

*Creating an “ideal” self: Are we influenced by  
Facebook use in our attitudes towards physical  
enhancement procedures?*



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*The influence of the frequency of Facebook use on attitudes towards offline and  
online physical enhancement procedures in relation to appearance comparison  
tendency and gender.*

**Master Thesis Marketing**

Erasmus University Rotterdam

Erasmus School of Economics

August 14<sup>th</sup>, 2017

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## Abstract

Over the past years, social media has grown rapidly, with Facebook on top of all platforms with around 1.3 billion daily users worldwide. Creating and maintaining an online presence has become very relevant these days. However, it has been found that users try to increase their perceived level of (online) attractiveness by engaging in manipulations. People perform identities that they think others will accept. Therefore, users are very conscious about the choices they make regarding their online presentation by posting pictures which convey an “ideal” self. Moreover, it is quite striking that, at the same time, the use of cosmetic procedures increase. In particular, the demand for botox and fillers grows fast. It seems like people do everything to look more attractive these days, both online by manipulating photos and offline by undergoing cosmetic procedures. Therefore, it is useful to consider whether there is a link between Facebook use and attitudes towards physical enhancement procedures.

The aim of the present study was to examine various factors which might be associated with attitudes towards offline and online physical enhancement procedures. Offline physical enhancement procedures represent cosmetic procedures and online physical enhancement procedures represent photo editing. The new conceptual model is tested on 209 Dutch participants with ages between 18 - 35 which completed an online questionnaire measuring their attitudes towards physical enhancement procedures.

Primary among the results of this study was that the frequency of Facebook use was associated with intentions towards cosmetic procedures. Frequent Facebook users had higher intentions towards cosmetic procedures than non-frequent Facebook users. In contrast, no association was found between the frequency of Facebook use and photo editing behavior. Furthermore, it was found that appearance comparison and gender were significant predictors of intentions towards cosmetic procedures, although there was no significant interaction effect between these aspects and Facebook use on cosmetic procedure intentions. The results are discussed in relation to existing literature mainly analyzing the factors related to intentions towards cosmetic procedures.

**Keywords:** Facebook use; physical enhancement procedures; cosmetic procedures; photo editing; body dissatisfaction; appearance comparison; gender.

## Table of Content

Chapter 1   Introduction .....	5
1.1 Problem Statement .....	7
1.2 Research Questions .....	8
1.3 Academic Relevance.....	8
1.4 Managerial Relevance.....	9
Chapter 2   Theoretical Framework .....	10
2.1 Facebook use and body dissatisfaction.....	10
2.2 Facebook use and cosmetic procedure intentions .....	11
2.3 Facebook use and photo editing behavior.....	12
2.4 Facebook use, appearance comparison and cosmetic procedure intentions .....	14
2.5 Facebook use, gender and cosmetic procedure intentions .....	16
2.6 Conceptual model .....	18
Chapter 3   Methodology .....	20
3.1 Research design .....	20
3.2 Sample and data collection .....	20
3.3 Procedure .....	21
3.4 Measures .....	22
3.5 Ethical considerations .....	24
3.6 Descriptive statistics .....	24
Chapter 4   Results .....	26
4.1 Assumptions ANOVA .....	26
4.2 Analysis of variance.....	26
4.3 Main effects Facebook use .....	27
4.3.1 Cosmetic procedure intentions .....	27
4.3.2 Photo editing behavior .....	27
4.4 Main and interaction effect of appearance comparison .....	28
4.5 Main and interaction effect of gender .....	29
Chapter 5   Discussion .....	30
5.1 Academic implications .....	32
5.2 Practical implications .....	32
5.3 Limitations .....	33
5.4 Future Research .....	34
Chapter 6   Conclusion .....	36

References .....	37
Appendices .....	46
Appendix A – Constructs Questionnaire .....	46
Appendix B – Visual Questionnaire .....	49
Appendix C – Three-way ANOVA Analysis .....	58
Appendix D – ANOVA Analysis .....	59

## Chapter 1 | Introduction

In recent years, Dutch news articles have been paying more and more attention to the “rising” cosmetic procedures in The Netherlands. *Cosmetic procedures* include all methods and principles of cosmetic surgery that completely focus on improving patients’ appearance rather than improving patients’ health. Enhancing symmetry, proportion and aesthetic appeal are the main purposes. The execution of cosmetic procedures can be done on any part of both the face and the body. Since the treated parts function well, cosmetic procedures are elective (American Board of Cosmetic Surgery, 2017). A growing number of patients seek minimal invasive procedures. In particular, the demand for botox and fillers increases rapidly (NU.nl, 2016).

Not that long ago, cosmetic procedures were related to Caucasian females of older age (Haiken, 1997). Currently, cosmetic procedures are not just for the wealthy and famous or the people with a mental disturbance. Males and females, young and old (Sarwer, Cash, Magee, Williams, Thompson, Roehrig & Anderson, 2005), and people of different socio-economic statuses (Didie & Sarwer, 2003) undergo cosmetic procedures these days in order to improve their appearance.

Some studies suggest that cosmetic procedures are becoming more popular among young people and that the increasing (social) media attention for cosmetic procedures plays a part in this. This can be explained in two ways (Sarwer & Crerand, 2004). The recent attention for cosmetic procedures in television programs (e.g., “Het Lelijke Eendje”), ads and articles has increased consciousness of benefits concerning cosmetic procedures and how they can be realized. Also, YouTube-vloggers contribute to the growing acceptance by filming (parts of) their surgeries (NU.nl, 2016), which takes away fear for the unknown. A more indirect media effect concerns the representation of the current beauty ideal (Sarwer, Grossbart & Didie, 2002), which is often impossible to achieve by natural methods, for example a slim yet full-breasted figure for females (Garner, Garfinkel, Schwartz & Thompson, 1980). The focus of this study will be on this latter, indirect, media effect.

The media landscape has changed a lot during the past years. Whereas television and magazines were the most used media forms once, social media platforms are now becoming increasingly popular. *Social media* can be defined as applications that are Internet-based and include content generated by consumers which contains “media impressions created by consumers, typically informed by relevant experience, and archived or shared online for easy access by other impressionable consumers” (Blackshaw, 2006). This encompasses a number of applications with which consumers are able to perform actions like “posting” or “blogging” on the Internet.

Social media provides new online resources with information that are generated, launched, spread, and used by consumers with the purpose to share knowledge about all kinds of issues (Blackshaw & Nazzaro, 2006).

Currently, the most popular social media network concerns Facebook, with around 1.3 billion people that use the platform daily (Facebook, 2017). On *Facebook*, users can create their own profiles and add personal information, including photos. Facebook is a useful tool for social contacts, providing information and social support (Burke, Marlow & Lento, 2010). Statistics show that every hour more than ten million images are posted on Facebook worldwide (Mayer-Schönberger & Cukier, 2013). In this way, Facebook offers a direct availability of up to date pictures, which far exceeds the possibilities of any magazine or television show.

In order to “enhance” images in magazines, they are often edited before publication. The same can be done by Facebook users, since they are also competent to edit pictures before posting them on their personal profile. Users’ self-presentation can be closely monitored so that an ideal variant of the self can be shown (Manago, Graham, Greenfield, & Salimkhan, 2008; Zhao, Grasmuck, & Martin, 2008). *Photo editing* refers to modifying or improving photographs by using techniques such as filters, composite figures or airbrushing. These methods can blur the reality of (social) media ideals. Yet, over representation has caused that these ideals are seen as normative (Smolak & Murnen, 2007), which results in high degrees of *social comparison*: an instinctive urge of individuals to rate personal attitudes, beliefs and skills comparing to other people (Festinger, 1954).

In most cases, people compare themselves with their peer group or with who they share similarities. Social comparison can be divided in two types: up- and downward social comparison. *Upward social comparison* involves comparison of individuals with those who they perceive as better than themselves. Often, these types of comparisons concentrate on improving the own capacities. *Downward social comparison* involves comparison of individuals with those who they perceive as worse than themselves. Such comparisons are usually focused on creating a better feeling about the own capacities (Festinger, 1954).

Especially females experience upward social comparison, because of sociocultural pressure from the media to meet the “thin ideal” beauty norm (Thompson, Heinberg, Altabe, et al, 1999). Females make this thin ideal part of their nature and compare themselves to it. In case they don’t measure up to the norm, this frequently causes a negative body image and the desire to

lose weight (Keery, van den Berg & Thompson, 2004). The definition of a *negative body image* concerns the psychologically salient difference between someone's perceived body and their ideal body (Halliwell & Dittmar, 2006). This causes negative thinking about one's physical appearance (Dittmar, 2008). The thin ideal, which is shown by the media, increases females' societal thin ideal internalization (Hofshire & Greenberg, 2001; Morry & Staska, 2001) and their appearance comparison tendency to other people (Hargreaves & Tiggemann, 2004). Both thin ideal internalization and appearance comparison predict dissatisfaction about the body (Keery, van den Berg & Thompson, 2004; Durkin & Paxton, 2002; Tiggemann & Miller, 2010).

Besides females, males are increasingly exposed to images in the media that pressurize them to have a certain appearance and body (Trujillo, 2000). The bodies that are shown vary widely, going from incredibly skinny to extremely muscular. There is no overweight or hair on specific body parts and they all look fashionable, which are considered to be ideal features by the media. For most males, these bodies are unachievable. Therefore, being bombarded by these images has a negative impact on the psychological well-being of males (Gill, Rosalind, Henwood & McLean, 2000).

Given that every hour more than ten million pictures are posted on Facebook (Mayer-Schönberger & Cukier, 2013), the platform offers a medium where people can engage in appearance comparison frequently and therefore, it can cause body dissatisfaction. Being exposed to idealized pictures and profiles of others on Facebook could negatively influence people's evaluations about themselves. Actually, more often studies are mentioning that Facebook might have negative consequences for humans' well-being, which also includes the increased chance of low self-confidence (Ellison, Steinfield & Lampe, 2007). In addition, a relationship was found between higher levels of *Facebook use*, or increased time on Facebook, and dissatisfaction about the body (Fardouly & Vartanian, 2015), possibly caused by the opportunities the platform provides for appearance comparisons. The effects of the use of Facebook on body image could clarify why this social media network might impact the attitudes concerning both *offline* (cosmetic procedures) and *online* (photo editing) physical enhancement procedures of its users. However, no study has tested these claims yet.

### **1.1 Problem Statement**

Based on the theories, the current study provides an investigation concerning the relationship between the frequency of Facebook use and attitudes towards offline and online physical

enhancement procedures. The subsequent problem statement concerns: *What is the relationship between the use of Facebook and attitudes towards physical enhancement procedures?*

## **1.2 Research Questions**

The research questions of the present study are:

- 1) *What is the difference between attitudes towards online and offline physical enhancement procedures influenced by the use of Facebook?*
- 2) *Which main effect do appearance comparison and gender have on offline physical enhancement procedure intentions?*
- 3) *Which interaction effect do appearance comparison and gender have on the relationship between the use of Facebook and offline physical enhancement procedure intentions?*

## **1.3 Academic Relevance**

Firstly, limited literature investigates the relationship between the exposure to (social) media and attitudes towards physical enhancement procedures. The closest related study (Nabi & Keblusek, 2014), found that women have a greater reported intention to undergo physical enhancement (such as cosmetic surgery) because of exposure to traditional media, like TV and magazines, since this kind of media shows content which is very appearance focused and includes idealized pictures. What sets apart the current study from previous research is the focus on social media, specifically Facebook. Since this platform is fast becoming essential in the current society at large, it is important to investigate the effects of its use.

Secondly, research on other factors besides the media that influence the intentions towards cosmetic procedures is sparse, and typically existing studies are concentrated on the body image of females that consider cosmetic surgery (e.g., Simis, Verhulst & Koot, 2001; Thorpe, Ahmed & Steer, 2004). Since lots of females and males are interested in cosmetic surgery, it is crucial to fill this gap in the available literature (Frederick, Lever & Peplau, 2007, Sarwer, Cash, Magee, Williams, Roehrig et al, 2005). Therefore, this research will investigate the main and interaction effect of appearance comparison and gender on cosmetic procedures. While there is evidence for the main effect of the latter (Brown, Furnham, Glanville & Swami, 2007; Swami, Arteché, Chamorro-Premuzic, Furnham, Stieger, Haubner, et al., 2008), there is no evidence for the main effect of appearance comparison on cosmetic procedure intentions. Also, the interaction effects of these aspects are not examined yet. This is where this study contributes to the existing literature.



