



# **OLDER ADULTS' RESPONSE TO SOCIAL MEDIA ADS**

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## **ABSTRACT**

Despite the fast growth of social media advertising and its global impact on the consumption behaviour of young adults, little is known about the performance of social media ads among older adults. According to the Socioemotional Selectivity Theory, people of different ages prioritize different types of goals. In view of this, this dissertation investigates differences in responses to affective and rational social media ads among older adults (60+) by experimentally exposing them to advertising in Facebook about a social (hedonic) app. Results reveal that affective ad appeals have a more positive impact on older adults' responses to social media ads than rational ones. Therefore, it can be concluded that older adults are indeed more responsive to social media ads focused on attaining emotional meaning in life than those offering solutions to practical (e.g., informational) needs. Among these, women seem to be even more prone to ads based on affective appeal than men. Therefore, a higher success rate in terms of engagement will be obtained by targeting women with affective ad appeals.

## **SUMÁRIO**

Apesar do rápido crescimento da publicidade nas das redes sociais e do seu impacto global nos hábitos de consumo dos jovens adultos, pouco se sabe sobre o desempenho destes anúncios entre os mais adultos. De acordo com a teoria da seletividade socioemocional, pessoas com idades diferentes dão prioridade a diferentes tipos de objetivos. Nesse sentido, esta dissertação investiga as diferenças nas respostas dos idosos (60+) a anúncios afetivos e racionais através das redes sociais, expondo-os à publicidade de um app Social (hedónico) no Facebook. Os resultados revelam que os anúncios afetivos têm um impacto mais positivo nas respostas dos idosos aos anúncios das redes sociais do que os racionais. Portanto, pode-se concluir que os mais adultos são realmente mais sensíveis aos anúncios das redes sociais mais focados em atingir significados emocionais, comparando com anúncios que oferecem soluções para necessidades mais práticas (ex. informacionais). Para além disso, as mulheres parecem ser ainda mais abertas a anúncios de apelo afetivo do que os homens. Portanto, prevê-se uma maior taxa de sucesso nas campanhas de publicidade se se investir em anúncios de carácter afectivo tendo as mulheres como público alvo.

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## GLOSSARY

**CPC:** Cost-per-click (CPC) is an online payment model where advertisers pay for each click-through their ad receives.

**CTR:** Click-through-rate (CTR) is a performance metric that indicates the ratio of users that clicked on an advertisement. It is defined as  $CTR = \frac{Clicks}{Impressions} \times 100$

**ER:** Engagement rate (ER) is the percentage of users, who saw a post that shared, liked or commented on it.

**SEST:** The SocioEmotional Selectivity Theory (SEST) predicts that as humans age, they attach more importance to goals aimed at deriving emotional meaning from life than to those that enhance future preparedness.

**SNM:** Social networked media (SNM) are media containing a social structure made up of a set of social actors.

# CHAPTER 1: INTRODUCTION

## 1.1 Background and problem statement

In a time where the only permanent certainty is change, marketing has to continuously adapt to stay innovative and relevant. Marketers are increasingly confronted with the new possibilities offered by social networked media (SNM), which emerged recently through the internet and currently reach billions of people worldwide. Importantly, SNM are increasingly complementing traditional advertising channels. In many instances, they can drastically reduce advertising costs, while providing impactful consumer contact by means of highly efficient targeting (Barreto, 2013; Logan, Bright, & Gangadharbatla, 2012). SNM marketing has hence become part of the agenda of corporate decision makers, as it enables companies to interact with customers in a direct way and effectively persuade users to purchase promoted offers (Kaplan & Haenlein, 2010; Neti, 2011). Despite the fast growth of SNM and its global impact on consumers' attitudes and behaviours, not many researchers have yet contributed meaningfully to the assessment of their advertising effectiveness (Deraz & Baffour, 2015).

Marketing is also only at the exploratory stage when it comes to understanding older segments of population and the fulfilment of their consumption needs (Kohlbacher & Hang, 2011; Xie, Watkins, Golbeck, & Huang, 2012). The Western world is facing a dramatic demographic change – the ageing or greying phenomenon -, but advertisers remain reluctant to market their offers to seniors (Niemelä-Nyrhinen, 2007; Reisenwitz & Iyer, 2007; Van Auken & Barry, 2009; WHO, 2015). Both advertisers and researchers have hypothesized that seniors might differ in their emotional judgment from younger generations, as they attach more importance to goals aimed at deriving emotional meaning from life than those enhancing future preparedness (Carstensen, Fung, & Charles, 2003). Nevertheless, only a couple of studies have addressed how older adults react to advertising so far, particularly when compared to younger audiences. These showed that seniors indeed significantly differ from younger generations in their response to different advertising appeals (Drolet, Williams, & Lau-gesk, 2007; Fung & Carstensen, 2003). Still, little guidance has been provided on how to appropriately target them based on this evidence.

Albeit at a slower rate than other consumer groups, seniors are more and more adopting the Internet, SNM and online shopping. It becomes therefore increasingly relevant for firms and brands to learn more about their online behaviour (Niemelä-Nyrhinen, 2007). A better understanding of the link between social media ads and older consumer segments is becoming

relevant not only due to demographic changes, but also due to the high purchasing power of this growing share of the population (Niemelä-Nyrhinen, 2007). To the best of my knowledge, no study has yet examined the specific impact of different types of social media ad appeals on older adults' online consumption behaviour.

## **1.2 Aims and scope**

The overall aim of this dissertation is to assess the effectiveness of advertisement targeting of older adults in SNM. To this end, it seeks to answer two specific research questions:

RQ1: What types of advertising appeals are perceived to be more engaging by older adults in a SNM context?

RQ2: How does age moderate the impact of different appeals on advertising performance in SNM?

In order to answer these questions and achieve the overall goal of the dissertation, some relevant research boundaries were preliminary defined. Following World Health Organization (2016) guidelines, older adults were considered to be people over 59 years (WHO, 2016) and elderly consumers are classified by the age of 65 (Drolet et al., 2007; Roebuck, 1979). To comply with the guidelines and resolve the above mentioned inquiries, responses to advertisement campaigns of older adults over 59 years were analysed. Due to the increasing usage of social media in this segment, the ads were displayed in the biggest social network Facebook (Facebook, 2016).

Since my company, the Flovision GmbH, offers a social network for older adults in form of a mobile application in the Google Play Store, I could select this native app for the analysis of older adults' response to social media ads about it. Due to the ease of applying campaigns and collecting data through paid Facebook ads, the "Seniorenchat App" (English: "Senior chat app") was used as promoted product. As this app is only available in the German language, only German-speaking Facebook users living currently in Germany were targeted. Finally, the ad was made visible only for Android phone users, and not for users of other operating systems or on the desktop, to make sure that only those older adults having access to an Android phone, and consequently the Google Play Store, were targeted.

