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Fit for Influence

A quantitative study on fitness influencers' impact on social media users' state self-esteem

by

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Abstract

Purpose: This thesis aims to investigate the effect of fitness influencers on the social media platform Instagram on users' state self-esteem. In particular, the effects on users' appearance, social, and performance state self-esteem are examined for distinct body types of the fitness influencers. Furthermore, this study aims to test a moderation effect of users' perceived physical condition on the relationship between exposure to fitness-related content and the three kinds of state self-esteem.

Methodology: This study employed a quantitative method. An experiment with three conditions was conducted through an online survey. The final sample size amounted to n=171. To analyze the collected data, one-way and two-way ANOVAs were used.

Findings: Exposure to fitness-related content showcasing the fit ideal body type, in contrast to body positive physiques, did not impact respondents' appearance, social, and performance state self-esteem in a negative way. A moderating effect of respondents' perceived physical condition was only partly found for the relationship between exposure to fitness-related content and performance state self-esteem.

Research implications: This study contributes to theory by showing that exposure to idealized fitness content on social media does not impact users' state self-esteem. It provides a contradiction to existing literature on the beneficial effects of body positivity on social media users, suggesting that previous findings may not be applicable to the context of fitness influencers. The major practical implication indicates that, when designing advertising campaigns, marketers' focus should be on the aspects that resonate most with the target audience. In the case of the fitness domain, focus should be on performance aspects rather than social and appearance aspects.

Originality/value: Although there is a significant amount of research on the impact of social media on body dissatisfaction, fitness influencers' effect on social media users' state self-esteem, especially in relation to their perceived fitness, has not been studied before. Additionally, body positivity within the fitness sector has not been extensively researched yet.

Keywords: fitness influencers, state self-esteem, perceived physical condition, social comparison theory, self-discrepancy theory

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List of Abbreviations

CFI	Comparative fit index
EFC	Exposure to fitness-related content
PPC	Perceived physical condition
RMSEA	Root mean square error of approximation
RQ	Research question
SSE	State self-esteem
TLI	Tucker Lewis index

1 Introduction

This chapter provides background information on social media, social media influencers, and the concept of fitspiration, which is a central part of this thesis. The introductory chapter serves to define all the important terms relevant to this thesis. Furthermore, the research purpose and research questions are presented, as well as the objectives and aimed contributions of the study.

1.1 Background

The rise of social media introduced a new type of marketing, through social media influencers. As their popularity has risen, influencers are attracting followers through content creation on various platforms (Barari, 2023). Brands will collaborate with influencers in order to target specific audiences passionate about certain topics such as cooking, reading and fashion (Fowler & Thomas, 2023). In 2023, the influencer marketing market size reached 21.1 billion US dollars, and with projections indicating continued growth (Statista, 2024b).

The fitness side of social media sees its influencers showcasing their workouts and promoting workout gear (Durau et al. 2022). The interest in online home workouts peaked during the pandemic, and now constitutes a significant part of people's daily routine (Durau et al. 2022). Not only are brands such as Nike and Gymshark collaborating with influencers to promote their products (Glofox, 2021), but the influencers themselves are building their brands by creating their own workout apps and fitness clothing lines (Williams, 2021).

With the growing number of influencers, the concept of fitspiration has gained popularity (Barnes et al. 2023). Under the hashtag #fitspiration, content and advertisement intending to provide motivation for a healthier lifestyle can be found (Barnes et al. 2023). The content includes "before and after"-pictures, highlighting the bodily transformations that can occur in response to exercise routines, dietary changes, and other specific behaviors (Carotte & Prichard, 2017). Mainly, bodies of a fit ideal are portrayed with toned and muscular physique, compared to the thin ideal (Barnes et al. 2023). An analysis by Tiggemann and Zaccardo (2016) of the content relating to fitspiration showed that about 63% included people, the majority women, with 25% showing some sort of workout related activity. The following 18% showcased healthy foods with the remaining images being gym equipment, exercise clothing and inspirational quotes (Tiggemann & Zaccardo, 2016). Despite the seemingly harmless

intention of promoting wellness, analyses show that the content often focuses on weight loss and appearance instead of overall fitness and health, while perpetuating an objectifying view (Boepple et al. 2016; Deighton-Smith & Bell, 2018; Santarossa et al. 2019).

Hudders & Lou (2023) argue that existing literature regarding influencer marketing mainly explores the commercial aspects and the positive effects it has. However, the dark side of influencer marketing, regarding the harmful effects on physical and psychological well-being of followers when exposed to idealized images, is not adequately covered (Hudders & Lou, 2023; Vrontis et al. 2021). Research shows that influencer marketing can have detrimental effects on followers' mental health (Barari, 2023; Rüther et al. 2023). Studies highlight the harmful effects of social comparison, which refers to the process where individuals compare themselves to other people (Festinger, 1954) on these platforms (Liu & Baumeister, 2016; Tiggemann & Zaccardo, 2015).

Research focusing on fitspiration found that the exposure to the content can lead to a negative effect on women's self-esteem and body satisfaction (Cohen & Blaszczynski, 2015). In response to the fit, thin body ideal predominantly showcased in fitspiration (Barnes et al. 2023), the body positive movement has emerged, portraying all different types of bodies (Cwynar-Horta, 2016). When Barnes et al. (2023) compared the fit ideal, and non-fit ideal images it was found that both had a negative effect on body satisfaction. The authors uncovered that when the participants were shown the non-fit ideal images, their state self-esteem increased and their state negative mood decreased, showing opposite results from the fit-ideal (Barnes et al. 2023).

Within the fitness and health literature, research suggests that a significant amount of the psychological benefits of exercise come from one's own beliefs about fitness rather than from actual physical exercising (Plante et al. 2000). Perceived fitness was found to have stronger correlations with positive personality traits and mood indicators than the actual aerobic fitness level of a person (Plante et al. 1998). This indicates that beliefs concerning fitness are likely to play an important role in the benefits of exercising, extending beyond actual increases of one's physical fitness (Plante et al. 2000).

Building on the previous research, this thesis undertakes a comprehensive examination of the effects of the fitness influencer's body type on the social media users' state self-esteem. To offer a fresh perspective the variable of the user's perceived physical condition will be included. This relationship is interesting and meaningful to investigate as studies have shown that perceived fitness goes hand in hand with improved psychological well-being (Plante et al. 2000).

1.2 Research Purpose & Questions

With this thesis, the authors aim to advance the understanding of how fitness influencers on the social media platform Instagram impact users' state self-esteem. In particular, the effects on users' state self-esteem will be examined for distinct body types of the fitness influencers. Thereby, outcomes from exposure to fitness-related content portraying the fit ideal will be compared to outcomes caused by exposure to fitness-related content showcasing body positive physiques. In addition, the purpose of this study is to investigate how social media users' perceived physical condition affects the outcomes on their state self-esteem after being exposed to fitness-related content. The research questions (RQ) for this study are as follows:

- RQ1: What effect do fitness influencers have on the state self-esteem of social media users?
- RQ2: Does the fitness influencer's body type affect the outcomes on the state self-esteem of social media users?
- RQ3: Do social media users' perceived physical condition moderate the relationship between exposure to fitness-related content and state self-esteem?

1.3 Aimed Contributions

Through the application of two traditional psychological theories, namely Social Comparison Theory and Self-discrepancy Theory, to the context of social media, this research aims to contribute to the existing literature on influencers and their effects on social media users. By doing so, the authors hope to offer a new, yet underexplored perspective on the dark side of influencer marketing, especially within the context of the fitness sector. This gap has previously been identified by Hudders & Lou (2023). Additionally, this research aims to shed light on the effects more diverse influencers have on users' state self-esteem. This part of the research will be of special value to marketing practitioners as it will provide them with insights on the effects of fit ideal and body positive influencers on social media users' state self-esteem. Thereby, knowledge about what facts to consider when choosing a new influencer for a collaboration is expanded. The findings will provide valuable insights for marketers, as well as for influencers themselves, who seek to create effective content without excessively harming social media users' state self-esteem and thereby, contributing to a more positive and empowering social media landscape.

1.4 Outline of the Thesis

The thesis consists of seven chapters. The first chapter introduces the topic and discusses the research purpose and research questions, as well as the aimed contributions of the paper. The second chapter presents a comprehensive literature review regarding the concepts under study. Following, the theoretical framework and proposed hypotheses are presented in the third chapter. The methodology of the study and plan for the data collection are discussed in chapter four. The fifth chapter includes the analysis of the results. Second to last, the findings are interpreted and discussed in chapter six. The final chapter consists of the research findings, implications, limitations and areas for future research.

2 Literature Review

The following chapter aims to offer insights into the concepts used in the study. The review begins with an analysis of social media influencers and their effects on users. Furthemore, an exploration of the body positivity movement and its application in marketing is conducted. Next, a range of theories used in the context of body images and internalization of ideals is reviewed. The chapter closes with a presentation of the research gap.

2.1 Social Media Influencers & Their Effects on Users

Social media is a phenomenon that has grown exponentially during the last decades. Carr and Hayes (2015) define social media as internet-based platforms that provide users with the opportunity to interact and tailor their self-presentation to an audience. The audience gains value from user-generated content and gets a sense of interaction with others, as explained by the authors. Value can be gained from organization generated content as well, however the user generated value is rated higher (Carr & Hayes, 2015).

The rise of influencers has led to meticulously curated online personas presenting a constant stream of seemingly perfect lives, often emphasizing appearance (de Valle et al. 2021; Pedalino & Camerini, 2022). By openly sharing their daily routine, and engaging in personal interactions with their followers, influencers foster a deep connection with their audience, termed as a trans-parasocial relation, as defined by Lou (2022). Unlike the traditional parasocial relationships between media characters and the audience, this dynamic is more interactive and reciprocal (Hudders and Lou, 2022). The authors posit that this connection makes the influencers become a trustworthy source of advice and inspiration. This creates the foundation for influencer marketing, as followers may develop a positive bias towards influencer endorsement (Hudders & Lou, 2023).

Fitness influencers are one of the niches present on social media. Individuals turn to them when seeking advice on training routines, nutrition, and finding recommendations for fitness related products (Aguilar & Arbaiza, 2021). The positivity bias as noted by Hudders & Lou (2023), can be found particularly within the fitness influencer marketing, as individuals perceive brands, endorsed by fitness influencers, have higher quality products and an increased brand credibility (Aguilar & Arbaiza, 2021).

The constant exposure to social media has fundamentally reshaped how individuals perceive themselves, particularly in relation to their bodies. Followers, particularly young women, tend to overlook the staged nature of the influencer content, which can have a harmful effect on their overall well-being (Cohen et al. 2019). Research suggests a concerning correlation between increased social media use and negative psychological outcomes (Garcia et al. 2022). It is shown that the repeated exposure to unrealistic beauty standards on social media can be detrimental, particularly for women. Exposure to idealized images of women, whether thin, fit, or curvy, can lead to increased negative mood, body dissatisfaction, and self-objectification in women (Betz & Ramsey, 2017; Brown & Tiggemann, 2016; Cohen & Blaszczynski, 2015; Robinson et al. 2017; Tiggemann & Zaccardo, 2015). The media's unrealistic appearance ideals are internalized by women, and they therefore engage in appearance comparison, which leads to dissatisfaction with their own bodies (Cohen, 2019). Although men may experience lower body dissatisfaction when exposed to idealized images of the same gender, this effect does not seem to be influenced by social comparison (Anderberg & Tiggeman, 2020). Consequently, women tend to be more vulnerable to social comparison regarding body image than men (Anderberg & Tiggeman, 2020).

This comparison can be found within the fitness section of social media as well, as the growing trend of fitness influencers has been associated with the concept of "fitspiration" (Boepple et al. 2016; Tiggemann & Zaccardo, 2016). Barnes et al. (2023) state that fitspiration, a combination of the words fitness and inspiration, typically aims to inspire exercise and a healthier lifestyle. Fitspiration content does not present the ideal thin body, but rather a "fit ideal" which can be defined as a toned physique that is still thin (Barnes et al. 2023). These concepts reinforce societal beauty standards and contribute to body dissatisfaction and unhealthy behaviors affecting both the physical and mental state (Boepple et al. 2016; Tiggemann & Zaccardo, 2016). While the intention of fitspiration can be to inspire, no correlation was found between the fitspiration and actual exercise, however, it was associated with negative body image (Andre et al. 2021).

2.2 Body Positivity and its Application in Marketing

In response to the wave of idealized images making their way in the media, the movement of body positivity has emerged (Cwynar-Horta, 2016). It aims to challenge unrealistic beauty standards, foster self-appearance and nurture self-esteem by embracing oneself (Cwynar-Horta, 2016). The movement has gained momentum on social media platforms, emphasizing the importance of showcasing diverse body types in terms of size, color, features, shapes, and abilities (Cwynar-Horta, 2016). Body positivity does not aim for people

to constantly love their bodies or appearance, instead it emphasizes caring for and respecting ones body, even on days when they may feel unhappy with it (Rodgers et al. 2022).

Research has shown that content related to body positivity has the potential to enhance body image on social media (Cohen et al. 2021). In a study by Fasoli & Constantinou (2024), the impact of body positivity was compared between men and women. The authors found that being exposed to idealized body images led to a decrease in positive mood and body satisfaction among both genders. However, being exposed to body positive imagery resulted in the opposite result, with increased body satisfaction and reduced drive for thinness in both men and women (Fasoli & Constantinou, 2024). Additionally, research focused on young women has shown that body positive content can elevate one's mood, enhance body satisfaction and body appreciation (Cohen et al. 2019). Having a positive body image correlates with less depression, higher self-esteem and fewer unhealthy dieting practices (Gillen, 2015). Therefore, an individual's perception of their body can play a crucial role in safeguarding self-esteem and shielding against depression and unhealthy eating behaviors (Gillen, 2015). Building on this, Rupp & McCoy (2023) discovered that among young adult women, those with an active participation in the body positivity movement have increased body dissatisfaction. This implies that they might be inclined to join and actively participate in the body positivity movement as a means of shielding themselves or coping with body dissatisfaction (Rupp & McCoy, 2023). Overall, while the effects of the body positivity movement are seen to be positive, it is still worth noting that the movement predominantly centers around body image, which could inadvertently enhance the focus on appearance (Rupp & McCoy, 2023).

With the rise of the movement, effort has been made to integrate the principles of body positivity into advertising and marketing. Research indicates that body positivity ads generate greater engagement with brands, compared to those promoting the thin ideal (Bhattacharjee et al. 2024). Exposure to the idealized image can induce stress among women, which in turn can lead to a negative brand perception and decreased brand engagement (Bhattacharjee et al. 2024). Furthermore, Bhattacharjee et al. (2024) compared the use of implicit versus explicit body positive images in advertising, and found that implicit images lead to higher customer engagement. The authors find a possible explanation for this through indirect persuasion, as people are more receptive to messages that are presented in a subtle way, since this requires more reflection. Therefore, decoding implicit information demands more cognitive effort, compared to explicit information, which makes it more memorable and fosters greater engagement with the brand (Bhattacharjee et al. 2024).

Although positive effects of integrating the learnings from body positivity into ads was found, some question its authenticity (Orgad & Gill, 2022). Many messages advocating for positive self-image seem insincere, as numerous brands that promote self-love have also perpetuated

societal norms they claim to oppose (Orgad & Gill, 2022). Moreover, brands and influencers often promote a version of body positivity that still engages in dominant beauty standards (Cwynar-Horta, 2016; Orgad & Gill, 2022). This is evident in the fact that bodies depicted in these advertisements only slightly deviate from conventional ideals, and the continued use of filters and photo manipulation persists (Orgad & Gill, 2022). Another study found that social media posts promoting body positivity, while also featuring self-promotion or product endorsements, were perceived as less morally acceptable, and were less successful in fostering body appreciation and inclusivity (Brathwaite & DeAndrea, 2022). To counter this and ensure the efficiency of the post, Pöyry et al. (2019) state that the post must resonate with the perceived values by the content creators. If the viewers perceive content creators as disgenuine and exploiting body positive messages for self-interest, they may disengage from them, diminishing their impact (Pöyry et al. 2019).

Although extensive research has been conducted within the body positivity movement, there remains a notable gap in understanding the impact of body positivity initiatives within the fitness industry. This presents a valuable opportunity for further investigation for this study.

2.3 Body Types and Internalization of Ideals

Previous studies have made efforts to investigate the effects of different body types by applying diverse theoretical frameworks (Breves et al. 2023).

The Social Learning Theory proposes that individuals learn attitudes and behaviors through observations of role models and peers, particularly regarding social norms and standards (Bandura, 1977). Within the context of body images, a prevalence of a certain body type and an association with positive attributes, can trigger social learning (Breves et al. 2023). This can explain how influencers content may shape users' ideal body image (Breves et al. 2023). If the content is showcasing dieting and thinness - and linking these practices to positive concepts like happiness, social acceptance and success - the audience may learn to internalize these appearances and strive to achieve them (Harrison & Cantor, 1997).

The Social Comparison Theory (Festinger, 1954) has been largely used when comparing the effects of social media platforms on well-being (Schreurs et al. 2022). The constant flood of idealized portrayals on these platforms fuels negative upward comparison, especially among those who struggle with feelings of inadequacy (Schreurs et al. 2022). This vulnerability makes them more susceptible to internalizing unrealistic online beauty standards, further damaging their self-esteem (Schreurs et al. 2022).

The Objectification Framework (Fredrickson & Roberts, 1997), adds another layer to the discussion. It posits that constant objectification has a negative effect on mental health (Fredrickson & Roberts, 1997). Cuto & Willoughby (2023) found that while objectifying elements in images has a clear negative effect on the participants well-being, using body appreciation captions may serve as a protective factor against these effects.

Stein et al. (2021), through The Cultivation Theory (Gerbner & Gross, 1976), posit that the repeated exposure to the thin ideal will foster the belief that this body type is societal norm. This perceived norm is then internalized by users, becoming part of their ideal self-image (Stein et al. 2021). Breves et al. (2023) connect this with the Self-discrepancy Theory by Higgins (1987), which suggests that these internalized ideals rarely match our perception of our actual selves. This leads to a gap that can trigger negative emotions like depression (Vartanian, 2012). The concept of actual-ideal discrepancy has been well-established in explaining how social media exposure with unrealistic body standards can negatively impact mood and body image (Ahadzadeh et al. 2017; Vartanian, 2012). Breves et al. (2023) suggest exposure to larger sized models portrayed in a positive and successful light as a potential countermeasure. In these cases, the ideal self may come closer to the actual self, potentially reducing the discrepancy (Breves et al. 2023).

2.4 Research Gap

While the amount of literature on the body positivity movement is growing, body positivity within the fitness industry has not been thoroughly researched yet. Barnes et al. (2023) propose that research should examine the effect of exposure to fitness-related content showcasing women with larger physiques and increased visibility of body fat. This study aims to address this gap, by comparing fit ideal images and body positive fitness posts. Although body positivity encompasses several aspects, such as different body type, ethnicity, and abilities, the focus of this study will be on body types. Other aspects of body positivity should be investigated by other researchers.

In particular, this thesis investigates the impact of fitness influencers on social media users' state self-esteem, taking into consideration users' perceived physical condition. This is going to provide a different, yet underexplored perspective. While a significant amount of research has been done on the effects of social media on body dissatisfaction (Betz & Ramsey, 2017; Brown & Tiggemann, 2016; Cohen, 2019; Cohen & Blaszczynski, 2015; Robinson et al. 2017; Tiggemann & Zaccardo, 2015), fitness influencers' effect on social media users' state self-esteem, taking into consideration how physically fit they perceive themselves, has not been studied before.

3 Theoretical framework and hypothesis

The following chapter describes the theoretical underpinnings of the study. First, the concept of self-esteem in the marketing literature is introduced. Continuing, the Social Comparison Theory and Self-discrepancy Theory is presented in order to explain the relationship between the variables. The research model and its corresponding hypotheses are presented and discussed.

3.1 Theoretical Background

3.1.1 Self-esteem in the Marketing Literature

Self-esteem is defined as a person's attitude towards the self and can be either a positive or a negative evaluation of one's self (Coopersmith, 1967; Rosenberg, 2016). The term also refers to the degree to which a person perceives the self as worthy and capable (Coopersmith, 1967). Consequently, individuals with high self-esteem perceive themselves as worthy, acknowledge their imperfections, yet anticipate to grow and improve (Rosenberg, 2016). On the contrary, low self-esteem suggests self-denial, dissatisfaction with oneself, and a lack of self-respect, resulting in a negative self-image (Rosenberg, 2016).

