Radboud Universiteit Nijmegen

Joyful or Joyless: The Paradoxical Effects of Mobile Applications on Users' Affective Well-being and Coping Strategies

---

Master Thesis

Master of Science Business Administration Specialisation Marketing

Lilly Assigbetse

Student number: S1008404

Supervisor: Prof. dr. Gerrit Antonides

Second examiner: Prof. dr. Csilla Horváth

Table of contents

Abstract

Purpose: This research aims to fill the gap by examining the degree to which technology paradoxes affect users' affective well-being and coping strategies within the domain of Social Networking Services (SNS) mobile applications, whereby the comprehensive framework was used and designed by Mick and Fournier (1998).

Methodology: An online questionnaire with a sample of 209 was conducted. The statistical technique PLS-SEM was used to analyze the data with software ADANCO.

Findings: Technology paradoxes fulfillment/ creation of needs, competence/incompetence and assimilation/ isolation have significant positive direct effects on positive affective well-being. Meanwhile the technology paradox freedom/enslavement had a significant negative direct effect on positive affective well-being. The results show that the technology paradox control/chaos had a significant negative direct effect on negative well-being. Positive affective well-being had a significant positive direct effect on confrontation coping strategies and negative affective well-being had a significant negative direct effect on confrontation coping strategies. Negative affective well-being also had a significant positive direct effect on avoidance coping strategies. Besides, Facebook, as a control variable positively influenced confrontation coping strategies. Significant positive direct effects were found for the technology paradox control/chaos on confrontation coping strategies and for the technology paradox freedom/enslavement on avoidance coping strategies. Moreover, the technology paradox assimilation/isolation had a negative direct effect on avoidance coping strategies and a positive direct effect on confrontation coping strategies. Indirect positive effects were found for the technology paradox control/chaos on avoidance coping strategies through negative affective well-being, also for the technology paradox control/chaos on avoidance coping strategies through negative affective well-being. Furthermore, for the technology paradox fulfillment/creation of needs on confrontation coping strategies through positive affective well-being, and an indirect effect was found for the technology paradox competence/incompetence on confrontation coping strategies through positive affective well-being.

Research limitations: This research sheds light on how technology paradoxes influence affective well-being and coping strategies. The practical implications help SNS developers and business managers to establish effective user-friendly mobile applications.

Originality: This is the very first research that examines the relationship between technology paradoxes and coping strategies through affective well-being.

Keywords: Technology paradoxes, affective well-being, SNS, coping strategies and emotions.

Acknowledgment

I would like to give a special thank you to my supervisor Professor Gerrit Antonides, who took the time to guide me and gave valuable feedback during the process of conducting and writing this Master thesis. I am extremely thankful for his patience, critical insights and advice that he provided during the process. His well-formulated instructions challenged me and helped me throughout the stages of writing this Master thesis.

I would also like to thank my parents and my friends who believed in me and helped me during the journey. Furthermore, I am filled with gratitude for all the respondents who took part in my research and were willing to help fill in my online questionnaire.

Finally, I am very grateful that I had the chance to attend my final two years at Radboud University. Starting from MBO to completing a Master's of Science in Business Administration has been really tough, challenging and a long journey. So I am very proud of myself that I kept going and did not give up.

1. Introduction

In today's society, mobile communication has become intertwined with people's daily lives and has become unavoidable (Quan-Haase & Young, 2010). Due to mobile communication, the use of Social Networking Services (SNS) have been increasing and are the fast-growing Internet services at the moment (Zhuang, Hsu, Brewer & Xiao, 2012). SNS refers to: "web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system" (Boyd & Ellison, 2008, p. 211). SNS are nowadays not only available as websites but also in the form of mobile applications (Salehan & Negahban, 2013). Internet users utilize SNS to learn new skills, connect with others and meet new people online (Salehan & Negahban, 2013). The study of the SNS concept is increasing in academia, whilst limited research has examined the paradoxes of SNS, especially within the domain of mobile applications (Zhuang et al., 2012; Shi, Luo, Liu & Yang, 2018). The paradox effects is a "polar opposite condition that simultaneously exists or at least can be potentiated, in the same thing" (Mick & Fournier, 1998, p.124). That is, SNS may produce paradoxical tensions when utilized by users (Zhuang et al., 2012). Paradoxical tensions, such as feelings of freedom and feelings of enslavement are emotional reactions to the technology (Mick & Fournier, 1998). For instance, SNS mobile applications may help users feel like they have the freedom to utilize the application but simultaneously users might feel enslaved to the application (Mick & Fournier, 1998). Both the positive and negative consequences of SNS on the well-being of individuals have been supported empirically. Positive consequences are connectedness with others, self-esteem promotion and identify formation (Collins, Rahilly, Richardson & Third, 2010; Quan-Haase & Young, 2010). However, an increase in SNS and Internet utilization may also lead to stress, depression, loneliness, isolation and addiction (Kraut, Patterson, Lundmark, Kiesler, Mukopadhyay & Scherlis, 1998; Salehan & Negahban, 2013; Maier, Laumer, Eckhardt & Weitzel, 2012). SNS such as Facebook and Instagram may be responsible for generating both positive and negative consequences on the well-being of users. Mick and Fournier (1998) developed a concept that examined the paradoxes consumers encounter when utilizing a technological product. The authors elaborate on the emotional reactions' consumers experience when using technological products, and the coping strategies they use to deal with the paradoxes (Mick & Fournier, 1998).

Coping strategies are the mechanisms consumers use to manage paradoxical emotions, and thus, can either increase and decrease paradoxical tensions, such as feelings of control and chaos (Mick & Fournier, 1998). This concept has been applied by many researchers within

different domains, such as mobile technology (Jarvenpaa & Lang, 2005), electronic banking (Munene, Pettigrew & Mizerski, 2002), SNS websites (Zhuang et al., 2012) and self-service technology (Johnson, Bardhi & Dunn, 2008). Nevertheless, empirical examination of the domain of SNS mobile applications is lacking. Prior research suggests that the effects of SNS and paradoxes should be examined regarding the following issues:

- Firstly, how other SNS and the paradoxes encountered influence users' well-being (Maier et al., 2012; Klintwort, 2008; Zhuang et al., 2012).
- Secondly, the development of a multi-item rating scale to quantify more precisely users' perceptions of technology paradoxes and their positive and negative emotional reactions (Mick & Fournier, 1998; Zhuang et al., 2012).
- Finally, how organizations can anticipate and nurture relationships with Internet users with the help of SNS (Mick & Fournier, 1998).

Thus, this research aims to fill these gaps by examining the role of technology paradoxes within the domain of SNS mobile applications and the routes by which these paradoxes influence users' emotions and how they cope with these paradoxes. More specifically, the current research aims to investigate the degree to which the SNS mobile application paradoxes affect users' affective well-being and coping strategies designed by the technology paradox concept by Mick and Fournier (1998).

1.1 Relevance of the research

There are several arguments why this research is relevant. First, as stated before, SNS is part of our contemporary lives and this industry keeps increasing. Therefore, it is a relevant topic for further exploration (Zhuang et al., 2012). Despite the recognized positive and negative consequences of SNS on well-being (Boyd & Ellison, 2008; Zhuang et al., 2012; Cho, 2015; Collins et al., 2008), empirical research regarding the emotions experienced while utilizing SNS mobile applications is scarce (Shi et al., 2018). Second, a quantitative research method will be applied, following prior further research suggestions (Mick & Fournier, 1998; Zhuang et al., 2012). Finally, the results of this research are highly relevant for managers, because with these results they may understand better how affective well-being is affected by the paradoxes, and why users might utilize mobile applications or not.

1.2 Objective of the research

This research aims to examine how paradoxes within the domain of SNS mobile applications affect users' affective well-being and how these paradoxes affect behavioral coping strategies. With this objective, this research attempts to answer the following question:

What kind of SNS mobile application paradoxes do users encounter and what effects do these technological paradoxes have on their affective well-being and coping strategies?

In Chapter 2 the theoretical background will be discussed. The chapter is divided into subchapters that describe the paradox concept, the technology paradoxes and the findings of the technology paradox concept. Moreover, the concept of SNS, coping strategies, the theoretical framework followed by the hypotheses will be discussed. Chapter 3 highlights the methodological approach, whereby the research question will be answered through a survey among SNS mobile application users and the explanation of quantitative data analysis. Furthermore, the research design, sample size, operationalization of variables, data analysis, and research ethics will be described in this chapter. Chapter 4 presents the results found in this research. Chapter 5 highlights the conclusion and discussion. In addition, limitations and further research suggestions will be provided.

2. Theoretical background

This chapter deals with the theoretical background of technology paradoxes. First, the paradox concept will be presented, then the technology paradoxes with its findings and contradictions. Second, social networking services (SNS), affective well-being and coping strategies will be explained. Lastly, the theoretical framework and hypotheses will be discussed.

2.1 The paradox concept

The paradox concept has been a common concept in philosophy and social research. Over the past 25 years, many scholars have adopted a paradox perspective on organizational phenomena (Schad, Lewis, Raisch & Smith, 2016). Between 1998 and 2008, paradox studies grew over 10 percent annually for organizational paradox perspectives (Smith & Lewis, 2011). However, there is a limited focus on consumer behavior, while it is important to focus on this because these perspectives are still very relevant for gaining knowledge regarding consumer behavior (Mick and Fournier, 1998; Schad et al., 2016). According to the authors, a paradox includes “polar opposite conditions that simultaneously exist or at least can be potentiated, in the same thing” (Mick & Fournier, 1998, p.124). A paradox contains two core characteristics: contradictions and interdependence (Schad et al., 2016). Contradictions emerge from oppositional elements, whereas interdependence emphasizes the links between oppositional elements (Schad et al., 2016) that are simultaneously present and mutually exclusive (Cameron and Quinn, 1998). The definition describing a paradox by Johnson et al. (2008) will be used for this research due to its concreteness: “something that is both advantageous and disadvantageous, and both liked and disliked at the same time.” For instance, SNS mobile applications can make users feel intelligent while utilizing the product but simultaneously feel less smart when utilizing the product.

Prior research has used two approaches for researching paradoxes: the collective approach (Schad et al., 2016; O’Reilly &. Tushman, 2013; Raisch, Birkenshaw, Probst & Tushman, 2009) and the individual approach (Schad et al., 2016; Smith & Tushman, 2005). The collective approach examined how groups experienced the challenges of paradoxes, such as organizations, populations and teams (Smith & Lewis, 2011). Studies of individual approaches investigated how consumers experienced and reacted to paradoxes on behavioral, cognitive and emotional levels (Smith & Lewis, 2011; Mick & Fournier, 1998). Johnson et al. (2008) found that consumers encounter paradoxical tensions as they constantly

shift between negative and positive experiences (Mick & Fournier, 1998). Individuals might experience tensions between the contradictory elements, which may lead to strong emotions (Lewis & Smith, 2014). Paradoxical insights on the individual approach have received little attention in management studies (Lewis & Smith, 2014), whereby this research aims to fill this gap.

2.2 The technology paradox

Mick and Fournier (1998) were the first to develop a comprehensive conceptual framework that synthesized the concepts of paradoxical tensions, consumer behavior and coping strategies within the domain of technological products. The paradoxes leading to strong emotions were confirmed by Mick and Fournier (1998). The authors identified eight paradoxes that caused conflicting tensions that led to coping strategies. The eight paradoxes identified by the authors are: chaos/control, freedom/enslavement, competence/incompetence, efficiency/inefficiency, fulfillment/creation of needs, assimilation/isolation, new/obsolete and engaging/disengaging, which are further identified in Appendix A. The paradox engaging/disengaging will not be included in this research. This paradox overlaps with the paradox assimilation/isolation because the authors identified this paradox as the lowest level of concreteness (Mick & Fournier, 1998). Apart from that, the paradox new/obsolete, will also not be included, since mobile applications are not likely to be outdated quickly, due to frequent updates (Kallas, 2018). Mick and Fournier (1998) argued that consumers express strong, and negative emotions towards technological products, subsequently activating coping strategies. Coping strategies are the way consumers manage paradoxes, and thus either increase or decrease conflicting tensions, such as feelings of competence and incompetence (Mick & Fournier, 1998). According to the authors, scholars mentioned that technological products were essential to consumers' lives and that the paradox effects were unnoticeable (Mick & Fournier, 1998). In contrast, Mick and Fournier (1998) proved otherwise, their findings highlighted that the paradoxical effects were visible and have a great influence on consumers and their coping strategies. The concept was further applied by many researchers, nevertheless with a limited number of technology products (Bruzzi & Joai, 2009; Jarvenpaa & Lang, 2005; Munene et al., 2002). The concept was explored with respect to smartphones (Bruzzi & Joai, 2009; Jarvenpaa & Lang, 2005), electronic banking (Munene et al., 2002), self-serving technology (Johnson et al., 2008) and SNS websites (Zhuang et al., 2012).

2.3 Findings and contradictions based on the technology paradoxes

Most published research regarding the technology paradoxes is based on qualitative methods, such as focus groups, diaries, interviews and observations (Mick & Fournier, 1998; Jarvenpaa & Lang, 2005; Munene et al., 2002). Based on four in-depth interviews and a focus group (*n* = 89), Mick & Fournier (1998) investigated the feelings and experiences consumers encountered after adopting a technological product. The paradoxes control/chaos and freedom/enslavement were the most noticeable paradoxes in their research. Jarvenpaa and Lang (2005) investigated how technology paradoxes shaped the users' experience and feelings with mobiles. The concept was studied among 33 focus groups across Helsinki, Tokyo, Hong Kong, and Austin. All paradoxes discovered by Mick and Fournier (1998) were found. In addition, four additional paradoxes were discovered: independence/dependence, public/private, illusions/disillusions and planning/improvising (Jarvenpaa & Lang, 2005). The mobile technology paradoxes caused several tensions which not only impacted the users' functional state but also their emotional state (Jarvenpaa & Lang, 2005). If the technology works according to expectations, users are happy, pleased and joyful. On the other hand, if it does not work accordingly, users are sad, frustrated and depressed (Jarvenpaa & Lang, 2005). The mobile technology paradoxes are crucial for the emotional state when used frequently (Chae & Yeum, 2010). Similar paradoxes were found in the domain of electronic banking technology (Munene et al., 2002). Nevertheless, differences were found between the paradoxes control/chaos, freedom/enslavement, disengaging/engaging and new/obsolete. According to the respondents of Mick and Fournier (1998), the technological product for the paradox control/chaos was seen as powerful, controlling the users and directing their activities. In contrast, the respondents of Munene et al. (2002) felt that the technological product rather provided the ability to control their banking activities. For the paradox freedom/enslavement, the respondents of Mick and Fournier (1998) felt enslaved to the technology, while on the other hand, the respondents of Munene et al. (2002) did not encounter such feelings but rather felt limited to the technology. Finally, the engaging/disengaging paradox was not found in Mick and Fournier (1998), whilst this paradox was predominant in the research of Munene et al. (2002).