The ad response behaviour of the older adults was analysed by means of designing and placing Facebook ads with three different message appeals, namely rational, affective and neutral (control), in a longitudinal field experiment. These appeals were chosen because age is known to differentially moderate senior consumers' responses to rational and affective ads (Carstensen et al., 2003; Drolet et al., 2007). This study did not aim at measuring consumers' reactions towards branded Facebook content or to analyse content posted by consumers on social media, on which most dissertations in this area focus, but rather to assess actual ad response behaviour by measuring engagement metrics such as likes, shares or comments, as well as click-through metrics such as click-through-rate and cost-per-click.

### **1.3 Research methods**

This dissertation undertook an exploratory approach aiming at testing the effects of different ad appeals on social media ad performance, particularly when moderated by age. To this end, primary quantitative data was collected through the performance of a longitudinal field experiment on Facebook over a period of 3 weeks (16.04.2016 – 03.05.2016). A within-between, 2x3 mixed factorial design was used (Tabachnick, Fidell, & Osterlind, 2001), in which a sample of senior (59+) subjects (n = 14.967 impressions) of the pre-defined population was divided into 2 age groups (under and over 65 year old), and then exposed to the 3 different add appeals in a counterbalanced sequence, using Facebook's Ad Management tool. As earlier stated the ad offer chosen was a social network for seniors in form of an app. As the ads were set up only for this experiment, they were promoted aside the App's Facebook chronicle, and not visible on the Facebook page itself, to guarantee no interaction from Facebook users who were not targeted. Facebook users who already liked the page were excluded from the experiment as they might bias the results due to their affinity towards the page.

Ahead of the field experiment, it was necessary to design and pre-test whether the different ad messages/appeals going to be used as stimuli – emotional, rational, neutral (control) –were indeed perceived as they were intended by the target audience. To this end, an online survey with a similar sample of subjects (n=35) was conducted, where the hedonic (vs. utilitarian) appeal of the app being promoted was besides the stimuli testing also investigated. This inquiry because people might react different towards hedonic and utilitarian products (Drolet et al., 2007).

## **1.4 Relevance**

The analysis of the drivers of SNM ad performance is currently the object of great interest for both practitioners and academics, due to the scarcity of reliable studies (Deraz & Baffour, 2015; Kohlbacher & Hang, 2011; Xie et al., 2012). The results and conclusions of this dissertation should thus have immediate use to marketing managers and advertising agencies, looking to increase the effectiveness of SNM ad campaigns. Equally important, they make a meaningful contribution to increase current knowledge about the online consumption behavior of older adults. Namely, the emotional responsiveness of older adults to ads is a relevant matter since this research field got widely neglected until now.

In addition to the limited knowledge about the decision making processing of older adults, little is known about common sales methods targeted at them. Unethical targeting seems to be the only practice towards the marginally investigated segment of older adults because the decision making process is changing by ageing and marketers have consequently difficulties in targeting older adults (Benbow, 2004; Ramsey, Marshall, Johnston, & Deeter-Schmelz, 2007; Reisenwitz & Iyer, 2007). Therefore, the dissertation aims to show how to target effectively different age segments of older adults in social media without the necessity of applying unethical sales practices. Beyond the consumer ethics viewpoint, the study aims to solve the lack in empirical research and give guidance to marketing departments of small and big companies in their strategic orientation of social media advertisement towards older adults.

## **1.5 Dissertation outline**

Chapter 2 presents the results of a review of the literature about SNM advertising and older adults' online consumption behavior, from which the research hypotheses were derived. Chapter 3 describes the research methods used in the field study for data collection and analysis. Chapter 4 presents and discusses the main results of this experiment and corresponding testing of research hypotheses. Finally, chapter 5 closes the dissertation by describing its main conclusions and limitations. Relevant academic and managerial implications are then derived and directions for future research in this area suggested.

## **CHAPTER 2: LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK**

This chapter is dedicated to present the results of the literature review. Finally, conclusions are drawn and research hypotheses based on them outlined.

### **2.1 Social Networked Media (SNM)**

The general term 'social media' emerged as an attempt to specify certain common functions of emerging web-based platforms, as well as technology platforms with diverse business models (Boyd & Ellison, 2007; Meikle, 2016). These social platforms can be classified as online networks (e.g. Facebook and LinkedIn), multimedia sharing websites (e.g., Flickr and YouTube), wikis (e.g., Wikipedia), rating sites (e.g. Yelp) bookmarking sites (e.g., Digg and Del.icio.us) and virtual worlds such as Second Life (Edwards, 2011). SNM, which are the main players in the social media field, are defined as online communities of persons who share a common interest, which provide a variety of ways for users to interact and enable private and public communications between them (Boyd & Ellison, 2007; Meikle, 2016). According to Meikle (2016), they can be also technically defined as a specific set of networked, internet-based communication platforms which build a data base composed by its own users. These platforms allow users to create a private or public profile, to share a connection with other persons, and review their own list of connections, as well as the ones from other users (Boyd & Ellison, 2007; Evans, 2012; Heinrichs, Lim, & Lim, 2011). SNM differentiate themselves from traditional media and networks because shared information is mainly generated by individual users, not companies or mass media. In such platforms, individuals exercise more control over content generation and use (Dickey & Lewis, 2011; Meikle, 2016). Facebook is arguably the most popular SNM today, displaying over a billion daily active users worldwide (Heinrichs et al., 2011).

### **2.2 SNM advertising**

SNM enable businesses to interact with customers timely and directly at a low cost (Kaplan & Haenlein, 2010). With the opportunities offered by the global reach of social media, companies can significantly enhance their promotional efforts. After decades of advertising domination by the same small set of print, television, radio and billboards, SNM are starting

to overcome traditional media (Bühler, Baur, Bick, & Shi, 2015; Pfeiffer & Zinnbauer, 2010). This occurs because they are generally much less costly than traditional media and provide more impactful consumer contact by means of an efficient targeting (Barreto, 2013; Logan et al., 2012). As a result, advertising is becoming a major source of profit for SNM companies. The lion's share of the quarterly earnings of the most dominant player Facebook (\$5.84bn in Q4 2015) can be traced back to advertisement. Moreover, this revenue source increases continuously in all major SNM (Facebook, 2016). In fact, SNM advertising is expected to more than double its revenue from 2014 to 2017, when total revenue will amount to 41 billion U.S. dollars.

Consumers tend to be more persuaded by the most relevant information, so the higher the relevance, the higher the engagement and response of viewers to ads (Feldman & Lynch, 1988; Herr, 1989; Shen & Chen, 2007). According to Baker (1993), advertising relevance refers to the consumer's impression of adequacy between the advertised message and the user, as well as between it and the ad medium. When confronted with similar advertisements, consumers were shown to believe that the relevant ad was part of a first non-ad stimulus, such as the informational content of a web page (Helen, Wysocka, & Hand, 2007; Soldow & Principe, 1981). Therefore, consumers may come to regard advertisements and other types of content to overlap.