Several studies have been conducted linking self-esteem to marketing practices. The term self-esteem advertising, as coined by Durgee (1986), describes a kind of advertising aimed at changing consumers' attitudes and behavior to brands and products through the stimulation of positive emotions towards themselves. The slogan "You deserve a break today" used by McDonald's is one example of the self-esteem advertising strategy (Durgee, 1986). According to Durgee (1986), consumers' feelings of self-esteem could potentially be used to influence buying decisions. Advertisements that influence consumers' self-perception in a positive way also have positive effects on their attitude towards the brand (Durgee, 1986). Similarly, Linardi et al. (2023) state that consumers with high self-esteem hold more positive attitudes towards ads and brands, as well as to have higher purchasing intention than individuals with low self-esteem.

Previous research investigated consumers' motivations behind comparisons with models used in advertisements. Comparing oneself to highly attractive models, widely used in advertisements, causes people to experience negative emotions (Bower, 2001). Martin &

Gentry (1997) explored different kinds of motivations behind comparison processes to highly attractive models among adolescents and preadolescents and how these motivations affect their self-perception and their self-esteem. In their paper, the authors demonstrated that if a comparison to a highly attractive model is motivated by self-evaluation, it might result in temporarily lower self-esteem for girls than in cases where the comparison is motivated by self-improvement. However, Social Comparison Theory is not able to explain why one person is more prone to follow the motive of self-evaluation and another one is more predisposed to self-improvement motives (Martin & Gentry, 1997).

Another branch of literature explored how different kinds of advertisements affect a person's self-esteem. In a study examining consumer preferences for self-similar versus self-contrasting product models, Nichols & Schumann (2012) suggest that individuals who engage in social comparisons on a regular basis are more willing to accept self-contrasting models as those consumers are actively seeking information to enhance themselves and to boost their self-esteem. Selensky & Carels (2021) discovered more inclusive, body positive advertising campaigns to enhance self-esteem and mood while also reducing weight bias. Especially in regard to self-esteem, females in the body positive conditions of this study documented increased self-esteem compared to women in the other conditions (Selensky & Carels, 2021). The authors state that, despite the uncertain effects in the long run, the influence of short video advertisements on self-esteem shows the potential of body positive campaigns. A study focusing on appearance self-esteem and academic self-esteem, found that consumers' self-esteem level in the domain related to the product category affects consumers' response to different advertisements picture types (Aydınoğlu & Cian, 2014). It is suggested that individuals with high versus low self-esteem levels respond differently to promotional messages (Aydınoğlu & Cian, 2014). The authors state that individuals with low domain-specific self-esteem show more favorable attitudes towards ads featuring product pictures instead of depicting a person. Aydınoğlu & Cian (2014) conclude that consumers' self-evaluations are essential to consider when designing advertisements. If they are implemented the right way, such considerations can lead to beneficial outcomes for brands (Aydınoğlu & Cian, 2014).

While self-esteem seems to be a relatively stable disposition (Rosenberg, 2016), it can undergo temporary changes (Heatherton & Polivy, 1991). People form their overall self-esteem by considering their emotions about themselves across a variety of social contexts, yet momentary self-assessment may vary depending on the circumstances (Heatherton & Polivy, 1991). State self-esteem tries to capture temporary fluctuations of self-esteem (Heatherton & Polivy, 1991). According to Nichols & Schumann (2012), moods strongly influence attitudes, choices, and judgements. People tending to engage in social comparison practices less frequently were found to be influenced by mood to a greater extent than people that are more comparison oriented (Nichols & Schumann, 2012).

3.1.2 Social Comparison Theory

Social Comparison Theory proposes that individuals assess their opinions and abilities by comparing themselves with others (Festinger, 1954). Even though opinions and abilities at first seem to be rather distinct, the concepts are closely interlinked and influence behavior (Festinger, 1954). According to Festinger (1954), abilities are only demonstrated through performance and in absence of objective, non-social means, individuals make use of comparisons with other persons to evaluate their own opinions and abilities. Inferior status is assigned to people considered less good than oneself and consequently, superior status is allocated to those considered better than oneself (Festinger, 1954).

From Festinger's (1954) perspective, the primary objective of comparison with others is to evaluate oneself accurately. Since he first published his work, Social Comparison Theory has been continuously revised and extended (Gulas & McKeage, 2000; Wood, 1989). Researchers have begun to form an understanding of Social Comparison Theory that goes beyond Festinger's original theory and even contradicts parts of it (Wood, 1989). The "similarity hypothesis", central to Festinger's work, asserts that individuals preferably compare themselves to similar persons (Wood, 1989). Wood (1989) found that comparisons can also serve self-enhancement and self-improvement purposes, not only self-evaluation objectives.

In Social Comparison Theory, there is a major distinction between upward and downward comparisons. While upward comparisons occur when comparing oneself with others who are perceived as superior, downward comparisons are made between oneself and persons seen as inferior or worse off (Watson et al. 2011; Wills, 1981; Wood, 1989). According to Collins (1996), upward comparisons can have self-enhancing as well as self-deflating effects, based on how the individual interprets the comparison. Engaging in upward comparisons often diminishes a person's self-esteem and overall well-being (Lin & Kulik, 2002; Richins, 1991). Yet, people might also draw inspiration from comparing themselves with others or become motivated to pursue similar goals (Frisby, 2004). In addition, Dittmar & Howard (2004) found that people may experience positive emotions if their attributes closely resemble those of the comparison other. Downward comparisons on the other hand generally tend to be self-enhancing (Lyubomirsky & Ross, 1997). The basic principle of downward comparison suggests that individuals can enhance their subjective well-being by comparing themselves to someone worse off (Wills, 1981). As a consequence, the person feels better about his or her own situation (Wills, 1981). In general, advantageous comparisons are particularly pleasurable, while unfavorable comparisons have painful effects (Wood, 1989).

3.1.3 Self-discrepancy Theory

Self-discrepancy Theory asserts that individuals frequently encounter negative motivational and emotional states when there is a discrepancy between the actual self and the ideal self

(Higgins, 1987). Self-discrepancy Theory concentrates on the outcomes the self-concept might induce on self-evaluations and individual emotional reactions (Higgins, 1987).

In his theory, Higgins (1987) explores how diverse types of discrepancies between self-state representations relate to distinct kinds of emotional vulnerabilities. Discrepancies exist between the actual self-state and ideal self-states and can lead to emotions such as disappointment, dissatisfaction, sadness, shame, and frustration (Higgins, 1987). The author states that different forms of self-discrepancies lead to distinct negative psychological situations and consequently, to different kinds of discomfort. A fundamental goal of Self-discrepancy Theory is to predict which types of conflicting beliefs will bring about which kinds of negative emotions (Higgins, 1987).

Within Self-discrepancy Theory, three domains of the self are distinguished: the actual self (i.e. the representation of the attributes an individual believes to truly possess), the ideal self (i.e. the representation of the attributes an individual ideally desires to possess), and the ought self (i.e. the representation of the attributes an individual believes it should possess) (Higgins, 1987).

Furthermore, Higgins (1987) makes a distinction between a person's self-concept (i.e. the image we have of ourselves) and one's self-guides (i.e the desired self-states). Self-discrepancy Theory posits that individuals are driven to reach a state where their self-concept aligns with the self-guides relevant to them (Higgins, 1987). According to Higgins (1987), individuals experience feelings of sadness or disappointment when they think they are unlikely to achieve a desired goal.

A prevalent discrepancy is the one between the actual/own self and the ideal/own self. In this condition, the current state of an individual's attributes, perceived from the person's own perspective, fails to align with the ideal state the individual personally aspires to achieve (Higgins, 1987). This incongruence leads to a psychological situation characterized by a lack of positive outcomes, such as the non-fulfillment of own hopes and desires, and as a consequence, the individual is susceptible to emotions associated with dejection (Dittmar, 2005; Higgins, 1987). Misalignment between actual and ideal self drives behavior that aims at reducing the perceived gaps between an individual's current state and his or her ideal state (Bessenoff, 2006; Dittmar, 2005).

3.1.4 Rationale behind Theory Selection

For the purpose of this study and to predict the hypotheses, the authors chose to combine Social Comparison Theory and Self-discrepancy Theory due to their complementary nature.

This integration presents new avenues for explaining observed phenomena and consequently, for gaining novel insights.

People tend to emulate influencers and partake in social comparisons with them due to influencers' popularity in specialized domains (Barari, 2023). Social Comparison Theory has been used in the context of social media in prior research (e.g. Barari, 2023, Rüther et al. 2023) which proves its applicability to newer phenomenons such as social media even though the theory was originally formulated in 1954. According to Barari (2023), the extent to which individuals compare themselves to others increases in the context of social media and influencers.

Social Comparison Theory was chosen due to its ability to explain effects of influencers on individuals exposed to their content and therefore to illuminate how influencers potentially contribute to negative outcomes for social media users, e.g. diminished overall well-being and self-esteem.

Self-discrepancy was found to moderate the likelihood of individuals comparing themselves to thin-ideal ad images, as well as the negative impacts of such comparison (Bessenoff, 2006). In a study on the effects of thin-ideal advertisements, Bessenoff (2006) discovered that individuals with elevated body image self-discrepancy tended to partake in social comparisons more often and experienced negative effects related to mood, depression, and self-esteem in contrast to individuals with lower levels of body image self-discrepancy. This paper shows the significance of integrating Self-discrepancy Theory into social comparison processes and suggests that varying levels of self-discrepancy affect the extent to which individuals engage in social comparisons, potentially impacting the degree to which they experience negative outcomes from these comparisons.

Consequently, Self-discrepancy Theory may advance the understanding of how social norms are internalized. Therefore, Self-discrepancy Theory can extend Social Comparison Theory by establishing boundary conditions under which upward/downward comparisons take place.

To conclude, Social Comparison Theory and Self-discrepancy Theory complement each other and provide a rich background for the following formulation of the hypotheses.

3.2 Hypothesis Formulation

The current study investigated the effect of exposure to fitness-related content showcasing either fit ideal or body positive physiques of fitness influencers on social media. Hypotheses were established in order to answer the following research questions:

- RQ1: What effect do fitness influencers have on the state self-esteem of social media users?
- RQ2: Does the fitness influencer's body type affect the outcomes on the state self-esteem of social media users?
- RQ3: Do social media users' perceived physical condition moderate the relationship between exposure to fitness-related content and state self-esteem?

3.2.1 Exposure to Fitness-related Content Reduces State Self-esteem

As established in Social Comparison Theory, upward comparisons frequently reduce an individual's self-esteem and well-being (Lin & Kulik, 2002; Richins, 1991). In contrast, previous research found that outcomes of such comparisons may also be positive if a person's attributes come close to those of the comparison other (Dittmar & Howard, 2004). Generally, a comparison can be described as pleasurable when advantageous for the individual engaging in social comparison and as painful when unfavorable for the individual (Wood, 1989). Therefore, the prediction is that exposure to fitness-related content will trigger people to start comparing themselves to the fitness influencers portrayed in the pictures and will consequently lead to negative outcomes on all of the three subfactors of state self-esteem, namely appearance, social, and performance (Heatherton & Polivy, 1991). In particular, participants are expected to have lower state self-esteem after temporary exposure to fitness-related content featuring the fit ideal body type than to fitness-related content showing body positive physiques. This draws on previous findings saying that negative comparison effects are reduced when an individual's attributes closely resemble the portrayed attributes. In sum, this leads to theorizing the following:

H1: Exposure to fitness-related content (EFC) showcasing the fit ideal body type will result in a greater decrease in viewer's Appearance state self-esteem (SSE) compared to body positive imagery.

H2: EFC showcasing the fit ideal body type will result in a greater decrease in viewer's Social SSE compared to body positive imagery.

H3: EFC showcasing the fit ideal body type will result in a greater decrease in viewer's Performance SSE compared to body positive imagery.

3.2.2 Perceived Physical Condition as a Moderator

Previous research has shown that physically fit individuals who engage in regular exercise tend to experience increased psychological functioning and mental well-being (Plante &

Rodin, 1990; Plante, 1996). Interestingly, some studies suggest that a considerable amount of the psychological benefits of exercise may stem from beliefs about exercise and fitness rather than solely from actual physical conditioning (Plante et al. 2000). Plante et al. (2000) define perceived fitness as an individual's belief regarding their own physical fitness level. In a study featuring 60 college students, Plante et al. (1998) observed that higher perceived fitness showed stronger correlations with positive personality traits and mood indicators (e.g. decreased depression, increased self-esteem) than actual aerobic fitness levels. Abadie (1988) states that there will only be enhanced mental well-being, if improvements are made concerning self-perception.

Self-discrepancy influences the likelihood of engaging in social comparisons (Bessenoff, 2006; Watson et al. 2011). Watson et al. (2011) hypothesize that high-discrepant individuals are more inclined to make social comparisons with idealized ad images than low-discrepant individuals. Furthermore, they propose that self-discrepancy moderates the relationship between the likelihood to make social comparisons and the psychological outcomes of such comparisons. In particular, individuals with high levels of self-discrepancy are more likely to engage in comparisons with idealized ad images, leading to greater negative psychological or emotional consequences (Watson et al. 2011). Low-discrepant individuals partake in fewer comparisons with idealized ad images, which results in greater positive psychological or emotional outcomes (Watson et al. 2011). Bessenoff (2006) found supporting evidence in a similar context. She proposed self-discrepancy to moderate the relationship between exposure to thin-ideal advertisements and negative outcomes in such way that women with high body image self-discrepancy experienced more negative outcomes (i.e. body dissatisfaction, depression, negative mood, negative self-esteem) form exposure to thin-ideal advertisements than low self-discrepant women.

For the purpose of this study, a subfactor of the Perceived Physical Fitness Scale (Abadie, 1988), namely physical condition was used as a moderator. Moderators influence the strength or the direction of an impact of the independent variable (Bessenoff, 2006). Thus, perceived physical condition as a moderating variable would mean that negative effects from fit ideal exposure on the three subfactors of state self-esteem are stronger for individuals with lower levels of perceived physical condition than for those with higher levels of perceived physical condition. Exposure to body positive imagery may cause the same effects, but is expected to impact the three subfactors of state self-esteem of individuals with lower as well as higher levels of perceived physical condition to a smaller extent. The reason for this could be that people perceive themselves as similar to the depicted fitness influencers and therefore do not engage in upward comparisons with a rather unachievable ideal.

Specifically, the prediction is that fit ideal exposure effects on the three subfactors of state self-esteem (i.e. Appearance SSE, Social SSE, and Performance SSE) will be stronger for

individuals with lower levels of perceived physical condition. This leads to theorizing the following:

H4: The relationship between EFC and Appearance SSE is moderated by Perceived physical condition (PPC) such that the effect of EFC on Appearance SSE is stronger for low PPC compared to high PPC.

H5: The relationship between EFC and Social SSE is moderated by PPC such that the effect of EFC on Social SSE is stronger for low PPC compared to high PPC.

H6: The relationship between EFC and Performance SSE is moderated by PPC such that the effect of EFC on Performance SSE is stronger for low PPC compared to high PPC.

3.3 Summary of Hypotheses & Conceptual Model

To address the aforementioned research questions, a conceptual model was created to visualize how the variables relate to each other. The research model is constructed to explore the impact of exposure to fitness-related content, featuring two different body types, on social media users' state self-esteem. Additionally, the moderating effect of users' perceived physical condition will be examined. As depicted in *Figure 1*, the model consists of six hypotheses. *Table 1* summarizes the hypotheses used in this study.

Table 1 Summary of hypotheses

H1	Exposure to fitness-related content (EFC) showcasing the fit ideal body type will result in a greater decrease in viewer's Appearance state self-esteem (SSE) compared to body positive imagery.
H2	EFC showcasing the fit ideal body type will result in a greater decrease in viewer's Social SSE compared to body positive imagery.
H3	EFC showcasing the fit ideal body type will result in a greater decrease in viewer's Performance SSE compared to body positive imagery.
H4	The relationship between EFC and Appearance SSE is moderated by Perceived physical condition (PPC) such that the effect of EFC on Appearance SSE is lower for higher PPC compared to low PPC.

H5	The relationship between EFC and Social SSE is moderated by PPC such that the effect of EFC on Social SSE is lower for higher PPC compared to low PPC.
H6	The relationship between EFC and Performance SSE is moderated by PPC such that the effect of EFC on Performance SSE is lower for higher PPC compared to low PPC.

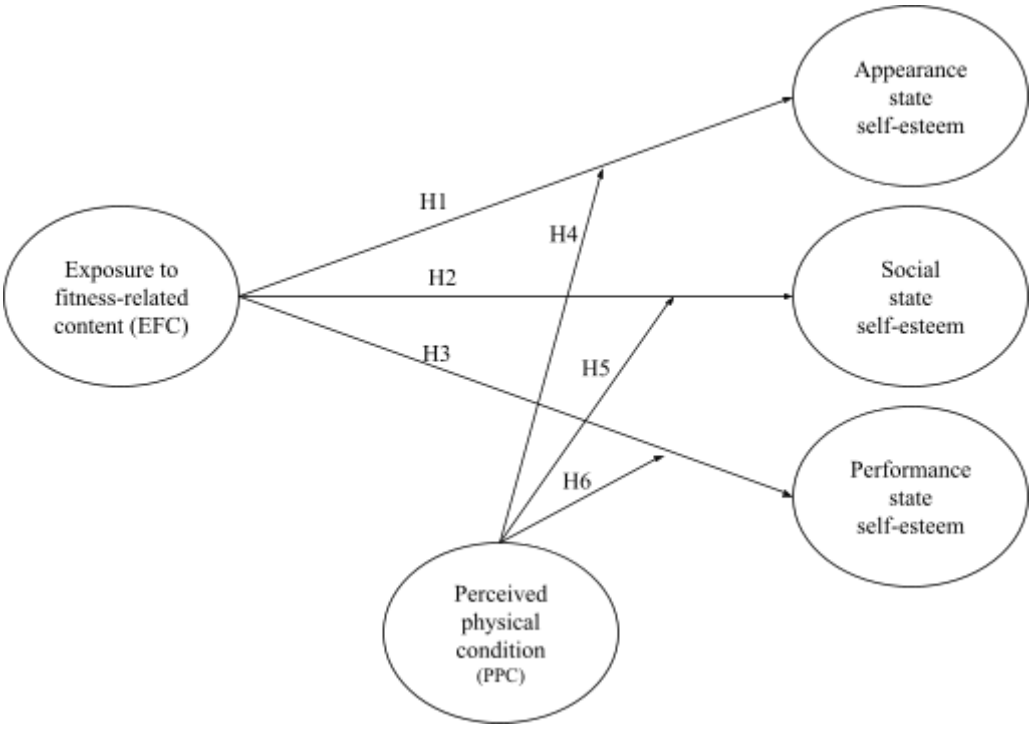


Figure 1 Conceptual Model

4 Methodology

In the following chapter, the methodological aspects are presented, starting with the research approach. Next, the research design is presented. Then the data collection method is discussed, followed by an explanation of how the data is analyzed.

4.1 Research Approach

In this thesis, the phenomenon of how exposure to fitness-related content on social media affects user's state self-esteem was investigated. Taking a standpoint rooted in the ontological position of internal realism, this study is positioned within the epistemological domain of positivism. The ontological position of internal realism assumes that the reality is independent of the observer and it can only be accessed by the researcher indirectly (Easterby-Smith et al. 2021). The positivist approach assumes that there is an external reality, independent of its observations. The goal of positivism is to uncover the laws and principles that govern this independent world (Easterby-Smith et al. 2021).

This study employed a quantitative approach to examine the impact of exposure to influencer contents on the subfactors of state self-esteem of the social media users. The quantitative method offers several advantages. Bell et al. (2019) argue that it allows for a larger sample size, resulting in a significant amount of data. The authors explain that a vast dataset allows the researcher to uncover broader trends and patterns that might be missed with a smaller group. Additionally, they assert that data gathered through quantitative methods holds the potential for greater external validity, as it is more generalizable and therefore it can be more applicable to a wider population. Finally, quantitative methods are less susceptible to researcher bias, which occurs when preconceived notions of the researchers influence data collection (Bell et al. 2019). Compared to a qualitative approach, the advantages of a quantitative approach were considered crucial for this study's theoretical and managerial implications. As the study builds upon previous research while opening a new angle for analyzing fitness influencers' effect on users' state self-esteem, having a large sample size that allows for making generalizations to the wider population, was regarded as essential.

4.2 Research Design

In this thesis, the authors conducted a between-subjects online experiment with image type (fit ideal imagery and body positive imagery) as the independent variable. The dependent variables were Social, Appearance, and Performance state self-esteem (SSE) and the moderating variable was Perceived physical condition (PPC). Established scales were employed for assessing SSE and PPC, as the usage of established measures is a way to ensure reliability.