Quantitative methods were also used to examine the technology paradoxes of Mick and Fournier (1998). Bruzzi and Joai (2013) investigated the smartphone paradoxes with online questionnaires among Brazilian executives (*n* = 245). The paradox freedom/enslavement and additional paradoxes, autonomy/addiction and independence/dependence were dominant in their research. The authors found that the pleasant sense of an increase in smartphone usage resulted in autonomy, independence and freedom, while an unpleasant sense of an increase in smartphone usage led to addiction,

dependence and enslavement (Bruzzi & Jaoi, 2013). Chae and Yeum (2010) quantitively tested the relationship between mobile technology paradoxes, anxiety and stress and coping strategies. The findings showed that the paradoxes efficiency/inefficiency, new/obsolete and freedom/enslavement were positively associated with stress regarding the mobile technology, which was consistent with other studies (Chae & Yeum, 2010; Munene et al., 2002; Mick & Fournier, 1998). The salient paradoxes led to more avoidance strategies, such as avoiding or showing less interest in the mobile device, which is confirmed by Mick and Fournier (1998), and Zhuang et al. (2012).

To date, one study focused on the impact of SNS website paradoxes (Zhuang et al., 2012). However, the authors only investigated two paradoxes: assimilation/isolation and competence/incompetence, because until this day only for these two paradoxes scales were developed by Schiffman et al. (2013). The findings suggested that the paradoxes assimilation/isolation and competence/incompetence were present among SNS websites. The complication of this study is the generalizability of the sample and the findings. The authors only investigated two paradoxes followed by an online questionnaire with a sample of 20 respondents. Another study, Johnson et al. (2008) studied self-service technology paradoxes in the domain of online banking on customer satisfaction, performance ambiguity and trust. These authors found three areas of paradoxes in the domain of self-service technology: control/chaos, fulfillment/creation of needs, and freedom/enslavement. Although this study empirically supported the technology paradoxes among consumers, the paradoxes were divided into dissatisfiers and satisfiers and measured separately (Johnson et al., 2008). As the paradox elements were measured separately, the authors failed to show conflicting emotions due to the separation of constructs, which is a serious shortcoming as it is a required condition for measuring a paradox (Garrity, 2012; Johnson et al., 2008). This current research will focus on improving the measures of paradoxes.

2.4 Social Networking Services

Social Networking Services (SNS) such as Facebook, Twitter, and Instagram have transformed our communication means and are unavoidable in people's lives (Collins et al., 2008; Lup, Trub & Rosenthal, 2015). SNS are used on a daily basis for several reasons. Users utilize the technologies to search for information on the Internet, to gain a new skill or to communicate with others online (Salehan & Negahban, 2013). SNS can be defined as "web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, (3) view and traverse their list of connections and those made by others within the system" (Boyd

& Ellison, 2008, p. 211). The main objective of SNS is to facilitate users and make their social networks visible that would not be visible otherwise (Boyd & Ellison, 2008). SNS provides people with connections via email, websites, and smartphones (Salehan & Negahban, 2013) thus helping to develop and foster relationships (Boyd & Ellison, 2008).

Smartphones have become indispensable and inescapable with approximately 2,995 million smartphone users worldwide (Deloitte, 2017). These days, smartphone users utilize SNS as a new way of communicating with others online (Zhuang et al., 2012; Salehan & Negahban, 2013). As the adoption of smartphones has been increasing, so has it been for mobile applications (Salehan & Negahban, 2013). Mobile applications are one of the biggest industries at the moment (Dogtiev, 2018). It is found that 38 percent of smartphone users spend their time on SNS mobile applications and approximately 178 billion apps have been downloaded (Mindsea, 2018). Many SNS vendors introduced their services on mobile applications that make it for users even more easy to connect with others (Quan-Haase & Young, 2010). SNS mobile applications are defined as SNS that connect each another on mobile applications (Salehan & Negahban, 2013). At the moment, Facebook and Instagram are the top two popular SNS mobile applications with a reach of over 1 billion active users on a monthly basis (Kallas, 2018). Facebook makes it possible for Internet users to interact and add friends, upload messages and update people about peers, friends and themselves online (Quan-Haase & Young, 2010). The fastest growing SNS Instagram, allows its users to upload photographs and online stories, and share them with other Instagram users (Lee, Lee, Moon & Sung, 2015). Instagram has a visually oriented culture through photographs, unlike Facebook (Lee et al., 2015). This research focuses only on Facebook and Instagram mobile applications because these two applications are by far the most used SNS at the moment (Kallas, 2008).

Kraut et al. (1998) questioned whether the impact of the Internet is better or worse for the well-being of users. Evidence showed that many scholars have tried to examine the relationship between SNS and the users' well-being (Zhuang et al., 2012). Several scholars found that the Internet and SNS have both positive and negative consequences on users. Positive consequences are identity formation, self-esteem promotion and sense of belonging (Collins et al., 2010). Facebook is used among undergraduates because of its popularity, based on the suggestion of a friend, to stay in touch with others and to find new friends (Quan-Haase & Young, 2010). Instagram is used to maintain and establish online social relationships, create a personal online documentary of pictures and to express their tastes, personalities and lifestyles through pictures (Lee et al., 2015). On the other hand, few critics argued that the usage of SNS also have drawbacks. SNS could lead to technostress (Tarafdar, Tu, Ragu-Nathan & Ragu-Nathan, 2011), social overload (Maier et al., 2012) and smartphone addiction

(Salehan & Negahban, 2013). Besides, the frequent use of Instagram and Facebook led to greater depression symptoms (Lup et al., 2015), declined social involvement, distant social circles, increased loneliness and stress (Kraut et al, 1998).

2.5 Affective well-being

Many researchers have studied the relationship between SNS and psychological well-being, while the relationship between SNS and affective well-being has been overlooked (Shi et al., 2018). Affective well-being should not be confused with psychological well-being, as psychological well-being is focused on a global evaluation, such as life satisfaction, whereas affective well-being is specifically focused on people's emotional stability, such as emotions and moods (Luhmann, Hawkley, Eid & Cacioppo, 2012). Affective well-being refers to negative and positive emotions and moods encountered by an individual based on specific experience or events (Luhmann et al., 2012; Shi et al., 2018), which is relevant for this research as the focus is on the paradoxical tensions encountered by users when utilizing SNS mobile applications (Mick & Fournier, 1998). Emotions and moods are used interchangeably in academia, although critics have argued otherwise (Ekkekakis, 2012). Emotion is defined by Russell and Barrett (1999, p.806) as a "complex set of interrelated sub-events concerned with a specific object" where a specific object can be referred to as a person, thing, event, whether imaginary or real. Emotions are evoked by something, to something and are mainly about something between a person and object (Russell and Barrett, 1999). According to Frijda (2009), mood is the affective element that is about nothing specific or about everything in general. For example, a person can be in an anxious mood, the object might be something specific or as distant as 10 years ago. In such a case, moods are caused by something that can have a longer effect, unlike emotions. This research focuses on emotions because the cause of moods is more difficult to identify (Ekkekakis, 2012).

Affective well-being is therefore defined in this research as positive and negative emotions that are frequently experienced by a user based on a specific event. Positive emotions while using SNS led to positive affective well-being experience (Shi et al., 2018), whereby negative emotions led to negative well-being experience (Mick & Fournier, 1998). Positive affective experience is defined as positive emotions and negative affective experience as negative emotions (Tomkins, 1980). This research proposes that emotional reactions, hence affective well-being stems from SNS mobile application paradoxes that lead to coping strategies, which will be explained in the next section.

2.6 Coping strategies

The consequences of experiencing a paradox are the coping techniques individuals apply to reduce the tensions (Garrity, 2012; Mick & Fournier, 1998; Johnson et al., 2008). Paradoxes create emotions, which in turn prompt coping strategies that seek to reduce the paradoxical tensions (Mick & Fournier, 1998; Johnson et al., 2008). Emotion regulation is a process used by individuals to maintain and manage expressions and experiences of both positive and negative emotions (Kopp,1989). Coping is related to emotion regulation (Bridges, Margie & Zaff, 2001). Emotion regulation is an ongoing process, whereby individuals constantly regulate their emotions in order to manage positive outcomes within their social and physical environment. Coping involves regulating emotions to specific challenges (Bridges et al., 2001) with cognitive and behavioral efforts that handle internal and external demands that are beyond the power of the individual (Lazarus & Folkman, 1987). According to the authors, two coping functions can be distinguished (Lazarus & Folkman, 1987). On the one hand, individuals experience problem-focused coping when they try to manage the stressful emotional experience (Lazarus & Folkman, 1987). On the other hand, emotion-focused coping is experienced when individuals aim to manage the emotions encountered as a result of a stressful situation by changing or regulating the emotions that are predominant for this research (Lazarus & Folkman, 1987; Yi & Baumgartner, 2014).

Most coping strategies used among consumers to manage paradoxes are confrontative coping strategies and avoidance coping strategies (Baron et al., 2006). Mick and Fournier (1998) made a distinction between consumption coping strategies that will be the focal points in this research: confrontation coping strategies and avoidance coping strategies. Confrontative coping strategies refer to strategies used to accept and to understand the technology and includes accommodating, partnering and striving for mastery with the technology (Garitty, 2012; Mick & Fournier, 1998). Confrontative coping is finding ways to reduce the tensions (Yi & Baumgartner, 2014) and emotions from the technology paradoxes (Mick & Fournier, 1998). For instance, users may take control, whereby they adopt new skills to better understand and learn about technology. Avoidance coping strategies, refer to strategies used to minimize interaction with the technology and includes neglecting the technology, abandoning the technology and distancing oneself from the technology (Mick & Fournier, 1998; Garitty, 2012; Baron et al., 2006; Jarvenpaa & Lang, 2005). Avoidance coping strategies are more likely to occur when the technology is highly demanding or confusing (Jarvenpaa & Lang, 2005). For instance, technology is constantly changed by new tools and software, which require users to adopt new skills that can be hard to manage, therefore they might refuse to use the technology. Tomkins (1980) mentioned that positive affects are slow and have a relaxed response, in contrast to negative affects that prompt a quick and decisive

response. It is therefore argued that confrontative coping is more seen as psychological and avoidance more as behavioral (Mick & Fournier, 1998; Garitty, 2012). Confrontative coping strategies lead to more positive emotions, whilst avoidance coping strategies tend to lead to more negative emotions (Garitty, 2012). Lazarus (1987, 2006) argued that coping is motivated by emotions and that the stimulation of emotional reactions prompts coping strategies. Therefore, this research proposes that coping strategies stem from affective well-being.

2.7 Theoretical framework and hypotheses

Drawing from the literature, the conceptual framework shown in Figure 1 suggests that six paradoxes are present in the domain of SNS mobile applications: control/chaos, freedom/enslavement, efficiency/inefficiency, competence/incompetence, fulfillment/creation of needs and assimilation/isolation, all influencing positive and negative affective well-being. Positive and negative affective well-being, in turn, prompts confrontation and avoidance coping strategies.

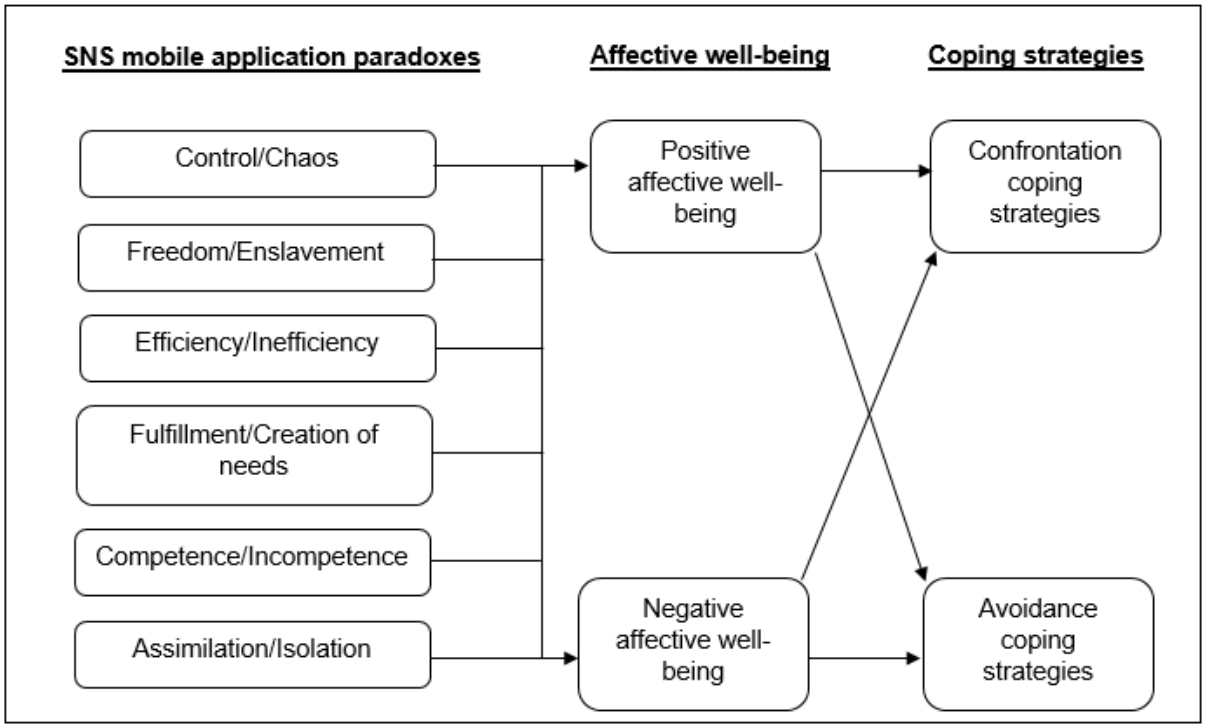

Figure 1: Conceptual framework

The SNS mobile application control/chaos paradox implies that technology can facilitate feelings, such as order or chaos (Mick & Fournier, 1998). The SNS mobile application control/chaos paradox is the degree to which users have the ability to utilize the SNS mobile application under their own control, while at the same time users can experience that the product takes over the control. One aspect of behavioral control is perceived self-efficacy that refers to individuals who are self-assured to perform a task (Namasivayam, 2004). If this confidence is present it leads to control, if absent it leads to chaos (Namasivayam, 2004). The behavior towards the outcome can lead to emotional consequences. If the SNS mobile application works accordingly, where the user has control over the SNS mobile application. The consequences may lead to positive emotions. However, when the SNS mobile application is beyond the control of the user, it may lead to negative emotions. It is therefore expected that the control/chaos dimension, has an effect on both positive and negative affective well-being. Based on the arguments the following hypotheses are proposed:

- H1a: Feelings of control versus chaos have a positive effect on positive affective well-being.
- H1b: Feelings of control versus chaos have a negative effect on negative affective well-being.

The SNS mobile application freedom/enslavement paradox refers to the degree to which users feel free with fewer restrictions (independent) and yet feel enslaved with more restrictions to the technology (dependent) (Mick & Fournier, 1998). Researchers have found that when consumers are allowed to choose freely rather than being restricted to a decision, consumers tend to create positive emotions (Deci & Ryan, 1987). Users may utilize the SNS mobile application whenever and wherever they want, without restriction. Thereby, positive emotions may occur when the SNS mobile application requires no dependence and when the user feels free to utilize the product. It is anticipated that the freedom/enslavement dimension may lead to positive affective well-being. However, when users feel restricted to a decision, users tend to create negative emotions, leading to negative affective well-being. Therefore, negative emotions may occur when the SNS mobile application requires restrictions whereby the user feels dependent on the product. Based on these arguments the following hypotheses are formulated:

- H2a: Feelings of freedom versus enslavement have a positive effect on positive affective well-being.
- H2b: Feelings of freedom versus enslavement have a negative effect on negative affective well-being.