SNM are able to effectively display contextual advertising, through which relevant ads appear for users according to the content they are viewing (Lee & Lee, 2007). Relevance is indeed high because the commonalities on which targeting can be based in SNM can include numerous factors, such as race, religion, sexuality, hobbies, interests, abilities and location. Therefore, due to both the more effective targeting and high perceived relevance of social media ads, advertisers are capable of offering high impact content with minimal cost and effort. This contrasts with traditional mass media, where the source of information is generally unknown of viewers, impersonal and typically more formal than in social media ads (Barreto, 2013). The overall advantage of this informal advertising channel is that the social media marketing focuses on people and their preferences, and not on products or brands.

Nevertheless, this social media ads may still result in a less significant association with purchase intentions than traditional advertising, as they have been shown to work better for branding than for actual sales conversions (Danaher & Dagger, 2013). In comparison with other forms of online advertising, namely paid search, display ads and email ads, social media also seems to remain relatively less effective, according to the same authors. These online advertising channels allow for a high degree of targeting and customization of ad campaigns

at low cost. Hereby, the main disadvantage of social network ads is that people are not using this kind of media to be advertised or to search for products, but to connect and to have fun and not to buy products (Danaher & Dagger, 2013; Rossiter, 2011).

It is evident that the understanding of advertising reception is crucial because it affects consumers' purchase motives (Bauer & Greyser, 1969; Mehta, 2000). But among them, examination of consumer reactions in the context of social networks is still at an explanatory stage, in particular in regards to older adults.

### **2.3 Consumer behaviour of older adults**

Older adults vary from other demographic segments as they change in personality throughout their life (Brown & Lowis, 2003; Erikson, 1998). They are less prone to try new products, but rather prefer to remain loyal towards the same well-known brands (Lambert-Pandraud & Laurent, 2010; Reisenwitz & Iyer, 2007). Therefore, they tend to repurchase the same products and consider less alternatives in their decision making process (Lambert-Pandraud & Laurent, 2010). With regards to marketing, older adults seem to refuse brands which include the word 'senior', or target explicitly elderly segments. This rejection can be traced back to the fact that ageing is often associated to the abandonment of the job market, declining health and well-being and increasing dependency on others (Lohmann & Danielsson, 2001; Reisenwitz & Iyer, 2007).

According to Peter Laslett (1987), seniors are a very heterogeneous group, and hence the ageing process can be subdivided into a third and fourth age, which represent different phases of the ageing process. The third age represents the active phase of ageing when people still enjoy possibilities for self-fulfilment and extensive leisure time, a secure livelihood and are in good health. Throughout the fourth age, however, they become increasingly dependent on others, as their health and physical condition deteriorate. The segmentation of older adults into different age groups becomes necessary, as a lot of differences exist between these two segments (Dinet et al., 2007). Their information search patterns vary as they differ widely in information search and information retrieval. The older people become, the more difficulties they have in performing these tasks (Czaja, Sharit, Ownby, Roth, & Nair, 2001). In terms of online consumer behaviour, older adults exhibit still more fear than younger segments towards the Internet use and online shopping. Nevertheless, they have been shown to have, in contrast to their stereotypes, a low level of technology anxiety and an increasing level of Internet experience in some circumstances (Dickey & Lewis, 2011; Selwyn, 2004).

## 2.4 Older adults and SNM

Engaging with SNM has become part of daily life for most of Western citizens. Figure 1 depicts the evolution of SNM use in the US between 2006 and 2014, per age group. Importantly, it shows that the largest growth in SNM use is occurring among those 65 and older, as saturation is being reached in the young adults' segment. Indeed, the share of US 65+ using SNM has gone from 11% in 2010 to ca. 35% in 2015 (Perrin, 2015). Due to the ageing process of the world population (WHO, 2015), this growth is expected to continue.

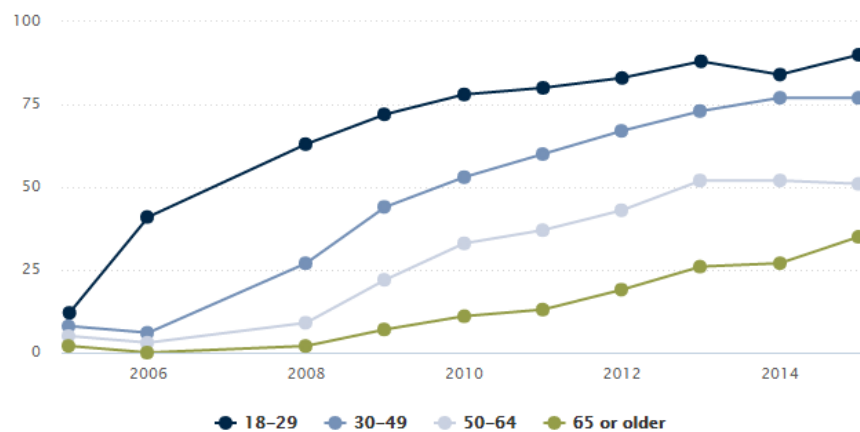


Figure 1: Social networking site use by age group, 2005 - 2015 (Source: Perrin, 2015)

Given that older adults can be prone to isolation and loss of social ties, it is easy to understand why the appeal of the Internet and SNM for seniors may be rising (Findlay, 2003; Fiori, Smith, & Antonucci, 2007). An active participation in SNM may provide a unique possibility for older adults to engage in social contact, enhance their learning experience and help them increase personal control over their lives (McMellon & Schiffman, 2002; Shapira, Barak, & Gal, 2007; Xie, 2008). It may also enable them expand their social interactions beyond the realm of family and close friends, and make new acquaintances (Leist, 2013; Sum, Mathews, & Campbell, 2008). Besides offering more opportunities for social inclusion, SNM might help in reducing depression, loneliness, as well as increase the sense of control, which would confer important gains in happiness and well-being to senior citizens (Shapira et al., 2007; Sum, Mathews, Pourghasem, & Hughes, 2008).

The growing adoption of social media by older adults, their increasing affinity for digital media as a whole and the demographic trends offer a lot of opportunities to companies that want to explore this segment. However, this potential makes it mandatory for brands to

identify characteristics of the senior users, particularly since older adults should have more time and disposable income to devote to brands present in social media. Despite being still reluctant to market products towards them, marketers are aware of the fact that they differ in their emotional behaviour from younger generations (Carstensen et al., 2003; Reisenwitz & Iyer, 2007). During aging lifestyle, needs and consumption habits become more and more dissimilar, and as a result there exists no other age group in which segmentation gets more difficult (Moschis, 1996). To target effectively by segments in social media, older adults' behaviour towards SNM has to be analysed first.

## **2.5 Older adults and advertising**

According to Mehta (2000), the attitude of consumers towards ads reflects the effectiveness of advertising. Ad messages should relate to the consumer's goals, interests, problems and wants, in order to trigger motivation for action. In traditional media advertising, an appeal is in general backed by the headline and the illustration, and supported by the distribution (Mueller, 1987). In addition, advertising in social media can be personalized. This raises the target's willingness to follow social media ads and might result in a more efficient purchase decision (Barreto, 2013; Chandra, 2012).