At the beginning of the survey, participants were presented a short introductory text stating the purpose of this study. They were told the study is about physical exercise in times of social media.

After providing their consent to participate in this study, demographic information (i.e. age, gender, nationality), as well as information concerning social media usage, was collected from the participants. This allowed for a more detailed sample description. If a participant's reply did not match the previously specified age range (i.e. between 18 and 30 years old) or gender (i.e. female), the survey was terminated for said participant.

Following, in the first section of the survey, participants' perceived physical condition were measured using a subfactor of the Perceived Physical Fitness Scale established by Abadie (1988). The Perceived Physical Fitness Scale originally consists of 12 items (*see Appendix A*) that measure four subfactors of physical fitness: physical condition, muscular flexibility, muscular condition, and body composition. All of these items are measured on a five-point Likert scale ranging from 1 to 5 (1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, 5 = strongly agree). Higher values indicate higher perceived physical fitness.

A Likert scale is intuitive for participants to understand and it enables them to express varying levels of agreement or disagreement (Albaum, 1997). Abadie (1988) reported a Cronbach's alpha of 0.78 for internal consistency and a high test-retest reliability of 0.92. Additionally, excellent construct and concurrent validity was reported, while no correlation was found with social desirability (Abadie, 1988).

Factor 1 (i.e. physical condition) was selected as the focus of this study, as it fits the purpose best. Therefore, only item 1, 3, 9, and 12 from the original scale were part of the survey (*see Appendix A*). According to Abadie (1988), item 4 and item 8 loaded equally on factor 1 and factor 3. The authors chose to not include those two items in factor 1 as they were not solely related to this factor.

Table 2 Adjusted Perceived Physical Fitness Scale (Abadie, 1988)

	Item	Primary factor
1.	I am in good physical condition.	Physical condition
2.	I am better able to walk briskly for twenty minutes than most individuals my age.	Physical condition
3.	I am more physically fit than most individuals my age.	Physical condition
4.	I need to improve my present overall physical condition. (R)	Physical condition

Note: (R) indicates reverse scoring.

Next, each participant was shown a stimulus set consisting of eight pictures portraying various fitness influencers. This study focused on the social media platform Instagram which is the fourth most used social network worldwide (Statista, 2024c). Currently, the platform has 1.4 billion users around the globe and numbers are projected to continue growing (Statista, 2024d). In comparison to the recently popular social media platform TikTok, content on Instagram is still very much centered on still pictures. All posts included in the stimulus sets are taken from Instagram. The stimuli consist of picture posts only, no short video clips (i.e. reels) or content of Instagram stories were included. Three sets of stimulus materials were constructed in which the number of fit ideal and body positive imagery was varied (8 fit ideal, 4 fit ideal & 4 body positive, 8 body positive). The first condition (i.e. only fit ideal imagery) was chosen by the authors to be able to see how fit ideal imagery affects state self-esteem in isolation from more inclusive posts. The same goes for the last condition which was set up to be able to see how body positive imagery affects the dependent variables in isolation of fit ideal imagery. The mixed condition included four body positive fitness posts in addition to four fit ideal posts to see how being exposed to both types affects the state self-esteem. Every participant had an equal chance to be randomly allocated to one of the three conditions of the experiment.

Several criteria needed to be fulfilled for a post to be included in the stimuli: (1) As this study focuses on the effects of fitness influencers' posts on women, only female fitness influencers were considered for the stimulus set. (2) Fitness inspiration pages and different hashtags related to working out (e.g. #fitspiration, #gymwear) were used by the researchers to select the pictures for the experiment. The setting of the pictures needed to include workout gear or the picture had to be taken in a gym to make sure that the overall focus of the post was related to physical exercise. The effort was made to find body positive images under the workout hashtags (e.g. #fitspiration, #gymwear), however it was proven difficult as most of the pictures showed the fit ideal. Therefore, some of the body positive pictures were found under #bodypositive, although they still were related to physical exercise. (3) The Instagram account from which a post was included in the stimulus set had to have at least 10,000 followers.

According to Campbell and Farrell (2020), influencers can be grouped into different segments in terms of follower count: celebrity and mega influencers (over 1,000,000 followers), macro influencers (100,000-1,000,000 followers), micro influencers (10,000-100,000 followers), and nano influencers (0-10,000 followers). With regard to social media marketing, micro and macro influencers are also considered the most beneficial for brands due to being more accessible and authentic in contrast to bigger influencers (Campbell & Farrell, 2020). For the purpose of this study, the minimum number of followers was set at 10,000 to ensure that the account is influential. (4) Body positive imagery was considered to show bodies with increased visibility of body fat and decreased visibility of muscle tone (Barnes et al. 2023) in contrast to the fit ideal.

Each stimulus set consisted of eight screenshots of real posts of fitness influencers. Based on the experimental condition, zero, four, or eight of these posts featured body positive physiques instead of the fit ideal body type. To ensure diversity and to reduce possible bias resulting from prior knowledge about a specific influencer, each post featured a different fitness influencer. Due to the nature of this study, participants were only exposed to the pictures posted on Instagram. Captions, likes and comments were not shown to avoid possible effects of any kind on the perception of the image, as well as distraction and overload of the participant by providing too many stimuli (*see Appendix C*). *Figure 2* illustrates an exemplary fit ideal post next to an exemplary body positive post.

Figure 2 Examples of a fit ideal post (@gymshark) and a body positive post (@elmint)

After looking at the stimulus set, participants were asked 17 questions to assess their state self-esteem. Therefore, the State Self-Esteem Scale developed by Heatherton & Polivy (1991) was used. The State Self-Esteem Scale originally consists of 20 items that measure three sub-categories of self-esteem, namely appearance, social, and performance self-esteem. In particular, seven questions are related to appearance self-esteem, another seven are related to social self-esteem, and six questions are related to performance self-esteem (see *Appendix B*). All items were measured on a five-point Likert scale, ranging from 1 to 5 (1 = not at all, 2 = a

little bit, 3 = somewhat, 4 = very much, 5 = extremely). Thereby, greater numbers imply higher levels of self-esteem. Each of the three subscales, as well as the overall self-esteem scale, demonstrate acceptable internal consistency.

For the purpose of this study, three items of the State Self-Esteem Scale were excluded, namely "I feel that I am having trouble understanding things that I read." (5.), "I feel confident that I understand things." (14.), and "I feel that I have less scholastic ability right now than others." (18.) (see *Appendix B*). These items were not included because the statements specifically refer to reading skills and scholastic abilities. Those skills do not relate to the phenomenon under investigation.

Table 3 Adjusted State Self-Esteem Scale (Heatherton & Polivy, 1991)

	Item	Primary factor
1.	I feel confident about my abilities.	Performance
2.	I am worried about whether I am regarded as a success or failure. (R)	Social
3.	I feel satisfied with the way my body looks right now.	Appearance
4.	I feel frustrated or rattled about my performance. (R)	Performance
5.	I feel that others respect and admire me.	Appearance
6.	I am dissatisfied with my weight. (R)	Appearance
7.	I feel self-conscious. (R)	Social
8.	I feel as smart as others.	Performance
9.	I feel displeased with myself. (R)	Social
10.	I feel good about myself.	Appearance
11.	I am pleased with my appearance right now.	Appearance
12.	I am worried about what other people think of me. (R)	Social
13.	I feel inferior to others at this moment. (R)	Social
14.	I feel unattractive. (R)	Appearance
15.	I feel concerned about the impression I am making. (R)	Social
16.	I feel like I'm not doing well. (R)	Performance
17.	I am worried about looking foolish. (R)	Social

Note: (R) indicates reverse scoring.

Before starting the main data collection phase, a pilot study was conducted in order to pre-test the online survey. This allows for identifying any potential issues with the survey's design or wording that might otherwise affect the intended research objectives. Five people were asked to complete the survey and to provide feedback afterwards. They pointed out some typos and unclear wording of the tasks, which was corrected before the actual data collection began.

4.3 Data Collection

Once the pilot study was conducted, the collection of the primary data began. Bell et al. (2019) introduce the two main sampling techniques, probability and non-probability sampling. Probability sampling, as defined by the authors, ensures that each member of the population has an equal chance of being selected. Non-probability sampling signifies that certain units in the population are more likely to be chosen than others (Bell et al. 2019). For this study, the second sampling method was chosen. This choice was made in regards to the limited timeframe of this study, as well as because of its efficiency, affordability and simplicity in both design and execution (Bell et al. 2019). Within the non-probability sampling, the convenience sampling method was used, targeting individuals available within a close vicinity to the researcher (Bell et al. 2019).

The participant selection criteria included an age range between 18 and 30 years, consistent with prior research in fitspiration (Prichard et al. 2018; Tiggemann & Zaccardo, 2015). Additionally, this age range reflects those who are most frequent users of the social media platform Instagram (Statista, 2024a). Given that existing research indicates that women are more prone to social comparison and body image concerns compared to men (Anderberg & Tiggemann, 2020), this study exclusively included female participants. Initially, 207 participants responded to the survey. If the participants' replies did not match with the previously determined age and gender criteria, the survey was terminated for them. Out of the 207 participants, 16 were male or preferred to not say their gender, three respondents were over 30 years old and 17 did not complete the survey. They were therefore excluded from the study. All in all, the final sample size amounted to 171 participants.

The survey was created in Qualtrics and the questions were written in English in order to ensure accessibility for participants from diverse linguistic backgrounds. The survey was distributed through various online platforms, such as LinkedIn, Instagram, WhatsApp, and Facebook.

A consent form was included in the beginning of the survey in order for the participants to give their informed consent before starting the survey. Participation in the study was

voluntary, with the option to terminate the survey at any point. Strict measures were in place to maintain their privacy and confidentiality throughout the study.

4.4 Data Analysis

After the data collection process was completed, the collected data was analyzed. Therefore, the participants' responses were exported to Jamovi via Excel. Jamovi is a software for analyzing data. All of the following analyses were performed in Jamovi.

First of all, the analysis began with the investigation of the descriptive statistics of the dataset. Descriptives were conducted for the sample as a whole and included measures of central tendency (i.e. mean, median, and mode), as well as measures of dispersion (i.e. standard deviation and interquartile range). This part of the total analysis also provides insights into the age distribution, the nationalities, and the social media usage of the sample.

Next, a confirmatory factor analysis was carried out to test the pre-specified measurement model. Confirmatory factor analysis was performed to make sure that the latent variables in the model (PPC, Social SSE, Appearance SSE, Performance SSE) are measured accurately. This step included reporting of the model fit and a reliability analysis. Depending on the results of the confirmatory factor analysis, modifications may be made to enhance the model fit, given that these adjustments make theoretical sense.

Validity evaluates how well an indicator or a set of indicators designed for measuring a concept actually measure that concept (Bell et al. 2019). There are several ways of testing measurement validity (Bell et al. 2019). Among these, construct validity assesses whether one is measuring what was intended to measure (Navarro & Foxcroft, 2018). To assess validity, this study uses the following thresholds for the model fit indices (see *Table 4*). Concerning the factor loadings, a minimum threshold of 0.50 was used.

Table 4 Model Fit Thresholds (Navarro & Foxcroft, 2018)

Model Fit Indices	Recommended Value for Satisfactory Fit	Recommended Value for Good Fit
CFI	> 0.90	> 0.95
TLI	> 0.90	> 0.95
RMSEA	0.05 to 0.08	< 0.05

Reliability refers to issues concerning the consistency of measures (Bell et al. 2019). Cronbach's Alpha and McDonald's Omega were used in this thesis. According to Navarro & Foxtrott (2028), thresholds of 0.70 or 0.80 represent acceptable and good reliability but should generally be treated with caution as the definition of thresholds largely depends on what the scale is measuring. In this thesis, a minimum threshold for Cronbach's Alpha and McDonald's Omega of 0.70 was used.

As this study investigates the relationship between exposure to fitness-related content (independent variable with three levels) and three subfactors of state self-esteem (three continuous dependent variables), a one-way ANOVA was used for analyzing the data in a first step. One-way ANOVAs are used for comparing means across more than two independent groups. Since the main results only show whether there is a difference between the groups, but do not provide further information on the nature of that difference, post hoc tests were also conducted. The one-way ANOVA was conducted to test if H1, H2, and H3 can be supported.

Next, the moderating variable PPC was transformed to a categorical variable that consists of two groups, i.e. low PPC and high PPC. Therefore, a median split was done, dividing PPC into one group that sees itself below the median and one group that perceives their physical condition to be above the median.

Lastly, three two-way ANOVAs were conducted to test if H4, H5, and H6 can be supported. Two-way ANOVAs are conducted to examine the influence of one categorical independent variable and one categorical moderator on the dependent variable. Consequently, the analysis shows whether the relationship between exposure to fitness-related content and state self-esteem varies at different levels of the moderator perceived physical condition.

5 Analysis

Within this chapter, the analysis of the collected data is presented in detail. Starting with descriptive statistics. Next, the results of the confirmatory factor analysis and the reliability analysis are provided, followed by the one-way ANOVA and three two-way ANOVAs. Finally, a summary of the hypotheses after the analysis is presented.

5.1 Sample Characteristics & Items Statistics

As outlined in the methodology chapter, the survey garnered 207 responses, out of which 171 met the criteria for inclusion in this study, constituting the final sample size.

The age of the respondents ranged from 18 and 30 years old, as per the criteria. The age group 21-25 years holds the highest representation (65.5 %) while the age group of 18-20 years is the least represented (10.5 %) (*see Table 5*). This outcome is expected, given that the latter age range spans only 2 years compared to the 4 years of the former. All of the respondents were female, as they were the intended target of this study.

Table 5 Frequencies of Age

Frequencies of Age

Age	Counts	% of Total	Cumulative %
21-25 years	112	65.5%	65.5%
26-30 years	41	24.0%	89.5%
18-20 years	18	10.5%	100.0%

The respondents were of a variety of nationalities, with German being the most represented (49.1 %), followed by Swedish (27.5 %), and thirdly by the USA and Dutch (2.9 % respectively) (*see Table 6)*.

Table 6 Frequencies of Nationality

Frequencies of Nationality

Nationality	Counts	% of Total	Cumulative %
Austrian	1	0.6%	0.6%
Brazilian	3	1.8%	2.3%
Canadian	1	0.6%	2.9%
Czech	1	0.6%	3.5%
Dutch	5	2.9%	6.4%
Estonian	2	1.2%	7.6%
Finnish	3	1.8%	9.4%
French	1	0.6%	9.9%
German	84	49.1%	59.1%
Greek	1	0.6%	59.6%
Hungarian	2	1.2%	60.8%
Icelandic	5	2.9%	63.7%
Italian	1	0.6%	64.3%
Polish	1	0.6%	64.9%
Spanish	2	1.2%	66.1%
Swedish	47	27.5%	93.6%
USA	5	2.9%	96.5%
Ukrainian	1	0.6%	97.1%
Italian	1	0.6%	97.7%
Chinese	2	1.2%	98.8%
Slovak	1	0.6%	99.4%
Danish	1	0.6%	100.0%

As for how much the respondents spend time on Instagram, the platform where the images for the experiment were taken from, people at most spent 1-2 hours on the platform (42.7 %), followed by 0-1 hour (29.2 %) (*see Table 7*).

Table 7 Time spent on Instagram

Frequencies of Time spent on Insta

Time spent on Insta	Counts	% of Total	Cumulative %
1-2 hours	73	42.7%	42.7%
2-3 hours	35	20.5%	63.2%
0-1 hour	50	29.2%	92.4%
3-5 hours	10	5.8%	98.2%
Over 5 hours	3	1.8%	100.0%

The frequencies of conditions (*see Table 8*) refers to which type of images were presented to the participants. Participants were randomly allocated to one of the three conditions with the majority of participants viewing the fit ideal images (38.0%), followed by the mixed images (32.2%), and lastly, the body positive images (29.8%).

Table 8 Frequencies of Condition

Frequencies of Condition

Condition	Counts	% of Total	Cumulative %
BP	51	29.8 %	29.8 %
Fit-ideal	65	38.0 %	67.8 %
Mix	55	32.2 %	100.0 %

The descriptive statistics for each of the indicators showed them to be overall normally distributed, without any missing values (*see Table 9, 10, 11 & 12*).

Table 9 Descriptives for PPC items

Descriptives

	Condition	Fitness_1	Fitness_2	Fitness_3	Fitness_4
N	BP	51	51	51	51
	Fit-ideal	65	65	65	65
	Mix	55	55	55	55
Missing	BP	0	0	0	0
	Fit-ideal	0	0	0	0
	Mix	0	0	0	0
Mean	BP	3.59	3.57	2.96	3.57
	Fit-ideal	3.55	3.28	3.00	3.32
	Mix	3.71	3.47	3.04	3.40
Median	BP	4.00	4.00	3.00	4.00
	Fit-ideal	4.00	3.00	3.00	4.00
	Mix	4.00	3.00	3.00	4.00
Mode	BP	4.00	4.00	2.00	4.00
	Fit-ideal	4.00	4.00	4.00	4.00
	Mix	4.00	3.00 [a]	2.00 [a]	4.00
Standard deviation	BP	1.10	0.964	1.06	1.20
	Fit-ideal	1.10	1.08	1.10	1.20
	Mix	0.956	0.979	0.981	0.915
Minimum	BP	2.00	2.00	1.00	1.00
	Fit-ideal	1.00	1.00	1.00	1.00
	Mix	2.00	2.00	1.00	1.00
Maximum	BP	5.00	5.00	5.00	5.00
	Fit-ideal	5.00	5.00	5.00	5.00
	Mix	5.00	5.00	5.00	5.00

Table 10 Descriptives for Performance SSE items

Descriptives

	Condition	Perf_1	Perf_4	Perf_8	Perf_16
N	BP	51	51	51	51
	Fit-ideal	65	65	65	65
	Mix	55	55	55	55
Missing	BP	0	0	0	0
	Fit-ideal	0	0	0	0
	Mix	0	0	0	0
Mean	BP	3.41	2.29	3.55	2.06
	Fit-ideal	3.09	2.28	3.63	2.11
	Mix	3.13	2.35	3.51	2.24
Median	BP	3.00	2.00	4.00	2.00
	Fit-ideal	3.00	2.00	4.00	2.00
	Mix	3.00	2.00	4.00	2.00
Mode	BP	3.00	2.00 [a]	4.00	2.00
	Fit-ideal	3.00	2.00	4.00	2.00
	Mix	3.00	2.00	4.00	2.00
Standard deviation	BP	0.942	0.855	0.986	0.968
	Fit-ideal	0.805	0.839	0.782	1.06
	Mix	0.924	0.927	1.02	1.09
Minimum	BP	1.00	1.00	1.00	1.00
	Fit-ideal	1.00	1.00	1.00	1.00
	Mix	1.00	1.00	1.00	1.00
Maximum	BP	5.00	4.00	5.00	5.00
	Fit-ideal	4.00	4.00	5.00	5.00
	Mix	5.00	4.00	5.00	5.00

Table 11 Descriptives for Social SSE items

Descriptives

	Condition	Social_2	Social_7	Social_9	Social_12	Social_13	Social_15	Social_17
N	BP	51	51	51	51	51	51	51
	Fit-ideal	65	65	65	65	65	65	65
	Mix	55	55	55	55	55	55	55
Missing	BP	0	0	0	0	0	0	0
	Fit-ideal	0	0	0	0	0	0	0
	Mix	0	0	0	0	0	0	0
Mean	BP	2.55	2.71	2.12	2.51	1.65	2.67	2.06
	Fit-ideal	2.49	2.80	2.12	2.83	2.12	2.71	2.35
	Mix	2.78	2.76	2.35	3.24	2.20	2.73	2.29
Median	BP	2.00	3.00	2.00	2.00	1.00	3.00	2.00
	Fit-ideal	2.00	3.00	2.00	3.00	2.00	3.00	2.00
	Mix	3.00	3.00	2.00	3.00	2.00	3.00	2.00
Mode	BP	1.00	2.00	2.00	2.00	1.00	3.00	1.00
	Fit-ideal	2.00	2.00	2.00	3.00	1.00	2.00	2.00
	Mix	2.00	3.00	2.00	3.00	1.00	2.00	3.00
Standard deviation	BP	1.30	1.03	0.993	1.12	0.844	1.14	1.12
	Fit-ideal	1.17	0.939	0.910	1.11	1.01	1.11	1.01
	Mix	1.10	0.881	0.821	0.981	1.11	1.04	1.08
Minimum	BP	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Fit-ideal	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Mix	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Maximum	BP	5.00	5.00	5.00	5.00	5.00	5.00	5.00
	Fit-ideal	5.00	5.00	5.00	5.00	4.00	5.00	5.00
	Mix	5.00	4.00	4.00	5.00	4.00	5.00	5.00

Table 12 Descriptives for Appearance SSE items

Descriptives

	App_3	App_5	App_6	App_10	App_11	App_14
N	171	171	171	171	171	171
Missing	0	0	0	0	0	0
Mean	2.95	3.06	2.25	3.40	3.15	2.02
Median	3.00	3.00	2.00	3.00	3.00	2.00
Mode	4.00	3.00	1.00	4.00	3.00	2.00
Standard deviation	1.10	0.977	1.23	0.885	1.01	0.988
Minimum	1.00	1.00	1.00	1.00	1.00	1.00
Maximum	5.00	5.00	5.00	5.00	5.00	5.00

5.2 Confirmatory Factor Analysis

The next step of the analysis consisted of performing a Confirmatory factor analysis to ensure the accurate measurement of latent variables (PPC, Social SSE, Appearance SSE, Performance SSE).