The SNS mobile application efficiency/inefficiency paradox refers to the degree to which the SNS mobile application can demand more or less time to perform a task (Mick & Fournier, 1998). The paradox can be constructed from the cost-benefit perspective (Johnson & Payne, 1985). This perspective implies that the trade-off between the result of increased effort and increased accuracy relates to the importance and the expected value of the decision outcome (Johnson & Payne, 1985). From this perspective, positive affective well-being may occur, when the trade-off between effort and time spent with a product result in an improvement (Johnson & Payne, 1985). Moreover, from this perspective, negative affective well-being may also occur, when the trade-off between effort and time spent with a product leads to more effort and more time spent. In the context of this research, when users facilitate SNS mobile applications that take little effort and improve their efficiency, it may lead to positive emotions. Consequently, inefficiency can occur when users facilitate SNS mobile applications that take more effort and more time, which may lead to negative emotions. Based on these arguments, the following hypotheses are formulated:

- H3a: Feelings of efficiency versus inefficiency have a positive effect on positive affective well-being.
- H3b: Feelings of efficiency versus inefficiency have a negative effect on negative affective well-being.

The SNS mobile application fulfillment/creation of needs paradox refers to the degree to which the technology facilitates satisfied or unsatisfied needs (Mick & Fournier, 1998). Technologies make life easier, but simultaneously more complex and therefore sometimes wastes time instead of saves time (Mick & Fournier, 1998). For instance, consumers often use technology that solves their needs, however, to utilize the technology effectively additional tasks, service, knowledge or equipment is needed that can create unrealized needs (Johnson et al., 2008; Mick & Fournier, 1998). SNS mobile applications provide solutions to solve problems, such as promoting self-esteem, building a community and strengthening interpersonal relationships (Collins et al., 2010). These solutions suggest positive affective well-being. Users may realize the benefits of SNS mobile applications that fulfill their needs, and thus, continue to utilize the SNS mobile application. Nevertheless, creation of needs can occur, when the solutions require more resources that generate unrealized and unsatisfied needs, whereby negative affective well-being is activated. Based on these arguments the following hypotheses are composed:

- H4a: Feelings of fulfillment versus creation of needs have a positive effect on positive affective well-being.

- H4b: Feelings of fulfillment versus creation of needs have a negative effect on negative affective well-being.

The SNS mobile application competence/incompetence paradox refers to the degree to which users experience competent or incompetent feelings when utilizing SNS mobile applications (Mick & Fournier, 1998). Self-determination theory highlights that self-regulation, motivation, growth tendencies and psychological needs are essential for individuals (Deci & Ryan, 2000). According to the theory, competence is one of three human needs that is important for personal well-being that is driven from self-motivation (Deci & Ryan, 2000). If competence is present it leads to positive consequences, such as positive feelings, if absent it diminishes positive consequences (Deci & Ryan, 2000). Personal technology competence is the potential the technology has to add new capabilities that improve the consumers' abilities (Mick & Fournier, 1998). Consumers tend to avoid technology that is too complex and beyond their coping mechanism but deal with those that match their capability (Johnson et al., 2008; Mick & Fournier, 1998). From these perspectives, positive affective well-being occurs when users feel competent, and negative affective well-being occurs when users feel incompetent when utilizing SNS mobile applications. Based on these arguments, the following hypotheses are proposed:

- H5a: Feelings of competence versus incompetence have a positive effect on positive affective well-being.
- H5b: Feelings of competence versus incompetence have a negative effect on negative affective well-being.

The assimilation/isolation paradox refers to the degree to which SNS mobile applications lead to togetherness and isolation (Mick & Fournier, 1998). SNS mobile applications have several benefits, such as building friendships, fast communication, social capital and reducing isolation (Cho, 2015; Chayko, 2014). Moreover, SNS creates a sense of belonging to the community and social connectedness (Collins et al., 2015; Chayko, 2014). SNS mobile applications stimulate connectedness and produce feelings, such as belonging, warmth, and excitement (Chayko, 2014). Users who utilize SNS mobile applications for social connections might experience positive emotions. However, several disadvantageous were found as well such as isolation, depression, stress and addiction (Salehan & Negahban, 2013) that leads to negative emotions. It is therefore expected that the assimilation/isolation dimension may influence both positive and negative affective well-being. The following hypotheses are therefore formulated:

- H6a: Feelings of assimilation versus isolation have a positive effect on positive affective well-being.
- H6b: Feelings of assimilation versus isolation have a negative effect on negative affective well-being

2.8 The mediating role of affective well-being

Affective well-being is defined in this research as positive and negative emotions that are frequently experienced by a user based on a specific event. As previously stated, coping is initiated by emotion (Lazarus & Folkman, 1987; Lazarus, 2006). The way emotional experiences convey crucial information to users plays a very important role in maintaining and directing human action (Lazarus & Folkman, 1987). There are different ways on how individuals cope with affective experiences that allow them to handle their emotions in their own ways during stressful events (Mick & Fournier, 1998). According to the broaden and built theory, positive and negative emotions have adaptive functions (Fredrickson, 2001). The theory implies that positive emotions broaden the mindset into a learning action repertoire that builds and intellectually adapts a decision (Fredrickson, 2001). This coping style is strongly linked to confrontative coping strategies as this coping is done psychologically, such as accommodation, partnering, and mastering (Mick & Fournier,1998). Negative emotions are linked to a quick, decisive specific action, such as attack or escape (Fredrickson, 2001). This coping style is strongly linked to avoidance coping strategies, such as neglect, abandonment and distance because this is done on the basis of a more behavioral mechanism (Mick and Fournier, 1998). The way users experience SNS mobile application paradoxes provide insights into the information that they derive from affective well-being which directs coping strategies. It is anticipated that positive affective well-being will lead to confrontative coping strategies and that negative affective well-being leads to avoidance coping strategies. This research proposes that affective well-being impacts coping strategies, thereby have a mediating effect on the relationship between SNS mobile application paradoxes and coping strategies:

- H7a: Positive affective well-being has a positive effect on confrontation coping strategies.
- H7b: Negative affective well-being has a negative effect on confrontation coping strategies.
- H8a: Positive affective well-being has a negative effect on avoidance coping strategies.
- H8b: Negative affective well-being has a positive effect on avoidance coping strategies.

3. Methodology

This chapter deals with the research methodology. First, the research design and survey sampling design will be discussed. Next, the survey sampling design will be explained. Second, the operationalization of variables, control variables, data analysis, and the sample size justification is described. Lastly, research ethics will be discussed.

3.1 Research design

As stated before, this research aims to answer the research question: *What kind of SNS mobile application paradoxes do users encounter and what effects do these technological paradoxes have on their affective well-being and coping strategies?* The research question can be divided into two parts. The first part of the research question looks at how the paradoxes, evoked by SNS mobile applications, affect the users' affective well-being. Thus, the interest here is in how users perceive these paradoxes and how they influence their emotions and thereby their affective well-being. Prior research has shown that technological products evoke paradoxical tensions (Mick & Fournier, 1998; Munene et al., 2008; Jarvenpaa & Lang, 2005; Zhuang et al., 2012). Thus, the aim of this research is to apply the technology paradoxes concept within the domain of SNS mobile applications. The second part highlights how the influence of affective well-being leads to coping strategies with the technology paradoxes encountered from the SNS mobile application.

Research can be driven by either an inductive or deductive strategy when concepts and definitions are defined in research (Bleijenbergh, 2015). The inductive approach considers that empirical research should not be restricted to develop theories, but rather to discover new theories (Bleijenbergh, 2015). The researcher starts with observing the concepts, and then look for literature to develop the concepts (Bleijenbergh, 2015). The deductive approach concludes developing a theoretical model for testing, the creation of hypotheses, design research measurements and purifying the model with fitted theory (Bleijenbergh, 2015; Babbie, 2013). This research has collected data to test theories using the data (Field, 2013). Hypotheses have been formulated based on existing theory thereby, a deductive approach was employed to gain new insights.

The aim of quantitative research is to assess the relationship between one element (dependent variable) and another element (independent variable) (Singh, 2007). Cross-sectional research usually gathers data at one point in time and asses the relationship between variables, whereby a sample is needed to investigate the relationships (Singh, 2007; Corbetta,

2003). This approach was best suitable for this research as its aim was to investigate relationships between constructs (Babbie, 2013). Most used surveys implement the cross-sectional design that poses questions to a sample at one point in time (Singh, 2007). A survey is defined as a means of collecting information about the opinions and attitudes of a larger population and is often employed as a tool for conducting consumer behavior studies (Babbie, 2013). This tool was appropriate because it is capable to obtain information from a large sample, describe the composition of the population, measure several numbers and types of variables, and collect information about opinions and attitudes (Corbetta, 2003). Furthermore, surveys require minimal investment to develop and administer and are relatively easy for making generalizations (Babbie, 2013).

3.2 Survey sampling design

The data was gathered with an online questionnaire that allowed respondents to fill in answers themselves by using the software Qualtrics (Singh, 2007; Qualtrics, 2019). The questionnaire had a standardized scheme of recording where the question was the same for everyone and administered to everyone the same (Corbetta, 2003). Further, the tool was administered to a sample of Facebook and Instagram users to obtain data on current opinions regarding the SNS mobile application.

Respondents were recruited through messages via social media channels Instagram and Facebook, and via the personal network of the researcher. Representativeness of the population was not the goal of this research, but rather a variation of the sample. Whereby the chance of representativeness of the population increased and helped to generalize the results of the population (Punch, 2003). The target population was users that utilize the SNS mobile application Facebook, Instagram or both social media channels.

A pre-test was conducted to detect ambiguities, difficulties and misunderstandings respondents may encounter with the questions in the survey. The pre-test was executed among 32 respondents via the personal network of the researcher. The respondents were targeted based on age, aged between 18 and 32. The survey was kept the same as the final survey however the statements above the Likert points were added because of misinterpretation. Based on the suggestions of the pre-test sample, the researcher decided to use two items per technology paradox, as the sample mentioned that the online questionnaire would otherwise be too long.

3.3 Operationalization of variables

This research has two dependent variables, six independent variables and two mediating variables (Table 2). All constructs were adapted from measurement scales in the literature. The complete set of operationalization is displayed in Table 2 and the survey questions in Appendix B.

Table 2: Operationalization

Variable	Source Scale	# of Items	Response Format	Survey Question
		Dependent variables		
Confrontation Coping strategies	Mick & Fournier (1998); Chae & Yeum (2008)	3	5-point Likert scale	Q40 -Q42
Avoidance Coping strategies	Mick & Fournier (1998); Chae & Yeum (2008)	3	5-point Likert scale	Q37 – Q39
		Independent variables		
Control/Chaos	Jones (1986; see Bruner, 2009, p. 824)	2	5-point semantic differential scales	Q7 - Q10
Freedom/ Enslavement	Salehan and Negahban (2013)	2	5-point semantic differential scales	Q11 - Q14
Efficiency/ Inefficiency	Dabholkar (1994; see Bruner, 2009, p. 404) Salehan and Negahban (2013)	2	5-point semantic differential scales	Q19 - Q22
Fulfillment/ Creation of needs	Oliver and Swan (1980; see Bruner, 2009, p. 773)	2	5-point semantic differential scales	Q23 - Q26
Competence/ Incompetence	Schiffman et al. (2003)	2	5-point semantic differential scales	Q15 -Q18
Assimilation/ Isolation	Schiffman et al. (2003)	2	5-point semantic differential scales	Q27 - Q30
		Mediating variables		
Positive affective well-being	Murry and Dacin (1999; see Bruner, 2009, p. 17 & 27)	3	5-point Likert scale	Q31 – Q33
Negative affective well-being	Murry and Dacin (1999; see Bruner, 2009, p. 17 & 27)	3	5-point Likert scale	Q34 – Q36

3.4 Control variables

This research took into account age, gender, Instagram users, Facebook users and both app users as control variables. It was expected that the control variables may affect technology paradoxes, affective well-being and coping strategies differently when the control variables were considered. For instance, age and gender may generate different perspectives and therefore result in different outcomes among technology paradoxes, affective well-being and coping strategies as well for gender. Age was measured with a ratio scale of seven levels: below 18, 18 to 24, 25 to 30, 31 to 35, 36 to 40, 41 to 60 and above 61 years. This scale was dichotomized into two categories to simplify the analysis. Gender was measured with a nominal scale with two levels: male and female. Mobile applications were measured with a nominal scale with three levels: Instagram, Facebook and both app users. All control variables were converted into dummy variables (see Table 3).

Table 3: Nominal scales of control variables

Control Variable	**Dummy Variable**
Gender	1- Male
	2- Female
Age	1- Under 18 to 30
	2- Above 31
Mobile applications	1- Instagram
	2- Facebook
	3- Both app users

3.5 Data analysis

This research employed the technique of partial least squares structural equation modeling (PLS-SEM) and was analyzed with software ADANCO (Adanco, 2019). The technique is variance-based and calculates all possible values for a random variable as a deviation from the mean, which can be done with ADANCO (Hair, Black, Babin & Anderson, 2014, p.14). PLS-SEM has advantages, such as examining a series of dependence relationships at the same time and it is useful in testing theories that contain several equations involving dependence relationships (Hair et al., 2014). The PLS-SEM technique suited this research due to its ability to observe unobservable constructs in relationships, such as the technology paradoxes and it accounted for measurement errors. Moreover, PLS-SEM is most useful to predict and explain targeted constructs (Hair et al., 2014).

3.5.1 Sample characteristics

According to Hair et al. (2014), the minimum sample size for PLS-SEM is based on the 10-times rule method (Hair et al., 2014). The 10-times rule implies that the sample size should be 10 times larger or equal to the highest number of arrowheads pointing to a construct within the model (Hair et al., 2014). Having this requirement in mind, the minimum sample size for this research was 60. The questionnaire was distributed via the Internet of a period of 7 days in April and May 2019 that collected 249 respondents. Due to a wrong set up by the researcher or unfinished records, 40 respondents were excluded from the research, which led to 209 valid responses.

Of the remaining respondents, 132 (63.2%) were female and 78 (36.8%) were male. The respondents entailed 100 students (47.8%), 85 employed for wages (40.7%) and 16 self-employed (7.7%). Most respondents made use of both Facebook and Instagram apps (72,7%), 35 respondents only used Facebook (16.7%) and 22 respondents only used Instagram (10.5%). Furthermore, 81 respondents were between 18 and 24 years old (38.8%), 75 respondents were between 25 and 30 years old (35.9%), and 22 respondents were between 31 and 35 years old (10.5%). Among the respondents, the majority utilized Instagram (39.2%) and Facebook (41.1%) a few times a day. The sample characteristics are shown in Table 4.

3.6 Research ethics

For this research, ethical considerations were considered. The information given by the respondents was respected and kept anonymously and confidentially. This research ensured that the respondents participated in the study voluntarily, where harm was avoided at all times. Moreover, the research ensured the integrity and was conducted impartially and independently. The signed research integrity form can be found in Appendix F.