## **1.4 Managerial Relevance**

Concerning the managerial relevance, this thesis will be relevant for companies that offer products and services that are in line with cosmetic procedures as this study seeks to understand whether specific factors (Facebook use, appearance comparison tendency and gender) affect the intentions towards cosmetic procedures. Particularly, as social media (including Facebook) is becoming ordinary in the current society, its part in developing and communicating cosmetic procedures will become more and more important. Not only is social media used by the consumers, also organizations in cosmetic procedures own social media accounts. For example, the American Society for Aesthetic Plastic Surgery (ASAPS) and the American Society of Plastic Surgeons (ASPS) own applications of Facebook, YouTube and Twitter which are used in their websites and national meetings. By knowing the characteristics of the target group, companies can choose to customize their (online) marketing strategy based on this knowledge, so that, in the future, the companies can more effectively reach their audience. In addition, this thesis might be useful for companies that focus on informing people concerning the possible risks of cosmetic procedures, like the Dutch government. These companies could also benefit from this study by concentrating on a target group which is most vulnerable for creating an interest in cosmetic procedures.

The remainder of this paper is structured as follows. First, the theoretical framework will be provided in section 2. Relevant concepts and theories about attitudes towards physical enhancement procedures will be analyzed critically and based on this, the hypotheses will be introduced. Furthermore, this section presents a conceptual framework which shows how the variables of this study are linked. Next, chapter 3 includes the methodology as well as a description of the employed data. After the methodology part follow the results where, the outcomes of the ANOVA analyses will be discussed. This research will be terminated with the discussion and in addition, limitations and implications will be included as well as suggestions for future research. Finally, a conclusion will be given.

## Chapter 2 | Theoretical Framework

### 2.1 Facebook use and body dissatisfaction

The most acknowledged framework to understand dissatisfaction about the body and eating disorders is provided by sociocultural models (e.g., Tiggemann, 2011). It was concluded that the thin ideal is societally strengthened and communicated by various sociocultural influences, with the media as the most prevalent one. For further examination based on the sociocultural model, comprehensive correlational research has shown associations between exposure to the media and dissatisfaction about the body or eating disorders. Several researches have examined in which way the media (particularly television and magazine images) influences consumers' satisfaction about their body. The meta-analysis "thin body ideal in media messages" found that body dissatisfaction among females can be caused by exposure to idealized images (Grabe, Ward & Hyde, 2008; Groesz, Levine & Murnen, 2002). This relation causes lots of concerns, since it is associated to both mental (e.g., body dysmorphic disorder) and eating disorders (e.g., anorexia nervosa) (Bissell & Zhou, 2004; Botta, 1999; Harrison & Cantor, 1997; Sarwer & Crerand, 2004; Stice & Shaw, 1994). More recent research points out that the traditional media (e.g., television and magazines) is being overtaken by the Internet, especially among the younger generation (Bell & Dittmar, 2011; Tiggemann & Miller, 2010). In particular, social networking sites are used a lot and although it was suggested that the amount of Facebook users was shrinking, Facebook is still on top of all social media platforms and its membership continues to grow (Pew Research Center, 2017).

Increasingly negative effects about the use of Facebook are being addressed. Every day, many pictures are posted by its users (Mayer-Schönberger & Cukier, 2013), which causes individuals to view Facebook profiles of others and compare themselves online (Haferkamp, Eimler, Papadakis & Kruck, 2012). Furthermore, since people strive to present themselves in an ideal way (Manago, Graham, Greenfield & Salimkhan, 2008; Zhao, Grasmuck & Martin, 2008), it is very likely that upward comparisons are made towards other Facebook users. As a consequence, more often studies are mentioning that Facebook might have negative consequences for humans' well-being, which also includes the increased chance of low self-confidence (Ellison, Steinfield & Lampe, 2007).

Recent studies have investigated this suggestion and found that there is indeed an association between Facebook use and concerns about one's appearance. A study among Australian respondents concluded that female Facebook users experience greater concerns about their

appearance and dieting behavior in comparison with females that don't use Facebook (Tiggemann & Slater, 2013, 2014). In addition, a study among American respondents concluded that the levels of self-objectification and appearance comparison tendency were higher among female Facebook users than females that didn't use Facebook (Meier & Gray, 2014).

Besides looking at the differences between Facebook users and non-users, the relation between the frequency of Facebook use and concerns about one's appearance has also been investigated. Australian female Facebook users that spent more hours per day on Facebook, turned out to have a greater appearance dissatisfaction, an increased internalization of the thin ideal and a better drive to be thin (Tiggemann & Miller, 2010; Tiggemann & Slater, 2013, 2014). Thus, the use of Facebook is pervasive and dissatisfaction about the body is widespread, but does this influences the attitudes towards physical enhancement procedures?

## **2.2 Facebook use and cosmetic procedure intentions**

There is a limited amount of academic literature that investigates the relationship between the exposure to (social) media and intentions towards cosmetic procedures. However, Sarwer and Crerand (Sarwer & Crerand, 2004) suggest an association between body dissatisfaction and seeking out procedures to enhance appearance. In fact, research (Brown, Furnham, Glanville & Swami, 2007) found that people which rated their physical attractiveness lower, showed more interest in undergoing cosmetic surgery. This supports the idea that body dissatisfaction increases the consideration of cosmetic procedures to improve appearance. Besides, it has been found that patients of treatments for cosmetic reasons are indeed unsatisfied with the certain parts of their body for which they undergo surgery (Simis, Verhulst & Koot, 2001). In the extensive discussion of Sarwer and Crerand around the image of one's body and cosmetic procedures, it is argued that the widespread, but unrealistic "ideal" thin, yet full-breasted female models presented by the media, contribute to the increasing number of cosmetic procedures. Yet, there is no evidence for this assertion. Harrison (Harrison, 2003) found a link between the frequency of exposure to the media image of the thin ideal and the approval of young people of surgical and nonsurgical treatments. Thus, there might be inferred that exposure to the beauty ideal is associated to acceptance of cosmetic treatments that can help to achieve that ideal. Finally, perhaps closest, is a study of Nabi and Keblusek (Nabi & Keblusek, 2014), which found that females have a greater reported intention to undergo physical enhancement (such as cosmetic surgery) because of exposure to traditional media, like TV and magazines, since this

kind of media shows content which is very focused on appearance and includes idealized pictures.

The processes that count for traditional media concerning the intentions towards cosmetic procedures, might also be at play in the context of Facebook. It's already clear that Facebook use influences body image negatively, so a logical question concerns if the use of Facebook also has a relation with the intentions for cosmetic procedures. For this reason, the first aim of the current study is to test if Facebook use predicts cosmetic procedure intentions.

**H<sub>1</sub>.** Frequent Facebook users have higher cosmetic procedure intentions comparing to non-frequent Facebook users.

### **2.3 Facebook use and photo editing behavior**

Concerning the social dimension of Facebook, the concept of self-presentation argues that people want to manage the image others create of them in each kind of social interaction (Goffman, 1959). This is because people want to influence others in order to be rewarded (e.g. positively impress future in-laws). Also, people desire to form an image that suits with their personality (wearing specific clothes to be considered as trendy). Self-presentations consist of the impressions given through explicit verbal communication (e.g., the Information page of Facebook users) and implicit expressions given through visual appearance. The main objective people have when they create a personal webpage (e.g. Facebook page), is to introduce and represent themselves on the Internet (Schau & Gilly, 2003). Generally, this kind of presentation is done by self-disclosure, which concerns the revealing of information about a person, coherent with the image one desires to have. Self-disclosure is required when it comes to developing close relationships but can also happen between strangers. A downside of online presentation is that it causes different kinds of concerns. One of them has to do with trust: To which extent are these online self-presentations through both explicit and implicit expressions on social media networks consistent with people's real identities?

Facebook users can be engaged in the concept of *selective self-presentation*. Selective self-presentation concerns a monitored and organized form of self-presentation (Walther, 1992). According to Walther, who originally outlined the concept, selective self-presentation is achievable because of (I) the textual nature of computer-mediated communication (CMC), which makes messages more editable, and (II) the slowed temporal dynamics of CMC, which

gives users more time to construct their self-presentation. These aspects of CMC give users the opportunity to control their self-presentation to a much greater extent comparing to real-life situations. Hence, online self-presentation is much more “selective” than what it would be in the real world (Walther 1992; Walther, 1996).

Online self-presentation is not solely focused on written descriptions anymore. The profile picture has become central in online self-presentation to represent people’s physical appearance. Profile pictures on Facebook are a type of "implicit" identity construction (Zhao, Grasmuck & Martin, 2008). With this, physical characteristics can be displayed through photographs. Content analysis (Zhao, Grasmuck & Martin, 2008) concerning Facebook profiles found that people have a high reliance on implicit self-presentation methods. Given that pictures can be enhanced by editing them and the uploading process can be strictly monitored, selective self-presentation via profile pictures seems reasonable.

In the current society, it seems like physical attractiveness is often rewarded. This might cause Facebook users to try to increase their level of (online) attractiveness by manipulations. Indeed, it has been found that people are very conscious about the selection they make regarding their visual online presentation. According to Siibak (Siibak, 2009), the selected pictures often represent an “ideal self” (the person one would like to be) or the “ought self” (the person one believes it should be in order to be accepted by other users). These conclusions correspond to Goffman’s (Goffman, 1959) assertion that people present personal identities which they think will be approved by others.

There are several methods people can use to improve physical appearance through photos. When a picture is made, specific programs can optimize it. Not that long ago, these programs could only be used by professionals. However, design software is now widely accessible for everyone (Casimiro, 2005). With a little knowledge, people can use the software to reduce wrinkles, remove blemishes, make hair shinier and more voluminous, and so forth (Messaris, 1997).

As discussed earlier, Facebook use is linked to negative body images due to the abilities for appearance comparison. People with low self-esteem might try to enhance physical attractiveness by editing their photos. This could improve self-confidence, since these pictures often represent someone’s ideal, monitored image. When it comes to uploading photos on personal social media profiles (Tazghini & Siedlecki, 2013), people with lower self-confidence

more often delete bad photos of themselves. In addition, they are less enthusiastic about posting pictures on Facebook comparing to people with a higher self-confidence. However, there has also been found a link between more self-promotion through Facebook profile pictures and people with low self-confidence (Mehdizadeh, 2010). Moreover, existing research that concentrated on self-presentation through social networks concluded that self-confidence increases when an individual browses his/her Facebook profile, since this most likely contains positive and carefully selected content (Gonzales & Hancock, 2011; Toma, 2013).

Given the fact that more frequent Facebook use is linked to more body image concerns which could be improved by a personal Facebook page with positive, well-considered pictures, it is expected that spending more time on Facebook is related to more frequent photo editing in order to emphasize an ideal self-image.

**H<sub>2</sub>.** Frequent Facebook users make more use of photo editing for pictures of themselves on Facebook than non-frequent Facebook users.

## **2.4 Facebook use, appearance comparison and cosmetic procedure intentions**

Social comparison has a long and rich theoretical history in psychology and is the tendency to look at other people's characteristics and compare these to the own features. Humans frequently make comparisons to others and consider which traits are worth to improve (Collins, 1996; Festinger, 1954; Gilbert, Price & Allan, 1995; Mendes, Blascovich, Major & Seery, 2001). Comparison likely serves as a measurement for deciding how much effort is needed to be successful regarding competitors.

Usually, people make upward instead of downward physical appearance comparisons, which means that they compare themselves to people that are "more beautiful" (e.g., fashion models or television stars). According to research, there is a link between upward appearance comparisons to images shown by the media and dissatisfaction about the body, including the common media (Jones, 2001; Morrison, Kalin & Morrison, 2004), TV programs and advertising (Botta, 1999; Cattarin, Thompson, Thomas & Williams, 2000; Tiggemann & Slater, 2004), and advertisements in magazines (Engelin-Maddox, 2005; Martin & Kennedy, 1993; Richins, 1991; Tiggemann & McGill, 2004). The dissatisfaction results in the adaption of risky compensatory behavior. Associations have been found with tendencies towards bulimia (Botta, 1999), a strict selection of food and a close watch on one's weight in females and dieting and using steroids

to become muscular in males (Morrison, Kalin & Morrison, 2004). So, the more comparisons people make to ideal media images, evaluating themselves as not good enough, the more appearance dissatisfaction they experience, the more females' motivation increases to be thin or males' motivation increases to be muscular and the more they perform actions to achieve their goals.

Assuming that undergoing cosmetic procedures is seen as a convenient way to close the attractiveness gap caused by upward appearance comparison, a logical expectation is that there is a relation between appearance comparison tendency and intentions towards cosmetic procedures, assuming self-evaluation motives are at play. Thus:

- H<sub>3</sub>.** Consumers with a high appearance comparison tendency have higher cosmetic procedure intentions comparing to consumers with a low appearance comparison tendency.

Through Facebook, people can frequently make appearance comparisons with others since each day lots of images are uploaded on the platform (Mayer-Schönberger & Cukier, 2013). Research has already shown a positive relationship between Facebook usage and worries about the body image, which was mediated by appearance comparisons to people in the close environment and famous people (Fardouly & Vartanian, 2015).