Zeng (2009) recognized that responses to advertising in a SNM context may depend not only on social identity, but also on the perceptions of advertising relevance and, in particular, its value. Nevertheless, relevance and value are concepts that change dramatically as people grow older, along with other lifestyle changes (Moschis, 1996). Namely, becoming older is inextricably related to having less time left in life. In this context, the SocioEmotional Selectivity Theory (SEST) (Carstensen et al., 2003; Carstensen, 1992) predicts that as humans age, they attach more importance to goals aimed at deriving emotional meaning from life than to those that enhance future preparedness. In view of this, it proposes that motivational changes arise due to a function of time perspective, which in itself can specify the direction of change.

According to SEST, personal goals can be classified into knowledge-related or emotionally meaningful. Whereas knowledge-related goals involve the optimization of the future, often through acquisition of new information, emotionally meaningful goals are defined as goals connected to feelings, such as sensing that one is needed by others, or those balancing emotional states (Carstensen et al., 2003). Knowledge-related goals are prioritized when time is recognized as open ended. In line with this, individuals are able to hoard information for

ambiguous and long futures. In the case of the perception of a limited time, knowledge-related goals become less significant. In contrast, emotionally meaningful goals become more critical since they are considered to be more gratifying to pursuit in the short-term. Since age is negatively related to time left in life, SEST predicts that older adults are more likely to give priority to emotionally meaningful goals than younger ones (Fung & Carstensen, 2003; Lang, Staudinger, & Carstensen, 1998). In relation to gender differences in emotional experiences, a controversy prevails in literature as the fact that women are the more emotional sex is only a belief (Barrett, Robin, Pietromonaco, & Eyssell, 1998). Nevertheless, the effects of hedonic value and utilitarian value differ according to Wang (2010) and Yang & Lee (2010) across gender groups.

Hedonic and utilitarian consumption motivations imply different consumption goals (Holbrook & Batra, 1987). While hedonic motivations are related to funny, sensorial, and spontaneous experiences, utilitarian ones are more linked to functional, sensible, and useful experiences (Dhar & Wertenbroch, 2000; Holbrook & Hirschman, 1982; Strahilevitz & Myers, 1998). Hedonic and utilitarian motivations to purchase a product have been shown to moderate perceptions and evaluations of product ads (Dhar & Wertenbroch, 2000; Strahilevitz & Myers, 1998). Moreover, they also affect search and shopping effort. Namely, consumers were shown to dedicate more time to the purchase of hedonic products, whereas they were more prone to spend more money in buying utilitarian ones (Okada, 2005). The rationale provided for this was that hedonic consumption is typically associated with feelings of guilt, which makes it easier to justify spending time, rather than money. In line with the SEST theory, 65+ individuals were thus hypothesized to hold a more favourable attitude towards printed ads with emotional appeals than rational ones, depending on their main motivation to consider the offer advertised in the first place (hedonic vs utilitarian) (Drolet et al., 2007; Williams & Drolet, 2005). Hedonic and utilitarian consumption motivations lead to different consumption goals (Holbrook & Batra, 1987). While hedonic motivations are related to funny, sensorial, and spontaneous experiences, utilitarian ones are more linked to functional, sensible, and useful experiences (Dhar & Wertenbroch, 2000; Holbrook & Hirschman, 1982; Strahilevitz & Myers, 1998). Hedonic and utilitarian motivations to purchase a product have been shown to moderate perceptions and evaluations of product ads (Dhar & Wertenbroch, 2000; Strahilevitz & Myers, 1998). Moreover, they also affect search and shopping effort. Namely, consumers were shown to dedicate more time to the purchase of hedonic products, whereas they were more prone to spend more money in buying utilitarian ones (Okada, 2005). The rationale provided for this was that hedonic consumption is typically associated with

feelings of guilt, which makes it easier to justify spending time, as opposed to money, on it. By highlighting SEST, this rational changes during life time. In particular, since the “fun culture” and therefore the associated hedonic motivation is predominant among older adults, seniors’ online communities are an example of highly hedonic products for older adults (Carstensen & Mikels, 2005; Nimrod, 2011).

Drolet (2007) and Fung & Carstensen (2003) have identified that elderly citizens exhibit more positive attitudes toward, and a better recall of affective ads relative to rational ads. They highlighted also the importance of classifying products into hedonic and utilitarian category types as affective and rational ads might be dependent on the product type. In Fung & Carstensen’s (2003) lab experiment the sample consisted of 164 participants from the U.S. of different age classes. As a result of the study authors hypothesize that persuasive advertisements, are preferred and better remembered by older adults when they promise to help realize emotionally meaningful goals, whereas younger adults would not show this bias. In Drolet’s (2007) study, 161 participants from the U.S. of different age classes completed a lab experiment. Results revealed that older consumers (age 65 plus) had more favorable attitudes toward affective ads, regardless of product category type (utilitarian vs. hedonic). In contrast, young consumers (age 18–25) were in favor of affective ads, but only for hedonic products, preferring rational ads for utilitarian products.

Both studies might be biased by the interrogation environment and the lack of establishing a cause-and-effect relationship. The main disadvantage of such lab experiments regarding preferences is that they are about stated preferences provided in hypothetical choice contexts. On the contrary, experiments in natural settings have the advantages of being about revealed preferences, provided in a real choice environment and yielding behavioral data (Saunders, Lewis, & A., 2009). By providing a field experiment in this dissertation, the subsequent inquiry should eradicate the limitations of the survey design and analyze the distinct types of emotion appeal (affective and rational) based on a real world examination. Furthermore, no study has yet examined either the specific emotional impact of different types of social media advertisements towards seniors or their hedonic and utilitarian motivations in social media and social network advertisements (Deraz & Baffour, 2015; Kohlbacher & Hang, 2011; Xie et al., 2012).

## **2.6 Conclusions and research hypotheses**

With the new era of Internet, the media landscape has changed. New media are complementing traditional media since they enable organizations to communicate with customers timely and at lower cost than in traditional media (Kaplan & Haenlein, 2010). Social media advertising became the major financial source for social media due to its popularity and effectiveness. This effectiveness originates from the opportunities of personal targeting mechanisms, which increases brand recognition and provides a more favourable opinion about advertisements and brands. Due to the high relevance of social media advertising, advertisers are able to analyse consumers' advertising behaviour and offer consequently high impact content with minimal cost effort.

Unfortunately, the examination of consumers' advertising response behaviour in the context of social networks is still at an exploratory stage. In particular, the reactions of the elderly segment have to be evaluated, as its increasing affinity digitalism and the drastic demographic change offer numerous opportunities for businesses. Seniors have the time and income to devote itself to the marketing activities in social media. Nevertheless, they differ from other demographic segments as they are prone to give priority to emotionally meaningful goals than younger people do (Fung & Carstensen, 2003; Lang et al., 1998). The senior consumers have a more favourable response behaviour toward affective advertisements than to rational advertisements, and could differ in their motivations towards print advertisements (Drolet et al., 2007; Williams & Drolet, 2005). However no literature exists up to the present regarding emotional advertising in social media.