Table 4: Sample characteristics

		FREQUENCY	PERCENTAGE
AGE	Below 18	5	2.4
	18-24	81	38.8
	25-30	75	35.9
	31-35	22	10.5
	36-40	8	3.8
	41-60	15	7.2
	61+	3	1.4
	Total	**209**	**100**
GENDER	Male	77	36.8
	Female	132	63.2
	Total	**209**	**100**
PROFESSION	Employed for wages	85	40.7
	Self-employed	17	7.7
	Student	100	47.8
	Unemployed	4	1.9
	Retired	2	1.0
	Other	2	1.0
	Total	**209**	**100**
MOBILE APPLICATION	Instagram	22	10.5
	Facebook	35	16.7
	Both apps	153	72.7
	Total	**209**	**100**
INSTAGRAM USAGE	A few times an hour	43	20.6
	About once an hour	20	9.6
	A few times a day	83	39.2
	About once a day	11	5.3
	Once every two, three days	11	5.3
	Once a week	7	3.3
	Missing	35	16.7
	Total	**209**	**100**
FACEBOOK USAGE	A few times an hour	37	17.7
	About once an hour	19	9.1
	A few times a day	87	41.1
	About once a day	29	13.9
	Once every two, three days	10	4.8
	Once a week	6	2.9
	Missing	22	10.5
	Total	**209**	**100**

4. Results

This chapter contains the research results. First, descriptive statistics will be explained. Second, the results from the factor analysis will be described. Third, the reliability analysis is explained. Lastly, ADANCO results will be discussed.

4.1 Descriptive statistics

Appendix C provides a consolidation of salient results regarding the differences and strengths of the six technology paradoxes. As explained in Chapter 3, a 5-point semantic differential scale was adopted with the idea that number 1 and 2 are positive feelings and indicate a positive scale, number 3 indicates a paradox and number 4 and 5 are negative feelings that indicate a negative scale. The column “mode” in Appendix C shows the values that occurred the most. The items for the technology paradox control/chaos received a mode of 2, indicating a positive scale. This implies that the majority of the respondents more experienced feelings of control than chaos. One item “I check this app every day” for the technology paradox freedom/enslavement received a mode of 5, indicating a negative scale. This means that respondents strongly experienced the feelings of enslavement rather than freedom. The other item for the technology paradox freedom/enslavement received a mode of 2 that indicates a positive scale. This item was linked to “I do not feel out of touch when I have not logged into this app for a day”, meaning that respondents rather perceived feelings of freedom than enslavement for that particular item. The technology paradoxes fulfillment/ creation of needs, competence/incompetence and assimilation/isolation were perceived as a paradox with a mode of 3. This means that respondents agreed on both opposite statements and experienced the scales as a true paradox.

Furthermore, a cross table analysis was conducted to analyze the relationships between the scales of the technology paradoxes and affective well-being. The interest here was to investigate whether respondents, who experienced a paradox where more likely to experience positive or negative affective well-being. The majority of respondents who experienced a paradox were indecisive and mainly selected the option “neither agree or disagree” to indicate whether they experienced positive or negative affective well-being. The results showed that respondents who experienced a paradox selected “disagree” for negative affective well-being. This applied to the scales of fulfillment/creation of needs (35%), competence/incompetence (36.%) assimilation/isolation (34%). These results mean that respondents who experienced a paradox did not experience negative emotions.

4.2 Factor analysis

Scales for the technology paradoxes were measured with exploratory factor analysis (see Table 5). A principal component factor analysis was constructed on twelve items, hence six technology paradoxes. Appendix D shows the correlation matrix. More specifically, all corresponding items were significantly correlated above .3 (Hair et al., 2012). Nevertheless, this was not the case for the items for technology paradox efficiency/inefficiency with a significance of .267 (see Appendix D). The Kaiser-Meyer-Olkin verified the sampling adequacy for the analysis KMO = .719, which is above the threshold of .5 (Field, 2013) and a significant Barlett's test of sphericity (χ^2 (66) = 599.408, p < .05) (see Appendix D). Four factors had eigenvalues greater than 1 with an explained variance of 62%. It was expected that not all technology paradoxes would perfectly load on corresponding factors. Among the technology paradoxes, control/chaos, freedom/enslavement and competence/incompetence failed to load on separate factors (see Appendix D). These results were not surprising, as it was suggested by Mick and Fournier (1998) that the technology paradoxes operate differently among levels and contexts (Johnson et al., 2008). As the items of the technology paradox efficiency/inefficiency failed to have a sufficient item-correlation value of above .3 the scale was eliminated for further analysis. This meant that the items were not measuring the same construct thus, may be deleted (Field, 2013). After deleting the technology paradox efficiency/ inefficiency, a principal component factor analysis with the ten remaining items resulted in a KMO = .670, and a significant Barlett's test of sphericity (χ^2 (45) = 460.818, p < .05). Three factors had eigenvalues over Kaiser's criterion of 1 with an explained variance of 57% (see Appendix D). Next, scale items were developed for positive and negative affective well-being with exploratory factor analysis. Table 5 shows that the two scales loaded on two factors. Positive affective well-being resulted into a KMO = .654 and a significant Barlett's test of sphericity (χ^2 (4) = 144.044, p < .05) and with an explained variance of 65%. Negative affective well-being resulted in a KMO =.682 and a significant Barlett's test of sphericity (χ^2 (3) = 152.352 p < .05) with an explained variance of 67%. Three items of avoidance coping strategies all fitted onto one theoretical construct, with a KMO = .588. A significant Barlett's test of sphericity (χ^2 (3) = 39.337, p < .05) that explained 50% of the variance (see Appendix D). Three items for confrontation coping strategies made the factor analysis inappropriate with a KMO =.442 (Appendix D). Whenever a KMO value reaches below .5, variables should be considered to be excluded (Field, 2013). One item had an inter-item correlation of .016 and was deleted. After deletion, two items loaded on one construct and the KMO value resulted into a KMO = .500 and a significant Barlett's test of sphericity (^{2} (1) = 25.653, p < .05) with eigenvalue of 1 that explained the variance of 67% (Appendix D).

Table 5: Factor analysis of construct items

	Components		
	1	2	3
		Technology Paradoxes	
Control/Chaos 1		.708	
Control/Chaos 2		.687	
Efficiency/Inefficiency 1		.709	
Efficiency/inefficiency 2		.654	
Fulfillment/Creation of needs 1			.806
Fulfillment/Creation of needs 2			.643
Competence/Incompetence 1			.483
Competence/Incompetence 2	.634		
Assimilation/Isolation 1	.728		
Assimilation/Isolation 2	.853		
		Affective well being	
Negative affective well-being 1	.799		
Negative affective well-being 2	.851		
Negative affective well-being 3	.806		
Positive affective well-being 1		.865	
Positive affective well-being 2		.772	
Positive affective well-being 3		.794	
		Avoidance coping strategies	
Avoidance 1	.609		
Avoidance 2	.749		
Avoidance 3	.760		
		Confrontation coping strategies	
Confrontation 1		.819	
Confrontation 2		.819	

Note: Principal component analysis with Oblimin rotation; loadings below .40 were suppressed

4.3 Reliability analysis

Cronbach's alpha assesses the internal consistency of a scale, where a Cronbach's alpha of minimum value of .7 is considered acceptable (Field, 2013). The scales for positive and negative affective well-being showed sufficient reliability. Cronbach's alpha for positive and negative affective well-being had high reliability of .736 and .753 (Field, 2013) (see Table 6). However, this was not the case for avoidance coping strategies. The scale for avoidance coping strategies showed low reliability with a Cronbach's alpha of .505. This means that the items of avoidance coping strategies were not measuring the same underlying construct (Field, 2013). Deleting one item from the scale would result in a Cronbach's alpha of .511 which still was not reliable. Therefore, no items were deleted from this construct. Two items were measured for the technology paradoxes and confrontation coping strategies, the inter-item correlation was assessed as demonstrated in the factor analysis. Inspecting Cronbach's alpha

should be done with at least three items and therefore the correlation matrix was reported (Field, 2015). The correlation matrix showed that all items for the technology paradoxes and confrontation coping strategies correlated above .3. However, as explained before that was not the case for the technology paradox inefficiency/inefficiency, which was deleted for further analysis (Appendix D).

Table 6: Reliability analysis

	Cronbach's alpha
Positive affective well-being	.736
Negative affective well-being	.753
Avoidance coping strategies	.505

4.4 Measurement model results

Structural Equation Modelling (SEM) was conducted for data analysis and hypotheses testing. SEM has become a well-known technique in business research that tests entire theories simultaneously in one model, where measurement errors are accounted for and no distributional assumptions are needed (Henseler, Hubona & Ash Ray, 2016). This research relied on the PLS path modeling guidelines by Henseler et al. (2016) and software ADANCO.

Figure 2 in appendix E displays the research model in ADANCO. The model is composed of the endogenous variables positive affective well-being as a factor of three indicators, negative affective well-being as a factor of three indicators, confrontation coping strategies as a factor of two indicators and avoidance coping strategies as a factor of three indicators. The exogenous latent variables control/chaos, freedom/enslavement, fulfillment/creation of needs, competence/incompetence and assimilation/isolation were measured with two indicators per latent variable. The control variables gender, age and app users were composed of a set of dummy variables (see Appendix E for Figure 2). The loadings for each latent variable are displayed in Table 13 (Appendix E).

The SEM analysis was performed on a sample size of 209 respondents. The recommended sample size was six arrowheads times ten pointing to a construct, therefore the minimum sample size of 60 was met (Hair et al., 2015). Thus this assumption was met. PLS models have two sets of linear equations: the measurement model and the structural model (Henseler et al., 2016). The assumption here is that the measurement model should provide sufficient results before the structural model can be assessed (Hair et al., 2015). The measurement model assesses the goodness-of-fit, construct reliability, convergent reliability and discriminant validity.

The first starting point for assessing the measurement model is the goodness-of-fit. If the model does not fit it means that the data explains more than the model conveys (Henseler et al., 2016). SRMR is the square root of the sum of the squared differences between the proposed model and correlation matrix. The proposed threshold is a value below 0.08 and this research achieved a SRMR value of 0.797. Thereby this assumption was met.

The construct reliability accounts for the random errors in a construct score (Henseler et al., 2016). The score is measured by Cronbach's alpha that recommends a minimum reliability value of .7 (Field, 2013). As stated before in the reliability analysis, Cronbach's alpha above .7 was met for both positive and negative affective well-being, although, not for avoidance coping strategies with a value of .5 (see Table 6). The constructs are therefore reliable for positive and negative affective well-being but questionable for avoidance coping strategies.

Convergent validity measures whether the set of indicators are represented by the same construct (Hair et al., 2015). The set of indicators should be free from systemic measurement errors and must be unidimensional (Henseler et al., 2016). Convergent validity was assessed with the average variance extracted (AVE). An AVE value of 0.5 or higher is considered acceptable. This threshold was applied to all constructs. However, this was not the case for avoidance coping strategies with a value of .489 (Table 7). This was expected as the items had a low Cronbach's alpha. Since the control variables were not measured by multiple items, the AVE score consisted of a value of 1. Convergent validity for avoidance coping strategies was not achieved since the AVE score was not significantly higher than the threshold.

Discriminant validity shows whether the set of indicators of a construct differs from a set of indicators of another construct (Henseler et al., 2016). This was estimated with the Heterotait-monotrait Ratio of Correlations (HTMT). HTMT values above .8 would indicate a violation of discriminate validity (Henseler et al., 2016) (Table 8). Since this was not the case, this assumption was met. Based on the sufficient results of the measurement model, hypotheses testing can be executed by assessing the structural model. Although, the assessment of the construct avoidance coping strategies provided questionable results this construct will be interpreted with care.

Table 7: Convergent validity assessment

Construct	Average Variance Extracted (AVE)
Control/Chaos	0.746
Freedom/Enslavement	0.656
Fulfillment/Creation of needs	0.684
Competence/Incompetence	0.675
Assimilation/Isolation	0.812
Positive affective well-being	0.653
Negative affective well-being	0.670
Confrontation coping strategies	0.661
Avoidance coping strategies	0.489
Instagram	1.000
Facebook	1.000
Both app users	1.000
Gender	1.000
Age	1.000

Table 8: Discriminant Validity

Construct	CC	FE	FC	CI	AI	PAWB	NAWB	AV	CON
CC									
FE	.705								
FC	.465	.059							
CI	.291	.148	.710						
AI	.278	.231	.564	.541					
PAWB	.012	.305	.527	.491	.332				
NAWB	.537	.235	.383	.349	.312	.082			
AV	.126	.392	.218	.156	.358	.249	.580		
CON	.649	.249	.334	.472	.500	.454	.487	.477	

Note: * CC= Control/Chaos, FE = Freedom/Enslavement, FC = Fulfillment/ Creation of needs/ CC = Competence/Incompetence, AI = Assimilation/Isolation, PAWB = Positive affective well-being, NAWB= Negative affective well-being, AV = Avoidance coping strategies, CON = Confrontation coping strategies.

4.4.1 Structural model results

In this section, the results of the structural model are shown by reporting the explained variance and path coefficients. ADANCO calculated a PLS algorithm with the bootstrapping procedure including 4999 subsamples to determine the coefficient of determination R^2, adjusted R^2, bootstrapping, path coefficients and Cohen's f^2.

The variance explained for the model on positive well-being was 21%, 18% for negative affective well-being, 22% for avoidance coping strategies and 28% for confrontation coping strategies (adjusted R^2) (Table 9). These results show that the model did not fully explain the endogenous latent variables. The direct effect of positive and affective well-being on confrontation and avoidance coping strategies predicted that four constructs had a positive and negative effect on the coping strategies.

Table 9: Explained variance of each of the dependent variables

Construct	**Coefficient of determination (R^2)**	**Adjusted R^2**
Positive affective well-being	0.245	0.213
Negative affective well-being	0.223	0.187
Avoidance coping strategies	0.263	0.222
Confrontation coping strategies	0.327	0.289

4.4.1.1 Path coefficients

The significant effects were evaluated with the bootstrapping method. The method is able to draw a large number of re-samples from the original population and calculates the model parameters for each re-sample that has been bootstrapped (Henseler et al., 2016). The bootstrapping method makes it is possible to determine the confidence intervals of the path coefficients and to make statistical inferences (Henseler et al., 2016). Significance was met with a 95 percent confidence interval and t-values above 1.96.

Hypotheses H1a to H5b predicted that five constructs had a positive direct effect on positive and negative affective well-being. With respect to H1a, a non-significant effect was found for feelings of control versus chaos on positive affective well-being (β = -.061, t = -.786, p = .43), thus rejecting H1a. With respect to H1b, a significant negative direct effect was found for feelings of control versus chaos on negative affective well-being (β = -.295, t = <1.96, p .< .05) thus, accepting H1b. With respect to H2a and H2b, a non-hypothesized significant negative direct effect was found for feelings of freedom versus enslavement on positive

affective well-being (β = -.174, t = <-2.067, *p* = .04) and a non-significant effect on negative affective well-being (β = -.009, t = -.010, *p* = .91), thus rejecting hypotheses H2a and H2b. As predicted, H4a was confirmed, since feelings of fulfillment versus creation of needs had a positive direct effect on positive affective well-being (β = .260, t = <1.96, *p* < .05). However, no significant effect was found for feelings of fulfillment versus creation of needs on negative affective well-being (β= -.103, t = -1.392, *p* = .16), thereby H4b was rejected. With respect to H5a, feelings of competence versus incompetence had a significant positive direct effect on positive affective well-being (β = .200, t = <1.96, *p* < .05). Thus, H5a was accepted. However, H5b was rejected as no significant effect was found for feelings of competence versus incompetence on negative affective well-being (β = -.118, t = -1.716, *p* = .09). Finally, a positive significant direct effect of feelings of assimilation versus isolation on positive affective well-being was confirmed (β = .140, t = < 1.96, *p* < .05) thus, accepting H6a. Nevertheless, no significant effect was found for feelings of assimilation versus isolation on negative affective well-being (β = -.134, t = -1.700, *p* = .09), thus rejecting H6b. The results are shown in Figure 3 and Table 10.

