y. (2019). 'I get my lovin' on the run': Digital Nomads, Constant Travel, and Nurturing Romantic Relationships. *The geographies of digital sexuality*, 69-90. DOI: 10.1007/978-981-13-6876-9_5
- Tidwell, L. C., & Walther, J. B. (2002). Computer-mediated communication effects on disclosure, impressions, and interpersonal evaluations: Getting to know one another a bit at a time. *Human communication research*, 28(3), 317-348. DOI: 10.1111/j.1468-2958.2002.tb00811.x
- Tissera, H., Visserman, M. L., Impett, E. A., Muise, A., & Lydon, J. E. (2022). Understanding the Links Between Perceiving Gratitude and Romantic Relationship Satisfaction Using an Accuracy and Bias Framework. *Social Psychological and Personality Science*, 19485506221137958. DOI: 10.1177/19485506221137958.
- Toma, C. L. (2018). Connection, conflict, and communication technologies: How romantic couples use the media for relationship management. In *A networked self and love* (pp. 62-85). Routledge. DOI:
- Toma, C. L., & Choi, M. (2016, February). Mobile media matters: Media use and relationship satisfaction among geographically close dating couples. In Proceedings of the 19th ACM conference on computer-supported cooperative work & social computing (pp. 394-404). DOI: 10.1145/2818048.2835204
- Utz, S., & Beukeboom, C. J. (2011). The role of social network sites in romantic relationships: Effects on jealousy and relationship happiness. *Journal of computer-mediated communication*, 16(4), 511-527. DOI: 10.1145/2818048.2835204
- Van Ouytsel, J., Walrave, M., Ponnet, K., Willems, A. S., & Van Dam, M. (2019). Adolescents' perceptions of digital media's potential to elicit jealousy, conflict and monitoring behaviours within romantic relationships. *Cyberpsychology: Journal Of Psychosocial Research on Cyberspace.-Brno*, 13(3), UNSP-3. DOI: 10.5817/CP2019-3-3
- Vaterlaus, J. M., Patten, E. V., Roche, C., & Young, J. A. (2015). #Gettinghealthy: The perceived influence of social media on young adult health behaviours. *Computers in Human Behaviour*, 45, 151-157. DOI: 10.1016/j.chb.2014.12.013
- Verduyn, P., Gugushvili, N., Massar, K., Täht, K., & Kross, E. (2020). Social comparison on social networking sites. *Current opinion in psychology*, 36, 32-37. DOI: 10.1016/j.copsyc.2020.04.002

- Walther, J. B. (2008). Social information processing theory. Engaging theories in interpersonal communication: *Multiple perspectives*, 391.
- Wang, N., Roaché, D. J., & Pusateri, K. B. (2019). Interconnection of multiple communication modes in long-distance dating relationships. *Western Journal of Communication*, 83(5), 600-623. DOI: <https://doi.org/10.1080/10570314.2018.1552986>
- Wang, X., & Cheng, Z. (2020). Cross-sectional studies: strengths, weaknesses, and recommendations. *Chest*, 158(1), S65-S71. DOI: 10.1016/j.chest.2020.03.012
- Warren, M. A., Donaldson, S. I., & Lee, J. Y. (2018). Applying positive psychology to advance relationship science, 9-33.
- Waterman, E. A., Wesche, R., Leavitt, C. E., Jones, D. E., & Lefkowitz, E. S. (2017). Long-distance dating relationships, relationship dissolution, and college adjustment. *Emerging Adulthood*, 5(4), 268-279. DOI: 10.1177/216769681770411
- Weber, D. M. (2022). Relationship" Jet Lag" in Long-Distance and Geographically-Close Relationships: The Impact of Relationship Transitions on Couple and Individual Functioning (*Doctoral dissertation*, The University of North Carolina at Chapel Hill).
- Yao, M. Z., & Ling, R. (2020). "What is computer-mediated communication?"- An introduction to the special issue. *Journal of Computer-Mediated Communication*, 25(1), 4-8. DOI: 10.1093/jcmc/zmz027
- Yin, L. (2009). Communication channels, social support and satisfaction in long distance romantic relationships. DOI: 10.57709/1061322
- Zhafira, A. S., Dimiyati, D., & Shukla, A. K. (2021). ROMANTIC RELATIONSHIPS ON INSTAGRAM: EXPLORING KNAPP'S RELATIONAL STAGE MODE. *Aspiration Journal*, 2(2), 129-154. DOI: 10.56353/aspiration.v2i2.29
- Zheng, Q., Markazi, D. M., Tang, Y., & Huang, Y. (2021). " PocketBot Is Like a Knock-On-the-Door!": Designing a Chatbot to Support Long-Distance Relationships. Proceedings of the ACM on Human-Computer Interaction, 5(CSCW2), 1-28. DOI: 10.1145/3479589
- Zoppolat, G., Visserman, M. L., & Righetti, F. (2020). A nice surprise: Sacrifice expectations and partner appreciation in romantic relationships. *Journal of Social and Personal Relationships*, 37(2), 450-466. DOI: 10.1177/0265407519867145

Appendices

Appendix A: Informed Consent

Dear respondent,

Thank you for your interest in this research. My name is Zizel Angelidou and I am a Master student in Media and Business at Erasmus University Rotterdam. I am inviting you to fill in this questionnaire for my MA thesis. I will investigate long-distance relationships. Further, it is a prerequisite that you are in a long-distance relationship, and you are over 18 years old. A simple definition of Long-distance relationships is: "Long-distance relationships (LDRs) can be defined as relationships where physical contact cannot happen on a daily basis as a result of geographic distance"

The questions will take approximately 5 minutes to fill in. Please answer each question honestly and carefully. There are no right or wrong answers and the entire questionnaire is completely anonymous.