As per the original scale by Heatherton & Polivy (1991), eleven indicators of the SSE factors were reversed (*see e.g. R4 Perf in Table 13*). For PPC, one of the indicators (item 4) displayed a negative standard estimate, leading to its reversal.

The significance threshold used to determine significance is set at $p < 0.05$, as alpha is assumed to be 0.05. Factor loadings for all factors (PPC, Social SSE, Appearance SSE, Performance SSE) were significant ($p < 0.05$) (*see Table 13*).

Table 13 presents the factor loadings for all of the four factors. For PPC, three of the indicators have good standard estimates, as they are above the previously specified threshold of 0.5 (Fitness_1: Stand. Estimate = 0.686, Fitness_2: Stand. Estimate = 0.635, Fitness_3: Stand. Estimate = 0.946). However, the standardized estimate of the last indicator is below the threshold (Fitness_4: Stand. Estimate = 0.312). For Performance SSE, three indicators have a value > 0.5, resulting in good standard estimates (Perf_1: Stand. Estimate = 0.614, R4 Perf: Stand. Estimate = 0.555, R16 Perf: Stand. Estimate = 0.564). The fourth indicator does not have a good standard estimate (Perf_8: Stand. Estimate = 0.425). For Social SSE, all except for one indicator (R7 Social: Stand. Estimate = 0.292), have good standard estimates (R2 Social: Stand. Estimate = 0.673, R9 Social: Stand. Estimate = 0.691, R12 Social: Stand. Estimate = 0.595, R13 Social: Stand. Estimate = 0.583, R15 Social: Stand. Estimate = 0.634, R17 Social: Stand. Estimate = 0.621). For Appearance SSE, there is one indicator that has a standard estimate < 0.5 (App_5: Stand. Estimate= 0.421), while the rest of the indicators have standard estimates > 0.5 (App_3: Stand. Estimate = 0.765, R6 App: Stand. Estimate = 0.570, App_10: Stand. Estimate = 0.775, App_11: Stand. Estimate = 0.796, R14 App: Stand. Estimate = 0.662).

Table 13 Factor Loadings before removing indicators

Factor Loadings

Factor	Indicator	Estimate	SE	Z	p	Stand. Estimate
PPC	Fitness_1	0.758	0.0773	9.80	<.001	0.721
	Fitness_2	0.647	0.0737	8.79	<.001	0.638
	Fitness_3	0.946	0.0722	13.11	<.001	0.907
	R4 Fitness	0.375	0.0891	4.20	<.001	0.337
Performance SSE	Perf_1	0.546	0.0675	8.10	<.001	0.614
	R4 Perf	0.481	0.0672	7.15	<.001	0.555
	Perf_8	0.390	0.0739	5.28	<.001	0.425
	R16 Perf	0.585	0.0801	7.30	<.001	0.564
Social SSE	R2 Social	0.799	0.0866	9.22	<.001	0.673
	R7 Social	0.275	0.0768	3.58	<.001	0.292
	R9 Social	0.626	0.0658	9.52	<.001	0.691
	R12 Social	0.656	0.0844	7.77	<.001	0.595
	R13 Social	0.593	0.0772	7.68	<.001	0.583
	R15 Social	0.692	0.0822	8.42	<.001	0.634
	R17 Social	0.661	0.0798	8.28	<.001	0.621
Appearance SSE	App_3	0.839	0.0748	11.21	<.001	0.765
	App_5	0.410	0.0759	5.40	<.001	0.421
	R6 App	0.700	0.0919	7.62	<.001	0.570
	App_10	0.684	0.0598	11.43	<.001	0.775
	App_11	0.804	0.0676	11.89	<.001	0.796
	R14 App	0.652	0.0713	9.15	<.001	0.662

To summarize, the four factors have by majority strong standard estimates. However, in order to increase the reliability and to ensure that the model measures what it is supposed to, adjustments needed to be made. The four indicators with standard estimates < 0.5 (R7 Social: Stand. Estimate = 0.292, Fitness_4: Stand. Estimate = 0.312, App_5: Stand. Estimate= 0.421, Perf_8: Stand. Estimate = 0.425) were weak, which could imply that they may not effectively represent the underlying construct. They were therefore removed in the order from lowest to highest standard estimate, to increase the reliability and improve the model fit (*see Table 14)*.

Table 14 Factor Loadings after removing indicators

Factor Loadings

Factor	Indicator	Estimate	SE	Z	p	Stand. Estimate
PPC	Fitness_1	0.756	0.0784	9.64	<.001	0.720
	Fitness_2	0.653	0.0738	8.86	<.001	0.644
	Fitness_3	0.949	0.0735	12.92	<.001	0.910
Performance SSE	Perf_1	0.527	0.0689	7.65	<.001	0.592
	R4 Perf	0.470	0.0696	6.76	<.001	0.543
	R16 Perf	0.582	0.0805	7.22	<.001	0.561
Social SSE	R2 Social	0.802	0.0866	9.27	<.001	0.676
	R9 Social	0.620	0.0660	9.40	<.001	0.683
	R12 Social	0.643	0.0847	7.60	<.001	0.583
	R13 Social	0.604	0.0770	7.84	<.001	0.593
	R15 Social	0.696	0.0821	8.49	<.001	0.638
	R17 Social	0.667	0.0795	8.38	<.001	0.627
Appearance SSE	App_3	0.857	0.0744	11.51	<.001	0.781
	R6 App	0.725	0.0915	7.93	<.001	0.591
	App_10	0.673	0.0605	11.12	<.001	0.763
	App_11	0.807	0.0677	11.92	<.001	0.800
	R14 App	0.644	0.0717	8.98	<.001	0.654

The model fit before removing the items was overall not good (*see Table 15*). The results for the exact fit are significant ($p < 0.001$). However, the results from the fit measures suggest that the fit is not satisfactory (CFI = 0.812, TLI = 0.785 and RMSEA = 0.0888). After removing the items (*see Table 16*), the exact fit is still significant ($p < 0.001$), however, the fit measures are still unsatisfactory (CFI = 0.861, TLI = 0.833 and RMSEA = 0.0908). Since the scales used in this study are established and have therefore been previously validated, it is presumed that the model remains reasonable for interpretation and drawing conclusions.

Table 15 Model fit before removing indicators

Test for Exact Fit			Fit Measures				
						RMSEA 90% CI	
χ^2	df	p	CFI	TLI	RMSEA	Lower	Upper
430	183	<.001	0.812	0.785	0.0888	0.0779	0.0997

Table 16 Model fit after removing indicators

Test for Exact Fit			Fit Measures				
						RMSEA 90% CI	
χ^2	df	p	CFI	TLI	RMSEA	Lower	Upper
272	113	<.001	0.861	0.833	0.0908	0.0770	0.105

The modification indices (*see Appendix D*) show suggestions of how to improve the model fit. They indicate that the model could be enhanced by relocating indicators to other factors. However, since the scales utilized are established, no adjustments were made.

5.3 Reliability Analysis

After performing the Confirmatory factor analysis, the next analysis to be done is the reliability analysis to evaluate the consistency of the measures. The threshold for Cronbach's α and McDonald's ω is above 0.70. The reliability for the factors were the following: PPC (α = 0.797, ω = 0.807), Performance SSE (α = 0.582, ω = 0.598), Social SSE (α = 0.801, ω = 0.804) and Appearance SSE (α = 0.835, ω = 0.843) (*see Table 17, 18, 19 & 20)*. Although the reliability of Performance SSE was below satisfactory, the variable is kept in the analysis because of the established and validated SSE scale.

Table 17 Reliability analysis PPC

Scale Reliability Statistics

	Cronbach's α	McDonald's ω
scale	0.797	0.807

Table 18 Reliability analysis Performance SSE

Scale Reliability Statistics

	Cronbach's α	McDonald's ω
scale	0.582	0.598

Table 19 Reliability analysis Social SSE

Scale Reliability Statistics

	Cronbach's α	McDonald's ω
scale	0.801	0.804

Table 20 Reliability analysis Appearance SSE

Scale Reliability Statistics

	Cronbach's α	McDonald's ω
scale	0.835	0.843

5.4 Computed Variables & Descriptives

Following the analysis above, four new variables were derived from the indicators and accordingly, the four latent variables were created. The next step was to analyze the descriptive statistics for each of the new variables. The results showed the variables to be normally distributed (*see Table 21*).

Table 21 Descriptives for computed variables

Descriptives

	Condition	PPC	Social SSE	Appearance SSE	Performance SSE
N	BP	51	51	51	51
	Fit-ideal	65	65	65	65
	Mix	55	55	55	55
Missing	BP	0	0	0	0
	Fit-ideal	0	0	0	0
	Mix	0	0	0	0
Mean	BP	3.37	3.74	3.55	3.69
	Fit-ideal	3.28	3.56	3.42	3.57
	Mix	3.41	3.40	3.39	3.52
Median	BP	3.33	3.83	3.80	3.67
	Fit-ideal	3.33	3.50	3.60	3.67
	Mix	3.33	3.50	3.40	3.67
Mode	BP	3.33[a]	4.17	4.40	3.67
	Fit-ideal	3.67[a]	3.00	3.60	4.33
	Mix	3.67	3.67	3.60	4.00
Standard deviation	BP	0.881	0.794	0.920	0.735
	Fit-ideal	0.949	0.766	0.860	0.666
	Mix	0.787	0.682	0.642	0.681
Minimum	BP	1.67	1.17	1.40	1.33
	Fit-ideal	1.00	1.67	1.40	2.00
	Mix	2.00	1.83	1.80	1.67
Maximum	BP	5.00	5.00	5.00	5.00
	Fit-ideal	5.00	5.00	5.00	4.67
	Mix	5.00	4.67	4.60	5.00

5.5 One-way ANOVA

A one-way ANOVA was conducted as there are three dependent variables (Appearance SSE, Social SSE, Performance SSE) and one independent variable with three levels, Exposure to fitness-related content (EFC), in the conceptual model. The aim of this analysis was to determine if there are statistically significant differences in the means of the dependent variables depending on the independent variable. The one-way ANOVA was used to assess if the hypotheses H1, H2, and H3 can be supported.

First of all, assumption checks, namely normality tests and homogeneity of variances tests, were carried out to see if the assumptions for a one-way ANOVA are fulfilled. The Shapiro-Wilk test of normality revealed significant p-values for all of the three dependent variables (Appearance SSE: $p < 0.001$, Social SSE: $p = 0.016$, Performance SSE: $p = 0.010$), assuming an alpha-level of 0.05. This indicates that the data in the dataset is not normally distributed. Consequently, visual inspection of the QQ-plots were conducted (*see Appendix D*). QQ-plots visually represent the distribution of the dataset and if the data is normally distributed, all data points should be as close to the straight line as possible. The assessment of the visuals led to the conclusion that the assumption of normality is not violated. Next, the

homogeneity of variances tests were evaluated. Assuming an alpha of 0.05, the homogeneity of variances tests for Social SSE and Performance SSE are non-significant, which means that the assumption is not violated for those two variables. In contrast, the p-value for Appearance SSE ($p = 0.031$) is significant and therefore, the assumption is violated. Therefore, Fischer's, as well as Welch's test can be used for the one-way ANOVA for Social SSE and Performance SSE, but only Welch's test can be used for the one-way ANOVA for Appearance SSE.

The results for the one-way ANOVA showed no significant p-values for any of the three dependent variables (*see Table 22*), assuming an alpha of 0.05. For Social SSE, Welch's test showed the p-value closest to the prespecified alpha-level ($p = 0.068$), but this value is still non-significant.

Table 22 Results for the one-way ANOVA

One-Way ANOVA

		F	df1	df2	p
Social SSE	Welch's	2.754	2	109	0.068
	Fisher's	2.708	2	168	0.070
Appearance SSE	Welch's	0.559	2	107	0.574
	Fisher's	0.586	2	168	0.557
Performance SSE	Welch's	0.786	2	108	0.458
	Fisher's	0.843	2	168	0.432

Based on those results, it can be seen that there are no statistically significant differences between the three experimental conditions. Therefore, the hypotheses H1, H2, and H3 can not be supported. Despite these findings, post-hoc tests were still conducted.

Looking at the plots in the post-hoc tests, there is a difference between the means depending on the independent variable for Appearance SSE. Here, the Appearance SSE is highest in the body positive condition, followed by the fit ideal condition (*see Figure 3*). Appearance SSE is the lowest for the mixed condition where respondents were confronted with body positive, as well as fit ideal imagery. Similar results were yielded for Social SSE and Performance SSE (*see Figure 4 and Figure 5*). The Social SSE was highest for exposure to purely body positive imagery, followed by the fit ideal condition and the mixed condition. The same holds true for Performance SSE. However, none of the aforementioned differences show significant p-values (*see Table 23, 24, and 25*).

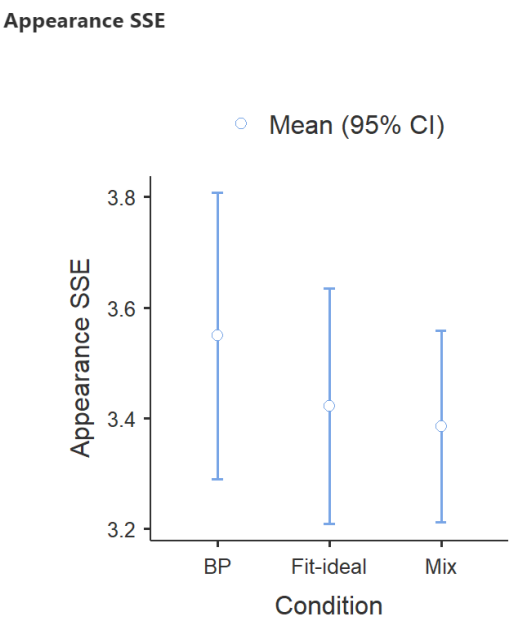


Figure 3 Plot for Appearance SSE

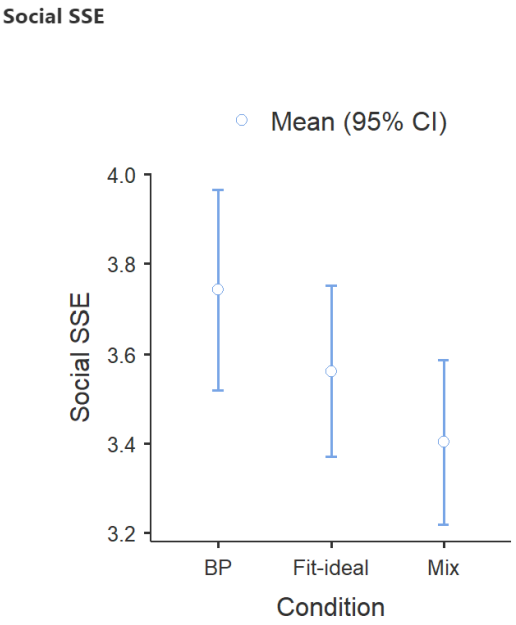


Figure 4 Plot for Social SSE

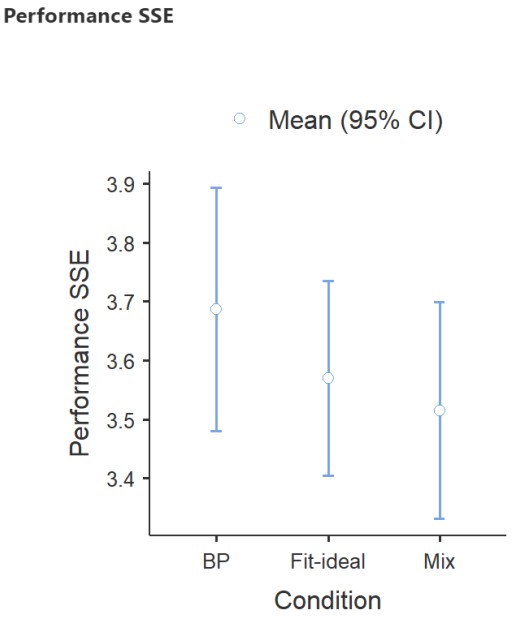


Figure 5 Plot for Performance SSE

Table 23 Post-Hoc Test for Appearance SSE

Tukey Post-Hoc Test – Appearance SSE

		BP	Fit-ideal	Mix
BP	Mean difference	—	0.127	0.1636
	t-value	—	0.835	1.031
	df	—	168	168
	p-value	—	0.682	0.558
Fit-ideal	Mean difference		—	0.0361
	t-value		—	0.241
	df		—	168
	p-value		—	0.968
Mix	Mean difference			—
	t-value			—
	df			—
	p-value			—

Table 24 Post-Hoc Test for Social SSE

Tukey Post-Hoc Test – Social SSE

		BP	Fit-ideal	Mix
BP	Mean difference	—	0.180	0.339
	t-value	—	1.29	2.33
	df	—	168	168
	p-value	—	0.405	0.055
Fit-ideal	Mean difference		—	0.159
	t-value		—	1.16
	df		—	168
	p-value		—	0.482
Mix	Mean difference			—
	t-value			—
	df			—
	p-value			—

Table 25 Post-Hoc Test for Performance SSE

Tukey Post-Hoc Test – Performance SSE

		BP	Fit-ideal	Mix
BP	Mean difference	—	0.117	0.1711
	t-value	—	0.904	1.272
	df	—	168	168
	p-value	—	0.638	0.413
Fit-ideal	Mean difference		—	0.0541
	t-value		—	0.427
	df		—	168
	p-value		—	0.905
Mix	Mean difference			—
	t-value			—
	df			—
	p-value			—

5.6 Two-way ANOVAs

Two-way ANOVAs were executed to evaluate the influence of the independent and the moderating variable on the dependent variables. This analysis allows for assessing if the moderator affects the relationship between EFC and the three kinds of state self-esteem. The two-way ANOVAs were used to determine if the hypotheses H4, H5, and H6 can be supported.

Before continuing with the two-way ANOVAs, the moderating variable PPC was transformed to a categorical variable consisting of two groups, i.e. low PPC and high PPC. The variable was split according to its median, which is 3.33. Of the 171 people in the sample, 90 were sorted to the low PPC group. Consequently, 81 respondents make up the high PPC group.

5.6.1 Two-way ANOVA Appearance SSE

Before looking at the results for the two-way ANOVA for the dependent variable Appearance SSE, assumption checks were performed. For normality tests, the Shapiro-Wilk test was significant ($p = 0.005$), assuming an alpha of 0.05. Therefore, the QQ-plot was checked, which indicated that the assumption of normality was not violated (*see Appendix D*). The homogeneity of variances tests also showed significant p-values (Levene's test: $p = 0.004$, Bartlett's test: $p = 0.011$), revealing that this assumption was violated. However, as the overall number of participants in each condition (body positive n = 51, fit ideal n = 65, mix n = 51)

and for both PPC levels (low PPC n = 90, high PPC n = 81) was similar, the analysis proceeded.

The results for the two-way ANOVA (*see Table 26*) show that there is a significant main effect of PPC on the Appearance SSE (F (1, 165) = 14.328, p < 0.001, η^2 = 0.078), showing that high PPC individuals had higher Appearance SSE. There is a non-significant main effect of the independent variable EFC on Appearance SSE (F (2, 165) = 0.681, p = 0.508, η^2 = 0.007). Besides, there is a non-significant interaction between EFC and PPC on Appearance SSE (F (2, 165) = 1.285, p = 0.280, η^2 = 0.014).