As predicted in H7a, a significant direct effect was found on positive affective well-being and confrontation coping strategies (β = .217, t = <1.96, *p* < .05). Therefore, H7a was accepted. H7b was confirmed, a significant negative direct effect was found for negative affective well-being on confrontation coping strategies (β = -.155, t = <-1.96, *p* < .05). A non-significant effect was found for positive affective well-being on avoidance coping strategies (β = -.006, t = -.090, *p* = .36), thus rejecting H8a. Finally, a significant positive direct effect was found for negative affective well-being on avoidance coping strategies (β= .379, t = < 1.96, *p* < .05). Thus hypothesis H8b was accepted (see Figure 3 and Table 10).

Control variables such as Age and Gender were included in the model one by one but, no significant effects were found on both positive and negative well-being. Control variable Mobile Application was included, and only one significant effect was found for users that only facilitate Facebook. A positive direct effect was found for Facebook on confrontation coping strategies (β = .193, t = < 1.96, *p* < .05). This result indicated that users who only used Facebook employed more confrontation coping strategies (Figure 3 and Table 10).

4.4.2 Additional analyses

Direct effects were also found for technology paradoxes on coping strategies. A significant positive direct effect was found for feelings of control versus chaos on confrontation coping strategies (β = .351, t = < 1.96, *p* < .05). A significant positive direct effect was found for feelings of freedom versus enslavement on avoidance coping strategies (β = .257, t = < 1.96, *p* < .05). The results also revealed that feelings of assimilation versus isolation had a negative significant direct effect on avoidance coping strategies (β = .-188, t = < -1.96, *p* < .05) and a positive significant direct effect on confrontation coping strategies (β = .155, t = < 1.96, *p* < .05) (see Table 10).

Full mediation effects were also present whereby a significant negative indirect effect was found for feelings of control versus chaos on avoidance coping strategies through negative affective well-being (β = .-106, t = < -1.96, *p* < .05). A significant positive indirect effect was found for feelings of fulfillment versus creation of needs on confrontation coping strategies through positive affective well-being (β = .072, t = < 1.96, *p* <.05). Also, a significant positive indirect effect was found for feelings of competence versus incompetence on confrontation coping strategies through positive affective well-being (β = .061 t = < 1.96, *p* < .05). Feelings of freedom versus enslavement and feelings of assimilation and isolation showed no indirect effects on coping strategies through affective well-being. Therefore, it can be concluded that no mediation impact was present for these two technology paradoxes (see Table 10).

Table 10: Results mediation model

	B	T	*p*	Sign.
Control/Chaos Direct effect				
Control/Chaos → Positive affective well-being	-.061	-.786	.431	NO
Control/Chaos → Negative affective well-being	-.295	-3.624	.000	YES
Control/Chaos → Avoidance	-.015	-.179	.857	NO
Control/Chaos → Confrontation	.351	3.926	.000	YES
Control/Chaos Indirect effect				
Control/Chaos → Avoidance	-.106	-2.736	.006	YES
Control/Chaos → Confrontation	.032	1.060	.289	NO
Freedom/Enslavement Direct Effect				
Freedom/Enslavement → Positive affective well-being	-.174	-2.067	.039	YES
Freedom/Enslavement → Negative affective well-being	-.009	-.010	.916	NO
Freedom/Enslavement → Avoidance	.257	2.927	.003	YES
Freedom/Enslavement → Confrontation	.040	.523	.600	NO
Freedom/Enslavement Indirect effect				
Freedom/Enslavement → Avoidance	.011	.272	.785	NO
Freedom/Enslavement → Confrontation	-.036	-1.175	.239	NO
Fulfillment/Creation of needs Direct effect				
Fulfillment/Creation of needs → Positive affective well-being	.260	2.985	.003	YES
Fulfillment/Creation of needs → Negative affective well-being	-.103	-1.392	.163	NO
Fulfillment/Creation of needs → Avoidance	.059	.746	.455	NO
Fulfillment/Creation of needs → Confrontation	-.125	-1.604	.108	NO
Fulfillment/Creation of needs Indirect effect				
Fulfillment/Creation of needs → Avoidance	-.061	-1.681	.092	NO
Fulfillment/Creation of needs → Confrontation	.072	2.226	.026	YES
Competence/Incompetence Direct effect				
Competence/Incompetence → Positive affective well-being	.200	2.554	.010	YES
Competence/Incompetence → Negative affective well-being	-.118	-1.716	.086	NO
Competence/Incompetence → Avoidance	.017	.189	.849	NO
Competence/Incompetence → Confrontation	.071	.891	.372	NO
Competence/Incompetence Indirect effect				
Competence/Incompetence→ Avoidance	-.061	-1.956	.051	NO
Competence/Incompetence → Confrontation	.061	2.334	.019	YES
Assimilation/Isolation Direct effect				
Assimilation/Isolation → Positive affective well-being	.140	1.976	.048	YES
Assimilation/Isolation → Negative affective well-being	-.134	-1.700	.089	NO
Assimilation/Isolation → Avoidance	-.188	-2.564	.010	YES
Assimilation/Isolation → Confrontation	.155	2.236	.025	YES

Assimilation/Isolation Indirect effect				
Assimilation/Isolation → Avoidance	-.061	-1.815	.069	NO
Assimilation/Isolation → Confrontation	.048	1.814	.069	NO
Confrontation coping strategies				
Positive affective well-being → Confrontation coping strategies	.217	2.259	.023	YES
Negative affective well-being → Confrontation coping strategies	-.155	-2.259	.023	YES
Avoidance coping strategies				
Positive affective well-being → Avoidance coping strategies	-.006	-.090	.363	NO
Negative affective well-being → Avoidance coping strategies	.379	5.699	.000	YES
Control variables				
Facebook → Confrontation coping strategies	.193	2.051	.040	YES
Facebook → Avoidance coping strategies	-.112	-1.426	.153	NO

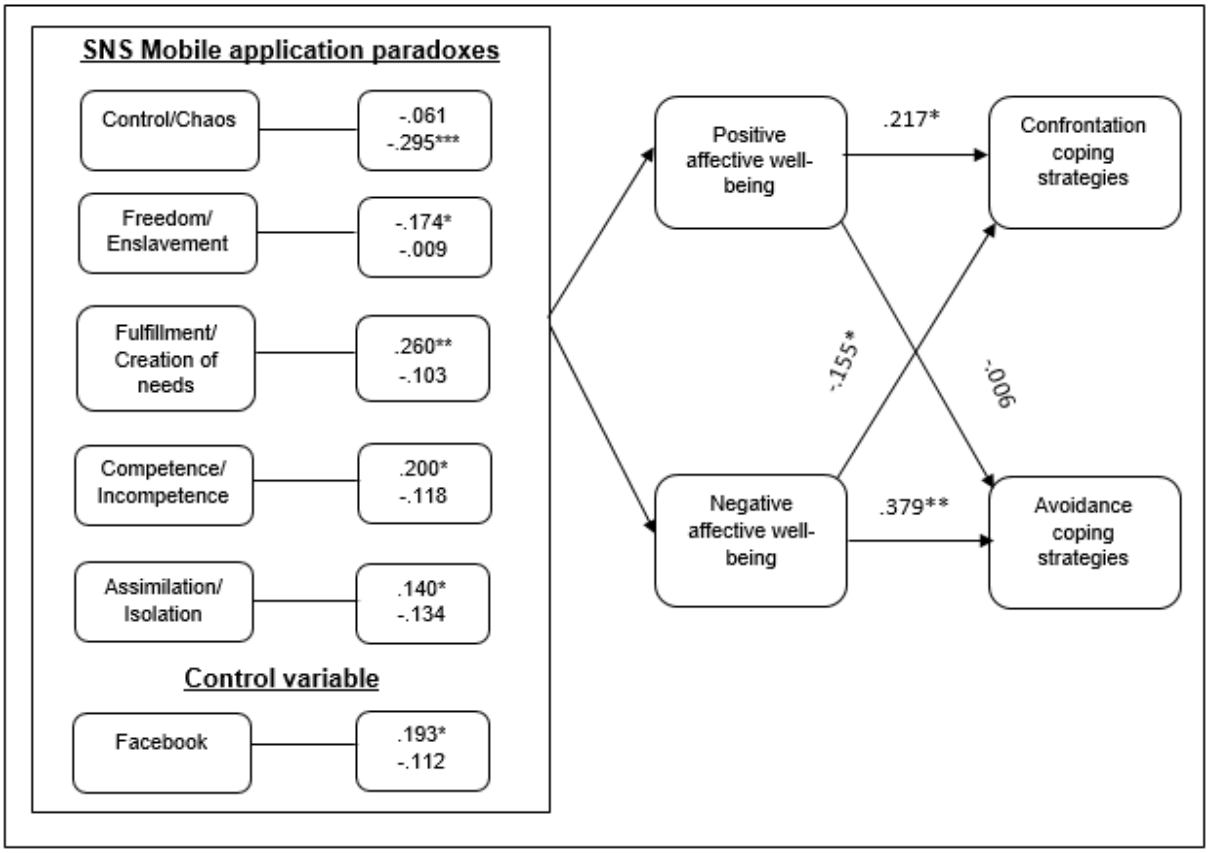

Figure 3: Estimated model: Note: concerning the paradoxes, the coefficients on top represent the effect on positive affective well-being and the coefficients below represent the effect on negative affective well-being. The coefficients for the control variable is the direct effect. The coefficients on top represent the effect on confrontation coping strategies and the coefficients below represent the effect on avoidance coping strategies. The other control variables were excluded because no significant effects were found. * p < .05

Effect size

In order to assess the strength of the significant effects, the direct effects of the path coefficients can be examined with the effect size by Cohen's f^2 (Henseler et al., 2016). The strength of the effect size was determined by Cohen's f^2 characterized as large (< .35), medium (< .15), or small (< .02). Table 11 shows that the effect sizes for the technology paradoxes, affective well-being and coping strategies were small. Moderate effect sizes were found for the technology paradox control/chaos on negative affective well-being (.081), technology paradox fulfillment/creation of needs on positive affective well-being (.064.), both for positive on confrontation coping strategies (.053), and for negative affective well-being on avoidance coping strategies (.150). The effect size found was small for control variable Facebook on confrontation coping strategies (.022).

Table 11: Cohen's f^2

Overview of path coefficients		
Path (From → To)	Cohen's f^2	Effect
Control/Chaos →Positive affective well-being	.003	Small
Control/Chaos → Negative affective well-being	.081	Medium/small
Freedom/Enslavement → Positive affective well-being	.032	Small
Freedom/Enslavement → Negative affective well-being	.003	Small
Fulfillment/Creation of needs → Positive affective well-being	.064	Medium/small
Fulfillment/Creation of needs → Negative affective well-being	.009	Small
Competence/Incompetence → Positive affective well-being	.041	Small
Competence/Incompetence → Negative affective well-being	.013	Small
Assimilation/Isolation → Positive affective well-being	.016	Small
Assimilation/Isolation → Negative affective well-being	.017	Small
Positive affective well-being → Avoidance	.007	Small
Positive affective well-being → Confrontation	.053	Medium/small
Negative affective well-being → Avoidance	.150	Medium
Negative affective well-being → Confrontation	.027	Small
Facebook → Confrontation	.022	Small

5. Conclusion and Discussion

This chapter deals with the conclusion and discussion. First, the conclusion will be stated. Second, the interpretation of the results is provided. Third, scientific and practical implications will be discussed. Lastly, research limitations and further research recommendations are explained.

5.1 Conclusion

The main goal of this research was to obtain information about whether technology paradoxes had an effect on positive and negative affective well-being that prompted coping strategies in turn. The research used the framework built by Mick and Fournier (1998). More specifically, this research provides an answer to the following research question: *What kind of SNS mobile application paradoxes do users encounter and what effects do these technological paradoxes have on their affective well-being and coping strategies?* The research question was divided into two parts.

The first part examined which SNS mobile application technology paradoxes emerged from affective well-being. The results show that among the five technology paradoxes: fulfillment/creation of needs, competence/incompetence and assimilation/isolation have small and moderate positive direct effects on positive affective well-being, while a small negative direct effect was found for the technology paradox freedom/enslavement on positive affective well-being. No effect was found for control/chaos on positive affective well-being. The results revealed that the technology control/chaos had a moderate negative direct effect on negative affective well-being. Meanwhile, the technology paradoxes: freedom/enslavement, competence/incompetence, fulfillment/creation of needs and assimilation/isolation had no significant effects on negative affective well-being.

The second part of the research question assessed whether affective well-being influenced coping strategies. As expected, positive affective well-being had a moderate positive effect on confrontation coping strategies however, no significant positive effect was found for avoidance coping strategies. Regarding negative affective well-being, a small direct effect was found on confrontation coping strategies, and a moderate negative effect was found on avoidance coping strategies. Facebook users had a small positive direct effect on confrontation coping strategies.

Direct effects were also found for technology paradoxes on coping strategies. The results revealed that the technology paradoxes control/chaos and assimilation/isolation have positive direct effects on confrontation coping strategies. Moreover, the technology paradox assimilation/isolation had a negative direct effect on avoidance coping strategies, and the technology paradox freedom/enslavement had a positive direct effect on avoidance coping strategies.

In terms of the indirect effects between technology paradoxes, affective well-being and coping strategies, the results revealed that the technology paradox control/chaos had a negative effect on avoidance coping strategies through negative affective well-being. The technology paradox fulfillment/creation of needs had a positive effect on confrontation coping strategies through positive affective well-being. Also, the technology paradox competence/incompetence had a positive effect on confrontation coping strategies through positive affective well-being. The summary of the hypotheses is shown in Table 12.

Table 12: Summary of hypotheses testing

	From	To	Direction	Results
H1a	Control/Chaos	Positive affective well-Being	-	Reject
H1b	Control/Chaos	Negative affective well-being	-	**Accept**
H2a	Freedom/Enslavement	Positive affective well-Being	-	Reject
H2b	Freedom/Enslavement	Negative affective well-Being	-	Reject
H4a	Fulfillment/Creation of needs	Positive affective well-Being	+	**Accept**
H4b	Fulfillment/Creation of needs	Negative affective well-Being	-	Reject
H5a	Competence/Incompetence	Positive affective well-Being	+	**Accept**
H5b	Competence/Incompetence	Negative affective well-Being	-	Reject
H6a	Assimilation/Isolation	Positive affective well-Being	+	**Accept**
H6b	Assimilation/Isolation	Negative affective well-Being	-	Reject
H7a	Positive affective well-being	Confrontation coping strategies	+	**Accept**
H7b	Negative affective well-being	Confrontation coping strategies	-	**Accept**
H8a	Positive affective well-Being	Avoidance coping strategies	-	Reject
H8b	Negative affective well-being	Avoidance coping strategies	+	**Accept**

5.2. Discussion

This research confirms the presence of technology paradoxes, which has been examined by prior scholars. Results of this research have led to a deeper understanding of how technology paradoxes influence affective well-being and coping strategies.

The first starting point is that this research found a negative direct effect on negative affective well-being and the technology paradox control/chaos. Mick and Fournier (1998) argued that the technology paradox control/chaos arouse negative emotions, which is confirmed in this research. Users might not have the right capability or might feel that the product is beyond their control, SNS mobile applications can therefore, have a devouring power because it is not easy to manage.