Comparing Facebook to magazine pictures, a big difference concerns the targets for appearance comparison. In magazines, usually pictures of celebrities or fashion models are shown whereas on Facebook generally pictures of people in the close environment are presented (Hew, 2011). Equal to the impact of exposure to pictures in the media of thin ideal attractive targets (Halliwell & Dittmar, 2004; Halliwell, Malson & Tischner, 2011; Hargreaves & Tiggemann, 2004), exposure to people in the close environment that meet the thin ideal raises females' dissatisfaction about their body (Krones, Stice, Batres & Orjada, 2005). Studies which investigated the effect of appearance comparisons to these two comparison targets concluded that comparisons to celebrities or fashion models and people in the close environment regarding females' body image concerns have different effects. This might be because the appearance of people in the close environment is perceived as more achievable than the appearance of celebrities or fashion models because of more matching lifestyles. Though, the findings around this subject vary (Carey, Donaghue & Broderick, 2013; Leahey & Crowther, 2008; Ridolfi,

Myers, Crowther & Ciesla, 2011; Schutz, Paxton & Wertheim, 2002). A meta-analysis on appearance comparison and dissatisfaction about the body concluded that there were no different outcomes of appearance comparisons to the two comparison targets on females' dissatisfaction about the body (Myers & Crowther, 2009).

The current study proposes that consumers with a high and low appearance comparison tendency react differently to exposure to images on Facebook. Consumers with a high appearance comparison tendency are more likely to compare themselves with (ideal) images on Facebook. The possible body dissatisfaction caused by this could eventually lead to higher cosmetic procedure intentions. The following hypothesis was defined:

- H<sub>4</sub>.** The relationship between Facebook use and cosmetic procedure intentions is moderated by appearance comparison, in that consumers with a high appearance comparison tendency react more strongly to frequent Facebook use than non-frequent Facebook use and that consumers with a low appearance comparison tendency react less strongly to frequent Facebook use than non-frequent Facebook use.

## **2.5 Facebook use, gender and cosmetic procedure intentions**

Looking at the factors that influence the intentions towards cosmetic procedures, the existing literature states that females have higher interests in undergoing cosmetic procedures comparing to males (Brown, Furnham, Glanville & Swami, 2007; Swami, Arteché, Chamorro-Premuzic, Furnham, Stieger, Haubner, et al., 2008). As explained before, this is probably because females experience a lot of pressure from the media to reach the “thin ideal” beauty norm (Thompson, Heinberg, Altabe, et al, 1999), which is strongly associated to a negative body image (Grabe, Ward & Hyde, 2008; Groesz, Levine & Murnen, 2002; Want, 2009).

Beauty covers an important aspect in the lives of many females. According to Freedman (Freedman, 1986), “women are aware that beauty counts heavily with men and they therefore work hard to achieve it”. For females, being perceived as attractive is essential to potential mates. From an evolutionary perspective, males are expected to try to find mates by looking at physical features like beauty and health since these aspects are associated to the reproductive potential of females (Buss, 1989; Buss & Barnes, 1986; Cunningham, Druen & Barbee, 1997; Kenrick & Keefe, 1992; Symons, 1979). In contrast to this, females are expected to put more



focus on males' social dominance when seeking for a potential partner, probably since this characteristic is linked to providing adequate resources and desirable genetic tendencies that can be passed on to their offspring (Sadalla, Kenrick & Vershure, 1987). To attract a potential partner, males and females need to embody the physical features that are wanted by the other gender. For females, this means that they must radiate fertility (youthful and healthy physical attractiveness).

Furthermore, females with a high attractiveness degree are rewarded both in a psychological and social way (Dellinger & Williams, 1997; Hatfield & Sprecher, 1997). Adolescent girls mentioned that "feeling good about themselves" depended on "looking good" (Currie, 1997). Females who wear makeup at work are perceived as heterosexual, in a better health, and more qualified comparing to the ones that do not wear makeup (Dellinger & Williams, 1997). In case females do not meet the standard, they are considered less positively (Bartky, 1990; Dellinger & Williams 1997).

Although especially females experience quite some pressure to look good, also males want to impress the opposite sex through physical attractiveness (Ridgeway & Tylka, 2005). Over the past thirty decades, content analyses about media pictures of males found that physical appearance ideals for males are becoming increasingly muscled (Leit, Pope & Gray, 2001; Spitzer, Henderson & Zivian, 1999) and are more often shown by the media (Pope, Olivardia, Borowiecki & Cohane, 2001). Other than females, that are usually dissatisfied with their weight and/or figure and desire to be thinner, males are usually dissatisfied with the size of their muscles and desire to be more muscular (McCabe & Ricciardelli, 2004; Morrison, Morrison & Hopkins, 2003; Olivardia, Pope, Borowiecki, 2004; Tiggemann, Martins & Kirkbride, 2007). There is a likely difference in males' ideal body and the body parts of concern comparing to females (Anderson, Cohn & Holbrook, 2000; Cohane & Pope, 2001; Olivardia, 2001; Vartanian, Giant & Passino, 2001). The areas where males want to gain muscle differ from the areas where females want to be more tight (McCabe & Ricciardelli, 2001). In particular, males desire to have a more muscular upper body and on the other hand, females mainly desire to have tighter hips, legs and buttocks (Anderson, Cohn & Holbrook, 2000).

Thus, both sexes care about their physical attractiveness in their own way. However, comparing to males, females put more focus to it. Evidence has already been found for the suggestion that females have higher interests in cosmetic procedures than males (Brown, Furnham, Glanville

& Swami, 2007; Swami, Arteché, Chamorro-Premuzic, Furnham, Stieger, Haubner, et al., 2008). Therefore, the following hypotheses was defined:

**H<sub>5</sub>.** Females have higher cosmetic procedure intentions comparing to males.

As mentioned, appearance ideals for both sexes, that offer widespread accepted norms which people can use for comparing and evaluating their own physical appearance, are mostly transmitted by the media (e.g., Tiggemann, 2002). The media is the main provider of the thin ideal for females, presenting a nonrealistic and artistic beauty image. For most females, this is impossible to attain (Levine & Murnen, 2009). In addition, males are also increasingly exposed to images in the media that pressurize them to have a certain appearance and body (Trujillo, 2000).

Since the media landscape has changed a lot during the last years, beauty ideals are no longer just promoted through the traditional media, like television or magazines. Facebook offers a platform where lots of images can be uploaded (Mayer-Schönberger & Cukier, 2013) and because people strive to present themselves in an ideal way online (Manago, Graham, Greenfield & Salimkhan, 2008; Zhao, Grasmuck & Martin, 2008), upward appearance comparisons to other users of Facebook seems plausible.

The current study proposes that females and males react differently to exposure to images on Facebook. Since females are more focused on appearance, they probably compare themselves with (ideal) pictures on Facebook more often. Eventually this could lead to higher cosmetic procedure intentions. The following hypothesis was defined:

**H<sub>6</sub>.** Facebook use will lead to cosmetic procedure intentions more strongly among women than man.

## **2.6 Conceptual model**

In short, the aims of the current study are to: (a) examine the effect of the frequency of Facebook use, appearance comparison tendency and gender on cosmetic procedure intentions; (b) examine the relationship between the frequency of Facebook use and photo editing behavior; (c) examine whether appearance comparisons account for the relationship between Facebook

use and cosmetic procedure intentions; (d) investigate whether the relationship between the frequency of Facebook use and cosmetic procedure intentions is stronger among females than males. The six hypotheses of this study are:

- H1: Frequent Facebook users have higher cosmetic procedure intentions comparing to non-frequent Facebook users.
- H2: Frequent Facebook users make more use of photo editing for pictures of themselves on Facebook than non-frequent Facebook users.
- H3: Consumers with a high appearance comparison tendency have higher cosmetic procedure intentions comparing to consumers with a low appearance comparison tendency.
- H4: The relationship between Facebook use and cosmetic procedure intentions is moderated by appearance comparison, in that consumers with a high appearance comparison tendency react more strongly to frequent Facebook use than non-frequent Facebook use and that consumers with a low appearance comparison tendency react less strongly to frequent Facebook use than non-frequent Facebook use.
- H5: Females have higher cosmetic procedure intentions comparing to males.
- H6: Facebook use will lead to cosmetic procedure intentions more strongly among females than males.

Based on these hypotheses, the resulting conceptual model is presented in figure 1.

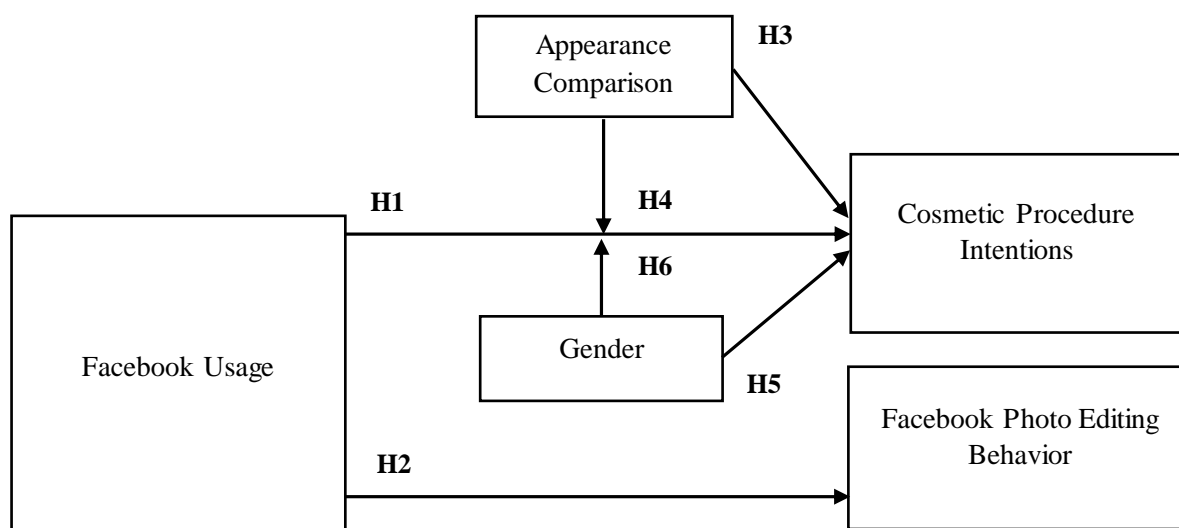


FIGURE 1 | CONCEPTUAL MODEL

## **Chapter 3 | Methodology**

### **3.1 Research design**

Since the research question of the current study is about possible relationships, but the independent variables cannot be manipulated and participants cannot be randomly assigned to conditions or orders of conditions, a non-experimental design rather than an experimental design was chosen to test the hypotheses. The term non-experimental design is referring to a situation in which a supposed cause and effect are identified but other structural features of an experiment are absent. Random assignment, pretests and control groups are not part of the design. Instead, non-experimental designs rely on measuring alternative explanations by interpretation, observation or interactions and then statistically controlling for them (Shadish, Cook & Campbell, 2002).

### **3.2 Sample and data collection**

The questionnaire was directed at young adults with a Dutch nationality. A total of 241 respondents participated in the experiment, yet only 209 responses were used for further testing. 22 individuals (9.1%) were omitted due to missing data, having another nationality than Dutch or falling outside the age category. The 209 respondents (60.3% females, 39.7% males) ranged from 18 till 35 in terms of age with a mean age of 24 (SD= 2,69). With regard to the social media facet of the current study, all respondents used Facebook. The most popular activities that were performed at the platform concerned checking up, viewing photos and viewing videos. Lastly, 81.3% of the respondents were students. More demographic information of the sample is shown below in table 1.

**Table 1 – DEMOGRAPHIC BACKGROUND OF PARTICIPANTS (N = 209)**

	Group	N	%
Gender	Male	83	39.7
	Female	126	60.3
Nationality	Dutch	209	100
Age	18-21	41	19.6
	22-26	152	72.7
	27-31	12	5.7
	32-35	4	1.9
Education	High school graduate	38	18.2
	MBO graduate	13	6.2
	HBO Bachelor's degree	53	25.4
	WO Bachelor's degree	72	34.4
	WO Master's degree	32	15.3
	Other	1	.5
Occupation	Student	170	81.3
	Part-time employee	13	6.2
	Full-time employee	25	12.0
	Unemployed	1	.5

### 3.3 Procedure

To test the stated hypotheses, an online questionnaire was conducted (Appendix A&B). The survey, generated with Qualtrics, was distributed through social media, more specifically Facebook and LinkedIn. The main advantages of an online survey are 1) low costs, 2) fast completion, 3) researcher's control of the participants (and no involvement in the questionnaire), 4) collected data can be instantly loaded in the data analysis software, which saves time and data entry process resources (Ilieva, Baron & Healey, 2001).