Table 26 Two-way ANOVA Appearance SSE

ANOVA - Appearance SSE

	Sum of Squares	df	Mean Square	F	p	η^2
Condition	0.842	2	0.421	0.681	0.508	0.007
PPC levels	8.865	1	8.865	14.328	< .001	0.078
Condition ✻ PPC levels	1.589	2	0.795	1.285	0.280	0.014
Residuals	102.083	165	0.619			

As depicted in *Figure 6*, Appearance SSE is higher for individuals with higher PPC in all three conditions. PPC level 1 includes the low PPC individuals and PPC level 2 applies to high PPC individuals. Appearance SSE is the highest for high PPC individuals in the body positive condition and lowest for low PPC individuals in the fit ideal condition (*see Table 27*).

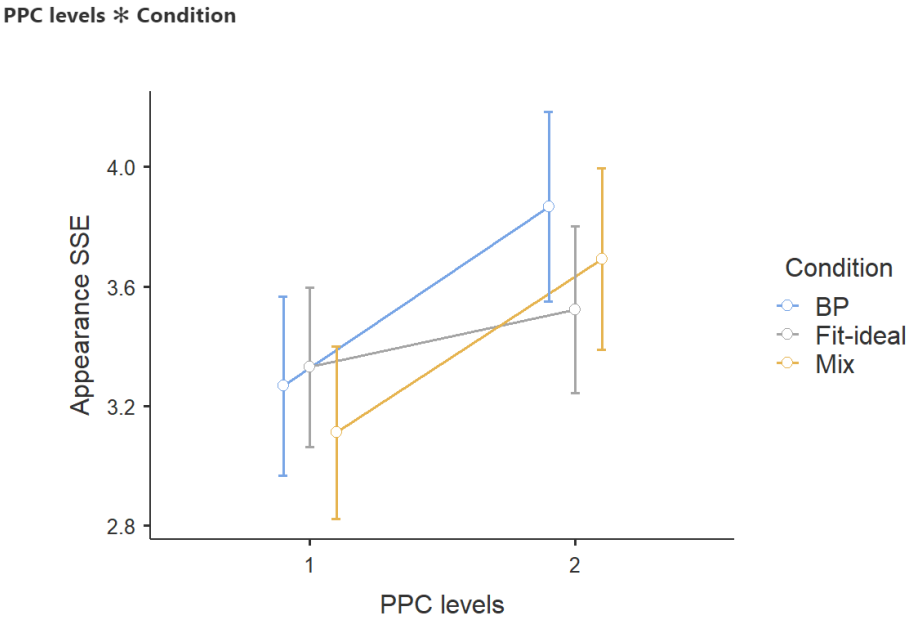


*Figure 6 PPC levels * Condition for Appearance SSE*

*Table 27 Estimated Marginal Means for PPC levels * Condition in Appearance SSE*

Estimated Marginal Means - PPC levels ⁜ Condition

				95% Confidence Interval	
Condition	PPC levels	Mean	SE	Lower	Upper
BP	1	3.27	0.151	2.97	3.57
	2	3.87	0.161	3.55	4.18
Fit-ideal	1	3.33	0.135	3.06	3.60
	2	3.52	0.141	3.24	3.80
Mix	1	3.11	0.146	2.82	3.40
	2	3.69	0.154	3.39	4.00

Assuming an alpha level of 0.05, post-hoc comparisons for the interaction between condition and PPC levels (*see Table 28*) revealed that there is no difference in Appearance SSE between high (i.e. PPC level 2) and low (i.e. PPC level 1) PPC individuals in the body positive condition (p = 0.077). The same holds true for the fit ideal (p = 0.921) and the mixed condition (p = 0.073).

*Table 28 Post-hoc Condition * PPC levels for Appearance SSE*

Post Hoc Comparisons - Condition ⁜ PPC levels

Comparison										
Condition	PPC levels		Condition	PPC levels	Mean Difference	SE	df	t	p_{tukey}	Cohen's d
BP	1	-	BP	2	−0.6000	0.221	165	−2.719	0.077	−0.7628
		-	Fit-ideal	1	−0.0627	0.203	165	−0.309	1.000	−0.0798
		-	Fit-ideal	2	−0.2559	0.207	165	−1.236	0.819	−0.3254
		-	Mix	1	0.1563	0.210	165	0.743	0.976	0.1987
		-	Mix	2	−0.4256	0.216	165	−1.969	0.364	−0.5411
	2	-	Fit-ideal	1	0.5373	0.210	165	2.562	0.113	−0.6830
		-	Fit-ideal	2	0.3441	0.214	165	1.609	0.594	0.4375
		-	Mix	1	0.7563	0.217	165	3.484	0.008	−0.9615
		-	Mix	2	0.1744	0.223	165	0.783	0.970	0.2217
Fit-ideal	1	-	Fit-ideal	2	−0.1932	0.195	165	−0.989	0.921	−0.2456
		-	Mix	1	0.2191	0.199	165	1.102	0.880	0.2785
		-	Mix	2	−0.3629	0.205	165	−1.771	0.487	−0.4614
	2	-	Mix	1	0.4122	0.203	165	2.029	0.331	−0.5241
		-	Mix	2	−0.1697	0.209	165	−0.811	0.965	−0.2158
Mix	1	-	Mix	2	−0.5820	0.212	165	−2.739	0.073	−0.7399

To conclude, no moderating effect of PPC could be found for the relationship between EFC and Appearance SSE. Therefore, H4 is not supported.

5.6.2 Two-way ANOVA Social SSE

Assumption checks for the two-way ANOVA for the dependent variable Social SSE showed a significant p-value in the Shapiro-Wilk test for normality (p = 0.019). However, the QQ-plot

indicates that the assumption of normality is not violated (*see Appendix D*). The homogeneity of variances tests were non-significant (Levene's test: p = 0.514, Bartlett's test: p = 0.354), so this assumption is also not violated.

As shown in *Table 29*, there is a significant main effect of PPC on the Social SSE (F (1, 165) = 4.06, p = 0.045, η^2 = 0.023), showing that individuals with high PPC reported higher Social SSE. There is a non-significant main effect of the independent variable EFC on Social SSE (F (2, 165) = 2.77, p = 0.065, η^2 = 0.031). Additionally, there is a non-significant interaction effect between EFC and PPC on Social SSE (F (2, 165) = 1.04, p = 0.357, η^2 = 0.012).

Table 29 Two-way ANOVA Social SSE

ANOVA - Social SSE

	Sum of Squares	df	Mean Square	F	p	η^2
Condition	3.06	2	1.531	2.77	0.065	0.031
PPC levels	2.24	1	2.245	4.06	0.045	0.023
Condition ✻ PPC levels	1.15	2	0.573	1.04	0.357	0.012
Residuals	91.15	165	0.552			

Figure 7 shows that Social SSE is generally higher for high PPC individuals, compared to low PPC individuals in the body positive and the mixed conditions. However, Social SSE remains on the same level for the fit ideal condition (*see Table 30*).

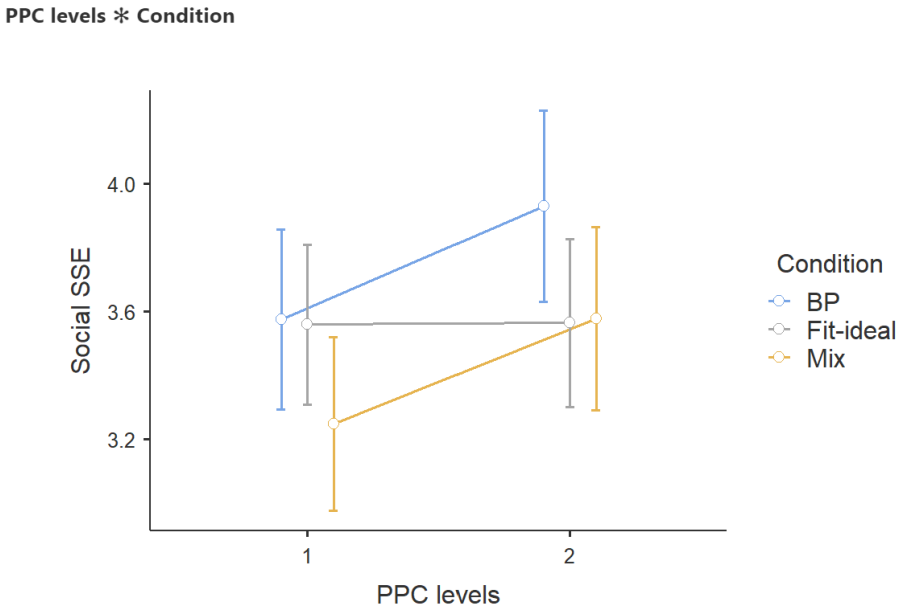


*Figure 7 PPC levels * Condition for Social SSE*

*Table 30 Estimated Marginal Means for PPC levels * Condition in Social SSE*

Estimated Marginal Means - PPC levels ⁜ Condition

				95% Confidence Interval	
Condition	PPC levels	Mean	SE	Lower	Upper
BP	1	3.57	0.143	3.29	3.86
	2	3.93	0.152	3.63	4.23
Fit-ideal	1	3.56	0.127	3.31	3.81
	2	3.56	0.133	3.30	3.83
Mix	1	3.25	0.138	2.97	3.52
	2	3.58	0.146	3.29	3.86

Post-hoc comparisons for the interaction between condition and PPC levels (*see Table 31*) revealed that there was no significant difference found between individuals with low PPC (i.e. PPC level 1) and individuals with high PPC (i.e. PPC level 2) within the body positive (p = 0.527), the mixed (p = 0.571), and the fit ideal (p = 1.000) condition.

*Table 31 Post-hoc Condition * PPC levels for Social SSE*

Post Hoc Comparisons - Condition ⁜ PPC levels

Comparison										
Condition	PPC levels		Condition	PPC levels	Mean Difference	SE	df	t	p_{tukey}	Cohen's d
BP	1	-	BP	2	−0.35648	0.209	165	−1.7097	0.527	−0.47963
		-	Fit-ideal	1	0.01525	0.192	165	0.0796	1.000	0.02052
		-	Fit-ideal	2	0.00956	0.196	165	0.0489	1.000	0.01286
		-	Mix	1	0.32695	0.199	165	1.6449	0.570	0.43989
		-	Mix	2	−0.00285	0.204	165	−0.0140	1.000	−0.00383
	2	-	Fit-ideal	1	0.37173	0.198	165	1.8760	0.421	−0.50015
		-	Fit-ideal	2	0.36604	0.202	165	1.8113	0.461	0.49249
		-	Mix	1	0.68343	0.205	165	3.3322	0.013	−0.91952
		-	Mix	2	0.35363	0.210	165	1.6808	0.546	0.47580
Fit-ideal	1	-	Fit-ideal	2	−0.00569	0.185	165	−0.0308	1.000	−0.00766
		-	Mix	1	0.31170	0.188	165	1.6591	0.561	0.41937
		-	Mix	2	−0.01810	0.194	165	−0.0935	1.000	−0.02435
	2	-	Mix	1	0.31739	0.192	165	1.6530	0.565	−0.42703
		-	Mix	2	−0.01241	0.198	165	−0.0628	1.000	−0.01669
Mix	1	-	Mix	2	−0.32980	0.201	165	−1.6429	0.571	−0.44373

In sum, the relationship between the independent variable EFC and Social SSE was not moderated by PPC. Therefore, H5 is not supported.

5.6.3 Two-way ANOVA Performance SSE

First of all, assumption checks were conducted in order to be able to run a two-way ANOVA for the dependent variable Performance SSE. The Shapiro-Wilk test for normality showed a significant p-value (p = 0.033), but visual inspection of the QQ-plot (*see Appendix D*) led to

regarding the assumption of normality as fulfilled. Levene's ($p = 0.761$) and Bartlett's ($p = 0.528$) tests of homogeneity of variances were both non-significant, so this assumption is not violated.

The following two-way ANOVA revealed a significant main effect of PPC on Performance SSE ($F(1, 165) = 27.896$, $p < 0.001$, $\eta^2 = 0.142$), showing that high PPC individuals have higher Performance SSE (*see Table 32*). Apart from this result, there is a non-significant main effect of the condition on Performance SSE ($F(2, 165) = 1.052$, $p = 0.352$, $\eta^2 = 0.011$) and a non-significant interaction between the condition and PPC on the dependent variable ($F(2, 165) = 0.779$, $p = 0.460$, $\eta^2 = 0.008$).

Table 32 Two-way ANOVA Performance SSE

ANOVA - Performance SSE

	Sum of Squares	df	Mean Square	F	p	η^2
Condition	0.875	2	0.437	1.052	0.352	0.011
PPC levels	11.601	1	11.601	27.896	< .001	0.142
Condition ✻ PPC levels	0.648	2	0.324	0.779	0.460	0.008
Residuals	68.615	165	0.416			

Performance SSE is higher for high PPC individuals compared to low PPC individuals in all of the three conditions of the experiment (*see Figure 8*). In the body positive condition, Performance SSE is the highest for high PPC individuals (*see Table 33*). The lowest value for Performance SSE is achieved for low PPC individuals in the mixed condition.

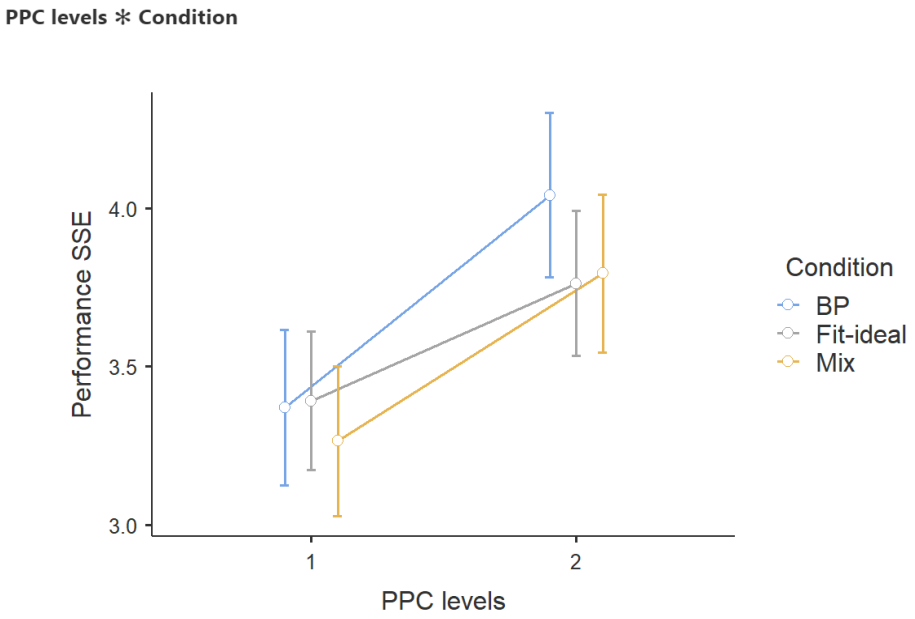


*Figure 8 PPC levels * Condition for Performance SSE*

*Table 33 Estimated Marginal Means for PPC levels * Condition in Performance SSE*

Estimated Marginal Means - PPC levels ✻ Condition

				95% Confidence Interval	
Condition	PPC levels	Mean	SE	Lower	Upper
BP	1	3.37	0.124	3.13	3.62
	2	4.04	0.132	3.78	4.30
Fit-ideal	1	3.39	0.111	3.17	3.61
	2	3.76	0.116	3.53	3.99
Mix	1	3.26	0.120	3.03	3.50
	2	3.79	0.126	3.55	4.04

Post-hoc comparisons for the interaction between condition and PPC levels (*see Table 34*) showed that high PPC individuals reported higher Performance SSE in the body positive condition than low PPC individuals ($p = 0.004$). A similar effect can be found for low versus high PPC individuals in the mixed condition, but this effect is not as strong as in the body positive condition ($p = 0.032$). Within the fit ideal condition, there is no significant difference in means between respondents with high PPC compared to low PPC ($p = 0.193$). Furthermore, high PPC respondents in the fit ideal condition have higher Performance SSE than low PPC respondents in the mixed condition ($p = 0.037$). From the post-hoc table, it can also be seen that there was no statistically significant difference between low PPC respondents in the body positive condition and low PPC respondents in the fit ideal condition ($p = 1.000$). Similarly, there was no difference found between low PPC individuals in the body positive and the mixed condition ($p = 0.990$). Apart from those findings, the p-value for the comparison between high PPC individuals in the body positive and the fit ideal condition was insignificant ($p = 0.608$), indicating that there exists no significant difference between the two means. Looking at the comparison between body positive and mixed condition for high PPC respondents, no difference can be found either ($p = 0.755$). Comparing low PPC individuals in the fit ideal condition to low PPC individuals in the mixed condition also showed no statistically significant difference in the corresponding mean values ($p = 0.970$). The same holds true when comparing high PPC respondents in the fit ideal condition to high PPC respondents in the mixed condition ($p = 1.000$).

*Table 34 Post-hoc Condition * PPC levels for Performance SSE*

Post Hoc Comparisons - Condition ✻ PPC levels

Comparison										
Condition	PPC levels		Condition	PPC levels	Mean Difference	SE	df	t	p_{tukey}	Cohen's d
BP	1	-	BP	2	−0.6713	0.181	165	−3.711	0.004	−1.0410
		-	Fit-ideal	1	−0.0218	0.166	165	−0.131	1.000	−0.0338
		-	Fit-ideal	2	−0.3931	0.170	165	−2.316	0.194	−0.6095
		-	Mix	1	0.1060	0.172	165	0.615	0.990	0.1644
		-	Mix	2	−0.4245	0.177	165	−2.396	0.164	−0.6583
	2	-	Fit-ideal	1	0.6495	0.172	165	3.778	0.003	−1.0072
		-	Fit-ideal	2	0.2782	0.175	165	1.587	0.608	0.4315
		-	Mix	1	0.7773	0.178	165	4.368	< .001	−1.2054
		-	Mix	2	0.2468	0.183	165	1.352	0.755	0.3827
Fit-ideal	1	-	Fit-ideal	2	−0.3713	0.160	165	−2.318	0.193	−0.5758
		-	Mix	1	0.1278	0.163	165	0.784	0.970	0.1982
		-	Mix	2	−0.4027	0.168	165	−2.397	0.163	−0.6245
	2	-	Mix	1	0.4991	0.167	165	2.996	0.037	−0.7739
		-	Mix	2	−0.0314	0.171	165	−0.183	1.000	−0.0487
Mix	1	-	Mix	2	−0.5305	0.174	165	−3.046	0.032	−0.8227

All in all, the relationship between EFC and Performance SSE was partly moderated by PPC. This leads to H6 being partially supported.

5.7 Summary of the Hypothesis after the Analysis

After conducting all of the aforementioned analysis steps, the following table gives an overview of all hypotheses under study and shows which of these hypotheses were supported (*see Table 35*). The next chapter then focuses on the discussion of the results.

Table 35 Summary of hypotheses after the analysis

H1	Exposure to fitness-related content (EFC) showcasing the fit ideal body type will result in a greater decrease in viewer's Appearance state self-esteem (SSE) compared to body positive imagery.	not supported
H2	EFC showcasing the fit ideal body type will result in a greater decrease in viewer's Social SSE compared to body positive imagery.	not supported
H3	EFC showcasing the fit ideal body type will result in a greater decrease in viewer's Performance SSE compared to body positive imagery.	not supported

H4	The relationship between EFC and Appearance SSE is moderated by Perceived physical condition (PPC) such that the effect of EFC on Appearance SSE is lower for higher PPC compared to low PPC.	not supported
H5	The relationship between EFC and Social SSE is moderated by PPC such that the effect of EFC on Social SSE is lower for higher PPC compared to low PPC.	not supported
H6	The relationship between EFC and Performance SSE is moderated by PPC such that the effect of EFC on Performance SSE is lower for higher PPC compared to low PPC.	partially supported

6 Discussion

In this chapter, the findings from the analysis will be discussed in light of the previously reviewed literature and the introduced theory section, starting with the impact on SSE. The second part of the chapter will then focus on the moderating effect of PPC.

6.1 Impact of Exposure to Fitness-related Content on SSE

Previous research has shown that being exposed to idealized images of women leads to negative mood, body dissatisfaction, and self-objectification in women (Betz & Ramsey, 2017; Brown & Tiggemann, 2016; Cohen & Blaszczynski, 2015; Robinson et al. 2017; Tiggemann & Zaccardo, 2015). In comparison, the body positivity imagery leads to positive effects of enhanced body appreciation (Cohen et al. 2019). In a study comparing the two conditions, similar effects were shown, with images showcasing an ideal body type leading to a worse mood and body dissatisfaction, while body positive imagery showed an increase in body satisfaction (Fasoli & Constantinou, 2024). The study's first three hypotheses aligned with this research, assuming that viewing fit ideal imagery would result in a greater decrease in SSE compared to body positive imagery. However, the research found that this assumption was wrong, H1, H2, and H3 are not supported.

