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Framing Real Beauty: A Framing Approach to the Effects of Beauty Advertisements on Body Image and Advertising Effectiveness

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Abstract

Current literature is inconsistent about the effects of idealized (i.e., thin) vs. non-idealized (i.e., average or plus-size) models on young women's well-being. This inconsistency may be explained by different frames (i.e., passive body, active body, and subject) surrounding beauty ad models. The current experimental study among 568 women aged 18 to 30 years (M = 21.45, SD = 1.84) tested the effects of differently framed ads featuring idealized vs. non-idealized models on well-being and ad effectiveness while taking into account the mediating role of cognitive schemas and moderating role of thin-ideal internalization. Results showed that a passive body frame generated more appearance schemas compared to a subject frame. The effects of framing on body functionality schemas operated differently for idealized vs. non-idealized models. The passive body frame also induced inferior ad outcomes (i.e., lower attitudes to the advertisement and brand and lower purchase intent) compared to an active body frame. No other main framing effects nor moderating effects of thin-ideal internalization were found. These results for advertising outcomes can encourage beauty brands to stop using typical objectifying ads.

Keywords: non-idealized models, body image, advertising, framing, cognitive schemas

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Nearly half of the women in Western societies are concerned about their body weight (Cain et al., 2010). Studies have linked these body image concerns to the portrayal of idealized models (i.e., models who exhibit the thin ideal) in beauty advertising (Grabe et al., 2008; Krawczyk & Thompson, 2015). As a response to these negative effects, alternative approaches featuring models with an average or plus-size body size (i.e., a 30-35-inch waist and European dress size 42-44; Diedrichs & Lee, 2011; Halliwell & Dittmar, 2004) have emerged in beauty advertisements (ads). Although such models are labeled in many ways, we used the term 'non-idealiz*ed* models' (based on Borau & Bonnefon, 2017). The term 'non-idealiz*ed*' emphasizes that it are the (subjective) social norms that define these models as imperfect. Non-idealized models are supposed to resolve the negative well-being outcomes induced by advertising content. However, existing research is inconsistent about the pro-social effects that non-idealized models have (Anschutz et al., 2009; Bissell & Rask, 2010; Diedrichs & Lee, 2011).

This inconsistency may be due to the lack of attention to how models in beauty ads are framed. A non-idealized model alone might not induce positive body image outcomes if the model is still presented in an objectifying or appearance focused manner (Anschutz et al., 2009). Not only the model's body size, but also the way the model is framed may be important to successfully promote positive well-being outcomes. Yet, little is known about framing in beauty ads as literature tends to solely focus on the model's body size. Therefore, this paper investigates the role of framing, which refers to presenting information in such a way that certain elements in the ad are emphasized (Entman, 1993). Three types of frames are examined: 1) a passive body frame, emphasizing what the model's body looks like, 2) an active body frame, emphasizing what the model is able to do with her body (i.e., body

functionality), and 3) a subject frame, emphasizing the model's personality. We theorize that these different frames trigger different schemas (i.e., appearance, body functionality, and personality schemas), that, in turn, differently affect well-being (i.e., body image and self-esteem). These framing effects will be studied for both idealized and non-idealized models. A less appearance focused frame might also be beneficial for idealized models. Although non-idealized models are increasingly popular, the majority of beauty ads still features idealized models (de Freitas, Jordan, & Hughes, 2018). Gaining knowledge on how a different way of framing idealized models might diminish their negative effects seems, as such, useful.

Because these effects can only be accurately captured when including individual differences, a mixed (pre-post x groups) experimental design was accounted for changes in well-being within participants over time. Some of these changes may also be attributed to differences in psychosocial traits. Therefore, thin-ideal internalization was included since previous research has repeatedly highlighted its moderating role (Diedrichs & Lee, 2011).

Lastly, this study may also be relevant from a practical level. In line with previous body image research (Diedrichs & Lee, 2011; Halliwell & Dittmar, 2004), advertising effectiveness is considered to improve our understanding of such ads from a marketing perspective.

Idealized vs. Non-Idealized Models and Body Image

Existing research is inconsistent about whether non-idealized models truly enhance well-being compared to idealized models, with some studies reporting positive effects, and others describing null or even negative effects. A first set of studies found that non-idealized models have positive effects on a variety of body image outcomes. Diedrichs and Lee (2011) found that average-size models (i.e., models with measurements representative for the average Australian woman) had a more positive effect on female college students' body image than thin models. Similarly, average-size models (i.e., models with U.K. dress size 14

and a 30-inch waist) generated less body anxiety among adult women than thin models (Halliwell & Dittmar, 2004). Women also experienced less societal pressure to be thin when viewing larger models compared to slim models (Martin & Xavier, 2010).

A second set of studies found no effects of non-idealized models. Bissell and Rask (2010) indicated that women exposed to a plus-size model did not differ from women exposed to a thin model on their levels of discrepancy between their actual vs. ideal self. Research among female college students reported similar findings regarding body anxiety (Anschutz et al., 2009). There are thus also studies that did not find positive effects and reported an absence of negative effects.

A third set of studies contradicted the first positive findings and reported negative effects of non-idealized models. A study among young French women found that natural looking models (i.e., models with a realistic body size and average level of facial beauty) induced more often repulsion compared to ideal models (Borau & Bonnefon, 2017). Anschutz et al. (2009) also found that the Dove's Real Beauty commercials negatively affected college women's mood and food intake.

In sum, literature is divided about whether non-idealized models truly generate a more positive body image as opposed to idealized models. This ambiguity may be explained by the use of different measurements (i.e., different variables to assess body image) and inconsistent operationalizations of idealized/non-idealized models across studies, but also the lack of attention to how these models are framed.