Even though, the technology paradox freedom/enslavement produced a non-hypothesized negative direct effect on positive affective well-being. The results support the claim that feelings of enslavement diminish positive emotions (Mick & Fournier, 1998). An application like Facebook requires a lot of attention with incoming notifications, friends requests and live stories. Therefore users are restricted and spend a lot of time on SNS mobile applications (Salehan & Negahban, 2013) which is not unexpected as users on average spend 38 percent of their time on SNS mobile applications (Mindsea, 2018). Users are thereby more likely enslaved to the SNS mobile application and integrate their lives into the application instead of the other way around (Johnson et al., 2008).

Additionally, technology paradoxes can lead to positive emotions (Mick & Fournier, 1998). Collectively, these results confirm that the technology paradoxes fulfillment/creation of needs, competence/incompetence and assimilation/isolation have an impact on positive emotions. As expected, utilizing SNS mobile applications fulfills many needs such as, sense of belonginess strengthen online relationships and faster communication (Collin et al., 2015; Salehan & Negahban, 2013), and therefore increase positive feelings (Shi et al., 2018).

Regarding the latter two paradoxes, Mick and Fournier (1998) argued that the younger generation is less cognizant than the older generation. This means that these two paradoxes are more likely perceived as positive among younger people because they are more willing to manage new technologies. Kraut et al. (1998) also argued that younger people can better handle complex and new products compared to elderly people. Stated in Chapter 4, the majority of the respondents in this research were students and aged between 18 and 30. Technologies require more knowledge and continuous learning and are adapted faster by the younger generation. This implies that competence and assimilation are the motives for positive emotions (Collin et al., 2015). The result confirms the findings found by Zhuang et al. (2012)

that as soon as assimilation is activated, users tend to utilize SNS for social connectedness. Moreover, Mick and Fournier (1998) argued that the technology paradox assimilation/isolation paradox will likely lead to positive emotions when the product is linked to telecommunications and perceived as entertaining, which is the case for both Facebook and Instagram. The authors also argued that females compared to males are more sensitive to this technology paradox. Unfortunately, this research yield no evidence for this claim as gender produced no significant effects.

Prior research has shown that confrontation coping strategies leads to positive emotions and avoidance coping strategies leads to negative emotions (Mick & Fournier, 1998; Jarvenpaa & Lang, 2005), all these claims are confirmed in this research. Jarvenpaa and Lang (2005) argued that confrontation coping strategies led to happier users when the technology works accordingly. The results show that users that only use Facebook are more likely to develop confrontation coping strategies. In other words, users are much happier and more engaged with Facebook. An explanation for this is that Facebook provides users with a lot of entertaining activities such as, managing personal events and picture albums, creating live videos, interacting in public and private group chats, importing important dates in personal calendar and liking and reacting on posts (Quan-Haase & Young, 2010; Lee et al., 2015). The results also support the claim of the broaden and built theory, where positive emotions are more likely to develop confrontation coping strategies (Frederickson, 2001). Positive emotions, for instance, broaden the interest of a person and is therefore, more willing to accept and learn about the new information. Users will therefore spend the effort to learn about the services and features, as they are more willing to understand the benefits of the SNS mobile application.

Scholars have argued that avoidance coping strategies originate from negative emotions (Mick & Fournier, 1998; Jarvenpaa & Lang, 2005) this result was uniform. Avoidance coping strategies are done on a behavioral level (Mick & Fournier, 1998; Garitty, 2012) and refers to users who are finding ways to minimize interaction with the SNS mobile application when they experience negative emotions. This means that users are choosing to avoid or neglect the mobile application altogether. For instance, users can turn off their phones, delete the application or put the notifications on mute. These examples demonstrate quick behavioral responses that are originated from negative affective well-being (Tomkins, 1980). Avoidance is activated when the technology is unreasonable demanding and confusing, in particular when users are under stressful situations. Thus the ubiquity of SNS mobile application can lead to information and user overload (Jarvenpaa & Lang, 2005). Consequently, users are more likely to avoid the technology rather than to confront or to learn about the technology due to its challenging interface. This could be an explanation of the direct effect found on negative affective well-being and avoidance coping strategies. This could also explain why users that

only use Facebook are more affected by confrontation coping strategies because of its popularity (Lee et al., 2015). Since SNS mobile applications have become unavoidable in today's society (Quan-Haase & Young, 2010; Zhuang et al., 2012) it makes it harder to avoid or neglect mobile applications.

Yi and Baumgartner (2014) argument that confrontation coping strategies can frequently involve negative emotions, who investigated how consumers manage stressful situations. The authors found that consumers rather used confrontation coping when they were unhappy with the product or experience (Yi & Baumgartner, 2014). This means that users who experience negative emotions are rather positively affected by negative emotions and therefore experience a higher level of happiness after using the SNS mobile application. More specially, users are more likely to confront or learn how to deal with their negative emotions instead of avoiding them. On the contrary, this research found that users rather employed less confrontation coping strategies and employed more avoidance coping strategies when negative emotions were activated.

The results of this research have led to new insights regarding the indirect effects of the technology paradoxes on coping strategies through affective well-being. This implies that further research suggestions are valid. Garrity (2012) examined paradoxes and coping strategies in the field of consumer decision making. Surprisingly, the author was not able to answer whether technology paradoxes directly influenced confrontation or avoidance strategies, whilst this current research was able to do so. For instance, the technology paradoxes control/chaos and assimilation/isolation have direct effects on confrontation coping strategies. Meanwhile the technology paradoxes freedom/enslavement and assimilation/isolation have direct effects on avoidance coping strategies. This shows that paradoxes do not only impact emotions directly but also coping strategies.

This current research contributes to the literature by filling the gap by examining the relationship between the paradox concept, affective well-being and coping strategies. This research is the very first to examine technology paradoxes within the domain of SNS mobile applications on affective well-being and coping strategies. The mediation analysis provides an even more comprehensible picture of the relationships between these concepts. Also, the paradox concept on individuals has received little attention in management research, which is investigated in this current research.

5.3 Scientific and practical implications

In terms of scientific implications, this current research examined a new research model. The research validated that five technology paradoxes directly impact affective well-being, three technology paradoxes directly impact coping strategies, and four technology paradoxes indirectly impact coping strategies through affective well-being drawn from the framework by Mick and Fournier (1998). Although not all technology paradoxes were valid on both positive and negative affective well-being, it does demonstrate that technology paradoxes affect emotions and coping strategies.

Managerial implications of these results apply to business managers and SNS developers. The results found in this research suggests that SNS mobile applications are able to create positive consequences if implemented accordingly. Business managers and SNS developers need to comprehend the SNS mobile application phenomena that influence users' affective well-being and behavior responses. Business managers need to restructure business objectives and manage user experiences in a more effective way, where activities should foster positive user experiences and prevent negative user experiences, such as chaos. To obtain a sustainable and ethical business strategy, continuous innovation should be done carefully and from the user's point of view that facilitates positive feelings such as happiness, relaxation and excitement. SNS developers should pay special attention to redesigning mobile applications that reduce users' perceptions of chaos, enslavement, creation of needs, incompetence and isolation. Additionally, they should look at approaching favorable experiences such as control, freedom, fulfillment, competence and assimilation. SNS developers can with the help of these results create a more user-friendly, customized and effective mobile application. For instance, by preventing feelings of creation of needs, creating new updates should be accomplished seamlessly. In this way a minimum of new knowledge is required. Furthermore, by avoiding enslavement, communication on mobile applications should not demand a lot of time and should be easy. The SNS mobile application needs to create a fun, friendly and healthy environment for users. This will eventually lead to happier users, better customers and more profitability. Users who are able to better handle the technology paradoxes will positively interact with SNS mobile applications that eventually leads to productivity. These users are most certain to increase usage, are open to new updates and features and will generate more revenue for businesses.

5.4 Limitations and further research

Mick and Fournier (1998) suggested that mediators like emotions should be investigated to explore in-depth insights between the process from technology paradoxes to coping strategies. Therefore, the researcher took further research suggestions into consideration for examination. This current research is the very first that examined the relationship between technology paradoxes, affective well-being and coping strategies. Thereby, it is not clear if the model stemmed from statistical failure or theoretical misconceptions. The first questionable limitation involves the low Cronbach's alpha for the variable confrontation coping strategies. Due to the low score, conclusions drawn on this construct cannot be seen as highly reliable, thus might have hampered the quality of this model and research. Nevertheless, the analyzes still show significant effects, which means that the variables and the model are debatable. Moreover, the low R^2 scores on especially coping strategies indicated that the model was not able to effectively explain the constructs in the model and the effect sizes in the research were small. Surprisingly, Chae and Yeum (2011) employed the framework by Mick and Fournier (1998) as well with PLS-SEM in their research and also produced a low R^2 score of seven percent for coping strategies. This shows that future research is necessary to revisit the constructs.

The model can be further investigated with the help of qualitative research. Future research can apply a mixture of both quantitative and qualitative research methods that shed light on how SNS paradoxes are related to uncovered mechanisms such as personality characteristics. This would not only improve the model and research but with the help of quantitative research, it can help provide deeper meanings on how, why and when the effects occur. The model can be improved by applying more items per construct. Each of the existing technology paradoxes in this research applied two items, thus, a scale with more than two items might strengthen the research. This was not possible for this research due to the timespan of this research.

As stated in Chapter 3, one technology paradox was eliminated for further investigation thereby valid information was lost. Nevertheless, this current research was able to examine the remaining five technology paradoxes out of eight. The eight technology paradoxes by Mick and Fournier (1998) offers comprehensive research opportunities for future research. The researcher recommends an expansion of the technology paradoxes framework. Since the framework was created in the 80s and constant innovations are continuously evolving in technology, new paradoxes might have developed and thus the model might be outdated. For instance, Jarvenpaa and Lang (2005) found additional paradoxes such as independence/dependence, public/private, illusions/disillusions and planning/improvising.

Also, Bruzzi and Joai (2013) found an additional paradox: autonomy/addiction. This shows that a variety of technology paradoxes is present and that this framework is still relevant to date, and can be explored thoroughly. More importantly, this current research examined the short-term consequences of affective well-being and coping strategies. It would be beneficial to examine whether these strategies are stable during a longer period of time, with the help of additional technology paradoxes, as the interactive exchange of SNS users and experiences may tend to change over time (Mick & Fournier, 1998).

Further, data was collected via an online questionnaire with a sample of 209 respondents. Shortcomings of the generalizability of the results were present. The research should be extended to a larger population and across different cultures. As the majority of respondents were students, examining supplementary users' groups will strengthen this research. Additional research is necessary in terms of age or other user groups that use SNS mobile applications. Further research can look into different SNS platforms such as SnapChat, WeChat, Whatsapp, Twitter and Pinterest. These platforms may be compared with each other, to examine whether the same or different technology paradoxes are salient. This was not possible for this current research as the sample sizes of Facebook and Instagram users were not large. Additionally, future research is necessary to examine whether technology paradoxes are experienced when examining different types of technologies such as wearables and home gadgets.

These concepts may help SNS developers and business managers to nurture and foster long-term relationships with users. Even though SNS has become a well-known topic in scientific literature, insufficient research has been done on how organizations market and sell their services in the SNS industry. The researcher hopes that the results of this research raise the attention to SNS technology paradoxes and the consequences among scholars and industry practitioners. This research shows that the paradox concept is worthwhile studying through the lens of emotions and SNS mobile applications. Future research should however not only focus on other SNS related paradoxes but also focus on the underlying conditions under which these paradoxes may occur.

6. References

Babbie, E. (2013). *The Practice of Social Research* (Vol. 13). Wadsworth, United Kingdom: Cengage Learning, Incorporated.

Bleijenbergh, I. (2015). *Kwalitatief Onderzoek in Organisaties* (2nd ed., Vol. 2). Amsterdam, the Netherlands: Boom Lemma Uitgevers.

Boyd, M., & Ellison, N. B. (2008). Social Network Sites: Definition, History, and Scholarship. *Journal of Computer-Mediated Communication*, *13*(1), 210–230. https://doi.org/10.1111/j.1083-6101.2007.00393.x

Bridges, L., Margies, N., & Zaff, J. (2001). Background for Community-Level Work on Emotional Well-being in Adolescence: Reviewing the Literature on Contributing Factors. Retrieved from https://eric.ed.gov/?id=ED465453

Bruzzi, P., & Joia, L. (2015). Detecting and Sorting the Paradoxes Associated with Smartphone Use by Brazilian Professionals. Twenty-first Americas Conference on Information Systems. Retrieved from file:///C:/Users/User/Downloads/Detecting%20and%20Sorting%20the%20Paradoxes%20Associated%20with%20Smartphone%20Us%20(1).pdf

Chae, M., & Yeum, D. (2010). The Impact of Mobile Technology Paradox Perception and Personal Risk-Taking Behaviors on Mobile Technology Adoption. *International Journal of Management Science*, *16*(2), 115–138.

Chayko, M. (2014). Techno-social Life: The Internet, Digital Technology, and Social Connectedness: Techno-social Life. *Sociology Compass*, *8*(7), 976–991. https://doi.org/10.1111/soc4.12190

Cho, J. (2015). Roles of Smartphone App Use in Improving Social Capital and Reducing Social Isolation. *Cyberpsychology, Behavior, and Social Networking*, *18*(6), 350–355. https://doi.org/10.1089/cyber.2014.0657

Collin, P., Rahilly, K., Richardson, I., & Third, A. (2010). The Benefits of Social Networking Services. Retrieved from http://www.youngandwellcrc.org.au/wp-content/uploads/2014/03/The-Benefits-of-Social-Networking-Services.pdf

Corbetta, P. (2003). *Social Research: Theory, Methods and Techniques*. London, United Kingdom: Sage Publications, Limited. https://doi.org/10.4135/9781849209922

Deci, E. L., & Ryan, R. M. (1987). The Support of Autonomy and the Control of Behavior. *Journal of Personality and Social Psychology*, *53*(6), 1024–1037. https://doi.org/10.1037/0022-3514.53.6.1024

Dogtiev. (2019). App Download and Usage Statistics (2018) - Business of Apps. Retrieved February 19, 2019, from http://www.businessofapps.com/data/app-statistics/

Ekkekakis, Panteleimon. (2012). *The Measurement of Affect, Mood, and Emotion: A Guide for Health-Behavioral Research* (17th ed.). Cambridge, United Kingdom: Cambridge University Press.

Field, A. (2013). *Discovering Statistics Using IBM SPSS Statistics* (4th ed.). London, United Kingdom: Sage Publications Limited.

Fredrickson, B. L. (2001). The Role of Positive Emotions in Positive Psychology: The Broaden-and-Build Theory of Positive Emotions. *American Psychologist*, *56*(3), 218–226. https://doi.org/10.1037/0003-066x.56.3.218

Frijda, N. (2009). Emotion Experience and its Varieties. *Emotion Review*, *1*(3), 264–271. https://doi.org/10.1177/1754073909103595

Garrity, C. (2012). Paradoxes and Consumer Decision Making. Retrieved from https://www.researchgate.net/publication/272506336_Paradoxes_and_Consumer_Decision_Making

Global Mobile Consumer Trends, 2nd Edition. (2017). Retrieved February 19, 2019, from https://www2.deloitte.com/global/en/pages/technology-media-and-telecommunications/articles/gx-global-mobile-consumer-trends.html

Hair, J. F., Black, W., Babin, B., & Anderson, S. (Ed.). (2014). *Multivariate Data Analysis* (7th ed.). Harlow, United Kingdom: Pearson New International.