CONFIDENTIALITY OF DATA

All research data remain completely confidential and are collected in anonymous form. I will not be able to identify you. There are no foreseeable risks or discomforts associated with participating in this research.

VOLUNTARY

If you now decide not to participate in this research, this will not affect you. If you decide to cease your cooperation while filling in this questionnaire, this will not affect you either. You can cease your cooperation without giving any reasons.

FURTHER INFORMATION

If you have questions about this research in advance, or afterwards, you can contact me (the researcher), Zizel Angelidou via email: 538685ea@eur.nl. If you understand the above-mentioned information, and freely consent to participate in this study, click on the "I agree" button below to start the questionnaire.

Appendix B: Survey Questions

Scale	Question	Answer option
	What is your age?	Drop down list
Default Question Block	Are you currently involved in a Long-Distance Relationship? "Long-distance relationships (LDRs) can be defined as relationships where physical contact cannot happen on a daily basis as a result of geographic distance"	Yes No
Demographics	What is your gender?	Male Female Non-binary/ third gender Prefer not to say
	What is your nationality?	Drop down list
	In which country do you reside?	Drop down list
	What is your sexual orientation?	Heterosexual Homosexual Lesbian Gay Lesbian Bisexual Other
	For how long are you in a long-distance relationship?	Less than 2 months Less than half a year Less than a year More than a year

	What is the reason for the long-distance relationship?	Education Military Work Other (text option)
	What is the frequency of your visits? How important would you rate the use of technology in your Long-distance romantic relationship?	Once a week Once per two (2) weeks Once a month Every couples of months Other
	How important would you rate the use of technology in your Long-distance romantic relationship?	Unimportant Neutral Important Extremely important
TUQ (Morey, Gentzler, Creasy, Oberhauser, & Westerman, 2013)	How often do you use each of the following types of technology when communicating with your romantic partner? - Telephone - Email - Social Networking Sites - Text Messaging	Never Almost Never Neutral Sometimes Daily
	With respect to Social Networking Sites (SNS), which one of the following options are you using the most?	Facebook/Messenger Instagram Botim SnapChat TikTok Viber

	WhatsApp
	Other (text option)
Please rate the following statements with respect to the above-selected option.	Completely Disagree Disagree Neutral Agree Completely Agree
- Using the above-selected SNS is part of my everyday activity.	
- I feel closer to my partner when using the above-selected SNS.	
Please rate the following statements	Not at all
- How frequently do you use technology devices (e.g., smartphones, tablets, computers) in your daily life.	Very little Somewhat Quit a bit Extremely
- How much do you rely on technology devices to complete your daily tasks and activities.	
- How much do you feel addicted to or dependent on technology devices.	
- How much do you believe technology devices positively impact your daily life.	
- How much do you believe technology devices negatively impact your daily life.	
- How much do you feel in control of your technology use.	
- How much do you feel technology devices enhance your social relationships.	

-
- How much you do feel technology devices detract from your face-to-face social interactions.
-

Relationship Scale	Assessment	For the next questions, please rate your level of agreement for each statement.	Completely Disagree Disagree Neutral Agree Completely Agree
		<ul style="list-style-type: none"> - My partner meets my needs. - I am satisfied with my relationship. - I never regret being in this relationship. - My partner meets my original expectations. - My partner and I agree on important issues. - My partner meets my needs and desires. - My partner provides a satisfying sexual experience. 	

Derogation of Alternatives (Stafford & Canary, 1991)	Please, indicate to what extent you agree with the following statements.	Never Almost Never Neutral Sometimes Constantly
	<ul style="list-style-type: none"> - I find other people attractive. - I talk (romantically) to other people apart from my long-distance partner. - I find other people less attractive than my partner. - I find myself comparing my partner to other people online. 	

Idealization (Olson, 2005)	Please, indicate to what extent you agree with the following statements.	Completely Disagree Disagree Neutral
	<ul style="list-style-type: none"> - My relationship with my partner is 	

	perfect, and we never have any problems.	Agree Completely Agree
	- If threatened by relational problems, I tend to minimize disappointment or conflict.	
	- Usually, I tend to maximize my partner's strengths, thereby avoiding conflict or break-up.	
	- I know my partner is not perfect, but I try to see him/her with positive eyes.	

	Please rate the following	Completely Disagree
	- My partner and I understand each other.	Disagree Neutral
	- Our relationship is almost perfect.	Agree
	- My partner and I agree on most things.	Completely Agree
	- We have a close to perfect relationship.	
	- Our relationship is without any significant flaws.	

Positive Attributions Scale (Fincham and Bradbury, 1992)	Please, indicate to what extent you agree with the following statements.	Never Almost Never Neutral Sometimes Constantly
	- I criticize something my partner does.	
	- I have unrealistic expectations concerning my relationship.	
	- My relationship with my partner makes me happy.	