The Role of Framing and Schemas

Framing occurs when information is presented in such a way that certain aspects of reality are emphasized, and/ or other elements are neglected (Entman, 1993). By making (some) elements of a media message more salient, a frame invites individuals to interpret the presented information in a certain way (Entman, 1993). Framing theory explains this

influence of frames with the concept of cognitive schemas (Entman, 1993; Scheufele, 2004). Cognitive schemas are mental structures of how individuals have stored information (Scheufele, 2004). These schemas thus include an individual's interpretations of a particular topic. Although not every individual will interpret the information as intended, by highlighting certain elements, frames thus try to steer how individuals mentally store information. Support for this process of frames trying to influence cognitive schemas has also been found within body image literature. Hargreaves and Tiggemann (2002), for example, found that watching appearance focused commercials determines how women think about beauty and activates appearance schemas.

Particularly self-schemas, which are cognitive structures that organize information about oneself, are relevant within the context of body image (Brown & Dittmar, 2005). Individuals compare themselves to idealized and non-idealized models (Papies & Nicolaije, 2012) and integrate the beauty standards put forward by the ad into their self-schemas. The way the model is framed, will thus influence self-schemas and how one thinks about one's body. As the frame determines which self-schemas are triggered, it is likely that different frames result in different body image outcomes. Current literature hinted at three possible framing approaches: 1) a passive body frame, 2) an active body frame, and 3) a subject frame.

A *passive body frame* presents the body as *passive*, as an object that is primarily evaluated for its aesthetic qualities (i.e., objectification; Fredrickson et al., 1998). This frame is the most commonly applied in not only ads featuring idealized models, but also ads promoting non-idealized models (Anschutz et al., 2009). For idealized models, such ads highlight the model's thin body by putting it forward as a beauty standard. For non-idealized models, such ads still highlight the model's body by emphasizing that plus-size bodies are

beautiful as well. Accordingly, a passive body frame emphasizes the model's body figure (Anschutz et al., 2009; Kraus & Myrick, 2018).

Because this frame entails that one's worth is based on one's appearance, it activates *appearance schemas*, i.e., cognitions on appearance ideals (Brown & Dittmar, 2005). These schemas remind women of the thin body ideal or the notion that curvy body sizes are not normative (Anschutz et al., 2009). As such, research repeatedly pointed out that appearance schemas explain the negative effects of idealized models (Brown & Dittmar, 2005). Moreover, appearance schemas could also explain why non-idealized models did not trigger beneficial effects in some studies and even caused negative effects in other studies. Because women learn these ideas about beauty from different socialization factors (i.e., parents, peers, media) at a very early age (Tripartite Influence Model; Thompson et al., 1999), appearance schemas are likely to be persistent which may cause women to be inadmissible for the message that other body types are beautiful too. Research investigating non-idealized models indeed found that activation of appearance schemas lead to dysfunctional body image outcomes (Anschutz et al., 2009). Simply changing the model's body size may thus not be sufficient when the model's appearance is still highlighted. Focusing on other aspects than the model's body size, such as the model's body functionality or personality, might avoid the activation of appearance schemas.

Body functionality research conceptualizes the body as something *active*, it is evaluated on its physical capacities (Alleva et al., 2015; Franzoi, 1995). Body functionality refers to everything the body can do and includes a variety of body functions, such as physical activity (e.g., walking), health (e.g., digestion), or communication (e.g., body language) (Alleva et al., 2015). The concept also relates with body appreciation in the sense of taking care of one's body. Little research has investigated how integrating body functionality into the media message itself may be linked to a positive body image. This

study introduces an *active body frame*, defined as a frame that draws attention to the body by emphasizing what the body can do and the importance of taking care of the body.

Schema theory suggests that an active body frame will activate *body functionality schemas,* which are cognitions about what one can do with one's body and how to take care of it (Alleva et al., 2015). While no study has yet investigated whether body functionality schemas debilitate the negative effects of idealized models or explain the positive effects of non-idealized models, research found that focusing on body functionality increases body appreciation (Avalos & Tylka, 2006) and decreases self-objectification (Alleva et al., 2015). Moreover, such schemas may also induce other, less well-known, body image outcomes, such as body functionality satisfaction.

A final framing approach may be presenting the model as a *subject*. A subject frame draws attention to the model's personality. This attention can be drawn by emphasizing personality characteristics that are moderately incongruent with the advertised beauty product. Most beauty ads present a model focusing on her appearance rather than her personality as this is congruent with what is expected from a beauty model. Role congruity theory explains that certain characteristics (e.g., attaching worth to how you look and not who you are) are typically linked to certain social roles (e.g., a being a beauty model) (Eagly & Karau, 2002 Solomon, Ashmore, & Longo, 1992). Ads in which beauty products are promoted by a model with a strong personality may thus be perceived as atypical (e.g., an adventurous looking model for a beauty brand; Kristen Stewart, who has an edgy personality, for the elegant Chanel brand). Advertising research has argued that ads in which the endorser's characteristics are moderately incongruent with the advertised product might be more effective (Törn, 2012).