All questions were marked as obligatory which made sure the participants couldn't skip an item by accident. The same introduction was exposed to all participants, which explained the process of the survey and clarified that their data would remain confidential, exclusive to this study. Subsequently, participants were asked to fill out some demographic questions. One after another, questions were asked concerning Facebook use, Facebook photo editing behavior, appearance comparison and cosmetic procedure intentions.

There has been deliberately chosen to use no incentives in order to raise the response rate. A drawback of incentives concerns the possibility to encourage people to fill in the questionnaire

multiple times. Also, people might fill in unusable data to finish the questionnaire as soon as possible just to be in the running for the incentive that can be gained (Goritz, 2004).

### **3.4 Measures**

*Demographic background.* First of all, five sociodemographic variables introduced the questionnaire: gender, nationality, age, educational attainment and area of occupation. Educational attainment was categorized as high school graduate, MBO graduate, HBO bachelor's degree, WO bachelor's degree, WO master's degree, doctorate degree/Ph.D and all other responses. Finally, area of occupation was categorized as student, part-time employee, full-time employee and unemployed.

Second, a set of items assessed frequency of use of several social media platforms by asking participants to indicate how often they used the following platforms each week: Facebook, Instagram, Twitter, Snapchat, LinkedIn, YouTube, Google+, Tumblr and Pinterest. These platforms were selected based on prior research documenting their popularity in The Netherlands (Newcom, 2016). Seven response categories for each of these items, based on a framework established by the Pew Research Center (I don't use this platform, less than once a week, 1-2 days a week, 3-6 days a week, about once a day, 2-4 times a day, 5 or more times a day) were used.

*Facebook usage.* For Facebook use, participants first indicated whether they had a Facebook account for personal use (Yes/No). Text associated with this item specifically instructed participants not to include work-related use (all participants indicated that they did have a Facebook account for personal use). Then they were asked how much time they spend on Facebook on a typical day (5 minutes or less, 15 minutes, 30 minutes, 1 hours, 2 hours, 4 hours, 6 hours, 8 hours, 10 hours or more) (Fardouly & Vartanian, 2015). These last items were recoded to represent hours, i.e., 0.083, 0.25, 0.5, 1, 2, 4, 6, 8, 10 respectively. Participants were also asked about how many Facebook friends they had (Less than 100, 100-200, 200-300, 300-400, 400-500, 500-600, 600 or more). Finally, participants were asked to estimate the frequency with which they conducted various activities on Facebook. For the list of Facebook activities consisting of fourteen items, a study of Junco was used (Junco, 2012). Participants were asked: "How frequently do you perform the following activities when you are on Facebook?" Facebook activity items were rated using a five-point Likert scale (Never - Very Frequently).

*Facebook photo editing behavior.* Editing behavior was determined by asking “How frequently do you use the following techniques to make you look better in pictures you post on Facebook?” Three methods of improving one’s appearance on pictures were given: cropping or cutting parts of yourself out of pictures, using photographic filters and using Photoshop or other picture editing software or applications. Participants responded on a five-point scale (Never - Often) (Fox & Rooney, 2014). The mean summary score was 2.20 with a standard deviation of 1.10. An index of the total scale was created to test the hypothesis, just as in formative measurement. Consequently, the items may be correlated, but the Composite Latent Variable (Formative) model does not assume or require this (Jarvis, MacKenzie & Podsakoff, 2003).

*Appearance comparison.* Each individual completed the Physical Appearance Comparison Scale-Revised (PACS-R) (Schaefer & Thompson, 2014), which consists of a listing of eleven statements. Participants were asked to rate all items using a five-point Likert rating scale (Never - Always) to assess their tendency to engage in physical appearance comparisons. Higher mean scores on the PACS-R indicate greater extent of appearance comparisons. The mean summary score was 2.63 with a standard deviation of 0.92. An index of the total scale was created to test the hypotheses, just as in formative measurement. Consequently, the items may be correlated, but the Composite Latent Variable (Formative) model does not assume or require this (Jarvis, MacKenzie & Podsakoff, 2003).

*Cosmetic procedure intentions.* Participants were asked about their intentions and past behavior concerning a list of cosmetic procedures. Using a method modified from Harrison (Harrison, 2003) combined with some popular physical enhancement procedures in the Netherlands (KliniekErvaringen.nl, 2013) all participants were asked: “Imagine these physical enhancement methods are free (so cost are not an issue), how likely would you be in that case to do each of the following to improve your appearance?” All respondents were asked to indicate their likelihood or past experience with fifteen common physical appearance enhancing behaviors: diet and exercise, hair coloring, appearance-improving skin lotion, tanning, teeth bleaching, dental veneers, laser hair removal, dermabrasion/ skin peel, botox injections, nose job, corrective eye surgery, face lift, cheek implants, tummy tuck and liposuction (Never – I have already done this). The mean summary score was 2.20 with a standard deviation of 0.70. An index of the total scale was created to test the hypotheses, just as in formative measurement. Consequently, the items may be correlated, but the Composite Latent Variable (Formative) model does not assume or require this (Jarvis, MacKenzie & Podsakoff, 2003).

### **3.5 Ethical considerations**

When conducting academic research, four ethical issues should be taken into account: 1) participation is voluntary, 2) no damage to participant, 3) confidentiality and 4) anonymity (Baxter & Babbie, 2004). The questionnaire did not ask participants to fill in information like their names or addresses which could detect their identity. Moreover, the survey did not include questions which could cause embarrassment or harm to the participants. Finally, on the first page of the questionnaire, there was a short introduction in which the participants were explained that the study was voluntary and declining would not have any consequences.

### **3.6 Descriptive statistics**

The outcomes of the survey were collected through Qualtrics and scrutinized in the statistical data program SPSS 23. With descriptive statistics, there is looked at respondents' demographic background, Facebook use, photo editing behavior, appearance comparison and cosmetic procedure intentions (e.g. mean and standard deviation). Furthermore, Pearson's correlation coefficient (or Pearson's  $r$ ) was used to explore the association among these variables. Pearson's  $r$  is a statistical measurement of a linear correlation between paired data. The values of Pearson's  $r$  are between -1 and 1, where -1 means there is a perfect negative linear correlation between the variables, 0 means there is no linear correlation between the variables and 1 means there is a perfect positive linear correlation between the variables (Lane, 2013). In addition, the correlation matrix also determines whether there is multicollinearity between the variables. Multicollinearity is the extent to which an independent variable varies with other independent variables (Gefen, Straub & Boudreau, 2000).

Table 2 shows the descriptive statistics and correlation matrix of the different variables in the main study. Since none of the correlations are  $>.95$ , there is no multicollinearity present in this model.



TABLE 2 – DESCRIPTIVE STATISTICS AND CORRELATION MATRIX

	Mean	SD	1	2	3	4	5
<b>1. Gender</b>	0.60	0.49	NA				
<b>2. Facebook use</b>	1.13	1.01	.028	NA			
<b>3. Appearance comparison</b>	2.63	0.92	.295**	.103	NA		
<b>4. Cosmetic procedures</b>	2.20	0.70	.491**	.162*	.419**	NA	
<b>5. Photo editing</b>	2.16	1.10	.321**	.093	.310**	.318**	NA

\*. Correlation is significant at the 0.05 level (2-tailed)

\*\* . Correlation is significant at the 0.01 level (2-tailed)

Furthermore, the participants were divided into smaller groups based on the number of hours they spent on Facebook on a typical day as follows: participants with scores 0.083 - 0.5 were placed in the *non-frequent Facebook users* group and 1 – 6 in the *frequent Facebook users* group. None of the participants used Facebook more than 6 hours per day. It is important to mention that categorizing could decrease statistical power (Arguinis, 1995), which is therefore seen as a limitation of this study. However, in marketing research, categorization is common to aid interpretation of the results (Arguinis, 1995). The final size of the participant groups can be found in table 3.

Value Label	N
Non-frequent Facebook users	92
Frequent Facebook users	117

TABLE 3 – FACEBOOK USER GROUPS

## Chapter 4 | Results

This chapter provides a thorough analysis of the data obtained by the questionnaire for which the program SPSS 23 was used. The six constituted hypotheses based on prior literature were tested. Tests with  $p < .05$  were considered statistically significant and tests with  $p > .05$  were considered not statistically significant.

### 4.1 Assumptions ANOVA

- Both the dependent measures (cosmetic procedure intentions and Facebook photo editing behavior) are measured at the continuous level.
- All three independent variables (Facebook usage, appearance comparison and gender) consist of two or more categorical, independent groups.
- Through boxplots, outliers were evaluated. Three outliers were detected, but since they were not considered to be data entry errors or measurement errors and would not substantially affect the results, the outliers were not eliminated from the analysis (Ghosh & Vogt, 2012).
- The dependent variables are not normally distributed for each combination of the groups of the independent variables. However, ANOVA analyses only require roughly normal data, since these analyses are quite "robust" to violations of normality. This means that the assumption can be a little violated and still provide valid output (Khan & Rayner, 2003).
- For both the three-way ANOVA as the one-way ANOVA that were performed, there was homogeneity of variances, as measured by Levene's test of homogeneity of variance (with  $p = .065$  and  $p = .954$ ).

### 4.2 Analysis of variance

The analysis of variance (or ANOVA) is an extension of the t-test in cases where there are more than two samples involved. An analysis of variance may therefore be used to determine the significance level of the difference between more than two means, as well as to find out what the effect of one or more nominal independent variables is on an interval-scaled dependent variable. Ultimately, both approaches come down to the same thing. The nominal independent variables are also called factors. The different values that these nominal variables may take on are referred as levels (Janssens, Wijnen, De Pelsmacker & Van Kenhove, 2008).

Analysis of variance may take on various forms. In this case, the three-way ANOVA analysis was used to test the hypotheses concerning the dependent variable cosmetic procedure

intentions (Appendix C). The three independent variables in this test were: Facebook use, appearance comparison, and gender. As mentioned, Facebook use was divided into two groups: frequent Facebook users and non-frequent Facebook users. To illustrate the difference among respondents with high scores on the appearance comparison scale, a dummy variable was created by splitting the variable at the median. Respondents with scores up to and including three are considered to have low scores (1) on appearance comparison tendency and the contrary holds for scores above three (2). Gender includes males and females. In addition, a one-way ANOVA was used to test the hypothesis concerning the dependent variable Facebook photo editing behavior (Appendix D). The independent variable in this test was Facebook use.

### **4.3 Main effects Facebook use**

#### **4.3.1 Cosmetic procedure intentions**

It is expected that more frequent Facebook use predicts increased intentions towards cosmetic procedures. Therefore, **hypothesis 1** proposed that frequent Facebook users have the highest cosmetic procedure intentions. The three-way ANOVA analysis (Appendix C) indicated that there is a significant difference in cosmetic procedure intentions among frequent and non-frequent Facebook users ( $F(1,201) = 4.413, p = .037$ ). Simple contrasts were run to analyze the mean differences between the Facebook user groups. As expected, cosmetic procedure intentions among frequent Facebook users ( $M = 2.294$  out of 6,  $SD = 0.067$ ) are higher than the cosmetic procedure intentions among non-frequent Facebook users ( $M = 2.063$  out of 6,  $SD = 0.087$ ). This means that support was found for **hypothesis 1**. Frequent Facebook users have higher intentions towards cosmetic procedures than non-frequent Facebook users.

#### **4.3.2 Photo editing behavior**

**Hypothesis 2** proposed that frequent Facebook users made more use of photo editing for pictures of themselves on Facebook than non-frequent Facebook users. A one-way ANOVA analysis (Appendix D) was run to test hypothesis 2. Frequent Facebook users make a little more use of photo editing ( $M = 2.177$  out of 5,  $SD = 1.108$ ) than non-frequent Facebook users ( $M = 2.134$  out of 5,  $SD = 1.104$ ). However, the effect of the different Facebook users on photo editing behavior is not significant ( $F(1,207) = .076, p = .783$ ). This means that directional support was found for **hypothesis 2**, but there is no significant difference in photo editing behavior among the two Facebook user groups.

#### 4.4 Main and interaction effect of appearance comparison

**Hypothesis 3** suggested that consumers with a high appearance comparison tendency had higher cosmetic procedure intentions comparing to consumers with a low appearance comparison tendency. It has been found (Appendix C) that there is a significant difference in cosmetic procedure intentions between the two appearance comparison tendency groups ( $F(1,201) = 10.515, p = .001$ ). As proposed, cosmetic procedure intentions are higher among consumers with a high appearance comparison tendency ( $M = 2.357$  out of 6,  $SD = 0.098$ ) than among consumers with a low appearance comparison tendency ( $M = 2.001$  out of 6,  $SD = 0.049$ ). This means that support was found for **hypothesis 3**.