Henseler, J., Hubona, G., & Ray, P. A. (2016). Using PLS Path Modeling in New Technology Research: Updated Guidelines. *Industrial Management & Data Systems*, *116*(1), 2–20. https://doi.org/10.1108/IMDS-09-2015-0382

Johnson, D. S., Bardhi, F., & Dunn, D. T. (2008). Understanding How Technology Paradoxes Affect Customer Satisfaction with Self-Service Technology: The Role of Performance Ambiguity and Trust in Technology. *Psychology and Marketing*, *25*(5), 416–443. https://doi.org/10.1002/mar.20218

Johnson, E. J., & Payne, J. W. (1985). Effort and Accuracy in Choice. *Management Science*, *31*(4), 395–414. https://doi.org/10.1287/mnsc.31.4.395

Kallas, P. (2018). Top 15 Most Popular Social Networking Sites and Apps [August 2018] @DreamGrow. Retrieved February 19, 2019, from https://www.dreamgrow.com/top-15-most-popular-social-networking-sites/

Klintwort, L. (2018). Blessing or Curse: The Paradoxical Impact of Mobile Health Applications on the Consumer. Retrieved from file:///C:/Users/User/Downloads/Klintwort,_Lisa_1%20(1).pdf

Kopp, C. B. (1989). Regulation of Distress and Negative Emotions: A Developmental View. *Developmental Psychology*, *25*(3), 343–354. https://doi.org/10.1037/0012-1649.25.3.343

Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukophadhyay, T., & Scherlis, W. (1998). Internet Paradox: A Social Technology that Reduces Social Involvement and Psychological Well-being? *American Psychologist*, *53*(9), 1017–1031. https://doi.org/10.1037/0003-066x.53.9.1017

Lazarus, R. S. (2006). Emotions and Interpersonal Relationships: Toward A Person-Centered Conceptualization of Emotions and Coping. *Journal of Personality*, *74*(1), 9–46. https://doi.org/10.1111/j.1467-6494.2005.00368.x

Lazarus, R. S., & Folkman, S. (1987). Transactional Theory and Research on Emotions and Coping. *European Journal of Personality*, *1*(3), 141–169. https://doi.org/10.1002/per.2410010304

Lee, E., Lee, J.-A., Moon, J. H., & Sung, Y. (2015). Pictures Speak Louder Than Words: Motivations for Using Instagram. *Cyberpsychology, Behavior, and Social Networking*, *18*(9), 552–556. https://doi.org/10.1089/cyber.2015.0157

Lewis, M. W., & Smith, W. K. (2014). Paradox as a Metatheoretical Perspective: Sharpening the Focus and Widening the Scope. *The Journal of Applied Behavioral Science*, *50*(2), 127–149. https://doi.org/10.1177/0021886314522322

Luhmann, M., Hawkley, L. C., Eid, M., & Cacioppo, J. T. (2012). Time Frames and the Distinction between Affective and Cognitive Well-being. *Journal of Research in Personality*, *46*(4), 431–441. https://doi.org/10.1016/j.jrp.2012.04.004

Lup, K., Trub, L., & Rosenthal, L. (2015). Instagram #Instasad?: Exploring Associations Among Instagram Use, Depressive Symptoms, Negative Social Comparison, and Strangers Followed. *Cyberpsychology, Behavior, and Social Networking*, *18*(5), 247–252. https://doi.org/10.1089/cyber.2014.0560

Maier, C., Laumer, S., Eckhardt, A., & Weitzel, T. (2012). Online Social Networks as a Source and Symbol of Stress: An Empirical Analysis. In *Proceedings of the 33rd International Conference on Information Systems (ICIS)*. Bamberg, Germany.

Mick, D. G., & Fournier, S. (1998). Paradoxes of Technology: Consumer Cognizance, Emotions, and Coping Strategies. *Journal of Consumer Research*, *25*(2), 123–143. https://doi.org/10.1086/209531

Munene, C., Pettigrew, S., & Mizerski, K. (2002). Paradoxes and Technology Adoption: A Retail Banking Analysis. *Asia Pacific Advances in Consumer Research*. Retrieved from http://acrwebsite.org/volumes/11831/volumes/ap05/AP-05

Namasivayam, K. (2004). Action Control, Proxy Control, and Consumers' Evaluations of the Service Exchange. *Psychology and Marketing*, *21*(6), 463–480. https://doi.org/10.1002/mar.20014

O'Reilly, C. A., & Tushman, M. L. (2013). Organizational Ambidexterity: Past, Present, and Future. *Academy of Management Perspectives*, *27*(4), 324–338. https://doi.org/10.5465/amp.2013.0025

Punch, K. (2003). *Survey Research*. London, United Kingdom: Sage Publications Limited. https://doi.org/10.4135/9781849209984

Qualtrics. (2019). The Leading Research & Experience Software | Qualtrics. Retrieved March 6, 2019, from https://www.qualtrics.com/

Quan-Haase, A., & Young, A. L. (2010). Uses and Gratifications of Social Media: A Comparison of Facebook and Instant Messaging. *Bulletin of Science, Technology & Society*, *30*(5), 350–361. https://doi.org/10.1177/0270467610380009

Quinn, R., & Cameron, K. (1998). *Paradox and Transformation: Toward a Theory of Change in Organization and Management*. Cambridge, Massachusetts: Ballinger Publishing Corporation.

Raisch, S., Birkinshaw, J., Probst, G., & Tushman, M. L. (2009). Organizational Ambidexterity: Balancing Exploitation and Exploration for Sustained Performance. *Organization Science*, *20*(4), 685–695. https://doi.org/10.1287/orsc.1090.0428

Russell, J. A., & Barrett, L. F. (1999). Core Affect, Prototypical Emotional Episodes, and Other Things Called Emotion: Dissecting the Elephant. *Journal of Personality and Social Psychology*, *76*(5), 805–819. https://doi.org/10.1037/0022-3514.76.5.805

Salehan, M., & Negahban, A. (2013). Social Networking on Smartphones: When Mobile Phones Become Addictive. *Computers in Human Behavior*, *29*(6), 2632–2639. https://doi.org/10.1016/j.chb.2013.07.003

Schad, J., Lewis, M. W., Raisch, S., & Smith, W. K. (2016). Paradox Research in Management Science: Looking Back to Move Forward. *The Academy of Management Annals*, *10*(1), 5–64. https://doi.org/10.1080/19416520.2016.1162422

Schiffman, L. G., Sherman, E., & Long, M. M. (2003). Toward a Better Understanding of the Interplay of Personal Values and the Internet. *Psychology and Marketing*, *20*(2), 169–186. https://doi.org/10.1002/mar.10066

Shi, Y., Luo, Y. L. L., Liu, Y., & Yang, Z. (2018). Affective Experience on Social Networking Sites Predicts Psychological Well-Being Off-Line. *Psychological Reports*, *0*(0), 1-12 https://doi.org/10.1177/0033294118789039

Singh, K. (2007). *Quantitative Social Research Methods*. New Delhi, India: Sage Publications India Private Limited. https://doi.org/10.4135/9789351507741

Smith, W. K., & Lewis, M. W. (2011). Toward a Theory of Paradox: A Dynamic Equilibrium Model of Organizing. *Academy of Management Review*, *36*(2), 381–403. https://doi.org/10.5465/AMR.2011.59330958

Statista. (2018, September 13). 25 Mobile App Usage Statistics To Know In 2019. Retrieved February 19, 2019, from https://mindsea.com/app-stats/

Tarafdar, M., Tu, Q., Ragu-Nathan, T. S., & Ragu-Nathan, B. S. (2011). Crossing to the Dark Side: Examining Creators, Outcomes, and Inhibitors of Technostress. *Communications of the ACM*, *54*(9), 113. https://doi.org/10.1145/1995376.1995403

Tomkins, S. (1980). Chapter 6: Affect as Amplification: Some Modifications in Theory. In *Emotion: Theory, Research, and Experience* (1st ed., Vol. 1, pp. 141–155). London: United Kingdom: Academic Press.

Yi, & Baumgartner. (2014). Coping with Negative Emotions in Purchase-Related Situations. *Journal of Consumer Pyschology*, *14*(3), 303–317. https://sci-hub.tw/10.2307/1480619

Zhuang, W., Hsu, M. K., Brewer, K. L., & Xiao, Q. (2012). Paradoxes of Social Networking Sites: an Empirical Analysis. *Management Research Review*, *36*(1), 33–49. https://doi.org/10.1108/01409171311284576

7. Appendix

7.1 Appendix A

Table 1: Eight technology paradoxes by Mick and Fournier (1998)

Technology Paradox	Description
Control/Chaos	Technology can facilitate control and order, and it can lead to chaos and disorder.
Freedom/Enslavement	Technology can facilitate independence or it can lead to dependence.
Competence/Incompetence	Technology can facilitate feelings of competence or it can lead to feelings of incompetence
Efficiency/Inefficiency	Technology can facilitate less time spent on activities or it can demand more time spent on activities
Fulfillment/Creates needs	Technology can facilitate satisfaction of needs or it can lead to creating more needs
Assimilation/ Isolation	Technology can facilitate togetherness among people or it can lead to separation among people
**Engaging/ Disengaging*	*Technology can facilitate connection or it can lead to disconnection*
**New/Obsolete*	*New technologies provide users with advanced features and benefits, or it can be outdated as soon as it hits the market.*

* Paradoxes engaging/disengaging and new/obsolete were excluded from this research due to lack of concreteness and irrelevancy.

7.2 Appendix B

Dear respondent,

Thank you for participating in this research. For my studies at Radboud University, I am conducting research about Social Networking Services (SNS). This research examines how users like you handle SNS mobile applications, such as Facebook and Instagram. Therefore, I would like to receive your perception and opinions about the mobile application. There are no right or wrong answers.

The survey is anonymous and the data will be handled with strict confidentiality. The survey will approximately take about 5 minutes to complete and it includes different themes. Your participation in this survey is completely voluntary. By continuing you indicate your agreement with participation.

The survey will start now.

Thank you for your participation.

Best,

Lilly Assigbetse

---

1. Which SNS mobile applications do you use?

Instagram
Facebook
Both Instagram and Facebook
None of the above

---

2. What is your gender?

Female
Male

---

3. How often do you use Facebook?

A few times an hour, or more
About once an hour
A few times a day
About once a day
Once every two, three days, or less

---

4. How often do you use Instagram?

A few times an hour, or more
About once an hour
A few times a day
About once a day
Once every two, three days, or less

---

5. What is your age?

Under 18
18-24
25-30
31-35
36-40
41-60
61 +

6. What is your profession?

Employed for wages
Self-employed
Student
Unemployed
Retired
Other

For each of the questions below circle the response from 1 to 7 that characterizes most how you feel about the statement.

		Strongly agree	Agree	I agree with both statements	Agree	Strongly agree		
7.	I have control over this app	1	2	3	4	5	8.	This app has control over me
9.	Using this app is within my control	1	2	3	4	5	10.	Using this app is beyond my control

		Strongly agree	Agree	I agree with both statements	Agree	Strongly agree		
11.	I do not check this app every day	1	2	3	4	5	12.	I do check this app every day
13.	I do not feel out of touch when I have not logged into this app for a day	1	2	3	4	5	14.	I do feel out of touch when I have not logged into this app for a day

		Strongly agree	Agree	I agree with both statements	Agree	Strongly agree		
15.	This application makes me feel intelligent	1	2	3	4	5	16.	This application makes me feel dumb
17.	Using this app makes me feel competent	1	2	3	4	5	18.	Using this app makes me feel incompetent

		Strongly agree	Agree	I agree with both statements	Agree	Strongly agree		
19.	Using this app takes little effort	1	2	3	4	5	20.	Using this app takes a lot of effort
21.	Using this app takes little of my time	1	2	3	4	5	22.	Using this app takes a lot of my time

		Strongly agree	Agree	I agree with both statements	Agree	Strongly agree		
23.	This app fulfils my needs	1	2	3	4	5	24.	This app creates more needs
25.	This app makes my life easier	1	2	3	4	5	26.	This app makes my life difficult

		Strongly agree	Agree	I agree with both statements	Agree	Strongly agree		
27.	I feel more connected with people when I am using this app	1	2	3	4	5	28.	I feel more disconnected with people when I am using this app
29.	This app encourages me to interact with others	1	2	3	4	5	30.	This app causes me to withdraw from human interactions

For each of the questions below circle the response that characterizes how you feel about the statement, where 1 = Strongly agree, 2 = Agree, 3 = Neither did agree nor disagree, 4 = Disagree, 5 = Strongly disagree.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
31. This app makes me feel happy	1	2	3	4	5
32. Using this app makes me feel relaxed	1	2	3	4	5
33. Using this app makes me feel excited	1	2	3	4	5
34. This app makes me feel anxious	1	2	3	4	5
35. Using this app makes me feel sad	1	2	3	4	5
36. This app makes me feel stressed	1	2	3	4	5

For each of the questions below circle the response that characterizes how you feel about the statement, where 1 = Strongly Agree, 2 = Agree, 3 = Neither agree nor Disagree, 4 = Disagree, 5 = Strongly disagree.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
37. I have lost interest in this application	1	2	3	4	5
38. If I have enough of this application, I sometimes log off	1	2	3	4	5
39. I have developed strict rules when I can use and not use this application	1	2	3	4	5
40. I accept this application	1	2	3	4	5
41. The more I use this application the more it means to me	1	2	3	4	5
42. I have learned how to use this application and it is fully within my control	1	2	3	4	5

This is the end of the questionnaire. Thank you so much for your participation.

Best,

Lilly Assigbetse

7.3 Appendix C

Paradoxes differences and strengths (absolute value and percentage)

Statistics

		FE_1	FE_2	CC_1	CC_2	EI_1	EI_2	FC_1	FC_2	CI_1	CI_2	AI_1	AI_2
N	Valid	209	209	209	209	209	209	209	209	209	209	209	209
	Missing	0	0	0	0	0	0	0	0	0	0	0	0
Mean		3,9043	2,2201	2,4211	2,2153	3,0957	2,1914	3,1292	2,7225	3,0335	2,8565	2,8134	2,8660
Median		4,0000	2,0000	2,0000	2,0000	3,0000	2,0000	3,0000	3,0000	3,0000	3,0000	3,0000	3,0000
Mode		5,00	2,00	2,00	2,00	2,00	2,00	3,00	3,00	3,00	3,00	3,00	3,00
Std. Deviation		1,25209	1,08281	1,03531	1,01269	1,22098	,97651	,99400	,85458	,84571	,74580	1,04173	1,07919
Skewness		-,871	,676	,607	,959	,039	,827	,123	,334	,177	,309	,226	,200
Std. Error of Skewness		,168	,168	,168	,168	,168	,168	,168	,168	,168	,168	,168	,168
Kurtosis		-,444	-,225	-,259	,619	-1,171	,247	-,755	,187	,101	,616	-,384	-,521
Std. Error of Kurtosis		,335	,335	,335	,335	,335	,335	,335	,335	,335	,335	,335	,335
Minimum		1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
Maximum		5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00

Note: CC = Control/Chaos, FE = Freedom/Enslavement, FC= Fullfillment/ Creation of needs, CI = Competence/Incompetence and AI = Assimilation/Isolation.