This is further explained by schema congruity theory (Yoon, 2013), which holds that information that fits within an existing schema, and thus lives up to one's expectations, will

be more easily processed than information that is incongruent (Festinger, 1962). Incongruent information requires cognitive effort to solve the incongruity (Festinger, 1962). Because women are used to link appearance to beauty products, a subject framed ad will require cognitive elaboration to solve the incongruence between the model and the endorsed product. This cognitive elaboration may trigger personality schemas, as individuals will be primed to think about the model's personality traits. Such schemas may learn women how beauty can be matched to other characteristics besides appearance traits. Objectification literature suggests that focusing on personality enhances body satisfaction (Vandenbosch, 2013). In addition, because personality schemas distract attention from the body, they might not only positively affect body image, but also other, less body specific, well-being outcomes. Well-being indicates that reflecting on one's (personality) strengths decreases stress and improves self-esteem (Dolev-Amit, Rubin, & Zilcha-Mano, 2020). Yet, little is known on how beauty models impact non-body related well-being. Outcomes linked to the subject frame, such as personality satisfaction, could be interesting in this context. But also more general well-being variables, that could be relevant to the other frames as well, such as self-esteem, are worth taking into account.

In sum, literature suggests that different frames in beauty ads activate different schemas and related well-being outcomes. Because each of the frames trigger different schemas, they are also expected to impact different well-being outcomes. The passive body frame is expected to mainly affect body image outcomes linked to the appearance of the body (i.e., appearance satisfaction, body appreciation, and self-objectification) while the active body frame is likely to affect body image outcomes linked to what the body is capable of (i.e., body functionality satisfaction). Since the subject frame does not focus on the body, this

frame is expected to affect non-body related or self-reflecting/personality outcomes (i.e., personality satisfaction). The study proposed to test the following preregistered hypotheses[1]:

- **H1**: Women who are exposed to an active body-framed ad or a subject-framed ad report higher levels of (a) appearance satisfaction and (b) body appreciation, and lower levels of (c) self-objectification than women exposed to a passive body-framed ad. These effects are mediated by appearance schemas.
- **H2**: Women who are exposed to an active body-framed ad report higher levels of body functionality satisfaction than women exposed to a passive body-framed or a subject-framed ad. These effects are mediated by body functionality schemas.
- **H3**: Women who are exposed to a subject-framed ad report higher levels of personality satisfaction than women exposed to a passive body-framed ad or an active body-framed ad. These effects are mediated by personality schemas.

To further understand the effects of the frames from a more general well-being perspective, self-esteem is considered. Self-esteem is an individual's evaluation of their own worth and is an important driver for overall well-being (Robins et al., 2001). Yet, little is known in body image literature on self-esteem. Therefore, self-esteem was included as an exploratory variable in the pre-registration, leading to the following question:

- **RQ1**: What are the effects of differently framed ads on self-esteem?

Match between Model's Body Size and Framing

Some of the frames may be more or less of a match with a certain body size. As mentioned earlier, a non-idealized model may coincide better with the empowering message of an active body or subject frame than the objectifying message of a passive body frame (Anschutz et al., 2009). An objectifying frame may thus counteract with the intended positive

[1] This study was pre-registered on OSF: https://osf.io/hmkvu/?view_only=fa02e2f020ea4d888ca4da4827b9fa10
The transparent changes document indicating minor adjustments to the pre-registration can be accessed via this link: https://osf.io/yws92/?view_only=4964510bf11e4d0bae2c68beb03600e0

effects of the model's non-idealized body size. For example, studies that use the Dove ads (e.g., Anschutz et al., 2009), which typically focus on appearance, might unintentionally create some kind of cognitive mismatch for their participants due to the incongruity between an appearance focused message and the progressive body size of the model. Conversely, an idealized model may match the appearance focused message of a passive body frame, but can mismatch the empowering message of an active body or subject frame. Displaying a thin model complying to conventional beauty standards might thus overrule the progressive message of the frame (Couture & Harrison, 2019). On the other hand, an active body or subject frame may weaken the negative effects of an idealized model and this mismatch may help to create a more nuanced message. Congruity research (Yoon, 2013) reveals that individuals will more easily notice such an incongruent ad because it is unexpected. As existing research gives some hints, yet overall little guidance, the following question was proposed:

- **RQ2**: How does the model's body size interact with the effects of the differently framed ads on the different well-being outcomes?

Thin-Ideal Internalization

Besides body size, thin-ideal internalization might also interact with the different frames. Thin-ideal internalization is an individual's intrinsic motivation to comply to the thin-ideal (Thompson & Stice, 2001). The extent to which women are affected by both idealized and non-idealized models depends on their level of thin-ideal internalization (Diedrichs & Lee, 2011; Halliwell & Dittmar, 2004). The role of thin-ideal internalization in framing effects is relatively unexplored. One of the scarce studies on this subject revealed that high internalizers are more likely to activate appearance schemas (Brown & Dittmar, 2005) and to have more body anxiety than low internalizers (Halliwell & Dittmar, 2004). This might suggest that high internalizers activate appearance schemas more easily when being exposed

to a passive body frame and are subsequently also highly susceptible for negative body image effects. Conversely, the negative effects of the passive body frame may be the weakest for low internalizers as they are less likely to activate appearance schemas (Brown & Dittmar, 2005). Apart from Brown and Dittmar (2005), no research has examined schema activation in high and low internalizers, leaving many unanswered questions, for example, about their responses to non-appearance frames. We can thus only speculate about the direction of the effects of different frames in high and low internalizers. Therefore, the following research question was proposed:

- **RQ3**: How does thin-ideal internalization interact with the effects of the differently framed ads on the different well-being outcomes?