**Hypothesis 4** then assumed that the relationship between Facebook use and cosmetic procedure intentions was moderated by appearance comparison. More specifically, it suggested that consumers with a high appearance comparison tendency would react more strongly to frequent Facebook use than non-frequent Facebook use and consumers with a low appearance comparison tendency would react less strongly to frequent Facebook use than non-frequent Facebook use. The three-way ANOVA analysis indicated that there is no significant *interaction* effect between Facebook use and appearance comparison on cosmetic procedure intentions ( $F(1,201) = 1.173, p = .280$ ). This is visualized in the profile plot in figure 2. Based on these results, there can be concluded that directional support was found for **hypothesis 4**, but there is no significant difference in cosmetic procedure intentions in relationship to Facebook use among the two appearance comparison tendency groups.

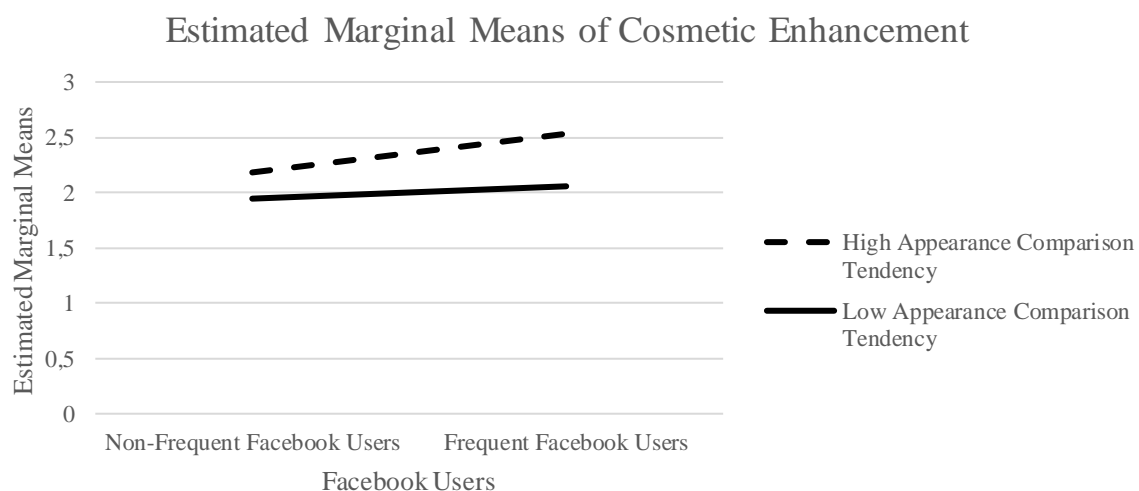


FIGURE 2 – INTERACTION OF FACEBOOK USERS AND APPEARANCE COMPARISON TENDENCY GROUPS

#### 4.5 Main and interaction effect of gender

**Hypothesis 5** proposed that Facebook use would lead to cosmetic procedure intentions more strongly among females than males. The three-way ANOVA analysis (Appendix C) indicated that there is a statistically significant difference in cosmetic procedure intentions between females and males ( $F(1,201) = 34.999, p = .000$ ). Females ( $M = 2.504$  out of 6,  $SD = 0.053$ ) have higher intentions towards cosmetic procedures than males ( $M = 1.854$  out of 6,  $SD = 0.096$ ). This means that support was found for **hypothesis 5**.

Then, **hypothesis 6** suggested that the relationship between Facebook use and cosmetic procedure intentions was moderated by gender. It assumed that Facebook use would lead to cosmetic procedure intentions more strongly among females than males. However, there was no significant *interaction* effect between Facebook use and gender on cosmetic procedure intentions ( $F(1,201) = 0.144, p = .705$ ). These results suggest that there is no greater intention to undergo cosmetic procedures among females due to Facebook use than among males, which is also shown in the profile plot in figure 3. This means that directional support was found for **hypothesis 6**, but there is no significant difference in cosmetic procedure intentions in relationship to Facebook use among females and males.

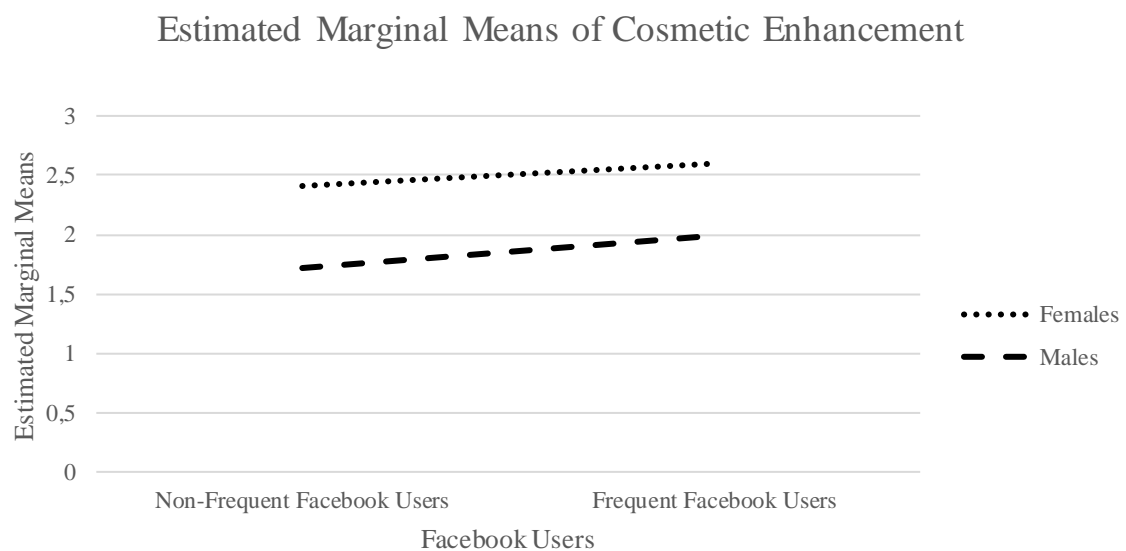


FIGURE 3 – INTERACTION OF FACEBOOK USERS AND GENDER

## Chapter 5 | Discussion

The current study has provided an investigation of the relationship between Facebook use and attitudes towards physical enhancement procedures. The main purpose of the study was to analyze if more frequent Facebook use would lead to increased intentions towards cosmetic procedures and increased Facebook photo editing behavior. Furthermore, it looked at the main and interaction effect of appearance comparison tendency and gender. The results of this study will now be summarized and discussed in relation to previous research.

The present study expands the existing academic literature in several ways. Firstly, it adds to existing literature on media effects by investigating the influence that Facebook use has on young adults' intentions towards cosmetic procedures. The main finding was that, as expected, Facebook use was linked to cosmetic procedure intentions. Frequent Facebook users, specifically in terms of how much time was spent on Facebook per day, had higher intentions towards cosmetic procedures than non-frequent Facebook users. Although no research examined the relationship between social media use and physical enhancement yet, the findings are to some extent in line with Nabi and Keblusek (Nabi & Keblusek, 2014), which found that women have a greater reported intention to undergo physical enhancement because of exposure to traditional media, like TV and magazines.

The results showed no significant difference in Facebook photo editing behavior between frequent and non-frequent Facebook users. This means that Facebook usage is not associated with making use of photo editing for pictures that people post of themselves on Facebook. Although there was no existing literature about this specific relationship, the findings are not in line with the expectations that could be drawn from previous research. Since more frequent Facebook use is linked to more body image concerns which could be improved by self-selected, positive photos (Gonzales & Hancock, 2011; Toma, 2013), it was expected that spending more time on Facebook was associated to more frequent photo editing in order to emphasize an ideal self-image. A possible explanation for the unexpected finding could be that opposite trends are getting a lot of attention recently. Celebs like Alicia Keys, Jennifer Lopez, Selena Gomez and many more are helping to adjust the standards of what's deemed beautiful by for example posting no makeup selfies. More women are pushing the message to look more authentically you and that this doesn't make people less attractive (USA TODAY, 2016). These trends might have caused the opposite effect. However, the reasons behind this finding require further research.

A significant main effect was found between appearance comparison tendency and cosmetic procedure intentions. Cosmetic procedure intentions are higher among consumers with a high appearance comparison tendency than among consumers with a low appearance comparison tendency. This is in line with the expectations that were based on the evidence that there is a link between upward physical appearance comparisons and dissatisfaction about the body (Jones, 2001; Morrison, Kalin & Morrison, 2004; Botta, 1999; Cattarin, Thompson, Thomas & Williams, 2000; Tiggemann & Slater, 2004; Engelin-Maddox, 2005; Martin & Kennedy, 1993; Richins, 1991; Tiggemann & McGill, 2004). In short, appearance comparison (e.g., to media images) could lead to the feelings of deficiency, which in turn could lead to body dissatisfaction, which eventually causes higher intentions towards cosmetic procedures. In contrast, no significant interaction effect was found between Facebook use and appearance comparison on cosmetic procedure intentions. So, there is no difference between consumers with a high or low appearance comparison tendency in their reaction to the frequency of Facebook use in terms of cosmetic procedure intentions. The link between the frequency of Facebook use and cosmetic procedure intentions is an issue that is not confined to consumers with a high appearance comparison tendency.

Finally, results showed a significant difference in cosmetic procedure intentions between females and males. Females have higher intentions towards cosmetic procedures than males. This corresponds to existing theories (Brown, Furnham, Glanville & Swami, 2007; Swami, Arteché, Chamorro-Premuzic, Furnham, Stieger, Haubner, et al., 2008) and can be explained by the fact that females experience a lot of pressure from the media to attain the (Western) standard of beauty (Thompson, Heinberg, Altabe, et al., 1999; Swami, Arteché, Chamorro-Premuzic, Furnham, Stieger, Haubner, et al., 2008). These pressures are ‘normative’ for females, which may lead them to undergo cosmetic procedures to soften concerns about their body. However, there might also be other factors at play. Another explanation could be that cosmetic clinics are aware of gender differences in societal pressures and respond to this by targeting their advertising specifically on females. Interestingly, although there was a significant difference between females and males for cosmetic procedure intentions, no significant interaction effect for Facebook use and gender on cosmetic procedure intentions was found. This means that Facebook use doesn’t have more or less influence on females than males concerning cosmetic procedure intentions. The association between Facebook use and cosmetic procedure intentions is not confined to young females. Indeed, research found that males are not immune to pictures in the media of the “ideal” body (Hargreaves & Tiggemann, 2004) Facebook use may influence

males' image of their body (Manago, Ward, Lemm, Reed & Seabrook, 2014), which in turn could lead to cosmetic procedure intentions. Apparently, males are as vulnerable as females when it comes to exposure to ideal beauty standards through Facebook.

### **5.1 Academic implications**

The current study is the first one to explore Facebook use and attitudes towards physical enhancement procedures. At this time, little is known at all about these relationships. However, with the increasing demand for cosmetic procedures and the changing media landscape, there is thus a need for systematic research in this field and for comprehensive frameworks to identify and classify the effect of social media use on attitudes towards physical enhancement procedures. Existing research only investigated the influence of traditional media on cosmetic procedure intentions (Nabi & Keblusek, 2014). This study adds to this by finding support for the new hypothesis of the effect of Facebook use on intentions towards cosmetic procedures. Furthermore, support was found for the main effects of appearance comparison and gender, which adds to previous studies (Brown, Furnham, Glanville & Swami, 2007; Swami, Arteché, Chamorro-Premuzic, Furnham, Stieger, Haubner, et al., 2008) on factors that predict positive attitudes towards cosmetic procedures. Appearance comparison was never examined as a predictor of cosmetic procedure intentions in previous research, but actually turned out to be a significant predictor.

### **5.2 Practical implications**

Currently we are experiencing an increase in cosmetic procedures in the Netherlands. Due to the popularity of these procedures, numerous companies are offering products and services that respond to this demand. The present study can provide a significant contribution in the advertising of these companies. Based on the results of this study, segmenting could be done in terms of Facebook use, appearance comparison tendency or gender. For example, frequent Facebook users and females have higher intentions towards cosmetic procedures than non-frequent Facebook users and males, so promoting cosmetic products and services through Facebook with the focus on females seems useful.

Besides companies that sell products and services related to cosmetic procedures, companies that focus on informing people concerning possible risks of cosmetic procedures, like the government, can benefit from the study. Encouraging body appreciation and “immunize” people to (social) media content about beauty standards might help potential patients to make more well thought-out choices about cosmetic procedures and the consequences for perceptions



about the self. Although this study extends the existing academic literature concerning cosmetic procedures, it is still not clear if the factors that cause intentions towards cosmetic procedures are positive, allowing people to increase their self-esteem and improve their lives by making physical changes or if the procedures are pathological, causing people to take medical risks to attain unrealistic beauty ideals (Delinsky, 2005). There is contradictory evidence as to whether people experience mental improvements after cosmetic procedures (Sarwer, Magee & Crerand, 2004) and there are always medical risks involved.