The exposure to the different conditions did not affect people's SSE in the way that was expected. It is possible that the brief exposure to such images does not have such a significant influence on SSE as anticipated because of the respondents current mood. Nichols & Schumann (2012) report that a person's mood highly impacts attitudes, judgments and choices. How a person already feels before seeing the images could therefore affect their responses to the SSE items, more than just the images themselves. This suggests that if someone is feeling good about themselves in the moment of taking the survey, being exposed to fit ideal imagery might not lower their SSE.

As mentioned, H1 and H2 were both not supported. Both hypotheses predicted that viewing the fit ideal will result in a greater decrease in SSE compared to body positivity imagery, where H1 regards Appearance SSE and H2 concerns Social SSE. The reason as to why they were not supported might stem from the significant disparity between Social SSE and Appearance SSE, and the fitness context. The fitness images may have evoked thoughts related to performance rather than social and appearance aspects. Consequently, the

respondents might not have linked the Social and Appearance SSE question to the fitness imagery, explaining the absence of an observable effect. This can be supported by Aydınoğlu & Cian (2014) findings that show that consumers' self-esteem level in a domain related to the product category affects their response to different ads. Therefore, the Appearance and Social SSE were not so relevant for the fitness domain, and this can explain the absence of an observable effect.

H1, H2, and H3 all expected there to be a decrease in the participants SSE when viewing fit imagery, compared to body positive content. This expectation aligns with Social Comparison Theory which suggests that engaging in upwards comparison often lowers an individual's self-esteem (Lin & Kulik, 2002; Richins, 1991). However, since the hypotheses were not supported, it is worth considering that the participants did not engage in upwards comparison, particularly concerning the Social SSE and Appearance SSE. In such a scenario, their SSE might not have been negatively affected, thereby explaining the deviation from the hypothesized outcome.

Social Learning Theory proposes that seeing a certain type of body with positive associations can trigger social learning (Breves et al. 2023). Therefore, if content is showcasing thinness and linking it to happiness and success, the audience internalizes these appearances (Harrison & Cantor, 1997). With the rise of social media, there has been a notable increase in the representation of diverse body types (Cwynar-Horta, 2016). Individuals may have become used to seeing more variety in body types with positive associations thereby diminishing the learned behavior stemming from seeing the fit body as the ideal. If the learned behavior is that not only the fit body is the ideal, that could explain as to why their SSE did not diminish. This can further be supported by Cultivation Theory (Gerbner & Gross, 1976), which argues that repeated exposure to the thin ideal will create the belief that this body type is the norm. The same could therefore be applied to repeated exposure to inclusive content, which Breves et al. (2023) suggest as a countermeasure for the fit ideal's negative impact on the mood and body image.

6.2 Moderating Effect of PPC on the Relationship between Exposure to Fitness-related Content and SSE

The last three hypotheses predicted that the relationship between EFC and SSE is moderated by PPC, such that the effect of EFC on the SSE is lower for higher PPC compared to low PPC. The moderator PPC was found to affect the relationship between EFC and Performance SSE (H6), but neither the relationship between EFC and Appearance SSE (H4), nor Social

SSE (H5). This could be due to fitness being very much about performance (e.g. how much weight one can lift, how far one can run), more than about looks and social components.

No moderation effect of PPC on the relationship between EFC and Appearance SSE was found. The formulation of H4 was based on the assumption that fit ideal equals ideal looks. Therefore, PPC as a moderator was considered relevant to investigate for this type of SSE. However, it is essential to distinguish between looks and physical condition. Perceiving oneself as physically fit and being satisfied with one's appearance are two different things. The relationship between EFC and Appearance SSE might be moderated by another variable that is more closely connected to appearance. An example for a moderator that could be used here is a variable that measures an individual's body image state. Cash et al. (2002) developed and validated the Body Image States Scale, which could prove useful to capture individuals' momentary evaluative body image states. As with H4, how fit people perceive themselves to be did not influence the relationship between EFC and Social SSE. The same argumentation can be made for H5 as Social SSE and PPC might be too different. Again, another moderator should be taken into consideration for the relationship between EFC and Social SSE. For this relationship, a moderator measuring social components could be used. The Social Connectedness Scale developed by Lee & Robbins (1995) could be of value here.

Regarding H6, a partial moderation of PPC on the relationship between EFC and Performance SSE was found. In particular, a moderation effect was found within the body positive and the mixed condition, however, no moderation effect was detected within the fit ideal condition.

When confronted with only body positive imagery, high PPC respondents reported significantly higher Performance SSE than low PPC individuals. As established in Social Comparison Theory, individuals assess their abilities through comparison with others, especially in the absence of objective measures (Festinger, 1954). As this thesis did not provide participants with any means of objectively assessing their own performance to the influencers' performance, it was expected that the respondents started engaging in comparison processes. High PPC individuals in the sample might perceive their performance abilities to be better than those of the body positive fitness influencers depicted in the stimulus set. Consequently, they are assigning inferior status to the fitness influencers, which means that a downward comparison is made to someone seeming worse off (Watson et al. 2011; Wills, 1981; Wood, 1989). In general, downward comparisons were found to have self-enhancing effects (Lyubomirsky & Ross, 1997), resulting in the reporting of higher Performance SSE in this case. Low PPC individuals, on the other hand, might perceive themselves to be inferior to the portrayed fitness influencers when it comes to assessing their Performance SSE. This self-perception hence results in an upward comparison. Previous literature found that engaging in upward comparisons reduces an individual's self-esteem and overall well-being

(Lin & Kulik, 2002; Richins, 1991). This is in line with the finding that low PPC respondents in the body positive condition reported lower Performance SSE than high PPC respondents.

The exposure to mixed imagery (i.e. four fit ideal pictures and four body positive pictures) produced similar results, albeit to a lesser extent. Low PPC individuals reported significantly lower Performance SSE than high PPC individuals. This effect can partly be explained by Social Comparison Theory as described in the paragraph above. However, self-discrepancy plays a pivotal role in the context of the mixed condition. High PPC individuals' Performance SSE might not be extensively affected by being exposed to the mixed picture set because those individuals do not perceive themselves to be too discrepant from the fit ideal influencers. In contrast, low PPC individuals might focus their attention on the pictures portraying the fit ideal, rather than on the ones depicting body positive fitness influencers. This again leads them to engage in upward comparison and decreases their Performance SSE. Failing to align with an ideal leads to a psychological situation characterized by a lack of positive outcomes where hopes and desires are not fulfilled (Dittmar, 2005; Higgins, 1987). As a result, the individual is more prone to experience negative emotions (Dittmar, 2005; Higgins, 1987), causing them to report lower Performance SSE.

Within Social Comparison Theory, comparisons were found to not only serve the objective of self-evaluation, but also self-enhancement and self-improvement purposes (Wood, 1989). Going one step further, Martin & Gentry (1997) discovered that if a comparison is motivated by self-evaluation, it might result in temporarily lower self-esteem than if the comparison is motivated by self-improvement. Linking this to the significant difference in Performance SSE between high and low PPC individuals in the mixed condition, low PPC individuals might have been more prone to motifs of self-evaluation against the fit ideal images while high PPC individuals rather used those images as motivation for self-improvement. Furthermore, the attainability of the fit ideal could have played an important role. As Higgins (1987) stated, individuals experience feelings of sadness or disappointment when they perceive that achieving a desired goal is unlikely. This unattainability of the fit ideal could have additionally contributed to the decrease in Performance SSE among low PPC respondents compared to high PPC respondents.

Interestingly, no similar effect was found within the fit ideal condition. Low PPC individuals did not report significantly lower Performance SSE than high PPC individuals when exposed to purely fit ideal imagery. This could be due to various reasons. As in the other two conditions, high PPC individuals might not perceive their performance abilities to be largely different from the fitness influencers displayed in the fit ideal condition. Therefore, the negative effects caused by discrepancies between one's self and the ideal (Higgins, 1987), do not apply to them, and their Performance SSE is not negatively impacted by being exposed to fit ideal imagery. Being repeatedly confronted with the thin ideal was found to lead people to

belief that this body type is the societal norm (Stein et al. 2021). This might have led to people being more used to the exposure to highly attractive and fit models. Thus, the Performance SSE even for respondents with low PPC might not be extensively affected anymore.

In addition, a moderating effect was found for the comparison between high PPC individuals in the fit ideal condition and low PPC individuals in the mixed condition. The former reported higher Performance SSE. This finding can be explained by Self-discrepancy Theory (Higgins, 1987). High PPC individuals might not perceive their performance abilities as discrepant from those of the portrayed fitness influencers in the fit ideal condition and therefore, their Performance SSE is not impacted in a negative way. For low PPC individuals, in contrast, being exposed to both picture types makes them realize their discrepancy to some of the featured fitness influencers, which leads them to report lower levels of Performance SSE. Previous research established a similar explanation by stating that comparisons may have positive effects if a person's attributes closely resemble those of the comparison other (Dittmar & Howard, 2004).

Nevertheless, no effects of PPC as a moderating variable were found for a number of combinations of conditions in equal PPC levels (e.g. fit ideal low PPC - body positive low PPC, fit ideal high PPC - body positive high PPC, fit ideal low PPC - mix low PPC). Previous research indicated that body positive content increases body satisfaction, body appreciation, and enhances body image on social media platforms (Cohen et al. 2019; Cohen et al. 2021; Fasoli & Constantinou, 2024). No similar effect was found in this thesis in regard to the effect of body positive imagery on Performance SSE. This could be due to previous studies' focus on appearance while the dependent variable in H6 was Performance SSE, leading to the conclusion that previous findings about favorable effects of body positive content might not be generalizable to the fitness context, especially when looking at the effects on Performance SSE. Including body positive imagery, as well as providing purely body positive imagery, did not lead to individuals pertaining to the same PPC level to report higher Performance SSE.

7 Conclusion

In this last chapter, the research aims and objectives are revisited in light of the previous analysis of the collected data. Following, theoretical and managerial implications are provided. Lastly, the study's limitations and areas for future research are presented.

7.1 Research Aims and Objectives

The aim of this study was to enhance the understanding regarding how Instagram users' SSE is affected by fitness influencers and their content, while taking into account the moderating effect of the users' PPC. In order to achieve this, the following research questions were formulated:

- RQ1: What effect do fitness influencers have on the state self-esteem of social media users?
- RQ2: Does the fitness influencer's body type affect the outcomes on the state self-esteem of social media users?
- RQ3: Do social media users' perceived physical condition moderate the relationship between exposure to fitness-related content and state self-esteem?

To formulate the study's hypotheses and to consequently answer the research questions, Social Comparison Theory and Self-discrepancy Theory were used. The conducted one-way ANOVA showed that fitness influencers' content had no significant effect on social media users' Appearance SSE, Social SSE, and Performance SSE (RQ1). Additionally, the fitness influencer's body type was not found to affect the outcomes on all three examined types of SSE (RQ2). Regarding RQ3, the two-way ANOVA with Performance SSE as the dependent variable led to the conclusion that the relationship between exposure to fitness-related content and Performance SSE is partly moderated by PPC. For the dependent variables Appearance SSE and Social SSE, no moderation effect of PPC was found.

7.2 Theoretical Implications

This study's theoretical contributions can be divided into two parts. First of all, the gap identified for future research concerning the destructive effects of fitness influencers on social media users' well-being, was addressed. Secondly, contributions were made to existing literature, highlighting both areas of contradiction and areas of alignment with prior research findings.

The first theoretical implication emerged in response to Hudders & Lou's (2023) suggestion for additional research into the harmful effect of the idealized images showcased through influencer marketing on the well-being of the individuals. This thesis thus contributes by demonstrating that state self-esteem is not among the aspects affected by these harmful effects.

Existing research showcased the beneficial effects of body positivity on social media users (Cohen et al. 2019). Furthermore, it was established that exposure to images portraying an ideal body type, resulted in a negative mood and heightened body dissatisfaction, whereas exposure to body positive imagery correlated with increased body satisfaction (Fasoli & Constantinou, 2024). This study did not establish a significant connection between exposure to fitness-related content and users' Social, Appearance, and Performance SSE. No effect was found to confirm the favorable outcomes of body positive imagery on social media users' SSE in contrast to fit ideal imagery. Besides, only a partial moderation effect of users' PPC on Performance SSE was found. Therefore, this research contradicts existing literature, indicating that previous findings might not be applicable to the context of fitness influencer marketing and state self-esteem.

Regarding Nichols & Schumann's (2012) study, a connection to this thesis was established. The authors stated that an individual's mood impacts attitudes, judgements, and choices to a great extent. This thesis builds on their research by acknowledging that participants' mood could be a contributing factor affecting the results from the conducted experiment, thereby affecting their state self-esteem. Furthermore, Aydınoğlu & Cian (2014) findings show that consumers' self-esteem level in a domain related to the product category affects their response to different ads. This study expands on this notion, showcasing how the Appearance SSE and Social SSE were too far away from the fitness domain to be relevant.

Social Comparison Theory states that engaging in upwards comparison often lowers an individual's self-esteem (Lin & Kulik, 2002; Richins, 1991), which is reflected upon in the hypotheses of this study. Social Comparison Theory and Self-discrepancy theory proved useful in explaining the moderating effect of PPC on the relationship between exposure to fitness-related content and Performance SSE. However, this thesis did not include measures to

ensure participants actually engaged in upward or respectively, downward comparisons to the portrayed fitness influencers. This shortcoming opens up an opportunity for future research.

This study expands upon the application of Social Learning Theory and Cultivation Theory. Social Learning Theory proposes that viewing a certain type of body with positive associations can trigger social learning (Breves et al. 2023). Cultivation Theory explains that repeated exposure to the thin ideal will create the belief that this body type is the norm (Gerbner & Gross, 1976). Since body positivity is becoming more popular (Cwynar-Horta, 2016) and people have become more used to seeing a variety of body types with positive associations, the correlation of Social Learning Theory and Cultivation Theory is explored. Learned behavior stemming from seeing the fit ideal body as the ideal is therefore diminished, which explains why participants' SSE did not decrease.

7.3 Managerial Implications

For marketers, consumers' self-perceptions are essential to consider in the process of designing advertisements, since previous research has shown that this implementation can lead to beneficial outcomes for the brand (Aydınoğlu & Cian, 2014). Therefore, practitioners should take an interest in understanding how consumers' self-esteem affects brand perception and consequently, purchase intention. Since previous research showed that moods significantly influence attitudes and judgements (Nichols & Schumann, 2012), the concept of consumers' state self-esteem is even more important to understand than their general self-esteem level. As state self-esteem captures momentary fluctuations of self-esteem (Heatherton & Polivy, 1991), it may be a more accurate reflection of the consumers' current state of mind.

The moderating effect of PPC on the relationship between exposure to fitness-related content and Performance SSE found in this study, suggests the necessity of considering additional underlying factors when tailoring advertisements to individual consumers. Understanding that the relevance of social, appearance, and performance aspects varies across different product categories, indicates the need for tailoring advertising strategies to the specific product domain. This finding is valuable to keep in mind when targeting individuals with specific perceptions through marketing efforts. As noted by Aydınoğlu & Cian (2014), the type of self-esteem associated with the product category affects consumers' responses. For instance, having a high performance related self-esteem while browsing for fitness related products, will lead to a higher purchase intention. Consequently, advertisements related to fitness should focus more on performance attributes, compared to appearance and social aspects.

Taking this argument a step further, it implies that perhaps models and influencers in the fitness domain do not have to have perfect looks, but instead the focus should be on highlighting their performance. Moreover, previous research showcases the beneficial aspects of including body positivity in ads, as it generates greater engagement (Orgad & Gill, 2022). However, if the usage of body positivity strays too far from previous marketing campaigns, the authenticity of the ads can be questioned, and as a result the opposite effect is achieved (Orgad & Gill, 2022). Building on this notion, some brands might be more successful by prioritizing aligning their marketing efforts and the consumers' domain related self-esteem, rather than from solely pursuing body positivity. Therefore, when designing advertising campaigns, marketers should focus on aspects that resonate most with the target audience within a given context, such as performance aspects rather than appearance in the case of fitness products.

7.4 Limitations

This study has some limitations that need to be accounted for by the researchers. Firstly, the study was based on a non-probability, convenience sampling. The choice was primarily made due to time constraints. However, the chosen sampling method entails constraints and may not offer a thorough representation of the diversity and complexity of the target population. As a consequence, the presented findings may not be generalizable to the wider population. In addition, there is the potential sampling bias which might have led to overrepresentation or underrepresentation of certain segments of the population. This could have led to skewed results. To conclude, while this thesis offers valuable insights, its findings should be viewed within the context of the methodological limitations.

Furthermore, the scope of this study was limited to one particular aspect of the body positivity movement, namely the diversity of body types. It is however crucial to acknowledge that the movement encompasses various types of diversity. For instance, it includes considerations of ethnicity and diverse abilities. By solely focusing on the aspect of body types, this study might have risked overlooking the intersectionality of the body positivity movement.

Another limitation is the demographic homogeneity of the study's participants. By exclusively including young adult women, the ability to generalize the findings to broader age groups and in terms of gender was limited. Moreover, the study may fail to capture diverse perspectives and experiences of individuals not belonging to the previously specified demographics. Nonetheless, the criteria for the demographic selection were based on previous research which included a similar age group and focused on women as well. Focusing on a specific demographic allows for a more narrow and thorough examination of the issues at hand and

potentially yields more profound insights, as well as a deeper understanding of the investigated phenomenon.

Lastly, this study only employed one moderating variable, which is identified to be a possible contributing factor to the lack of support for the hypotheses. By only using one moderating variable, this study loses sight of other potential moderators that could influence the relationship between the independent and the dependent variables. The moderator was found to be more closely related to one of the dependent variables, Performance SSE, compared to the other two (i.e. Appearance SSE and Social SSE). Accordingly, the generalizability of the moderator PPC across different outcomes is questioned.

7.5 Future Research

This study presents numerous avenues for future research. First of all, future research should consider conducting the experiment using an alternative sampling approach. Using probability and stratified random sampling would enhance the representativeness of the results to the wider population.

Although the body positivity movement encompasses diversity in various dimensions, this study opted to concentrate solely on body type. The narrow focus of this study opens an opportunity for researchers to broaden the scope and include other components of the body positivity movement. Future research could explore the connections of various types of diversity, fostering a more inclusive understanding.

For this study, the decision was made to target young adult women. This was justified based on existing literature. It would be an interesting addition for future research to go beyond the previous scope and focus on a more diverse range of participants, encompassing individuals of varying ages and genders. By adopting a more inclusive approach and exploring how body positivity movements manifest across different demographic groups, it can provide a more comprehensive understanding of the phenomenon and its implications for society at large.

Continuing, Social Comparison Theory (Festinger, 1954) was applied in this study in order to explain the results found from the experiment. However, there remains an opportunity for future research to expand the application of this theory. One way this could be done is by integrating measures to assess whether individuals actually partake in upward and downward comparison. By broadening the scope of investigation in this manner, researchers can gain deeper insights into the social comparison processes.

Lastly, the discussion underscored the importance of considering additional moderators which have a closer connection to Social SSE and Appearance SSE. One suggested scale, aligning with Appearance SSE, is the Body Image States Scale by Cash et al. (2002). Its indicators could be used to create the moderator. For Social SSE, the Social Connectedness Scale developed by Lee & Robbins (1995) could be of value. By including moderators based on the scales suggested, researchers could gain a more nuanced understanding of the underlying dynamics, thereby enriching the study's findings and implications.