Advertising Effectiveness

Research investigating beauty ads heavily focuses on well-being outcomes, but far less is known on the effects of idealized and especially non-idealized models on advertising cognitions (e.g., one's attitude toward the brand or purchase intention). Taking advertising effectiveness of non-idealized models into account helps to encourage the further adoption of these models in real-life beauty ads. Especially because advertisers often assume that an idealized model increases sales based on the 'what is beautiful, is good' stereotype (Kahle & Homer, 1985). Some studies found that ads featuring average-size models are equally effective compared to ads featuring thin models (Diedrichs & Lee, 2011; Halliwell & Dittmar, 2004). Other studies though pointed out that average- and plus-size models negatively affect perceived product quality and price estimation (Polonsky & Kareklas, 2011). Research thus seems divided on the impact of these models on advertising outcomes. Moreover, no research has investigated the different framing approaches. A typical objectifying passive body frame might generate less revenues than a progressive active body or subject frame. Yet, there are no hints in the literature on the effects of differently framed

beauty ads on ad outcomes. Because little to nothing is known on the effects of the three proposed frames on advertising results, we followed the same reasoning as for self-esteem, and included ad effectiveness as an exploratory variable:

RQ4: What are the effects of differently framed ads on advertising effectiveness?

All the hypotheses and (exploratory) research questions are visualized in Figure 1.

Method

Data Collection and Sample

Data were collected between March and April 2019. Ethical approval was received from the Ethics Committee of the University [identifying information deleted]. Using convenience sampling, participants were recruited both off- and online. Attention was given to an adequate distribution in terms of educational background. Psychology or social sciences students were avoided as much as possible (but not excluded from the final sample) to avoid response bias. All participants could enter in a lottery that raffled several reward cards.

A total of 568 women aged 18 to 30 years participated in the study (see Table 1 for demographic descriptives). The data of one participant of 52 years old was deleted because she did not meet the age requirements. Participants were randomly assigned to one of the six conditions (see Table 2 for conditions and *N* per condition). Preliminary analyses showed that the six experimental groups did not differ on the demographic variables (see Table 1 for statistics). The average BMI was also found to be normal within each condition.

Stimuli Material

Six ads for a body lotion of the fictive brand "Royal Body" were developed by a graphic designer using Adobe Photoshop software. All ads featured the same Caucasian model, the brands' name and logo, a picture of the body lotion, a slogan, and a quote from the displayed model. The ads were manipulated to differ on (1) framing and (2) body size[2].

[2] The stimuli material can be obtained by sending an email to the first author.

(1) Three different frames were created by changing the slogan, the quote, and the overall look (i.e., posture and outfit) of the model across conditions. Although the body poses were different for each frame, it must be noted that in each condition, the model faced the camera and thus stared directly into the lens. 1) In the *passive body frame conditions*, the slogan ("Essentials for a beautiful body") and quote ("Helps me to let my body shine and appreciate it for its beauty") focused on appearance. The model looked confident (i.e., presented with her hands on her waist) and was wearing a sexualized outfit (i.e., a low cut mini dress and high heels) to further emphasize the appearance of her body.

2) In the *active body frame conditions*, the slogan ("Essentials for an active body") and quote ("Helps me to take care of my body and appreciate it for everything it can do") focused on body functionality. Because an ad does not allow to present all the body functions that the broad concept of body functionality includes, we focused on three types of body functions. To present the body as something active, the model was shown while walking and wearing a more sporty (but not too sporty to avoid links with fitspiration), everyday outfit (i.e., a jacket with a legging and sneakers). This posture and outfit thus referred to body functions related to movement (according to the categorization of Alleva et al. (2015)). The model was also displayed with headphones, indicating she was listening to music. This referred to both body functions related to senses (i.e., one's hearing) and creative endeavours (i.e., expressing one's identity through music).

3) In the *subject frame conditions*, the slogan ("Essentials for a strong personality") and quote ("Helps me to take care of myself and appreciate who I am") focused on personality. The model looked laid-back (i.e., hands in the pockets of her pants, leaning a little bit backwards) and was wearing a cool outfit (i.e., loose T-shirt, army pants, and sneakers). The overall look of the model was thus rather tough to indicate she had a sturdy personality, which was moderately incongruent with endorsing a beauty product.

(2) Body size of the model was manipulated to be either a non-idealized or an idealized model. Bodies of current idealized models (wearing the outfits mentioned above) were used to ensure that they complied to the measurements of the average thin model (approximately BMI below 20, bust = 80-85cm, waist = 60-65cm, hips = 85-88cm). This body of the idealized model was stretched by approximately 25% of its original size to become a non-idealized body and align with the measurements of an average-size model (approximately BMI above 25, bust = 100-105cm, waist = 80-88cm, hips = 108-114cm). To ensure that the resulting images looked realistic, the model's face was also stretched to appear fuller. The head of an unknown model was photoshopped on each body so it looked like the same model was used throughout all conditions. This way, we were able to control all factors except body size.

Besides these manipulations, all other characteristics of the ad were kept similar. A pilot study (see Appendix A for a detailed explanation) was conducted to test the stimuli material. The manipulation of body size was successful, i.e., the idealized models were rated as significantly thinner than the non-idealized models (see Table A.1). The slogans and quotes in the passive body/active body/subject frame conditions were rated as significantly more focused on appearance/body functionality/personality than the other framing conditions. The model's look in the passive body/subject frame conditions was rated as significantly sexier/cooler than the other framing conditions. The model's look in the active body frame conditions was rated as significantly sportier compared to the passive body frame conditions, but no differences were found with the subject frame conditions. To make the look more sporty, the model's purse was removed in the final stimuli material.

Procedure

A 3 x 2 mixed factorial design was conducted. The between-subjects factors were the frames (3 conditions) and body sizes (2 conditions). The within-subjects factor was the time

of measurement in the pre-post design. The first webpage introduced the research and included an active consent form. Pre- and post-test surveys had to be completed one week apart from each other.