### **5.3 Limitations**

Despite the valuable findings concerning the associations between Facebook use, appearance comparison and gender with attitudes towards physical enhancement procedures, a number of limitations in this study needs to be mentioned. First, the scale of this study is relatively small. More participants than the current 209 would be beneficial to corroborate the results and generalize the findings of the research. Moreover, only young adults from the Netherlands have been studied. Consumers of older age or a different culture could be more or less influenced by their Facebook use, appearance comparison tendency or gender concerning attitudes towards physical enhancement procedures. Future research with a wider or different range of respondents can provide valuable insights on this topic. Moreover, the current study only focused on one social media platform. Further research can expand on this, for example by examining the influence of Instagram on attitudes towards physical enhancement procedures.

Furthermore, the non-experimental design of the present study hinders the drawing of solid causal conclusions. Facebook use may indeed influence intentions towards cosmetic procedures. However, the opposite is also possible. That is, people with cosmetic procedure intentions may intentionally search for particular media, e.g. Facebook, containing information or opinions about these treatments. Likewise, whereas a high appearance comparison tendency may induce intentions towards cosmetic procedures, pro-cosmetic procedure views may also increase appearance comparison by creating the belief that “average” isn’t enough and should be improved. Probably a more logical explanation, is that these associations are reciprocal in nature, affecting each other in an ongoing cyclical fashion. Longitudinal studies and experimental research could lead to more clarity on these relationships.

Another limitation is that the current study has not investigated the influence of the use of Facebook on consumers’ actual cosmetic procedure behavior. Although the intentions to undergo a cosmetic treatment could be considered as an intermediate step towards actually

doing it, a gap still remains between self-reported intentions towards cosmetic procedures and actual cosmetic procedure actions. It would be more useful to measure the actual increase in cosmetic treatments among frequent Facebook users and non-frequent Facebook users. Furthermore, participants could fill in the questionnaire online on a voluntary basis. In other words, they were self-selecting. There might be some differences between individuals who decided to fill in the questionnaire and individuals who decided not to do this. It could be that only the most motivated people have participated, possibly the ones with the strongest intentions towards cosmetic procedures.

The last limitation of the current study concerns the measurements of Facebook use and appearance comparison tendency. For both measurements, participants were split into two groups: frequent or non-frequent Facebook users and consumers with a low or high appearance comparison tendency. In marketing research, categorization is common to aid interpretation of the results (Arguinis, 1995). However, as mentioned earlier, this leads to a loss in statistical power (Arguinis, 1995). Further research could employ different statistical methods to account for this effect. Additionally, this study uses self-report scales to measure Facebook use, Facebook photo editing behavior and appearance comparison tendency, which might be impacted by participants' tendency to provide socially desirable answers. Although it was clearly communicated to the respondents that all the outcomes of the survey were anonymous, consumers' social desirability bias might have still led them to provide answers that differed, albeit slightly, from their actual Facebook use, Facebook photo editing behavior and appearance comparison tendency, for instance out of embarrassment (Piquero, MacIntosh & Hickman, 2000). Not answering the items in a truthful manner could therefore bias both the measurements' and overall results. Future research could investigate different measures for these items. For example, Facebook use could be measured by using more sophisticated technologies, like computer tracking, to get more accurate measures.

#### **5.4 Future Research**

First, future research could perform experimental work to test causal direction of the relationships that are found in the current study. Longitudinal studies could examine if intentions towards cosmetic procedures lead to action. Also, the effects of Facebook use could be explored on a more diverse sample, particularly people of older age or people with another nationality than Dutch.

Furthermore, the overall model of the present study solely looks into Facebook. Nonetheless, similar results in the field of other social media networks can be expected. Some social media networks, such as Instagram, Snapchat, Pinterest, and Tumblr, are more focused on visual presentation, which includes the posting and viewing of pictures and videos (Pew Research Center, 2015). According to Newcom, 3.2 million people in the Netherlands use Instagram and 47% of Instagram users use the site daily. In addition, 2.4 million people use Pinterest (Newcom, 2016). These social media networks may expose users to influential visual content, including images that present the beauty ideal. It would be interesting to expand upon the framework proposed in this study by focusing on these visual focused social media platforms.

Finally, although there was examined that checking up, viewing photos and viewing videos were the most popular activities to perform on Facebook, just like other research investigating the effects of exposure to traditional media types (usually magazines and television), this study cannot identify the particular elements of Facebook responsible for the relationships that are found. Most likely, there are frequent appearance messages on Facebook pages that strengthen each other and cumulate with increasing Facebook exposure. Social media platforms in particular, may be responsible for arousing appearance concerns since users spend many hours creating and customizing their personal profile (Tiggemann & Miller, 2010). Future studies could investigate the specific attributes that are responsible for cosmetic procedure intentions among Facebook users.

## **Chapter 6 | Conclusion**

In conclusion, the current study provides a novel insight on the use of Facebook and attitudes towards physical enhancement procedures. Namely, in case people spend a certain amount of time per day on Facebook, they have higher intentions towards cosmetic procedures. Most likely this is a result of body dissatisfaction, caused by upward appearance comparison to the current beauty ideals which are hard to achieve by natural means. Especially females experience a lot of pressure to attain the standard of beauty. Therefore, it's not surprising that both females and consumers with a high appearance comparison tendency have higher intentions towards cosmetic procedures comparing to males and consumers with a low appearance comparison tendency. On the other hand, when it comes to online self-presentation, the frequency of Facebook use doesn't lead to increased photo editing behavior. It is recommended that more research should be conducted to further investigate the proposed framework.

## References

- American Board of Cosmetic Surgery. (2017). *Cosmetic Surgery vs. Plastic Surgery*. Retrieved from Website from American Board of Cosmetic Surgery: <http://www.americanboardcosmeticsurgery.org/patient-resources/cosmetic-surgery-vs-plastic-surgery/>
- Anderson, Cohn & Holbrook. (2000). *Making weight: Men's conflicts with food, weight, shape, and appearance*. CA: Gurze Books.
- Arguinis. (1995). Statistical power with moderated multiple regression in management research. *Journal of Management*, 21(6), pp. 1141-1158.
- Bartky. (1990). *Femininity and domination*. New York: Routledge.
- Baxter & Babbie. (2004). *The Basics of Communication Research*. United States: Wadsworth Cengage Learning.
- Bell & Dittmar. (2011). Does media type matter? The role of identification in adolescents girls' media consumption and the impact of different thin-ideal media on body image. *Sex Roles*, 65, pp. 478-490.
- Bissell & Zhou. (2004). Must-see-TV or ESPN: Entertainment and sports media exposure and body-image distortion in college women. *Journal of Communication*, 54, pp. 5-21.
- Blackshaw & Nazzaro. (2006). Consumer-generated media (CGM) 101 Word-of-mouth in the age of the web-fortified consumer. *New York: Nielsen BuzzMetrics*.
- Blackshaw. (2006). *The consumer-generated surveillance culture*. Retrieved from Website from Clickz: <https://www.clickz.com/the-consumer-controlled-surveillance-culture/69332/>
- Botta. (1999). Televised images and adolescent girls' body image disturbance. *Journal of Communication*, 49, pp. 22-41.
- Brown, Furnham, Glanville & Swami. (2007). Factors that affect the likelihood of undergoing cosmetic surgery. *Aesthetic Surgery Journal*, 27, pp. 501-508.
- Burke, Marlow & Lento. (2010). Social network activity and social well-being. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, pp. 1909-1912.
- Buss & Barnes. (1986). Preferences in human mate selection, 50. *Journal of Personality and Social Psychology*, pp. 559-570.
- Buss. (1988). The evolution of human intrasexual competition: tactics of mate attraction 54(4). *Journal of Personality and Social Psychology*, 616-628.
- Buss. (1989). Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences*, 12, pp. 1-49.
- Carey, Donaghue & Broderick. (2013). Body image concern among Australian adolescent girls: The role of body comparisons with models and peers. *Body Image*, 11, pp. 81-84.

- Casimiro. (2005). Seeing is not believing. *Popular Science*, 267, pp. 70-98.
- Cattarin, Thompson, Thomas & Williams. (2000). Body image, mood, and televised images of attractiveness: The role of social comparison. *Journal of Social and Clinical Psychology*, 19, pp. 220-239.
- Cohane & Pope. (2001). Body image in boys: A review of the literature. *International Journal of Eating Disorders*, pp. 373-379.
- Collins. (1996). For better or worse: the impact of upward social comparison on self-evaluations. *Psychological Bulletin*, 119(1), 51-69.
- Cunningham, Druen & Barbee. (1997). Angels, mentors, and friends: Tradeoffs among evolutionary, social and individual variables in physical attractiveness. *Evolutionary social psychology*, 25, pp. 109-140.
- Currie. (1997). Decoding femininity: Advertisements and their teenage readers. *Gender & Society*, pp. 11:453-7.
- Delinsky. (2005). Cosmetic Surgery: A Common and Accepted Form of Self-Improvement? *Journal of Applied Social Psychology*, 35(10), pp. 2012-2028.
- Dellinger & Williams. (1997). Makeup at work: Negotiating appearance rules in the workplace. *Gender & Society*, pp. 11:151-77.
- Didie & Sarwer. (2003). Factors which influence the decision to undergo cosmetic breast augmentation surgery. *Journal of Women's Health*, 12, pp. 241-253.
- Dittmar. (2008). Consumer culture, identity and well-being: The search for 'good life' and the 'body perfect'. *Psychology Press*.
- Durkin & Paxton. (2002). Predictors of vulnerability to reduced body image satisfaction and psychological wellbeing in response to exposure to idealized female media images in adolescent girls. *Journal of Psychosomatic Research*, 53, pp. 995-1005.
- Ellison, Steinfield & Lampe. (2007). The benefits of Facebook "friends:" Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication* 12, pp. 1143-1168.
- Engelin-Maddox. (2005). Cognitive responses to idealized media images of women: The relationship of social comparison and critical processing to body image disturbance in college women. *Journal of Social and Clinical Psychology*, 24, pp. 1114-1138.
- Facebook. (2017). *Stats*. Retrieved from Website from Facebook: <https://newsroom.fb.com/company-info/>
- Fardouly & Vartanian. (2015). Negative comparisons about one's appearance mediate the relationship between Facebook usage and body image concerns. *Body Image* 12, pp. 82-88.
- Festinger. (1954). A theory of social comparison processes. *Human Relations*, 7(2), 117-140.

- Fox & Rooney. (2014). The Dark Triad and trait self-objectification as predictors of men's use and self-presentation behaviors on social networking sites. *Personality and Individual Differences*, pp. 161-165.
- Frederick, Lever & Peplau. (2007). Interest in cosmetic surgery and body image: Views of men and women across the lifespan. *Plast Reconstr Surg* 120, pp. 41-60.
- Freedman. (1986). *Beauty bound*. Lexington: MA: Lexington Books.
- Garner, Garfinkel, Schwartz & Thompson. (1980). Cultural expectations of thinness in women. *Psychological reports*, 47(2), pp. 483-491.
- Gefen, Straub & Boudreau. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of the association for information systems*, 4(1), p. 7.
- Ghosh & Vogt. (2012). Outliers: An Evaluation of Methodologies. *Proceeds of the Joint Statistical Meetings*, 1(1), pp. 3455-3460.
- Gilbert, Price, & Allan. (1995). Social comparison, social attractiveness and evolution: how might they be related? *New Ideas in Psychology*, 13(2), 149-165.
- Gill, Rosalind, Henwood & McLean. (2000). The tyranny of the sixpack: Men talk about idealized images of the male body in popular culture. *Body & Society*, 11 (1), pp. 37-62.
- Goffman. (1959). *The presentation of self in everyday life*. New York: Doubleday Anchor Books.
- Gonzales & Hancock. (2011). Mirror, mirror on my Facebook wall: Effects of exposure to Facebook on self-esteem. *Cyberpsychology, Behavior, and Social Networking*, 14, pp. 79-83.
- Goritz. (2004). The impact of material incentives on response quantity, response quality, sample composition, survey outcome and cost in online access panels. *International Journal of Market Research*, 46, pp. 327-346.
- Grabe, Ward & Hyde. (2008). The role of the media in body image concerns among women: A meta-analysis of experimental and correlational studies. *Psychological Bulletin*, 134, pp. 460-46.
- Greenberg & Hofschire. (2001). Media's impact on adolescents' body dissatisfaction. *Sexual teens, sexual media: Investigating media's influence on adolescent sexuality*, p. 125.
- Groesz, Levine & Murnen. (2002). The effect of experimental presentation of thin media images on body satisfaction: A meta-analytic review. *International Journal of Eating Disorders*, 31, pp. 1-17.
- Haferkamp, Eimler, Papadakis & Kruck. (2012). Men are from Mars, women are from Venus? Examining gender differences in self-presentation on social networking sites. *Cyberpsychology, Behavior and Social Networking*, 15, pp. 91-99.