From the drawn conclusions and taking into account the research questions mentioned in the first chapter, the following research hypotheses were thus formulated:

RH1: Affective ad appeals have a more positive impact on older adults' responses to social media ads than rational ones.

RH2: Ageing moderates the impact of ad appeal on older adults' responses to social media ads. That is, ad appeals have a more positive impact on responses of older elderly people than on responses of younger elderly people.

The methodology applied to collect and analyse data – for answering the research questions and testing the hypotheses – is described in the next chapter. Empirical results are presented and discussed in the subsequent chapter.

## **CHAPTER 3: METHODOLOGY**

This chapter presents the research approach used in the study. Furthermore, the population, data, sampling process, data collection methodologies and the analytical tools used to analyse the data in this dissertation are described.

### **3.1 Research approach**

Previous research has shown that there are age-related differences in the way consumers respond to affective vs emotional appeals in printed ads promoting tangible product offers (Carstensen, 1992). The present dissertation aims at testing whether such differences also hold in the context of social media ads promoting digital services. Consequently, an explanatory research approach – where causal relationships between variables and their underlying processes are established – was undertaken (Saunders et al., 2009).

Quantitative data was gathered through the performance of a field experiment using Facebook ads. The primary source allowed to collect first-hand unbiased information via Facebook advertising campaigns and establish a within-between subject design. Cross-sequential data conduction over three weeks (16.04.2016 – 03.05.2016) was necessary as Facebook does not allow specific targeting of groups with the same characteristics within different campaigns. In order to test the hypotheses put forward in chapter 2, the experiment was carried out in the Facebook page of “Seniorenchat” – a SNM in form of an Android Smartphone app for older German-speaking adults. As the app is only in German language available, German-speaking Facebook users in Germany were targeted. The ads were only visible for Android phone users, and not for other operating systems or on the desktop to make sure that only users who have an Android phone can access the Google Play Store. As the ads were set up only for this experiment, they were promoted aside the Facebook chronicle, and not visible on the Facebook page itself to guarantee no interaction from Facebook users who were not targeted. Facebook users who already liked the page were excluded from the experiment as they might bias the results due to their affinity towards the page.

Ahead of the experiment it was necessary to identify whether the offer promoted by the ad had mainly a hedonic or utilitarian appeal and whether the different ad messages used as

stimuli – emotional, rational, neutral (control) – in the experiment were indeed perceived as they were intended. Therefore, a pre-test for both the appeal of offered app and the different options of ad design messages was conducted in form of a survey.

### **3.2 Population and sample**

The statistical population was defined as “German-speaking adults, with 60 years of age or older, accessing Facebook through an Android smartphone in Germany”. The size of this population was estimated by the Facebook Ads Manager to be 580.000 individuals, as of April 2016 (47% female; 55% aged 65 years or older). Using Facebook Ads Manager, a sample of this population was targeted with the experimental ads promoting the “Seniorenchat” app from 16.04.2016 until 05.05.2016, according to experimental design next described. Experimental ad impressions in this period reached a total number of 14.967 (53% female; 53% aged years or older) Facebook users.

### **3.3 Experimental design**

A 3 (type of message appeal: affective vs. rational vs. neutral) by 2 (age group: 60-65 years vs. 65+ years), repeated measures, mixed (within-between) factorial design was employed. The selection of this type of design relates to the fact that Facebook Ads Manager does not enable random assignment of subjects to experimental treatment conditions (nor does it lend itself to A/B testing). Rather, it enables random targeting (from the viewpoint of the researcher) of users according to pre-specified demographics, which enable for instance the display of different ads in different sequences to groups of consumers in different age groups. The neutral version of the add appeal was included as a control of the experimental manipulation and to set a baseline to mere information effects. In this way, any difference between the experimental and control groups for the dependent variable (type of advertisement) can be tested (Saunders et al., 2009).

Therefore, the different ad appeal types were shown to each age segment at a different point in time which amounted in 18 campaigns (Annex 1). Holding the weekdays constant, each ad was shown over two days. The independent variable was ad type, while round and age were treated as covariates. The covariate gender was extracted from each campaign as Facebook segregates the campaign results into male and female.

Ad campaign performance metrics - click-through rate (CTR), cost-per-click (CPC) and engagement rate (ER) - were selected as dependent variables. Their values were calculated

from the data on total (i.e., aggregate) campaign impressions, clicks, costs and likes supplied by Facebook Ad Manager. CTR was calculated as ad clicks over ad impressions and ER as the number of likes over the number of impressions. CPC refers to the price paid per ad click by a user.

The rounds were implemented in form of weeks to allow random assignment as Facebook does not allow random assignment per se. Despite the preassigned budget of € 5,00 for each campaign, more money was spent in the first week to guarantee traction and viable results.

### **3.4. Pre-test survey**

Two Facebook ads, each with one of the 3 different types of ad appeal tested, were designed and pre-tested according to the procedure developed by Fung & Carsten (2003) (Annex 2). The two affective ad appeals were "BUILD LIFELONG FRIENDSHIPS" and "REJOICE IN OUR VIVID NETWORK". These appealed to emotions and focused on adjectives and verbs related to friendship and vividness. The two rational messages were "ESTABLISH CONTACTS AND BROADEN YOUR NETWORK" and "ESTABLISH CONTACTS AND INFORM YOURSELF IN THE FORUM". These focused on the establishment of future connections and knowledge transfer about information gathering, as well as social network extension. Finally, the two neutral messages were "GET TO KNOW NEW ACQUAINTANCES" and "TEXT NEW ACQUAINTANCES MESSAGES". These simply described the activities enabled by the SNM app promoted. Since the targeted audience was German, the ad copies were created in German. Except for the message appeal, all other advertisement features such as picture and brand name were held constant across the six pre-tested ads.

In order to select three out of the six ad copies that best represented affective, rational and neutral message appeals – and since the field experiment conditions did not enable the inclusion of manipulation checks -, a pre-test of all six ad copies was conducted using a convenience sample of 35 individuals, drawn from the statistical population of the study. These were either subscribers of a newsletter of the website [www.senior-surfer.com](http://www.senior-surfer.com) which offers senior citizens internet courses focused on Internet and PC courses), or registered users of the “Seniorenchat” app. Hereby all app users received the link.

The pre-test was included in a brief Qualtrics’ online questionnaire. Respondents’ evaluations of each of the 6 ad copies were measured using an adaptation of a psychometric scale developed by Drolet (2007). The scale was composed of four items - “This advertisement

made me focus on my feelings about the app”, “This advertisement is directed at making me feel something about the brand”, “This advertisement made me focus on my thoughts about the brand” and “This advertisement was directed at making me think something about the brand”); respondents’ answers were provided on a 7-point, Likert-type (1 = totally disagree to 7 = totally agree). The individual scores of the four items were first averaged to create a mean scale score and afterwards averaged across subjects.