The pre-test survey included socio-demographics, thin-ideal internalization, and state measures of the different types of schemas and satisfaction, body appreciation, self-objectification, and self-esteem. Schemas were measured both directly and indirectly (see below). Indirect schemas measures were asked before the direct schemas measures to avoid biases due to priming. One week after completing the pre-test survey, participants completed the post-test survey. Participants were first exposed to an ad for Royal Body by randomly assigning them to one of the six conditions. Afterwards, they were asked again to complete the same state measures questioned in the pre-test survey, together with a manipulation check and a measure for advertising effectiveness.

Both surveys included an attention check embedded in the body appreciation scale. At the end of the post-test survey, an awareness check was also added. Participants who failed these checks or already participated in the pilot study were excluded. Participants having a physical disability were not exposed to the questions regarding body functionality schemas and satisfaction as these may be too sensitive and give distorted results.

Measures

Pre-existing scales were tested with Principal Components Analyses (PCAs) (see Appendix B - Table B.1). The schemas and satisfaction measures were validated with more rigorous analyses since they were newly developed measures. First, they were pretested in the earlier mentioned pilot study by conducting Principal Axis Factoring (PAFs) in SPSS and additional Confirmatory Factor Analyses (CFAs) in Mplus (see Appendix A – Tables A.2 and A.3). Next, they were tested again, performing the same analyses, in the actual study (see Appendix B – Tables B.2 and B.3).

Thin-ideal internalization. The thin/low body fat subscale of the Sociocultural Attitudes Towards Appearance Questionnaire-4-Revised (SATAQ-4R) was used (Schaefer et al., 2017). This scale contained four items such as "*I want my body to look very thin*" and "*I think a lot about looking thin*" rated on a 5-point Likert scale ranging from 1 (= *definitely disagree*) to 5 (= *definitely agree*) (α = .81). A new variable with two categories was created to divide participants into high or low internalizers.

Body appreciation. The Body Appreciation Scale-2 (BAS-2; Tylka & Wood-Barcalow, 2015) containing ten items such as "*I respect my body*" and "*I feel good about my body*" was used. Because the scale was used to measure state body appreciation, participants evaluated their level of agreement "right now" on a 7-point Likert scale ranging from 1 (*definitely disagree*) to 7 (*definitely agree*) (α_{pre} = .94; α_{post} = .95).

Self-objectification. We used the adapted state version of the Self-Objectification Questionnaire (Fredrickson et al., 1998) of Vandenbosch et al. (2015) because this measure takes into account the trade-off between appearance and competence attributes by allowing respondents to rank them according to their importance. Participants evaluated the importance of twelve appearance-based or competence-based attributes "right now" on a 10-point Likert scale ranging from 1 (= *not at all important*) to 10 (= *very important*). Mean scores for appearance-based body attributes (i.e., physical attractiveness, coloring, weight, sex appeal, and measurements) (α_{pre} = .72; α_{post} = .73) and competence-based body attributes (i.e., physical coordination, stamina, health, physical fitness, physical energy level, muscular strength, and muscle tone) (α_{pre} = .83; α_{post} = .85) were computed. The difference between the mean scores was calculated to obtain the level of self-objectification. The higher the scores, the higher the level of self-objectification.

Satisfaction measures. Three types of satisfaction were measured: appearance, body functionality, and personality satisfaction. Participants evaluated their satisfaction with four

attributes “right now” on a 10-point Likert scale ranging from 1 (= *not at all*) to 10 (= *very much*). See Appendix A for pilot study factor results and Appendix B for final factor results. The performed PAFs and CFAs showed one factor solutions and good model fit statistics for all satisfaction measures in both the pilot study and final data.

1) *Appearance satisfaction* was based on the Body Images States Scale (BISS) (Cash et al., 2002) and the appearance satisfaction measure as described in Mulgrew and Tiggemann (2018). The scale contained four items such as “*My body shape*” and “*My weight*” (see Table A.2 for all items) (α_{pre} = .89; α_{post} = .92).

2) *Body functionality satisfaction* was measured as described in Mulgrew and Tiggemann (2018). The original scale contained three items but to make sure the satisfaction scales were similar in wording and amount of items, we added a fourth item (“*My body’s health*”) (see Table A.2 for all items) (α_{pre} = .87; α_{post} = .89).

3) *Personality satisfaction* was measured with a self-developed scale that assessed how satisfied respondents were with different aspects of their personality such as their characteristics or who they are as a person. The scale contained four items such as “*My personality*” and “*H*ow *others perceive me*” (see Table A.2 for all items) (α_{pre} = .93; α_{post} = .93).

Direct schemas measures. Three types of schemas were measured: appearance, body functionality, and personality schemas. Participants indicated their level of agreement “right now” on a 7-point Likert scale ranging from 1 (= *definitely disagree*) to 7 (= *definitely agree*). See Appendix A for pretest factor results and Appendix B for final factor results. The pilot study pointed out that some of the initial items needed to be adapted (see Appendix A for detailed explanation). After these adaptations, the final PAFs and CFAs still revealed mediocre model fit statistics and unexpected factor solutions (low loadings or crossloadings).

Therefore, some of the items were not taken into account into the final variables (see below which items were omitted).

1) *Appearance schemas* were measured by adapting the Centre for Appearance Research Salience (CARSAL) scale (Moss & Rosser, 2012) to a state measure by changing the wording of certain items. The scale contained five items such as "*I am aware of the way that I look to other people*" and "*I am aware of the way my body looks*" (see Table A.3 for all items). PAF analyses extracted two factors. The second factor was mainly generated because of item 1 and item 4 since these items crossloaded on both factors.