References

Abadie, B. R. (1988). Construction and validation of a perceived physical fitness scale. *Perceptual and Motor Skills*, vol. 67, pp.887-892, https://doi.org/10.2466/pms.1988.67.3.887

Aguilar, D., & Arbaiza, F. (2021). The Role of Fitness Influencers in Building Brand Credibility through Distorted Imagery of Healthy Living on Instagram. *16th Iberian Conference on Information Systems and Technologies*, pp.1-8, https://doi.org/10.23919/CISTI52073.2021.9476251

Ahadzadeh, A. S., Pahlevan Sharif, S., & Ong, F. S. (2017). Self-schema and self-discrepancy mediate the influence of Instagram usage on body image satisfaction among youth. *Computers in Human Behavior*, vol. 68, pp.8–16, https://doi.org/10.1016/j.chb.2016.11.011

Albaum, G. (1997). The Likert scale revisited. *Journal of the Market Research Society*, vol. 39, no. 2, pp.1-21, https://doi.org/10.1177/147078539703900202

Anderberg, I., & Tiggemann, M. (2020) Muscles and bare chests on Instagram: The effect of Influencers' fashion and fitspiration images on men's body image. *Body Image*, vol. 35, pp.237-244, https://doi.org/10.1016/j.bodyim.2020.10.001

Andre, T., Bowels. A. & Walsh, S. (2021). Is Fitspiration Truly an Inspiration? Relationships Between Fitspiration, Exercise, and Body Image. *Health Behavior Research*, vol. 4, no. 2, https://doi-org.ludwig.lub.lu.se/10.4148/2572-1836.1101

Aydınoğlu, N. Z. & Cian, L. (2014). Show me the product, show me the model: Effect of picture type on attitudes toward advertising. *Journal of Consumer Psychology*, vol. 24, no. 4, pp.506-519, https://doi.org/10.1016/j.jcps.2014.04.002

Bandura, A. (1977). Social learning theory. Englewood Cliffs, New Jersey: Prentice Hall

Barari, M. (2023). Unveiling the dark side of influencer marketing: how social media influencers (human vs virtual) diminish followers' well-being. *Marketing Intelligence & Planning*, vol. 41, no. 8, pp.1162–1177, https://doi.org/10.1108/MIP-05-2023-0191

Barnes, K., Newman, E., & Keenan, G. (2023). A comparison of the impact of exposure to fit ideal and non-fit ideal body shapes in fitspiration imagery on women. *Computers in Human Behavior,* vol. 144, https://doi.org/10.1016/j.chb.2023.107728

Bell, E,. Bryman, A., & Harley, Bill (2019). Business research methods. 5th edn, Oxford: Oxford University Press

Bessenoff, G. R. (2006). Can the Media Affect Us? Social Comparison, Self-Discrepancy, and the Thin Ideal. *Psychology of Women Quarterly*, vol. 30, no. 3, pp.239–251, https://doi.org/10.1111/j.1471-6402.2006.00292.x

Betz, D. E., & Ramsey, L. R. (2017). Should women be "All About That Bass?": Diverse body-ideal messages and women's body image. *Body Image,* vol. 22, pp.18–31, https://doi.org/10.1016/j.bodyim.2017.04.004

Bhattacharjee, D. R., Pradhan, D., Kuanr, A., & Malhotra, N. (2024). Perfectly Imperfect: How Body-Positive Advertisements in Social Media Foster Consumer Engagement. *Journal of Advertising*, vol. 1, pp.1–20. https://doi.org/10.1080/00913367.2024.2306422

Boepple, L., Rheanna, N. A., Ruba, R. & Thompson, J. K. (2016). Strong is the new skinny: A content analysis of fitspiration websites. *Body Image*, vol. 17, pp.132–135, https://doi.org/10.1016/j.bodyim.2016.03.001

Bower, A. B. (2001). Highly Attractive Models in Advertising and the Women Who Loathe Them: The Implications of Negative Affect for Spokesperson Effectiveness. *Journal of Advertising*, vol. 30, no. 3, pp.51–63, https://doi.org/10.1080/00913367.2001.10673645

Brathwaite, K. N. & DeAndrea, D. C. (2022). BoPopriation: How self-promotion and corporate commodification can undermine the body positivity (BoPo) movement on Instagram. *Communication Monographs*, vol. 89, no. 1, pp.25–46, https://doi.org/10.1080/03637751.2021.1925939

Breves, P., Paryschew, L. & Stein, J. (2023). Be positive? The interplay of Instagram influencers' body type and favorable user comments on young women's perceptions, affective well-being, and exercise intentions. *Psychology of Popular Media,* https://doi.org/10.1037/ppm0000499

Brown, Z., & Tiggemann, M. (2016). Attractive celebrity and peer images on Instagram: Effect on women's mood and body image. *Body Image*, vol. 19, pp.37–43, https://doi.org/10.1016/j.bodyim.2016.08.007

Campbell, C., & Farrell, J. R. (2020). More than meets the eye: The functional components underlying influencer marketing. *Business Horizons*, vol. 63, no. 4, pp.469–479, https://doi.org/10.1016/j.bushor.2020.03.003

Cash, T. F., Fleming, E. C., Alindogan, J., Steadman, L., & Whitehead, A. (2002). Beyond Body Image as a Trait: The Development and Validation of the Body Image States Scale. *Eating Disorders*, vol. 10, no. 2, pp.103-113, https://doi.org/10.1080/10640260290081678

Carotte, E., & Prichard, I. (2017). “Fitspiration” on social media: A content analysis of gendered images. *Journal of Medical Internet Research*, vol. 19, no. 3, https://doi.org/10.2196/jmir.6368

Carr, T. C., & Hayes, A. R. (2015). Social Media: Defining, Developing, and Divining. *Atlantic Journal of Communication*, vol. 23, no. 1, pp.46-65, https://doi.org/10.1080/15456870.2015.972282

Cohen, R., & Blaszczynski, A. (2015). Comparative effects of Facebook and conventional media on body image dissatisfaction. *Journal of Eating Disorders*, vol 3, no. 1, https://doi.org/10.1186/s40337-015-0061-3

Cohen, R., Fardouly, J., Newton-John, T., & Slater, A. (2019). #BoPo on Instagram: An experimental investigation of the effects of viewing body positive content on young women’s mood and body image. *New Media & Society*, vol. 21, no. 7, pp.1546–1564, http://dx.doi.org/10.1177/1461444819826530

Cohen, R., Newton-John, T., & Slater, A. (2021). The case for body positivity on social media: Perspectives on current advances and future directions. *Journal of Health Psychology*, vol. 26, no. 13, pp.2365–2373, https://doi.org/10.1177/1359105320912450

Collins, R. L. (1996). For Better or Worse: The Impact of Upward Social Comparison on Self-Evaluations. *Psychological Bulletin*, vol. 119, no. 1, pp.51-69, http://dx.doi.org/10.1037/0033-2909.119.1.51

Coopersmith, S. (1967). The Antecedents of Self-Esteem, San Francisco: W. H. Freeman

Cuto, L. & Fitts Willoughby, J. (2023). #LoveYourBody: An Experimental Test of the Effects of Objectification and Body Appreciation Content on Instagram Fitness and Health Posts Among Young Women. *Health Communication*, pp.1-9, https://doi-org.ludwig.lub.lu.se/10.1080/10410236.2023.2265647

Cwynar-Horta, J. (2016). The commodification of the body positive movement of Instagram. *Stream: Interdisciplinary Journal of Communication*, vol. 8, no. 2, pp.36-56, https://doi.org/10.21810/strm.v8i2.203

de Valle, M. K., Gallego-García, M., Williamson, P., & Wade, T. D. (2021). Social media, body image, and the question of causation: Meta-analyses of experimental and longitudinal evidence. *Body Image*, vol. 39, pp.276–292, https:// doi.org/10.1016/j.bodyim.2021.10.001

Deighton-Smith, N. & Bell, B. T. (2018). Objectifying fitness: A content and thematic analysis of #fitspiration images on social media. *Psychology of Popular Media Culture*, vol. 7, pp.467-483, https://doi.org/10.1037/ppm0000143

Dittmar, H. (2005). A New Look at "Compulsive Buying": Self–Discrepancies and Materialistic Values as Predictors of Compulsive Buying Tendency. *Journal of Social and Clinical Psychology*, vol. 24, no. 6, pp.832–859, https://doi.org/10.1521/jscp.23.6.768.54799

Dittmar, H., & Howard, S. (2004). Thin-ideal internalization and social comparison tendency as moderators of media models' impact on women's body-focused anxiety. *Journal of Social and Clinical Psychology*, vol. 23, no. 6, pp.768–791, http://dx.doi.org/10.1521/jscp.23.6.768.54799

Durau, J., Diehl, S., & Terlutter, R. (2022). Motivate me to exercise with you: The effects of social media fitness influencers on users' intentions to engage in physical activity and the role of user gender. *Digital Health*, vol. 8, https://doi.org/10.1177/20552076221102769

Durgee, J. F. (1986). Self-Esteem Advertising. *Journal of Advertising*, vol. 15, no. 4, pp.21–42, https://doi.org/10.1080/00913367.1986.10673034

Easterby-Smith, M., Jaspersen, L., Thorpe, R. & Valizade, D. (2021), Management and Business Research, 7th edn, London: SAGE

Fasoli, F., & Constantinou, D. (2024). Does body positivity work for men as it does for women? The impact of idealized body and body positive imagery on body satisfaction, drive for thinness, and drive for muscularity. *Acta Psychologica*, vol. 243, https://doi.org/10.1016/j.actpsy.2024.104126

Festinger, L. (1954). A Theory of Social Comparison Processes. *Human Relations*, vol. 7, no. 2, pp.117–140, https://doi.org/10.1177/001872675400700202

Fowler, K. & Thomas, V. L. (2023). Influencer marketing: a scoping review and a look ahead. *Journal of Marketing Management*, vol. 39, no. 11/12, pp.933-964, https://doi.org/10.1080/0267257X.2022.2157038

Fredrickson, B. L., & Roberts, T. A. (1997). Objectification theory: Toward understanding women's lived experiences and mental health risks. *Psychology of Women Quarterly*, vol. 21, no. 2, pp.173–206, https://doi.org/10.1111/j.1471-6402.1997.tb00108.

Frisby, C. M. (2004). Does race matter? Effects of idealized images on African American women's perceptions of body esteem. *Journal of Black Studies*, vol. 34, no. 3, pp.323–347

Garcia, R. L., Bingham, S., & Liu, S. (2022). The Effects of Daily Instagram Use on State Self-Objectification, Well-Being, and Mood for Young Women. *Psychology of Popular Media,* vol. 11, no. 4, pp.423–434, https://doi.org/10.1037/ppm0000350

Gerbner, G., & Gross, L. (1976). Living with television: The violence profile. *Journal of Communication*, vol. 26, no. 2, pp.172–199, https://doi.org/10.1111/j.1460-2466.1976.tb01397.x

Gillen, M. M. (2015). Associations between positive body image and indicators of men's and women's mental and physical health. *Body Image*, vol. 13, pp.67–74. https://doi.org/10.1016/j.bodyim.2015.01.002

Glofox. (2021). 4 Fitness Brands to Inspire You to Stand out on Instagram, https://www.glofox.com/blog/fitness-brands-on-social-media/ [Accessed 12 April 2024]

Gulas, C. S., & McKeage, K. (2000). Extending Social Comparison: An Examination of the Unintended Consequences of Idealized Advertising Imagery. *Journal of Advertising*, vol. 29, no. 2, pp.17–28

Harrison, K., & Cantor, J. (1997). The relationship between media consumption and eating disorders. *Journal of Communication,* vol. 47, no. 1, pp.40–67, https://doi.org/10.1111/j.1460-2466.1997.tb02692.x

Heatherton, T. F., & Polivy, J. (1991). Development and validation of a scale for measuring self-esteem. *Journal of Personality and Social Psychology*, vol. 60, pp.895–910, https://doi.org/10.1037/0022-3514.60.6.895

Higgins, E. T. (1987). Self-Discrepancy: A Theory Relating Self and Affect. *Psychological Review*, vol. 94, no. 3, pp.319–340

Hudders, L. & Lou, C. (2023). The rosy world of influencer marketing? Its bright and dark sides, and future research recommendations. *International Journal of Advertising*, vol. 42, no. 1, pp.151–161, https://doi.org/10.1080/02650487.2022.2137318

Lee, R. M., & Robbins, S. B. (1995). Measuring belongingness: The Social Connectedness and the Social Assurance scales. *Journal of Counseling Psychology*, vol. 42, no. 2, pp.232–241, https://doi.org/10.1037/0022-0167.42.2.232

Lin, L. F., & Kulik, J. A. (2002). Social comparison and women's body satisfaction. *Basic and Applied Social Psychology*, vol. 24, no. 2, pp.115–123, https://doi.org/10.1207/s15324834basp2402_4

Linardi, E. K., Lin, H.-F., & Yeo, B. (2023). Effective Digital Advertising: The Influence of Customised Ads, Self-esteem and Product Attributes. *Journal of Creative Communications*, https://doi.org/10.1177/09732586231195241

Liu, D. & Baumeister, R. (2016). Social Networking Online and Personality of Self-Worth: A Meta-Analysis. *Journal of Research in Personality*, vol. 64, no. 6, pp.79-89, https://doi.org/10.1016/j.jrp.2016.06.024

Lou, C. (2022). Social media influencers and followers: Theorization of a Trans-Parasocial relation and explication of its implications for influencer advertising. *Journal of Advertising,* vol. 51, no. 1, pp.4–21, https://doi.org/10.1080/00913367.2021.1880345

Lyubomirsky, S., & Ross, L. (1997). Hedonic Consequences of Social Comparison: A Contrast of Happy and Unhappy People. *Journal of Personality and Social Psychology*, vol. 73, no. 6, pp.1141-1157, http://dx.doi.org/10.1037/0022-3514.73.6.1141

Martin, M. C., & Gentry, J. W. (1997). Stuck in the model trap: The effects of beautiful models in ads on female pre-adolescents and adolescents. *Journal of advertising*, vol. 26, no. 2, pp.19-33, https://doi.org/10.1080/00913367.1997.10673520

Navarro, D. J., & Foxcroft, D. R. (2018). Learning Statistics with Jamovi: A Tutorial for Psychology Students and Other Beginners, [e-book], https://www.learnstatswithjamovi.com/

Nichols, B. S. & Schumann, D. W. (2012). Consumer Preferences for Assimilative Versus Aspirational Models in Marketing Communications: The Role of Product Class, Individual Difference, and Mood State. *Journal of Marketing Theory and Practice*, vol. 20, no. 4, pp.359–375, https://doi.org/10.2753/MTP1069-6679200401

Orgad, S., & Gill, R. (2022). Confidence culture. Duke University Press

Pedalino, F., & Camerini, A.-L. (2022). Instagram use and body dissatisfaction: The mediating role of upward social comparison with peers and influencers among young females. *International Journal of Environmental Research and Public Health*, vol. 19, no. 3, https://doi.org/10 .3390/ijerph19031543

Plante, T. G. (1996). Does the use of physical exercise in treating psychiatric disorders help?. *Journal of Psychosocial Nursing and Mental Health Services*, vol. 34, pp.38–43

Plante, T. G., & Rodin, J. (1990). Physical fitness and enhanced psychological health. *Current Psychology: Research and Reviews*, vol. 9, pp.3–24

Plante, T. G., Caputo, D., & Chizmar, L. (2000). Perceived Fitness and Responses to Laboratory Induced Stress. *International Journal of Stress Management*, vol. 7, no. 1, pp.61–73, https://doi.org/10.1023/a:1009518832566

Plante, T. G., Lantis, A., & Checa, G. (1998). The influence of perceived versus aerobic fitness on psychological health and physiological stress responsivity. *International Journal of Stress Management*, vol. 5, pp.141–156

Pöyry, E., Pelkonen, M., Naumanen, E., & Laaksonen, S. M. (2019). A call for authenticity: Audience responses to social media influencer endorsements in strategic communication. *International Journal of Strategic Communication*, vol. 13, no. 4, pp.336–351, https://doi.org/10.1080/1553118X.2019.1609965

Prichard, I., McLachlan, A. C., Lavis, T., & Tiggemann, M. (2018). The impact of different forms of #fitspiration imagery on body image, mood, and self-objectification among young women. *Sex Roles*, vol. 78, pp.789–798, https://doi.org/10.1007/s11199-017-0830-3

Richins, M. L. (1991). Social comparison and the idealized images of advertising. *Journal of Consumer Research*, vol. 18, no. 1, pp.71–83, https://doi.org/10.1086/209242

Robinson, L., Prichard, I., Nikolaidis, A., Drummond, C., Drummod, M. & Tiggemann, M. (2017). Idealised media images: the effect of fitspiration imagery on body satisfaction and exercise behaviour. *Body Image*, vol. 22, pp.65–71, https://doi-org.ludwig.lub.lu.se/10.1016/j.bodyim.2017.06.001

Rodgers, R. F., Wertheim, E. H., Paxton, S. J., Tylka, T. L., & Harriger, J. A. (2022). # Bopo: Enhancing body image through body positive social media-evidence to date and research directions. *Body Image*, vol. 41, pp.367-374, https://doi.org/10.1016/j.bodyim.2022.03.008

Rosenberg, M. (2016). Society and the Adolescent Self-Image, [e-book] Princeton: Princeton University Press, https://www.degruyter.com/document/doi/10.1515/9781400876136/html

Rupp, K. & McCoy, S. (2023). Understanding Health Behaviors, Weight Perceptions, and Body Appreciation of Young Adult Women Engaged in the Body Positivity Movement, *Women's Health Issues*, vol. 33, no. 5, pp.551-559, https://doi.org/10.1016/j.whi.2023.05.004.

Rüther, L., Jahn, J. & Marksteiner, T. (2023) #influenced! The impact of social media influencing self-esteem and the role of social comparison and resilience. *Frontiers in Psychology*, vol. 14, https://doi.org/10.3389/fpsyg.2023.1216195

Santarossa S., Coyne, P., Lisinski, C., & Woodruff S. J. (2019). #fitspo on Instagram: A mixed-methods approach using Netlytic and photo analysis, uncovering the online discussion and author/image characteristics. *Journal of Health Psychology*, vol. 24, no. 3, pp.376-385, https://doi:10.1177/1359105316676334

Schreurs, L., Meier, A., & Vandenbosch, L. (2022). Exposure to the positivity Bias and Adolescents' differential longitudinal links with social comparison, inspiration and envy

depending on social media literacy. *Current Psychology*, vol. 21, pp.1–21, https://doi.org/10.1007/s12144-022-03893-3

Selensky, J. C. & Carels, R. A. (2021). Weight stigma and media: An examination of the effect of advertising campaigns on weight bias, internalized weight bias, self-esteem, body image, and affect. *Body Image*, vol. 36, pp.95-106, https://doi.org/10.1016/j.bodyim.2020.10.008

Statista. (2024a). Distribution of Instagram users worldwide as of January 2024, by age and gender, https://www.statista.com/statistics/248769/age-distribution-of-worldwide-instagram-users/ [Accessed 12 April 2024]

Statista. (2024b). Influencer marketing market size worldwide from 2016 to 2024, https://www.statista.com/statistics/1092819/global-influencer-market-size/ [Accessed 10 April 2024]

Statista. (2024c). Most popular social networks worldwide as of January 2024, ranked by number of monthly active users https://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-user/ [Accessed 14 April 2024]

Statista. (2024d). Number of Instagram users worldwide from 2020 to 2025. https://www.statista.com/statistics/183585/instagram-number-of-global-users/ [Accessed 10 April 2024]

Stein, J.-P., Krause, E., & Ohler, P. (2021). Every (Insta)Gram counts? Applying cultivation theory to explore the effects of Instagram on young users' body image. *Psychology of Popular Media*, vol. 10, no. 1, pp.87–97, https://doi.org/10.1037/ppm0000268

Tiggemann, M. & Zaccardo, M. (2016). "strong is the new skinny": A content analysis of #fitspiration images on Instagram. *Journal of Health Psychology,* vol. 23, no. 8, pp.1003–1011, https://doi.org/10.1177/1359105316639436

Tiggemann, M., & Zaccardo, M. (2015). "Exercise to be fit, not skinny": The effect of fitspiration imagery on women's body image. *Body Image*, vol. 15, pp.61–67, https://doi-org.ludwig.lub.lu.se/10.1016/j.bodyim.2015.06.003

Vartanian, Lenny. (2012). Self-Discrepancy Theory and Body Image. *Encyclopedia of Body Image and Human Appearance*, pp.711-717, https://doi.org/10.1016/B978-0-12-384925-0.00112-7

Vrontis, D., Makrides, A., Christofi, M., & Thrassou, A. (2021). Social media influencer marketing: A systematic review, integrative framework and future research agenda. *International Journal of Consumer Studies*, vol. 45, no. 4, pp.617–644, https://doi.org/10.1111/ijcs.12647

Watson, S., Wells, C. D., & Hudson, E. J. (2011). The Effects of Idealized Advertising Imagery on Social Comparisons, Psychological and Emotional Outcomes, and Consumer Vulnerability: A Conceptual Model. *Journal of Promotion Management*, vol. 17, no. 4, pp.407–417, https://doi.org/10.1080/10496491.2011.620494

Williams, C. (2021). Stay Fit With These 7 Influencer-Made Workout Apps, *Brit.Co.* https://www.brit.co/lifestyle/health/influencer-made-workout-apps/ [Accessed 13 April 2024]

Wills, T. A. (1981). Downward Comparison Principles in Social Psychology. *Psychological Bulletin*, vol. 90, no. 2, pp.245–271, https://doi.org/10.1037/0033-2909.90.2.245

Wood, J. V. (1989). Theory and Research Concerning Social Comparisons of Personal Attributes. *Psychological Bulletin*, vol. 106, no. 2, pp.231–248, https://doi.org/10.1037/0033-2909.106.2.231

Appendix A - Perceived Physical Fitness Scale

Perceived Physical Fitness Scale (Abadie, 1988)

	Item	Primary factor
1.	I am in good physical condition.	Physical condition
2.	I need to alter (lose or gain) my weight in order to improve my physical health. (R)	Body composition
3.	I am better able to walk briskly for twenty minutes than most individuals my age.	Physical condition
4.	I am as physically strong as I need to be.	Physical condition & muscular condition
5.	An object that I can lift once with slight difficulty soon becomes strenuous when I attempt to lift it repeatedly. (R)	Muscular condition
6.	I possess greater muscular flexibility than most individuals my age.	Muscular flexibility
7.	I am more overweight than most individuals my age. (R)	Body composition
8.	When I exercise I tire easily. (R)	Physical condition & muscular condition
9.	I am more physically fit than most individuals my age.	Physical condition
10.	I am a very limber (flexible) individual.	Muscular flexibility
11.	I possess less muscular strength than most individuals my age. (R)	Muscular condition
12.	I need to improve my present overall physical condition. (R)	Physical condition

Note: (R) indicates reverse scoring.