Next, the extent to which respondents would download the “Seniorenchat” app mainly due to hedonic vs utilitarian motivations was measured using an adaptation of a psychometric scale, also developed by Drolet (2007). The scale was composed of 4 items - “The decision to download an app like this is based a lot on feelings”, “The decision to download an app like this is based mainly on the expected emotional benefits of using it”, “The decision to download an app like this is mainly logical or objective” and “The decision to download an app like this is based mainly on the expected functional benefits of using it”; respondents’ answers were again provided on a 7-point, Likert-type (1 = totally disagree to 7 = totally agree). Finally, respondents were asked to provide some socio-demographic information, namely age and gender.

Of the 35 questionnaires received, 10 were either incomplete or had been completed by respondents less than 60 years old; final sample size was hence 25. Respondents’ age ranged between 60 and 87 years old ( $68 \pm 7$  years); 52% of respondents were female.

Table 1 presents the descriptive statistics of the scale scores of the pre-test responses to the ad stimuli.

Table 1: Results of the descriptive analysis of pre-test responses to ad stimuli (n=25).

Ad Stimuli	Ad version	Mean $\pm$ Std
<b>Affective Appeal</b>	1	5.10 $\pm$ 0.94
	2	4.32 $\pm$ 0.66
<b>Rational Appeal</b>	1	2.26 $\pm$ 0.77
	2	3.47 $\pm$ 1.06
<b>Neutral Appeal</b>	1	3.89 $\pm$ 0.64
	2	3.95 $\pm$ 0.96

**Note:** responses measured with a 4-point item scale; scores provided in a 7-point Likert scale. Higher means indicate more affective stimuli.

Paired t-tests were conducted to test the statistical significance of mean differences; results are displayed in Annex 3. These showed that for ad stimuli with an affective appeal, Ad version 1 had a significantly ( $p < .01$ ) higher mean than Ad Version 2, whereas for those with rational

appeal, the opposite occurred. There were no statistical significant differences between ad versions with neutral appeals. Comparing across different appeals, the findings conclude that rational 2 is not only less rational than rational ad 1 but also not adequate as a representation of rational ads due its high standard deviation. Affective 2 constitutes also a tighter spread than affective 1. Nevertheless, the mean of affective 2 is closer to the means of neutral 1 and neutral 2. This relation gets confirmed by conducting the t-test. The t-test of the pair neutral 2 - affective 2 is not significant while the t-test of pair neutral 2 – affective 1 stays significant. Moreover, the t-test of the pair neutral 1 – affective 2 is only marginal significant while the t-test of the neutral 1 – affective 1 remains at a significance level of 0,000. The ads neutral 1 and neutral 2, obtain indifferent results and are both close to 4, the center of the scale, which represents neutrality between affective and rational ads. Furthermore, the t-test reveals that both ads are close to each other. Nevertheless, the standard deviation is less in neutral 1 which demonstrates less disagreement among participants.

In view of these results, Ad version 1 with an affective appeal, Ad versions 2 with a rational appeal and Ad Version 1 with a neutral appeal were selected as stimuli for the field experiment.

Finally, the mean of mean scores on the 4-item scale measuring the hedonic vs utilitarian nature of the motivation to download the app was  $4,4 \pm 1,2$ , indicating that for pre-test respondents this motivation was essentially hedonic.

## CHAPTER 4: RESULTS AND DISCUSSION

This chapter presents and discusses the results of the analysis of the data collected during the field experiment.

### 4.1 Campaign performance metrics

Table 2 shows the results of the performance metrics of each ad round undertaken.

**Table 2:** Facebook campaigns - Nonparametric results

Ad	Amount spent (EUR)	Clicks	Impressions	Engagement	CTR	CPC (EUR)	ER
Round 1 - Affective -65	5	33	1133	3	2,913	0,152	0,003
Round 1 -	5	17	628	3	2,707	0,294	0,005

Affective +65								
Round 1 -	9,88	54	1608	3	3,358	0,183	0,002	
Neutral -65								
Round 1 -	8,4	28	1052	0	2,662	0,300	0,000	
Rational +65								
Round 1 -	4,95	23	860	1	2,674	0,215	0,001	
Rational -65								
Round 1 -	4,84	25	835	2	2,994	0,194	0,002	
Neutral +65								
Round 2 -	4,94	13	517	0	2,515	0,380	0,000	
Neutral -65								
Round 2 -	4,87	21	841	0	2,497	0,232	0,000	
Rational +65								
Round 2 -	4,88	35	867	2	4,037	0,139	0,002	
Rational -65								
Round 2 -	4,88	36	893	4	4,031	0,136	0,004	
Neutral +65								
Round 2 -	4,9	26	697	2	3,730	0,188	0,003	
Affective -65								
Round 2 -	4,95	33	968	3	3,409	0,150	0,003	
Affective +65								
Round 3 -	4,53	11	506	1	2,174	0,412	0,002	
Rational -65								
Round 3 -	4,89	17	425	1	4,000	0,288	0,002	
Neutral +65								
Round 3 -	4,96	25	981	1	2,548	0,198	0,001	
Affective -65								
Round 3 -	4,87	20	714	1	2,801	0,244	0,001	
Affective +65								
Round 3 -	4,9	18	655	0	2,748	0,272	0,000	
Rational +65								
Round 3 -	4,62	24	787	3	3,050	0,193	0,004	
Neutral -65								

Average number of impressions per ad round was  $832.3 \pm 265.1$  (total over 3 rounds = 14 967) , the number of clicks was  $18.3 \pm 9.9$  (total over 3 rounds = 444) and the number of likes was  $1.7 \pm 1.2$  (total over 3 rounds = 30). Average spending per ad round was €  $5.4 \pm 1.4$ . No comments or shares of ad stimuli occurred. According to the Facebook Ads Benchmark Report from Salesforce (2013) the CPC in the experiment was with 0,23 € lower than the average CPC (\$0,29) in Germany for Facebook ads. Nevertheless, the campaigns had with a lower CTR (3,0) than average ads in Germany (4,2). The page like rate in the campaigns was with 0,20% far higher than the average page like rate in Germany (0.03%).

Ad stimuli were counterbalanced across rounds. The existence of significant main effects of round (ad learning/habituation) on ad performance metrics was nevertheless tested. The results, depicted in Annex 4, show that round effects did not significantly affect performance

metrics. Learning effects didn't occur and the longitudinal design was able to counterbalance ad presentation and secure random assignment of ad types to different groups of users.

## 4.2 Main effects of ad appeal and age

Table 3 presents the results of the test of main effects of ad type on ad performance metrics across all rounds.