2) *Body functionality schemas* were based on the Expand Your Horizon Programme of Alleva et al. (2015). The scale contained five items such as "*I am aware of how grateful I should be that I am healthy*" and "*I am grateful because I do not have any physical limitations and I can do whatever I want to do*" (see Table A.3 for all items). PAF analyses ensured the one-factor dimension. However, the factor loading of item 1 was considered as too low (≤ .40) (Stevens, 2002).

3) *Personality schemas* were measured with a self-developed scale. The scale contained five items such as "I am aware of how others perceive me" and "I am aware of how my personality makes me unique" (see Table A.3 for all items). PAF analyses ensured the one-factor dimension. However, the factor loading of item 1 was again considered as too low (≤ .40) (Stevens, 2002). A CFA testing all three schemas measures at once indicated that the model fit would improve when the abovementioned problematic items (i.e., item 1 and 4 for appearance schemas and item 1 for both body functionality and personality schemas) were not included. Therefore, these items were not taken into account into further analyses. The final appearance schemas (α_{pre} = .75; α_{post} = .83), body functionality schemas (α_{pre} = .60; α_{post} = .65), and personality schemas (α_{pre} = .67; α_{post} = .68) measures were all found to be reliable.

Indirect schemas measures. Direct measures may already prime respondents to think about appearance, body functionality, or personality. Literature indicates that implicit measures are sometimes more appropriate to capture cognitive processes (Fazio & Olson, 2003). The twenty statement measure of Kuhn & McPartland (1954) therefore indirectly measured appearance, body functionality, and personality schemas. Participants made 20 different statements about themselves by completing the sentence "I am___." Since the indirect schemas measures were included in both the pre- and the post-test, a total of 22 800 statements were coded by two coders (i.e., the principal investigator and a second coder). To ensure that the coding would not be biased by gender, the coders existed of one female coder and one male coder. The second coder was trained by the principal researcher and checked regularly with the principal researcher to clarify possible misunderstandings. The coders coded (0 = *absent*, 1 = *present*) the participants' responses on whether the statement referred to (1) appearance, (2) body functionality, and (3) personality. Krippendorff's alpha ensured good intercoderreliability ($\alpha_{appearance}$ = .99; $\alpha_{functionality}$ = .94; $\alpha_{personality}$ = .94). A mean score was computed for each type of schema.

***Self-esteem*.** The Single-Item Self-Esteem Scale (SISE) (Robins, Hendin, & Trzesniewski, 2001) measured self-esteem. To measure state self-esteem, the original answer categories were changed by asking participants their degree of self-esteem "right now" on a 5-point Likert scale ranging from 1 (= *very little self-esteem*) to 5 (= *a lot of self-esteem*).

***Advertising effectiveness*.** Advertising effectiveness was measured as described in Halliwell and Dittmar (2004) by three components: 1) attitude to the advertisement, 2) attitude to the brand, and 3) purchase intent. Item 1 and 2 were measured by two six-point semantic differentials (unfavorable to favorable and negative to positive). Item 3 was measured on a 6-point Likert scale ranging from 1 (= *very unlikely*) to 6 (= *very likely*) (α = .87).

Control variables. We controlled for clothing style attractiveness in all analyses (i.e., the extent to which a participant liked the clothing style of the model) because the rated attractiveness in clothing differed significantly between conditions ($F_{5,561} = 4.08$, $p = .001$). More specifically, for the non-idealized model conditions, the clothing style in the passive body frame was rated as significantly more attractive than the clothing styles in the active body ($p = .022$) and the subject frame ($p = .026$).

Analytical strategy

All analyses for this study, except the analyses for the exploratory variables self-esteem and ad effectiveness, were written out beforehand in the pre-registration.

The main model (H1-H3) was tested with three basis structural equation models (one for each hypothesis) in Mplus. The first model tested the effects of framing on body appreciation, appearance satisfaction and self-objectification via appearance schemas. The second model tested the effects of framing on body functionality satisfaction via body functionality schemas. The third model tested the effects of framing on personality satisfaction via personality schemas. Direct and indirect effects were calculated. The following indices and criteria of acceptable fit were considered (West, Taylor, & Wu, 2012): RMSEA < .08, CFI > .90, TLI >.90 and SRMR < .08. The categorical framing variable was transformed into two dummies. Simple contrast coding was used, thus comparing each category to the same reference category. This reference category did however change according to the hypothesis. For H1, the passive body frame was contrasted to the active body (dummy 1) and subject frame (dummy 2). For H2, the active body frame was contrasted to the passive body (dummy 1) and subject frame (dummy 2). For H3, the subject frame was contrasted to the passive body (dummy 1) and active body frame (dummy 2). Clothing style attractiveness was modeled as a control variable by including it as a predictor to the schemas

and well-being outcomes and drawing covariances with the framing dummies. Difference scores were calculated for all dependent variables to account for timing effects.

Because self-esteem (RQ1) and ad effectiveness (RQ4) were included as exploratory variables, they were not included in the three basis models described above but tested separately in a fourth model assessing the direct effects of framing on ad effectiveness and self-esteem. The dummies contrasting the passive body frame to the active body and subject frame were used since it is most likely that effects will occur between these frames.

Furthermore, to test RQ2 and RQ3, multigroup analyses comparing an unconstrained model to a constrained model using a χ^2-difference test were calculated. This was done for each of the three basis models described above as well as the exploratory fourth model. Difference parameters were further added to determine which pathways differed in case of a significant model comparison test.