7.4 Appendix D

Correlation matrix: technology paradoxes

Correlation Matrix[a]

		CC_1	CC_2	FE_1	FE_2	EI_1	EI_2	FC_1	FC_2	CI_1	CI_2	AI_1	AI_2
Correlation	CC_1	1,000	,495	,254	,243	,424	,200	,218	,165	,044	-,021	,162	,055
	CC_2	,495	1,000	,270	,373	,438	,376	,230	,203	,222	,258	,211	,202
	FE_1	,254	,270	1,000	,324	,317	,031	,060	,024	,094	-,154	,071	,015
	FE_2	,243	,373	,324	1,000	,300	,346	-,040	,040	,097	,170	,190	,132
	EI_1	,424	,438	,317	,300	1,000	,267	,323	,141	,076	,100	,203	,105
	EI_2	,200	,376	,031	,346	,267	1,000	,093	,110	,056	,236	,101	,088
	FC_1	,218	,230	,060	-,040	,323	,093	1,000	,388	,246	,213	,302	,178
	FC_2	,165	,203	,024	,040	,141	,110	,388	1,000	,292	,329	,314	,314
	CI_1	,044	,222	,094	,097	,076	,056	,246	,292	1,000	,374	,253	,121
	CI_2	-,021	,258	-,154	,170	,100	,236	,213	,329	,374	1,000	,287	,388
	AI_1	,162	,211	,071	,190	,203	,101	,302	,314	,253	,287	1,000	,623
	AI_2	,055	,202	,015	,132	,105	,088	,178	,314	,121	,388	,623	1,000
Sig. (1-tailed)	CC_1		,000	,000	,000	,000	,002	,001	,008	,262	,382	,009	,214
	CC_2	,000		,000	,000	,000	,000	,000	,002	,001	,000	,001	,002
	FE_1	,000	,000		,000	,000	,329	,193	,362	,088	,013	,153	,413
	FE_2	,000	,000	,000		,000	,000	,283	,281	,081	,007	,003	,028
	EI_1	,000	,000	,000	,000		,000	,000	,021	,137	,076	,002	,066
	EI_2	,002	,000	,329	,000	,000		,090	,056	,209	,000	,072	,102
	FC_1	,001	,000	,193	,283	,000	,090		,000	,000	,001	,000	,005
	FC_2	,008	,002	,362	,281	,021	,056	,000		,000	,000	,000	,000
	CI_1	,262	,001	,088	,081	,137	,209	,000	,000		,000	,000	,041
	CI_2	,382	,000	,013	,007	,076	,000	,001	,000	,000		,000	,000
	AI_1	,009	,001	,153	,003	,002	,072	,000	,000	,000	,000		,000
	AI_2	,214	,002	,413	,028	,066	,102	,005	,000	,041	,000	,000	

a. Determinant = ,052

Note: CC = Control/Chaos, FE = Freedom/Enslavement, EI = Efficiency/Inefficiency, FC= Fulfillment/ Creation of needs, CI = Competence/Incompetence and AI = Assimilation/Isolation.

Correlation matrix: affective well-being and coping strategies

Correlation Matrix[a]

		Nawb1 Stress	Nawb2 Anxious	Nawb3 Sad	Pawb1 Happy	Pawb2 Relaxed	Pawb3 Excited	Av1 Neglect	Av2 Abondoment	Av3 Distance	Con1 Accomodation	Con2 Partnering	Con3 Mastering
Correlation	Nawb1 Stress	1,000	,531	,443	-,133	-,236	,123	,226	,121	,104	-,128	,006	-,273
	Nawb2 Anxious	,531	1,000	,544	-,047	-,145	,062	,254	,264	,192	-,126	,094	-,308
	Nawb3 Sad	,443	,544	1,000	-,056	-,081	,130	,234	,170	,293	-,132	,199	-,230
	Pawb1 Happy	-,133	-,047	-,056	1,000	,554	,520	-,204	-,197	,087	,293	,310	,175
	Pawb2 Relaxed	-,236	-,145	-,081	,554	1,000	,379	-,145	-,126	,021	,219	,149	,150
	Pawb3 Excited	,123	,062	,130	,520	,379	1,000	-,167	-,124	,068	,235	,294	,050
	Av1 Neglect	,226	,254	,234	-,204	-,145	-,167	1,000	,198	,213	-,281	-,198	-,040
	Av2 Abondoment	,121	,264	,170	-,197	-,126	-,124	,198	1,000	,343	-,217	-,227	-,007
	Av3 Distance	,104	,192	,293	,087	,021	,068	,213	,343	1,000	-,220	,123	-,071
	Con1 Accomodation	-,128	-,126	-,132	,293	,219	,235	-,281	-,217	-,220	1,000	,328	,342
	Con2 Partnering	,006	,094	,199	,310	,149	,294	-,198	-,227	,123	,328	1,000	-,018
	Con3 Mastering	-,273	-,308	-,230	,175	,150	,050	-,040	-,007	-,071	,342	-,018	1,000
Sig. (1-tailed)	Nawb1 Stress		,000	,000	,027	,000	,038	,000	,041	,067	,033	,468	,000
	Nawb2 Anxious	,000		,000	,249	,018	,186	,000	,000	,003	,034	,088	,000
	Nawb3 Sad	,000	,000		,211	,121	,030	,000	,007	,000	,029	,002	,000
	Pawb1 Happy	,027	,249	,211		,000	,000	,001	,002	,104	,000	,000	,006
	Pawb2 Relaxed	,000	,018	,121	,000		,000	,018	,034	,383	,001	,016	,015
	Pawb3 Excited	,038	,186	,030	,000	,000		,008	,037	,163	,000	,000	,234
	Av1 Neglect	,000	,000	,000	,001	,018	,008		,002	,001	,000	,002	,281
	Av2 Abondoment	,041	,000	,007	,002	,034	,037	,002		,000	,001	,000	,462
	Av3 Distance	,067	,003	,000	,104	,383	,163	,001	,000		,001	,039	,153
	Con1 Accomodation	,033	,034	,029	,000	,001	,000	,000	,001	,001		,000	,000
	Con2 Partnering	,468	,088	,002	,000	,016	,000	,002	,000	,039	,000		,398
	Con3 Mastering	,000	,000	,000	,006	,015	,234	,281	,462	,153	,000	,398	

a. Determinant = ,052

Note: Pawb = Positive affective well-being, Nawb = Negative affective well-being, Con = Confrontation coping strategies, Av = Avoidance coping strategies.

Kmo and Barlett's test

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,719
Bartlett's Test of Sphericity	Approx. Chi-Square	599,408
	df	66
	Sig.	,000

Total Variance Explained: 12 items

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	3,344	27,866	27,866	3,344	27,866	27,866	2,125
2	1,881	15,672	43,537	1,881	15,672	43,537	2,206
3	1,193	9,945	53,482	1,193	9,945	53,482	2,083
4	1,071	8,921	62,403	1,071	8,921	62,403	2,159
5	,957	7,973	70,376				
6	,679	5,662	76,038				
7	,652	5,430	81,468				
8	,560	4,670	86,139				
9	,517	4,310	90,449				
10	,464	3,866	94,315				
11	,386	3,217	97,532				
12	,296	2,468	100,000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Pattern Matrix: 12 items

Pattern Matrix[a]

	Component			
	1	2	3	4
FE_1		,722		
FE_2	-,360	,312	,602	
CC_1		,693		
CC_2		,462	,496	
EI_1		,654		
EI_2			,810	
FC_1	,781			
FC_2	,644			
CI_1	,547			
CI_2	,366	-,394	,519	
AI_1				,834
AI_2				,903

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 15 iterations.

KMO and Barlett's Test (after deletion technology paradox efficiency/inefficiency)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,670
Bartlett's Test of Sphericity	Approx. Chi-Square	460,818
	df	45
	Sig.	,000

Total Variance Explained (after deletion technology paradox efficiency/inefficiency)

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	2,942	29,417	29,417	2,942	29,417	29,417	2,295
2	1,683	16,834	46,251	1,683	16,834	46,251	2,049
3	1,112	11,117	57,368	1,112	11,117	57,368	1,972
4	,994	9,942	67,310				
5	,839	8,388	75,698				
6	,632	6,323	82,021				
7	,577	5,771	87,792				
8	,525	5,252	93,044				
9	,397	3,973	97,017				
10	,298	2,983	100,000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Pattern Matrix: 10 items (after deletion technology paradox efficiency/inefficiency)

Pattern Matrix[a]

	Component		
	1	2	3
CC_1		,708	
CC_2		,687	
FE_1		,709	
FE_2		,654	
FC_1			,806
FC_2			,643
CI_1			,483
CI_2	,634		
AI_1	,728		
AI_2	,853		

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 11 iterations.

KMO and Barlett's Test: positive affective well-being

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,654
Bartlett's Test of Sphericity	Approx. Chi-Square	144,044
	df	3
	Sig.	,000

Total Variance Explained: positive affective well-being

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1,973	65,758	65,758	1,973	65,758	65,758
2	,622	20,736	86,494			
3	,405	13,506	100,000			

Extraction Method: Principal Component Analysis.

KMO and Barlett's Test: negative affective well-being

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,682
Bartlett's Test of Sphericity	Approx. Chi-Square	150,352
	df	3
	Sig.	,000

Total Variance Explained: negative affective well-being

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,013	67,092	67,092	2,013	67,092	67,092
2	,557	18,579	85,671			
3	,430	14,329	100,000			

Extraction Method: Principal Component Analysis.

KMO and Barlett's Test: avoidance coping strategies

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,588
Bartlett's Test of Sphericity	Approx. Chi-Square	39,337
	df	3
	Sig.	,000

Total Variance Explained: avoidance coping strategies

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1,510	50,321	50,321	1,510	50,321	50,321
2	,834	27,811	78,132			
3	,656	21,868	100,000			

Extraction Method: Principal Component Analysis.

KMO and Barlett's Test: confrontation coping strategies (three items)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,442
Bartlett's Test of Sphericity	Approx. Chi-Square	53,579
	df	3
	Sig.	,000

Pattern Matrix: confrontation coping strategies

Pattern Matrix[a]

	Component	
	1	2
Mean_Accomodation Accomodation	,599	-,546
Mean_Mastering Mastering	,938	
Partnering Partnering		,944

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 11 iterations.

KMO and Barlett's Test: confrontation coping strategies (two items)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,500
Bartlett's Test of Sphericity	Approx. Chi-Square	25,653
	df	1
	Sig.	,000

Total Variance Explained: confrontation coping strategies (two items)

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1,342	67,089	67,089	1,342	67,089	67,089
2	,658	32,911	100,000			

Extraction Method: Principal Component Analysis.

7.5 Appendix E

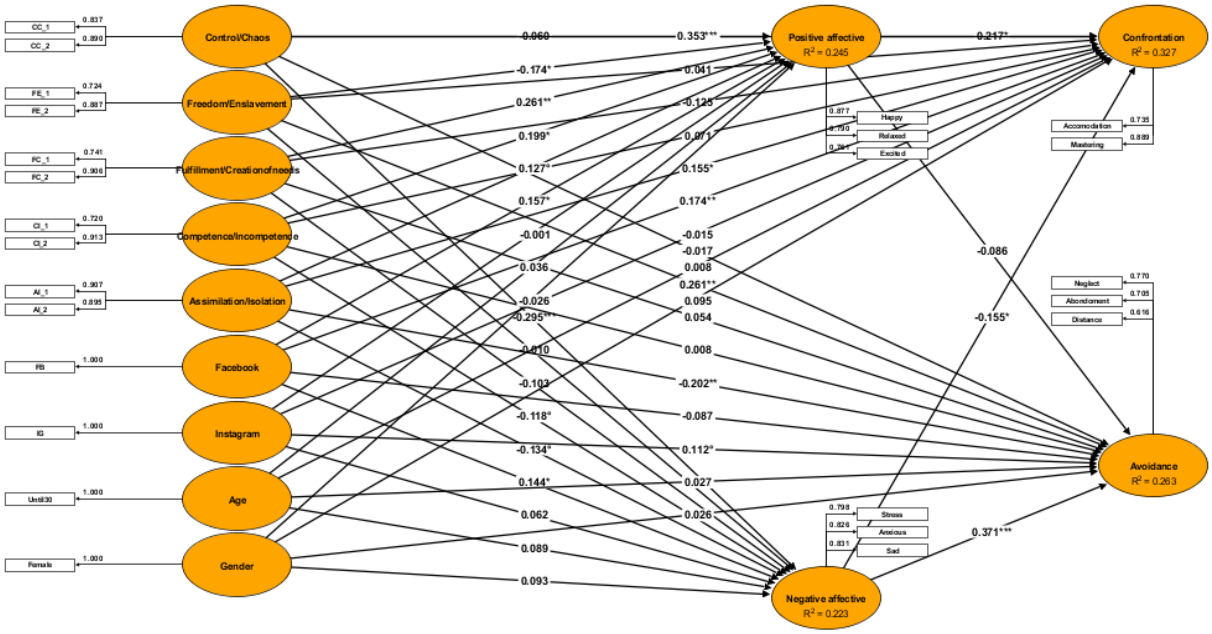

Figure 2: Research model in ADANCO

Table 13: Loadings for the latent variables

Latent variable	Indicator	Loadings
Control/Chaos	Item 1	.836
	Item 2	.890
Freedom/Enslavement	Item 1	.724
	Item 2	.887
Fulfillment/Creation of needs	Item 1	.740
	Item 2	.906
Competence/Incompetence	Item 1	.719
	Item 2	.912
Assimilation/Isolation	Item1	.907
	Item 2	.894
Positive affective well-being	Item 1	.873
	Item 2	.788
	Item 3	.766
Negative affective well-being	Item 1	.797
	Item 2	.825
	Item 3	.831
Avoidance coping strategies	Item 1	.781
	Item 2	.687
	Item 3	.617
Confrontation coping strategies	Item 1	.739
	Item 2	.885
Under30	Item 1	1.000
Above31	Item 1	1.000
Female	Item 1	1.000
Male	Item 1	1.000
Facebook	Item 1	1.000
Instagram	Item 1	1.000
Both app users	Item 1	1.000

7.6 Appendix F

Integrity form

Research Integrity Form - Master thesis

Name: Lilly Assigbetse	Student number: S1008404
RU e-mail address: e.assigbetse@student.ru.nl	Master specialisation: Business Administration: Marketing

Thesis title: What kind of SNS mobile application paradoxes do users encounter and what effects do these technological paradoxes have on their affective well-being and coping strategies?
Brief description of the study: This research aims to examine how paradoxes within the domain of SNS mobile applications affect users' affective well-being and how these paradoxes affect behavioral coping strategies.

It is my responsibility to follow the university's code of academic integrity and any relevant academic or professional guidelines in the conduct of my study. This includes:

- providing original work or proper use of references;
- providing appropriate information to all involved in my study;
- requesting informed consent from participants;
- transparency in the way data is processed and represented;
- ensuring confidentiality in the storage and use of data;

If there is any significant change in the question, design or conduct over the course of the research, I will complete another Research Integrity Form.

Breaches of the code of conduct with respect to academic integrity (as described / referred to in the thesis handbook) should and will be forwarded to the examination board. Acting contrary to the code of conduct can result in declaring the thesis invalid

Student's Signature: _____ **Date:** 14-6-2019

To be signed by supervisor

I have instructed the student about ethical issues related to their specific study. I hereby declare that I will challenge him / her on ethical aspects through their investigation and to act on any violations that I may encounter.

Supervisor's Signature: _____ **Date:** 9-6-2019