**Table 3:** T-test analysis of Ad type (n=18).

Ad type	CTR	CPC	ER
<b>Rational</b>	2,799±0,641	0,262±0,092	0,001±0,001
<b>Neutral</b>	3,325±0,600	0,229±0,089	0,003±0,002
<b>Affective</b>	3,047±0,580	0,204±0,056	0,003±0,001
<b>F-test value</b>	1,286	0,768	3,787*

Note: \*p<.05; \*\* p<.01, \*\*\* p<.001

These show the existence of a significant effect ( $p < .05$ ) for engagement rate only. Post-hoc test results revealed that the difference between the means of the engagement rate for the affective and the rational ad stimuli was marginally significant ( $-0.019$ ;  $p=0.052$ ). No other significant effects of ad stimuli were found.

Table 4 shows that age has no significant effect on the dependent variables.

**Table 4:** T-test analysis of Age (n=18)

Age	CTR	CPC	ER
<b>&lt;65</b>	3,000±0,610	0,229±0,098	0,002±0,001
<b>&gt;65</b>	3,094±0,582	0,234±0,062	0,002±0,002
<b>F-test value</b>	0,113	0,019	0,001

Note: \*p<.05; \*\* p<.01, \*\*\* p<.001

The stepwise regression with engagement rate as the regressor and ad types, age rounds as predictors was furthermore conducted. Results are presented in Annex 5 and Annex 6 and confirm that only ad type dummy had a significant effect on engagement rate. Consequently, age as well CTR and CPC were excluded from the following analysis.

A Tukey post-hoc test was executed to apply multiple comparisons to see which ad groups differed from each other for ER (Table 5).

**Table 5:** Tukey post-hoc test for dependent variable in Ad types for ER.

(I) Adtype	(J) Adtype	Mean Difference (I-J)	Std. Error	Sig.
Rational	Neutral	-0,00158	0,00074	0,116
	Affective	-0,00190	0,00074	0,053*
Neutral	Rational	0,00158	0,00074	0,116
	Affective	-0,00032	0,00074	0,902
Affective	Rational	0,00190	0,00074	0,053*
	Neutral	0,00032	0,00074	0,902

Note: \*p<.05; \*\* p<.01; \*\*\* p<.001

The test revealed that the engagement in affective ads was at a 0.05 significance level higher than the engagement in rational ads and at a 0.1 significance level higher in neutral ads. There were no statistically significant differences between rational and neutral groups.

### 4.3 Main effect of ad appeal and gender as covariate

Across 18 rounds of the campaign, the mean ER of female participants was significantly higher ( $0,0029 \pm 0,0032$ ) than that of males ( $0,0011 \pm 0,0020$ ) ( $F(1,96) = 4,134, p < 0,050$ ). To further investigate the impact of gender on ad engagement, a stepwise regression (Adjusted R Square = 0,082; Sig. = 0,050) was executed (Table 6). By removing the variables adtype and round, the regression shows that the single best predictor of ad performance was gender (Table 7).

**Table 6:** Gender: Stepwise regression of gender on ad engagement rate (n=36) – Coefficients

Model	Unstandardized Coefficient	Std.Error	Standardized Beta Coefficients	F- Test
<b>1 (Constant)</b>	0,003	0,001		4,622
<b>Gender</b>	-0,002	0,001	-0,329	-2,032*

\* Note: \*p<.05; \*\* p<.01; \*\*\* p<.001

**Table 7:** Gender: Stepwise regression of gender on ad engagement rate (n=36) – Excluded variables

Model	Beta In	F-Test	Partial Correlation	Collinearity Statistics
<b>Adtype</b>	0,277	1,763*	-0,293	1,000
<b>Round</b>	-0,081	-0,497	-0,086	1,000

\* Note: \*p<.1; \*\*p<.05; \*\*\* p<.01; \*\*\*\* p<.001

But at a 10% significance interval also ad type is significant (Table 7). Therefore, a within-between-design analysis will be conducted for ER under the assumption that participants saw the ads in a sequence.

#### 4.4 Mixed ANOVA results for ad appeal and gender

Given that a mixed factorial design was employed in the longitudinal field experiment, a mixed ANOVA model was applied with gender as within-subject variable and adtype as between-subject variable.

The Greenhouse-Geiser test shows that the within-subjects effects for gender are significant at the 10% confidence interval (Table 8).

**Table 8:** Greenhouse-Geiser test of within-subjects effects for gender

	Mean Square	F-Test
Gender	3,021E-5	3,816*
Gender x Adtype	2,040E-5	2,578
Error (Gender)	7,915E-6	-

\* Note: \*p<.1; \*\*p<. 05; \*\*\* p<.01; \*\*\*\* p< .001

The interaction effect between gender and adtype is not significant. Nevertheless, Table 9 shows that female participants indeed had a significant higher engagement towards affective ads than men.

**Table 9:** T-test of ad types for gender

	Rational Ads	Neutral Ads	Affective Ads
Mean ± St.dev.	0,001 ± 0,003	0,000±0,005	0,005±0,004
F-test value	0,550	1,011	3,132*

\* Note: \*p<. 05; \*\* p<.01; \*\*\* p< .001

#### 4.5 Discussion

From the results it can be derived that no differences in rounds emerged, as they were part of the design to ensure random assignments. Despite the variance in campaign investments, the experiment could get conducted with a counterbalanced measures design. From the statistically non-significant results regarding CTR and CPC, it can be hypothesized that the

experiment did not include enough data to draw representative conclusions regarding the impact of different appeals on advertising performance in SNM.

Furthermore, the results of the statistical analyses could not confirm the existence of a significant moderation of age on the effect of message appeal on ad performance among older adults (RH2). Therefore, no recommendations in regard to age moderation on advertising appeal performance in SNM can be given. This could be related to the narrow age scope of the study. Young older adults were taken to be between 60 and 64 years old, as Facebook does not offer any specific age targeting above 65 years. It is likely that response to different ad appeals among older adults of such close ages does not vary greatly.

Nevertheless, results confirmed that older adults do engage more social media ads based on affective appeals than neutral or rational ones, confirming RH1 and the central tenants of SEST (Carstensen et al., 2003; Carstensen, 1992). According to this psychological theory, older adults attach more importance to goals aimed at deriving emotional meaning from life than to those that enhance future preparedness and imply rational goals (Carstensen et al., 2003; Carstensen, 1992). The present findings are consistent with this assumption and show that this theory also applies to social media ads, as older adults in the Facebook experiment engage significantly more with ads focused on attaining emotional meaning in life (“Build lifelong friendships”) than satisfying informational needs (“Establish contacts and broaden your network”).

Older adults seem to refuse brands which use the word ‘senior’ or which target explicitly elderly segments (Lohmann & Danielsson, 2001; Reisenwitz & Iyer, 2007). The rejection can be traced back to the fact that seniorship gets often associated with the age of retirement and dependency on others. The discrepancy in results found between the dependent variables CTR, CPC and ER for the different ad types seems to support this view. Older adults engage with the ad and recommend the product as they are affected by the idea. But they do not necessarily want to know more about the product, with the intent of perhaps using users of the app. Since they are not regarding themselves as seniors, they might not want to get targeted as such and might not have the desire of using such an app themselves – although they seem motivated to suggest to other people. Finally, and despite the controversy in literature regarding gender differences in responses to emotional marketing stimuli (Barrett et al., 1998), the results of the Facebook experiment confirm that female consumers seem to be more engaged with affective ads than their male counterparts.