Finally, full information maximum likelihood in Mplus was used to address missing data (Muthén & Muthén, 2017) and 95% bias-corrected bootstrapped confidence intervals (1000 bootstrapped samples) were calculated. Confidence intervals and p values of standardized model results were reported.

Results

Manipulation checks

Because the stimuli material was slightly adapted based on the results of the pilot study, an additional check was included into the final survey to verify the manipulations. In line with the results of the pilot study, the slogans and quotes in the passive body frame/active body frame/subject frame conditions were rated as significantly more focused on appearance/body functionality/personality compared to the other framing conditions (see Appendix C – Table C.1 for inferential statistics). For the manipulation of the model's look, removing the purse that the model was carrying was successful since the model's look in the

passive body frame/active body frame/subject frame was now rated as significantly sexier/sportier/cooler compared to the other framing conditions. In line with previous body image research (Diedrichs & Lee, 2011), we also assessed ad realism and found that the passive body frame ad conditions were rated as significantly more similar to everyday life ads than the ads in the active body frame conditions (see Table C.1 in Appendix C), which is in line with observations in existing research (Anschutz et al., 2009).

The manipulation of body size was also confirmed, whereby the idealized models were rated as significantly thinner than the non-idealized models (see Table C.1 in Appendix C). In line with previous research (Halliwell & Dittmar, 2004), we checked whether the manipulation of body size had not affected the model's attractiveness. We found that the idealized models were not rated as more attractive than the non-idealized models. Again, ad realism was checked and results indicated that the thin model ads were rated as more similarly to ads they encounter in their daily life, compared to the non-idealized model ads (see Table C.1 in Appendix C). This is in line with existing literature (e.g., Sypeck, Gray, & Ahrens, 2004) indicating that beauty and fashion ads seldom use non-idealized models.

Hypotheses and Exploratory Tests

Table 2 shows the means and standard deviations for all variables.

Effects of framing on well-being outcomes via cognitive schemas (H1-H3)

Figure 2 shows the results for the structural equation model testing H1, which predicted that an active body or subject frame would generate better body image outcomes compared to a passive body frame and that these effects would be mediated by appearance schemas. The model showed a good fit with the data: $\chi^2(187) = 301.93$, $p = .000$, *RMSEA* = .03 (90% CI: .03 / .04), *CFI* = .90, *TLI* = .88, *SRMR* = .04. The passive body vs. subject contrast had a positive effect on the indirect appearance schemas. Women in the passive body frame condition showed more indirect appearance schemas than women in the subject frame

condition. No support for mediation was found. We also did not find any direct effects of framing on the body image outcomes. In sum, although we found an effect of framing on indirect appearance schemas, no support was found for the hypothesized direct- and mediation effects, thus rejecting H1.

Figure 3 shows the results for the structural equation model testing H2, which predicted that an active body frame would generate better body functionality satisfaction than a passive body or subject frame and that these effects would be mediated by body functionality schemas. The model showed a good fit with the data: $\chi^2(44) = 54.49$, $p = .134$, *RMSEA* = .02 (90% CI: .00 / .04), *CFI* = .97, *TLI* = .96, *SRMR* = .03. No significant effects were found, thus rejecting H2.

Figure 4 shows the results for the structural equation model testing H3, which predicted that a subject frame would generate better personality satisfaction than a passive body or active body frame and that these effects would be mediated by personality schemas. The model showed a good fit with the data: $\chi^2(44) = 55.76$, $p = .110$, *RMSEA* = .02 (90% CI: .00 / .04), *CFI* = .98, *TLI* = .97, *SRMR* = .03. Direct personality schemas were found to have a positive effect on personality satisfaction, indicating that women who were more aware of their personality, are also more satisfied with who they are as a person. Yet, no support for mediation and also no direct effects of framing on personality satisfaction were found. In sum, although we found an effect of direct personality schemas on personality satisfaction, no support was found for the hypothesized direct- and mediation effects, thus rejecting H3.

Moderating effects of model's body size and thin-ideal internalization (RQ2 & RQ3)

We investigated whether the effects of the frames as described above interacted with the model's body size (RQ2) and thin-ideal internalization (RQ3). The χ^2-difference test for the model's body size in the first basis model was not significant (see Table 3). No differences were thus found for the effects of framing on body image via appearance schemas

between women exposed to an idealized model and women exposed to a non-idealized model. Also the χ^2-difference test for thin-ideal internalization was not significant. No differences were thus found for the effects of framing on body image via appearance schemas between high and low internalizers.

The χ^2-difference test for the model's body size in the second basis model was significant. Difference parameters indicated that the effect of the active body vs. passive body contrast on direct body functionality schemas significantly differed between groups (p = .006). More specifically, for women exposed to a non-idealized model, the active body frame generated lower levels of direct body functionality schemas compared to the passive body frame (*ß* = -.29, *B* =,-.17, *SE* = .08, p = .027), while for women exposed to an idealized model, no significant effect occurred (*ß* = .29, *B* = .13, *SE* = .07, p = .054). The χ^2-difference test for thin-ideal internalization was again not significant. No differences were thus found for the effects of framing on body functionality satisfaction via body functionality schemas between high and low internalizers.

The χ^2-difference test for the model's body size in the third basis model was not significant. No differences were thus found for the effects of framing on personality satisfaction via personality schemas between women exposed to an idealized model and women exposed to a non-idealized model. Also the χ^2-difference test for thin-ideal internalization was not significant. No differences were thus found for the effects of framing on personality satisfaction via personality schemas between high and low internalizers.