- Haiken. (1997). *Venus envy: a history of cosmetic surgery*. Johns Hopkins University Press, Baltimore, MD.
- Halliwell & Dittmar. (2004). Does size matter? The impact of model's body size on women's body focused anxiety and advertising effectiveness. *Journal of Social and Clinical Psychology, 123*, pp. 104-122.
- Halliwell & Dittmar. (2006). Associations between appearance-related self-discrepancies and young women and men's affect, body satisfaction, and emotional eating: A comparison of fixed-item and participant generated self-discrepancies. *Personality and Social Psychology Bulletin, 32*, pp. 447-458.
- Halliwell, Malson & Tischner. (2011). Are contemporary media images which seem to display women as sexually empowered actually harmful to women? *Psychology of Women Quarterly, 35*, pp. 38-45.
- Hargreaves & Tiggemann. (2004). Idealized media images and adolescent body image: "comparing" boys and girls. *Body Image, 1*, pp. 351-361.
- Harrison & Cantor. (1997). The relationship between media consumption and eating disorders. *Journal of Communication, 47*, pp. 40-66.
- Harrison. (2003). Television viewers' ideal body proportions: The case of the curvaceously thin woman. *Sex Roles, 48*, pp. 255-264.
- Hatfield & Sprecher. (1997). Mirror, mirror: The importance of looks in everyday life. *Gender & Society*.
- Hew. (2011). Students' and teachers' use of Facebook. *Computers in Human Behavior, 27*, pp. 662-676.
- Ilieva, Baron & Healey. (2001). On-line Surveys in International Marketing. Research: Pros and Cons. *Manchester Metropolitan University Business School Working Paper Series*.
- Janssens, Wijnen, De Pelsmacker & Van Kenhove. (2008). *Marketing Research with SPSS*. Pearson Education Limited.
- Jarvis, MacKenzie & Podsakoff. (2003). A critical review of construct indicators and measurement model misspecification in marketing and consumer research. *Journal of consumer research, 30(2)*, pp. 199-218.
- Jones. (2001). Social comparison and body images: Attractiveness comparisons to models and peers among adolescent girls and boys. *Sex roles, 45*, pp. 645-664.
- Junco. (2012). The relationship between frequency of Facebook use, participation activities, and student engagement. *Computers & Education, 58*, pp. 162-171.
- Keery, van den Berg & Thompson. (2004). An evaluation of the tripartite influence model of body dissatisfaction and eating disturbance with adolescent girls. *Body Image, 1*, pp. 237-251.



- Kenrick & Keefe. (1992). Age preferences in mates reflect sex differences in reproductive strategies. *Behavioral and Brain Sciences*, 15, pp. 75-133.
- Khan & Rayner. (2003). Robustness to Non-Normality of Common Tests for the Many-Sample Location Problem. *Journal of Applied Mathematics and Decision Sciences*, 7(4), pp. 187-206.
- Kline. (2005). Principles and practice of structural equation modeling. *New York: Guilford*.
- KliniekErvaringen.nl. (2013, November 18). *De 5 meest populaire cosmetische ingrepen*. Retrieved from Website from KliniekErvaringen.nl: <https://www.kliniekervaringen.nl/blog/de-5-meest-populaire-cosmetische-ingrepen-128>
- Krones, Stice, Batres & Orjada. (2005). In vivo social comparison to a thin-ideal peer promotes body dissatisfaction: A randomized experiment. *International Journal of Eating Disorders*, 38, pp. 134-142.
- Laerd Statistics. (2013). *Three-way ANOVA in SPSS Statistics*. Retrieved from Website from Laerd Statistics: <https://statistics.laerd.com/spss-tutorials/three-way-anova-using-spss-statistics.php>
- Lane. (2013). *Introduction to Statistics*. Rice University.
- Leahey & Crowther. (2008). An ecological momentary assessment of comparison target as a moderator of the effects of appearance-focused social comparisons. *Body Image*, 5, pp. 307-318.
- Leit, Pope & Gray. (2001). Cultural expectations of muscularity in men: The evolution of Playgirl centerfolds. *International Journal of Eating Disorders*, 29, pp. 90-93.
- Levine & Murnen. (2009). "Everybody knows that mass media are/are not [pick one] a cause of eating disorders". A critical review of evidence for a causal link between media, negative body image, and disordered eating in females. *Journal of Social & Clinical Psychology*, 28, pp. 9-42.
- Manago, Graham, Greenfield & Salimkhan . (2008). Self-presentation and gender on MySpace. *Journal of Applied Developmental Psychology*, 29, pp. 446-458.
- Manago, Ward, Lemm, Reed & Seabrook. (2014). Facebook involvement, objectified body consciousness, body shame, and sexual assertiveness in college women and men. *Sex Roles*, 72(1-2), pp. 1-14.
- Martin & Kennedy. (1993). Advertising and social comparison: Consequences for female preadolescents and adolescents. *Psychology and Marketing*, 10, pp. 513-530.
- Mayer-Schönberger & Cukier. (2013). Big data: A Revolution that will Transform How we Live, Work and Think. *Houghton Mifflin Harcourt*.
- McCabe & Ricciardelli. (2001). Body image and body change techniques among young adolescent boys. *European Eating Disorders: Review*, 9, pp. 335-347.

- McCabe & Ricciardelli. (2004). Body image dissatisfaction among males across the lifespan: A review of past literature. *Journal of Psychosomatic Research*, 56, pp. 675-685.
- Mehdizadeh. (2010). Self-presentation 2.0: Narcism and self-esteem on Facebook. *Computers in Human Behavior*, 28, pp. 2359-2365.
- Meier & Gray. (2014). Facebook photo activity associated with body image disturbance in adolescent girls. *Cyberpsychology, Behavior, and Social Networking*, 4, pp. 199-206.
- Mendes, Blascovich, Major, & Seery. (2001). Challenge and threat responses during downward and upward social comparisons. *European Journal of Social Psychology*, 31(5), 477-497.
- Messaris. (1997). Visual persuasion: the role of images in advertising. *Thousands Oaks, CA: Sage Publications*.
- Meston & Buss . (2009). Why women have sex: the psychology of sex in women's own voices. *New York: Times Books*.
- Morrison, Kalin & Morrison. (2004). Body-image evaluation and body-image investment among adolescents: A test of sociocultural and social comparison theories. *Adolescence*, 39, pp. 571-592.
- Morrison, Morrison & Hopkins. (2003). Striving for bodily perfection? An exploration of the drive for muscularity in Canadian men. *Psychology of Men & Masculinity*, 4, pp. 111-120.
- Morry & Staska. (2001). Magazine exposure: Internalization, self-objectification, eating attitudes, and body satisfaction in male and female university students. *Canadian Journal of Behavioural Science* 2001, 33, pp. 269-279.
- Myers & Crowther. (2009). Social comparison as a predictor of body dissatisfaction: A meta-analytic review. *Journal of Abnormal Psychology*, 118, pp. 683-698.
- Nabi & Keblusek. (2014). Inspired by hope, motivated by envy: comparing the effects of discrete emotions in the process of social comparisons to media figures. *Media Psychology*, 17(2), pp. 208-243.
- Nabi. (2009). Cosmetic Surgery Makeover Programs and Intentions to Undergo Cosmetic Enhancements: A Consideration of Three Models of Media Effects. *Human Communication Research*, 35, pp. 1-27.
- Newcom. (2016). *Nationale Social Media Onderzoek 2016*. Newcom Research & Consultancy B.V.
- NU.nl. (2016, November 26). *Media-aandacht maakt cosmetische ingrepen bij jongeren populairder*. Retrieved from Website from NU:  
<http://www.nu.nl/gezondheid/4356236/media-aandacht-maakt-cosmetische-ingrepen-bij-jongeren-populairder.html>
- Olivardia. (2001). Mirror, mirror on the wall, who's the largest of them all? The features and phenomenology of muscle dysmorphia. *Harvard Review of Psychiatry*, pp. 254-259.

- Olivardia, Pope, Borowiecki. (2004). Biceps and body image: The relationship between muscularity and self-esteem, depression, and eating disorder symptoms. *Psychology of Men & Masculinity*, 5, pp. 112-120.
- Pew Research Center. (2015). *Teens, Social Media & Technology Overview 2015*. Retrieved from Website from Pew Research Center: <http://www.webcitation.org/6ajFEcL1O>
- Pew Research Center. (2017). *Social Media Fact Sheet*. Retrieved from Website from Pew Research Center: <http://www.pewinternet.org/fact-sheet/social-media/>
- Pope, Olivardia, Borowiecki & Cohane. (2001). The growing commercial value of the male body: A longitudinal survey of advertising in women's magazines. *Psychotherapy and Psychosomatics*, 70, pp. 189-192.
- Richins. (1991). Social comparison and the idealized images of advertising. *Journal of Consumer Research*, 18, pp. 71-83.
- Ridgeway & Tylka. (2005). College men's perceptions of ideal body composition and shape. *Psychology of Men & Masculinity*, 6, pp. 209-220.
- Ridolfi, Myers, Crowther & Ciesla. (2011). Do appearance focused cognitive distortions moderate the relationship between social comparisons to peers and media images and body image disturbance? *Sex Roles*, 65, pp. 491-505.
- Sadalla, Kenrick & Vershure. (1987). Dominance and heterosexual attraction. *Journal of Personality and Social Psychology*, 52, pp. 730-738.
- Sarwer & Crerand. (2004). Body image and cosmetic medical treatments. *Body image*, 1, pp. 99-111.
- Sarwer, Cash, Magee, Williams, Thompson, Roehrig & Anderson. (2005). Female college students and cosmetic surgery: An investigation of experiences, attitudes, and body image. *Plastic and reconstructive surgery*, 115(3), pp. 931-938.
- Sarwer, Grossbart & Didie. (2002). Beauty and society. *Atlas of cosmetic surgery*, pp. 48-59.
- Sarwer, Magee & Crerand. (2004). Cosmetic surgery and cosmetic medical treatments. *Handbook of eating disorders and obesity*, pp. 718-737.
- Schaefer & Thompson. (2014). The development and validation of the Physical Appearance Comparison Scale-Revised (PACS-R). *Eating Behaviors*, 15, pp. 209-217.
- Schau & Gilly. (2003). We are what we post? Self-presentation in personal web space. *Journal of Consumer Research*, pp. 385-404.
- Schutz, Paxton & Wertheim. (2002). Investigation of body comparison among adolescent girls. *Journal of Applied Social Psychology*, 32, pp. 1906-1937.
- Siibak. (2009). Constructing the self through photo selection - Visual impression on social networking websites. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 3 (1), article 1.

- Simis, Verhulst & Koot. (2001). Body image, psychosocial functioning, and personality: how different are adolescents and young adults applying for plastic surgery. *J Child Psychol Psychiatry* 42, pp. 669-678.
- Smolak & Murnen. (2007). Feminism and body image. *The Body Beautiful: Evolutionary and Socio-Cultural Perspectives*, pp. 236-258.
- Spitzer, Henderson & Zivian. (1999). Gender differences in population versus media body sizes: A comparison over 4 decades. *Sex Roles*, 40, pp. 545-565.
- Stice & Shaw. (1994). Adverse effects of the media-portrayed thin-ideal on women and likages to bulimic symptomatology. *Journal of Social and Clinical Psychology*, 13, pp. 288-308.
- Swami, Arteché, Chamorro-Premuzic, Furnhm, Stieger, Haubner, et al. (2008). Looking good: Factors affecting the likelihood of having cosmetic surgery. *European Journal of Plastic Surgery*, 30, pp. 211-218.
- Symons. (1979). *The evolution of human sexuality*. New York: Oxford University Press.
- Tazghini & Siedlecki. (2013). A mixed method approach to examining Facebook use and its relationship to self-esteem. *Computers in Human Behavior*, 29, pp. 827-832.
- Thompson, Heinberg, Altabe, et al. (1999). Body image, eating disorders, and obesity in youth: assessment, prevention, and treatment. *Washington, DC: American Psychological Association*.
- Thorpe, Ahmed & Steer. (2004). Reasons for undergoing cosmetic surgery: a retrospective study. *Sexualities, Evolution & Gender* 6, pp. 75-96.
- Tiggemann & McGill. (2004). The role of social comparison in the effect of magazine advertisements on women's mood and body dissatisfaction. *Journal of Social & Clinical Psychology*, 23, pp. 23-44.
- Tiggemann & Miller. (2010). The Internet and adolescent girls' weight satisfaction and drive for thinness. *Sex Roles*, 63, 79-90.
- Tiggemann & Slater. (2004). Thin ideals in music television: A source of social comparison and body dissatisfaction. *International Journal of Eating Disorder*, 35, pp. 48-58.
- Tiggemann & Slater. (2013). NetGirls: The Internet, Facebook and body image concern in adolescent girls. *International Journal of Eating Disorders*, pp. 630-634.  
doi:<http://dx.doi.org/10.1002/eat.22141>
- Tiggemann & Slater. (2014). NetTweens: The Internet and body image concerns in preteenage girls. *Journal of Early Adolescence*, 34, pp. 606-620.
- Tiggemann. (2002). Media influences on body image development. *Body image: A handbook of theory, research, and clinical practice*, pp. 91-98.
- Tiggemann, Martins & Kirkbride. (2007). Oh to be lean and muscular: Body image ideals in gay and heterosexual men. *Psychology of Men & Masculinity*, 8, pp. 15-24.