## **CHAPTER 5: CONCLUSIONS AND LIMITATIONS**

This chapter includes the main conclusions, limitations and further research suggestions of this dissertation.

### **5.1 Conclusions and Implications**

Nowadays SNM are complementing traditional advertising channels. By means of providing impactful consumer contact through efficient targeting, they can drastically reduce advertising costs in many instances (Barreto, 2013; Logan et al., 2012). Despite the fast growth of SNM and its global impact on young generation's behaviours, not many researchers have yet contributed meaningfully to the assessment of their advertising performance (Deraz & Baffour, 2015). Past research findings are in particular scarce in relation to the understanding of older demographic segments and the fulfilment of their consumption needs (Kohlbacher & Hang, 2011; Xie et al., 2012).

This dissertation strived for providing clarity in an unexplored research field and aimed to assess therefore the effectiveness of advertisement targeting of older adults in SNM.

In previous studies differences in responses to affective and rational ads among older adults were examined (Drolet et al., 2007; Fung & Carstensen, 2003). The dissertation applied the approach in the social media context and revealed that affective ad appeals have a more positive impact on older adults' responses to social media ads than rational ones (for hedonic products). According to SEST, older adults attribute priority to goals aimed at deriving emotional meaning from life than to those that enhance future preparedness and imply rational goals (Carstensen et al., 2003; Carstensen, 1992). The findings in the dissertation let the theory apply on SNM since older adults attached more importance towards social media ads focused on emotional meaning in life than towards ads focused on rational goals.

From the analysis no economic conclusions can be drawn as there were no significant differences in terms of cost effectiveness. The discrepancy in significant results between cost effectiveness and ad engagement for the different ad types shows that older adults engage with the ad but they do not necessarily use the product. The major reason might be that they are not regarding themselves as seniors and don't want to get targeted as such. They are affected by the idea but don't have necessarily the desire to use the product for themselves.

In regard to gender differences, the results indicate that older women are more prone to engage in affective social media advertisements than older men.

## **5.2 Limitations and future research**

One of the main limitations of this dissertation is the small sample size of the experiment with only 18 campaigns and a total number of 14.967 impressions. The limited capacity led to several non-significant results and the results indeed obtained were often significant only at a marginal level. Therefore, it is recommended that future studies conduct larger/longer ad campaigns with other types of ads and product offers. Furthermore, it suggested to extend the time frame of future longitudinal studies, because the short period of three weeks was not sufficient to obtain different results over time. The longitudinal study has to be conducted for Facebook advertising studies because the Adverts Manager of Facebook does not enable to target different audiences in different campaigns. Nevertheless, as the longitudinal design was applied to be able to counterbalance ad presentation and secure random assignment of ad types to different groups of users, the above mentioned effects are not necessarily relevant.

Since the cost per impression of Facebook advertisements can change day by day - as this is dependent on the ad investment of competing advertisers - different results can be obtained in each campaign. Such a limitation can only be eliminated by the application of big sample sizes. Another drawback of Facebook ad analysis regarding older adults is the narrow age scope, as the Facebook Adverts Manager allows no segmentation above 65 years. Therefore, a threshold higher than 65 might have led to significant results as the range of young older adults (60-64) targeted was quite narrow in terms of age.

Moreover, the sample information was only conducted from Facebook users employing a smartphone with Android operating system, since the app was only available in Google Play Store. In further research also other operating systems as well as desktop users might be integrated to control for display reaction differences. In addition, the present research focuses only on a hedonic product in a specific product category, namely social networks. Further research might investigate in other product categories and types and might apply other moderators such as experience or cognitive load-variables which possess different qualitative effects on decision making (Drolet & Luce, 2004).

Since older adults are an increasingly important market segment in social media it is crucial to understand their online and social media behaviour. Therefore, this dissertation initiates a new

scope of research and aims to give guidance for future studies in social media advertising towards older adults.

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## ANNEXES

### Annex 1 - Facebook experiment - Time frame for advertisement campaigns

Age	Round	Ad per weekday			
		Saturday, Sunday	Monday, Tuesday	Wednesday, Thursday	Friday
<65	Round 1 (16.04.-22.04.)	Affective	Neutral	Rational	Break
	Round 2 (23.04.-29.04.)	Neutral	Rational	Affective	Break
	Round 3 (30.04. - 06.05.)	Rational	Affective	Neutral	Break
>65	Round 1 (16.04.-22.04.)	Affective	Rational	Neutral	Break
	Round 2 (23.04.-29.04.)	Rational	Neutral	Affective	Break
	Round 3 (30.04. - 06.05.)	Neutral	Affective	Rational	Break

### Annex 2 - Advertising example: Affective advertisement 1



### Annex 3 - T-test Analysis Pre-test

Pair	Mean ± Std	F-Test
Affective 1 - Affective 2	0,78 ± 0,94	4,165***
Affective 1- Rational 1	2,84 ± 1,16	12,253***
Affective 1- Rational 2	1,63 ± 1,21	6,759***
Affective 2 - Rational 1	2,06 ± 0,90	11,417***
Affective 2 - Rational 2	0,85 ± 1,23	3,452**
Rational 1 - Rational 2	-1,21 ± 1,18	- 5,124***
Rational 1 - Neutral 1	-1,63 ± 0,98	8,300***
Rational 1 - Neutral 2	-1,69 ± 1,03	8,212***
Rational 2 - Neutral 1	-0,42 ± 1,21	1,740
Rational 2 - Neutral 2	-0,48 ± 1,10	2,188*
Neutral 1 - Neutral 2	-0,06 ± 1,11	-0,270

Note: \*p<.05; \*\* p<.01, \*\*\* p<.001

#### Annex 4 - T-test Analysis Rounds (n=18)

Round	CTR	CPC	ER
1 (16.04.-22.04.)	2,885 ± 0,269	0,223±0,061	0,002±0,002
2 (23.04.-29.04.)	3,370±0,708	0,204±0,094	0,002±0,002
3. (30.04. - 06.05.)	2,887±0,580	0,268±0,080	0,002±0,001
F-test value	1,469	1,011	0,034

Note: \*p<.05; \*\* p<.01; \*\*\* p<.001

#### Annex 5 - Stepwise regression ER – Coefficients

Model	Unstandardized Coefficient	Std.Error	Standardized Beta Coefficients	F- Test
1 (Constant)	0,000	0,001		0,211
Adtype	0,001	0,000	0,541	2,574*

\* Note: \*p<.05; \*\* p<.01; \*\*\* p<.001

#### Annex 6 - Stepwise regression ER – Excluded variables

Model	Beta ln	F-Test	Partial Correlation	Collinearity Statistics
Age	-0,007	-0,031	-0,008	1,000
Round	-0,060	-0,278	0,072	1,000

\* Note: \*p<.05; \*\* p<.01; \*\*\* p<.001