Appendix B - State Self-Esteem Scale

State Self-Esteem Scale (Heatherton & Polivy, 1991)

	Item	Primary factor
1.	I feel confident about my abilities.	Performance
2.	I am worried about whether I am regarded as a success or failure. (R)	Social
3.	I feel satisfied with the way my body looks right now.	Appearance
4.	I feel frustrated or rattled about my performance. (R)	Performance
5.	I feel that I am having trouble understanding things that I read. (R)	Performance
6.	I feel that others respect and admire me.	Appearance
7.	I am dissatisfied with my weight. (R)	Appearance
8.	I feel self-conscious. (R)	Social
9.	I feel as smart as others.	Performance
10.	I feel displeased with myself. (R)	Social
11.	I feel good about myself.	Appearance
12.	I am pleased with my appearance right now.	Appearance
13.	I am worried about what other people think of me. (R)	Social
14.	I feel confident that I understand things.	Performance
15.	I feel inferior to others at this moment. (R)	Social
16.	I feel unattractive. (R)	Appearance
17.	I feel concerned about the impression I am making. (R)	Social
18.	I feel that I have less scholastic ability right now than others. (R)	Performance
19.	I feel like I’m not doing well. (R)	Performance
20.	I am worried about looking foolish. (R)	Social

Note: (R) indicates reverse scoring.

Appendix C - Online survey

Welcome to the online survey for our Master's thesis in International Marketing and Brand Management at Lund University, Sweden.

This study is about physical exercise in times of social media. Your honest responses to the questions on the next pages will provide valuable insights for our research. Please take your time to read each question carefully and answer truthfully. There is no right or wrong answer to the questions. Your responses are completely anonymous and cannot be traced back to you as an individual.

The target group of this study is females between the ages of 18 and 30. We kindly ask you to only fill out the survey if you belong to this group.

Participation in this survey is voluntary, and you can terminate it at any time. The survey will take approximately 5 minutes to complete.

Thank you for taking the time to contribute to our study. We truly appreciate your input!

Andrea Månsson & Lisa Lindenmeyer

I hereby provide my consent to participate in this study.

- ○ I agree
- ○ I disagree

First, please fill out some basic information about yourself.

Age

- ○ Under 18 years
- ○ 18-20 years
- ○ 21-25 years
- ○ 26-30 years
- ○ Over 30 years

Gender

- ○ Female
- ○ Male
- ○ Prefer not to say

Nationality

How much time do you spend on Instagram per day?

- ○ 0-1 hour
- ○ 1-2 hours
- ○ 2-3 hours
- ○ 3-5 hours
- ○ Over 5 hours

The following questions aim to evaluate how physically fit YOU perceive yourself to be. Please read the statements carefully and answer honestly.

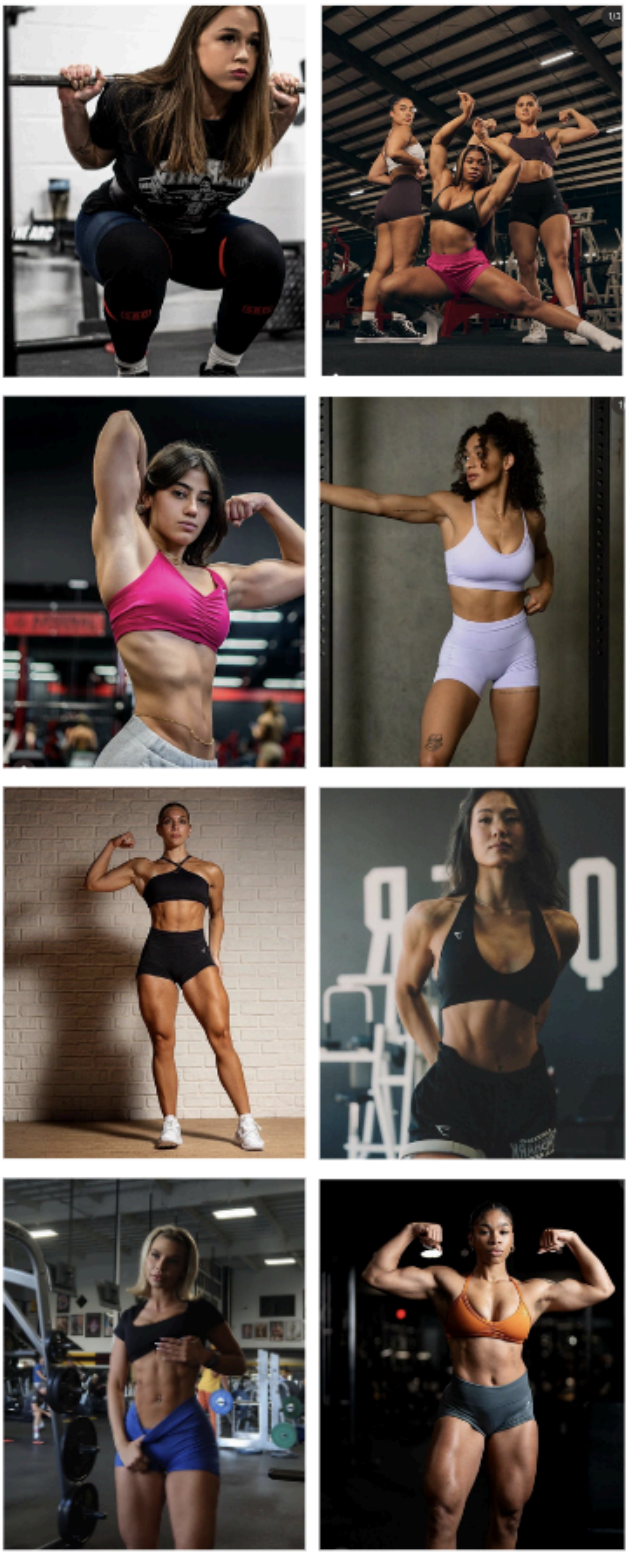
	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
I am in good physical condition.	○	○	○	○	○
I am better able to walk briskly for twenty minutes than most individuals my age.	○	○	○	○	○
I am more physically fit than most individuals my age.	○	○	○	○	○
I need to improve my present overall physical condition.	○	○	○	○	○

→

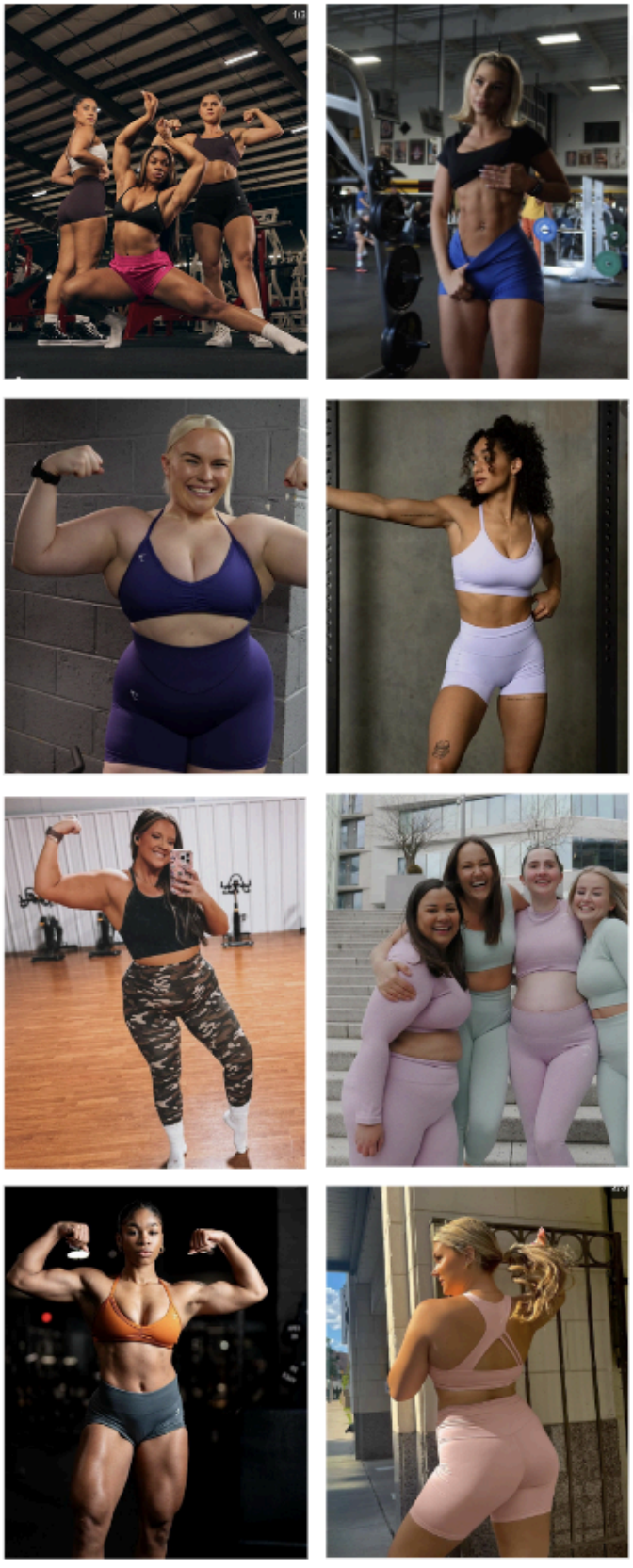
Please take your time to look at the following pictures.

The three stimulus sets:

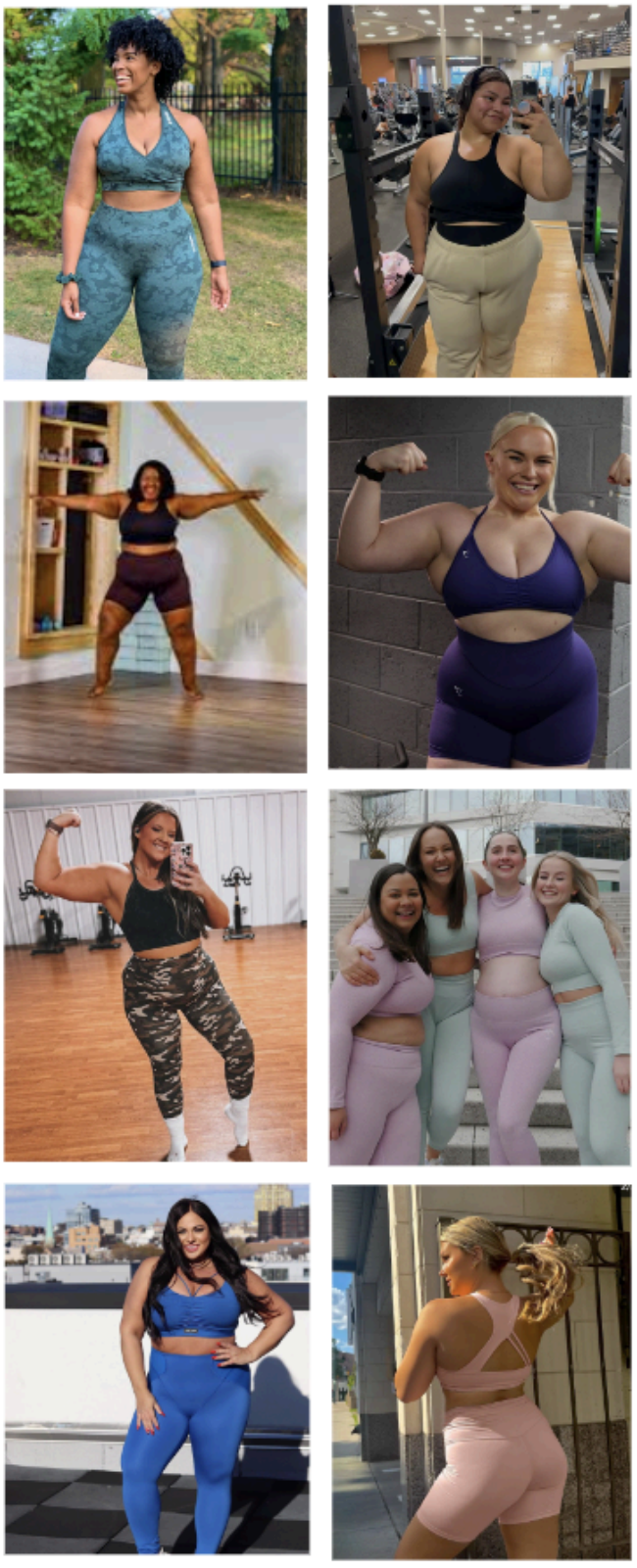
Condition 1 - Only fit ideal imagery



Condition 2 - 4 fit ideal posts and 4 body positive posts



Condition 3 - Only body positive imagery



The best answer is what you feel is true of yourself at this moment. Be sure to answer all of the statements, even if you are not certain of the best answer.

	Not at all	A little bit	Somewhat	Very much	Extremely
I feel confident about my abilities.	○	○	○	○	○
I am worried about whether I am regarded as a success or failure.	○	○	○	○	○
I feel satisfied with the way my body looks right now.	○	○	○	○	○
I feel frustrated or rattled about my performance.	○	○	○	○	○
I feel that others respect and admire me.	○	○	○	○	○
I am dissatisfied with my weight.	○	○	○	○	○
I feel self-conscious.	○	○	○	○	○
I feel as smart as others.	○	○	○	○	○
I feel displeased with myself.	○	○	○	○	○
I feel good about myself.	○	○	○	○	○
I am pleased with my appearance right now.	○	○	○	○	○
I am worried about what other people think of me.	○	○	○	○	○
I feel inferior to others at this moment.	○	○	○	○	○
I feel unattractive.	○	○	○	○	○
I feel concerned about the impression I am making.	○	○	○	○	○
I feel like I'm not doing well.	○	○	○	○	○
I am worried about looking foolish.	○	○	○	○	○

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

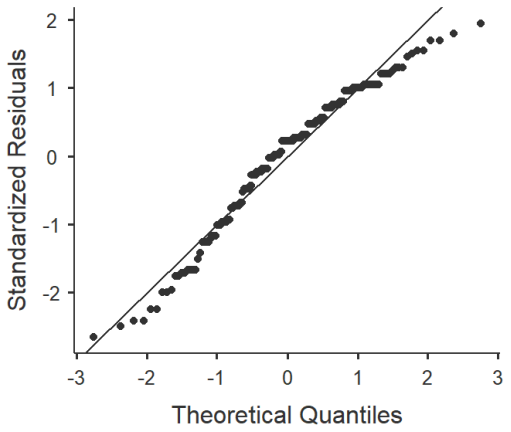
Appendix D - Analysis

Confirmatory factor analysis: Modification Indices after removing

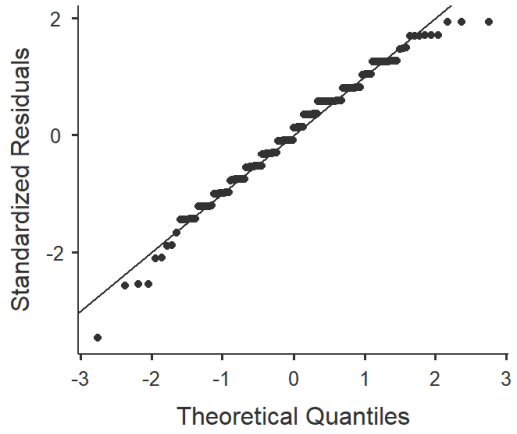
Factor Loadings – Modification Indices

	PPC	Performance SSE	Social SSE	Appearance SSE
Fitness_1		4.43055	3.69647	5.746
Fitness_2		6.67213	5.63082	7.927
Fitness_3		0.00625	0.00582	3.45e−4
Perf_1	10.44186		16.59932	3.573
R4 Perf	0.00643		0.33673	1.259
R16 Perf	10.73141		13.41005	0.753
R2 Social	1.35651	0.55097		0.696
R9 Social	0.72173	0.00617		5.817
R12 Social	2.35771	3.24754		4.325
R13 Social	3.08218	2.61982		0.822
R15 Social	1.54718	5.58339		17.694
R17 Social	10.77264	10.80282		3.084
App_3	0.27415	8.85985	8.39482	
R6 App	0.23326	0.07665	0.00137	
App_10	3.53052	8.89010	3.17834	
App_11	0.00401	4.50020	5.93933	
R14 App	1.87584	9.93611	22.56270	

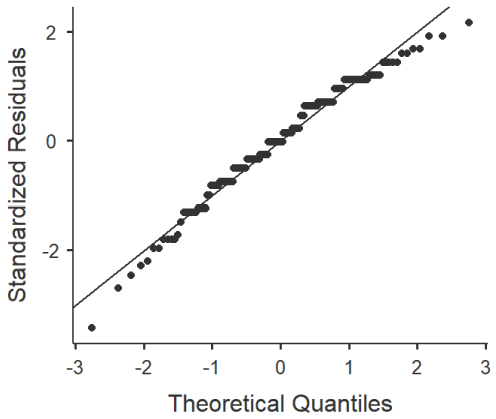
One-way ANOVA: QQ-plot Appearance SSE



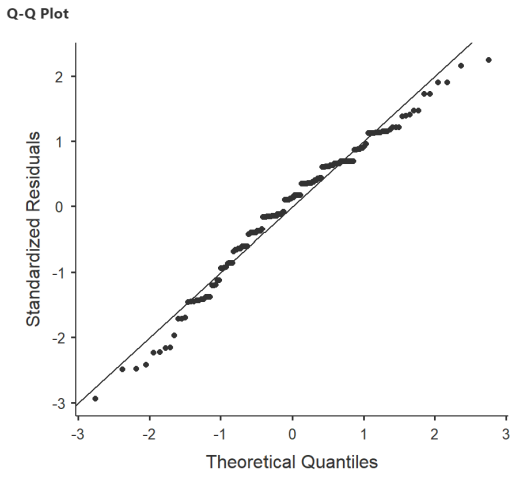
One-way ANOVA: QQ-plot Social SSE



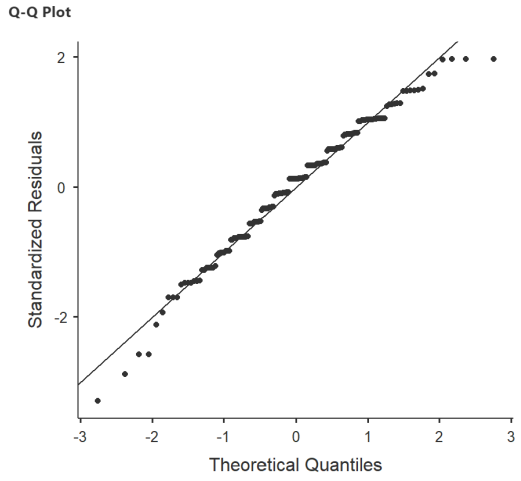
One-way ANOVA: QQ-plot Performance SSE



Two-way ANOVA: QQ-plot Appearance SSE



Two-way ANOVA: QQ-plot Social SSE



Two-way ANOVA: QQ-plot Performance SSE