- Toma. (2013). Feeling better but doing worse: Effects of Facebook self-presentation on implicit self-esteem and cognitive task performance. *Media Psychology, 16*, pp. 199-220.
- Trujillo. (2000). Hegemonic masculinity on the mound: Media representations of Nolan Ryan and American sports culture. *Reading Sport: Critical Essays on Power and Representation*, pp. 14-19.
- USA TODAY. (2016, July 26). *Celebs go 'naked face' (well, mostly) in the no/less makeup trend*. Retrieved from Website from USA TODAY:  
<https://www.usatoday.com/story/life/people/2016/07/26/celebs-taking-all-off-in-no-or-less-makeup-trend/87135188/>
- Vartanian, Giant & Passino. (2001). "Ally McBeal vs Arnold Schwarzeneger": Comparing mass media, interpersonal feedback and gender as predictors of satisfaction with body thinness and muscularity. *Social Behavior & Personality, 29*, pp. 711-723.
- Walther. (1992). Interpersonal effects in computer-mediated interaction: A relational perspective. *Communication Research, 19*, pp. 52-91.
- Walther. (1996). Computer-mediated communication: Impersonal, interpersonal, and hyperpersonal interaction. *Communication Research, 23*, pp. 52-91.
- Want. (2009). Meta-analytic moderators of experimental exposure to media portayals of women on female appearance satisfaction: Social comparisons as automatic processes. *Body Image, 6*, pp. 257-269.
- Zhao, Grasmuck & Martin. (2008). Identity construction on Facebook: Digital empowerment in anchored relationships. *Computers in Human Behavior, 24*, pp. 1816-1836.  
doi:<http://dx.doi.org/10.1016/j.chb.2008.02.012>

## Appendices

### Appendix A – Constructs Questionnaire

Construct	Source	Type of questions	Items
<b>Demographic</b> <i>Moderator</i>		Nominal	What is your gender? <ul style="list-style-type: none"> <li>○ Male</li> <li>○ Female</li> </ul>
		Ratio	What is your nationality?
		Ratio	What is your age?
		Ordinal	What is the highest degree or level of education you have completed? <ul style="list-style-type: none"> <li>○ High school graduate</li> <li>○ MBO graduate</li> <li>○ HBO Bachelor's degree</li> <li>○ WO Bachelor's degree</li> <li>○ WO Master's degree</li> <li>○ Doctorate degree/Ph.D</li> <li>○ Other</li> </ul>
		Nominal	Which of the following categories best describes your primary area of occupation? <ul style="list-style-type: none"> <li>○ Student</li> <li>○ Part-time employee</li> <li>○ Full-time employee</li> <li>○ Unemployed</li> </ul>
		Ordinal	How often do you use the following social media networks? Note: These questions are not about work related use of Facebook <ol style="list-style-type: none"> <li>1. Facebook</li> <li>2. Instagram</li> <li>3. Twitter</li> <li>4. Snapchat</li> <li>5. LinkedIn</li> <li>6. YouTube</li> <li>7. Google+</li> <li>8. Tumblr</li> <li>9. Pinterest</li> </ol>
<b>Facebook use</b> <i>Independent variable</i>	Fardouly & Vartanian, 2015; Junco, 2012;	Nominal	Do you have a Facebook account? <ul style="list-style-type: none"> <li>○ Yes</li> <li>○ No</li> </ul>
		Ordinal	How much time do you spend on Facebook on a typical day? <ul style="list-style-type: none"> <li>○ 5 minutes or less</li> <li>○ 15 minutes</li> <li>○ 30 minutes</li> <li>○ 1 hour</li> <li>○ 2 hours</li> <li>○ 4 hours</li> <li>○ 6 hours</li> <li>○ 8 hours</li> </ul>

			<ul style="list-style-type: none"> <li>○ 10 hours or more</li> </ul>
		Ordinal	<p>About how many Facebook friends do you have?</p> <ul style="list-style-type: none"> <li>○ Less than 100</li> <li>○ 100-200</li> <li>○ 200-300</li> <li>○ 300-400</li> <li>○ 400-500</li> <li>○ 500-600</li> <li>○ 600 or more</li> </ul>
		Five-point Likert scale	<p>How frequently do you perform the following activities when you are on Facebook?</p> <ol style="list-style-type: none"> <li>1. Playing games</li> <li>2. Status updates</li> <li>3. Private messages</li> <li>4. Commenting (e.g. on photos)</li> <li>5. Facebook chat</li> <li>6. Checking up</li> <li>7. Events (staying up to date on specific events)</li> <li>8. Posting photos</li> <li>9. Tagging friends in photos</li> <li>10. Viewing photos</li> <li>11. Posting videos</li> <li>12. Tagging friends in videos</li> <li>13. Viewing videos</li> </ol>
<b>Facebook photo editing behavior</b> <i>Dependent variable</i>	Fox & Rooney, 2014	Five-point Likert scale	<p>How frequently do you use the following techniques to make you look better in pictures you post on Facebook?</p> <ol style="list-style-type: none"> <li>1. Cropping or cutting parts of yourself out of pictures</li> <li>2. Using photographic filters</li> <li>3. Using Photoshop or other picture editing software or applications</li> </ol>
<b>Appearance comparison</b> <i>Moderator</i>	Schaefer & Thompson, 2014	Five-point Likert scale	<p>People sometimes compare their physical appearance to the physical appearance of others. This can be a comparison of their weight, body size, body shape (body figure), body fat or overall appearance. Thinking about how you generally compare yourself to others, please use the following scale to rate how often you make these kinds of comparisons.</p> <ol style="list-style-type: none"> <li>1. When I'm out in public, I compare my physical appearance to the appearance of others.</li> <li>2. When I meet a new person (same sex), I compare my body size to his/her body size.</li> <li>3. When I'm at work or school, I compare my body shape to the body shape of others.</li> </ol>

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4. When I'm out in public, I compare my body fat to the body fat of others.
  5. When I'm shopping for clothes, I compare my weight to the weight of others.
  6. When I'm at a party, I compare my body shape to the body shape of others.
  7. When I'm with a group of friends, I compare my weight to the weight of others.
  8. When I'm out in public, I compare my body size to the body size of others.
  9. When I'm with a group of friends, I compare my body size to the body size of others.
  10. When I'm eating in a restaurant, I compare my body fat to the body fat of others.
  11. When I'm at the gym, I compare my physical appearance to the appearance of others.
- 

**Cosmetic enhancement procedures intentions**  
*Dependent variable*

Nabi, 2009

Ordinal

These days there are a lot of ways to improve your appearance. However, this can be very expensive. Imagine these physical enhancement methods are free (so costs are not an issue), how likely would you be in that case to do each of the following to improve your appearance?

1. Diet and exercise
  2. Hair coloring (To try something new or to cover up grey hair)
  3. Appearance-improving skin lotion
  4. Tanning (solarium)
  5. Teeth bleaching
  6. Dental veneers
  7. Laser hair removal
  8. Dermabrasion/ skin peel
  9. Botox injections
  10. Nose job
  11. Corrective eye surgery
  12. Face lift
  13. Cheek implants
  14. Tummy tuck
  15. Liposuction
-



## Appendix B – Visual Questionnaire

Dear Respondent,

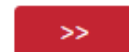
First of all, thank you for your support and participation. Filling out this survey will help me with my thesis for the master Marketing at the Erasmus University.

This survey will take about 5 minutes to complete. Please answer all questions both truthfully and openly. There are no right or wrong answers. Your responses will remain anonymous and will only be used for this study.

If you have any questions, feel free to contact me by email: 456244mf@eur.nl.

Thank you for your time!

Marjon Frederiks



What is your gender?

Male

Female

What is your nationality?

What is your age?

What is the highest degree or level of education you have completed?

High school graduate

MBO graduate

HBO Bachelor's degree

WO Bachelor's degree

WO Master's degree

Doctorate degree/Ph.D

Other:

Which of the following categories best describes your primary area of occupation?

Student

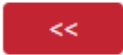
Part-time employee

Full-time employee

Unemployed

How often do you use the following social media networks? Note: These questions are not about work related use of Facebook.

	I don't use this platform	Less than once a week	1-2 days a week	3-6 days a week	About once a day	2-4 times a day	5 or more times a day
Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Instagram	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Snapchat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
LinkedIn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
YouTube	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Google+	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tumblr	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pinterest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

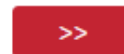
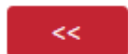


The next questions are about your use of Facebook. Note: These questions are not about work related use of Facebook.

Do you have a Facebook account?

Yes

No



How much time do you spend on Facebook on a typical day?

5 minutes or less

15 minutes

30 minutes

1 hour

2 hours

4 hours

6 hours

8 hours

10 hours or more

About how many Facebook friends do you have?

Less than 100

100-200

200-300

300-400

400-500

500-600

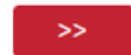
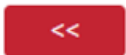
600 or more

How frequently do you perform the following activities when you are on Facebook?

	Never	Rarely	Sometimes	Somewhat frequently	Very frequently
Playing games	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Status updates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Private messages	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Commenting (e.g. on photos)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook chat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Checking up	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Events (staying up to date on specific events)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Posting photos	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tagging friends in photos	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Viewing photos	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Posting videos	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tagging friends in videos	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Viewing videos	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How frequently do you use the following techniques to make you look better in pictures you post on Facebook?

	Never	Very rarely	Rarely	Occasionally	Often
Cropping or cutting parts of yourself out of pictures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using photographic filters	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using Photoshop or other picture editing software or applications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



People sometimes compare their physical appearance to the physical appearance of others. This can be a comparison of their weight, body size, body shape (body figure), body fat or overall appearance. Thinking about how you generally compare yourself to others, please use the following scale to rate how often you make these kinds of comparisons.

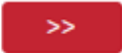
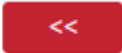
	Never	Seldom	Sometimes	Often	Always
When I'm out in public, I compare my physical appearance to the appearance of others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I meet a new person (same sex), I compare my body size to his/her body size.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm at work or school, I compare my body shape to the body shape of others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm out in public, I compare my body fat to the body fat of others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm shopping for clothes, I compare my weight to the weight of others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm at a party, I compare my body shape to the body shape of others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm with a group of friends, I compare my weight to the weight of others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm out in public, I compare my body size to the body size of others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm with a group of friends, I compare my body size to the body size of others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm eating in a restaurant, I compare my body fat to the body fat of others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I'm at the gym, I compare my physical appearance to the appearance of others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>





These days there are a lot of ways to improve your appearance. However, this can be very expensive. Imagine these physical enhancement methods are free (so cost are not an issue), how likely would you be in that case to do each of the following to improve your appearance?

	Never	Probably not	Possibly	Probably	Definitely	I have already done this
Diet and exercise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hair coloring (To try something new or to cover up grey hair)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appearance-improving skin lotion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tanning (solarium)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Teeth bleaching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dental veneers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Laser hair removal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dermapabrasion/ skin peel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Botox injections	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nose job	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Corrective eye surgery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Face lift	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cheek implants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tummy tuck	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Liposuction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



We thank you for your time spent taking this survey.  
Your response has been recorded.

## Appendix C – Three-way ANOVA Analysis

### Tests of Between-Subjects Effects

Dependent Variable: Total Cosmetic Enhancement

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	33,670 <sup>a</sup>	7	4,810	14,070	,000	,329
Intercept	538,322	1	538,322	1574,600	,000	,887
Facebook_Users	1,509	1	1,509	4,413	,037	,021
Gender	11,965	1	11,965	34,999	,000	,148
Appearance_Comparison_Groups	3,595	1	3,595	10,515	,001	,050
Facebook_Users * Gender	,049	1	,049	,144	,705	,001
Facebook_Users *	,401	1	,401	1,173	,280	,006
Appearance_Comparison_Groups						
Gender *	,224	1	,224	,655	,419	,003
Appearance_Comparison_Groups						
Facebook_Users * Gender *	,388	1	,388	1,136	,288	,006
Appearance_Comparison_Groups						
Error	68,718	201	,342			
Total	1110,431	209				
Corrected Total	102,388	208				

a. R Squared = ,329 (Adjusted R Squared = ,305)

## Appendix D – ANOVA Analysis

### ANOVA

Total Photo Editing

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,093	1	,093	,076	,783
Within Groups	253,252	207	1,223		
Total	253,345	208			