Exploratory effects on self-esteem and advertising outcomes (RQ1 & RQ4)

Figure 5 shows the results for the structural equation model exploring the effects of framing on self-esteem (RQ1) and advertising outcomes (RQ4). The proposed factor structure showed a poor fit with the data: $\chi^2(21) = 401{,}41$, p = .000, *RMSEA* = .18 (90% CI: .16 / .19), *CFI* = .80, *TLI* = .68, *SRMR* = .05. MI indicated that correlating the measurement errors of

the two items that measured attitude toward the ad (*MI* = 291.73, *EPC* = .40) and the error terms of the two items that measured attitude toward the brand (*MI* = 252.62, *EPC* = .44) would significantly decrease the χ^2-value. After specifying this parameter, a good model fit was obtained: $\chi^2(19) = 64.02$, $p = .000$, *RMSEA* = .06 (90% CI: .05 / .08), *CFI* = .98, *TLI* = .96, *SRMR* = .02. We acknowledge that there is much debate on the practice of correlating error terms as shared variance between items may be caused by unwanted factors that are not specified in the model. However, several authors (e.g., Byrne, 2013; Kline, 2016) argue that correlating error terms is justified if this correlation is theoretically meaningful. The passive body vs. active body contrast was found to have a negative effect on ad effectiveness, indicating that a passive body frame generated poorer ad outcomes than an active body frame.

The χ^2-difference test for the model's body size was significant. Difference parameters indicated that the effect of the passive body vs. subject contrast on ad effectiveness ($p = .001$) and on self-esteem ($p = .042$) significantly differed between groups. More specifically, for women exposed to a non-idealized model, no significant effect occured (*ß* = .09, *B* = .08, *SE* = .07, $p = .230$), while for women exposed to an idealized model, the passive body frame generated lower ad outcomes compared to the subject frame (*ß* = -.26, *B* = -.23, *SE* = .07, $p = .001$). Regarding self-esteem, when looking at the effects for women exposed to a non-idealized model (*ß* = -.11 *B* = -.08, *SE* = .05, $p = .099$) vs. to an idealized model (*ß* = .09, *B* = .06, *SE* = .05, $p = .209$) these relationships appeared to be non-significant. As such, these differences cannot be further interpreted. Finally, the χ^2-difference test for thin-ideal internalization was not significant. No differences were thus found for the effects of framing on ad effectiveness and self-esteem between high and low internalizers.

Discussion

The current study explored the effects of idealized vs. non-idealized models on young women's well-being and advertising effectiveness by taking into account different frames. Following the trend of reporting inconsistent findings in past research (e.g., Anschutz et al., 2009; Bissell & Rask, 2010; Diedrichs & Lee, 2011), most of the proposed hypotheses were not confirmed. Framing did not have an effect on any of the body image outcomes. We further found that the passive body frame generated more appearance schemas than the subject frame and that personality schemas had a positive effect on personality satisfaction. Yet, no support was found for full mediation of the different cognitive schemas. These results suggest that framing might not be particularly helpful in ensuring that beauty models contribute to women's well-being. We did found that a passive body frame generated poorer advertising outcomes than an active body frame. This result suggests that ads spreading the message to take care of one's body work better in terms of advertising cognitions and purchase intent compared to the typical objectifying ads. Additionally, our research provoked some questions on how advertising models are studied within the current body image field and which new elements should be taken into account in future research.

First, an active body frame and a subject frame were expected to be more successful in generating positive well-being outcomes via schemas than a passive body frame. Such framing effects on well-being were not found. The results did reveal that a passive body frame more easily activated appearance schemas than a subject frame. Also, personality schemas resulted in higher personality satisfaction, but no support for full mediation was found. A possible explanation for the null findings may be the short-term nature that characterizes experimental research (De Pelsmacker, 2020). A single exposure to a differently framed ad may not be sufficient to elicit more positive body image outcomes and to alleviate the pertinacious negative effects that the usual idealized, objectifying beauty ads have had in the past on young women's body image. Research investigating the effects of

sexualized media content found that some media effects only manifest themselves over a longer period of time or after repeated exposure to the content (Vangeel, 2019). A long-term experimental study approach may thus be necessary to capture these long-term or cumulative framing effects.

Moreover, besides timing, the limited amount of framing cues may also explain why no effects occurred. Although both the pilot study and the manipulation check indicated that the manipulation of framing was successful, the frames may not have been noticeable enough to activate the intended cognitive schemas. The framing manipulations may have provided too little context or background. It is possible that more information is necessary to really encourage women to intensively think about their body functionality or personality. Future research should consider adding a body copy to the ad (e.g., framing manipulations of Homer and Yoon (1992)) or use a media format that allows for a more storytelling method (e.g., a campaign video as used in Mulgrew et al. (2018)). These manipulations may be more prominent, which could lead to a more active way of processing the presented information.

Additionally, we presumed that an active body-framed or subject-framed ad would *activate* body functionality or personality schemas. Activation assumes that these schemas already exists (i.e., activation effects, Scheufele, 2004). Especially for body functionality, it is possible that women have not yet developed body functionality schemas because they are so used to thinking about aesthetic qualities when thinking of their bodies (Alleva et al., 2015). Therefore, they might also not be able to recognize the body functionality cues that are present in the ad. Especially when these cues are rather subtle, as described above. More information might be needed for women to establish these new schemas (i.e., formation effects, Scheufele, 2004).

It is also possible that because a beauty ad is inherently linked to appearance, such ads have trouble in generating other types of schemas than appearance schemas. Even though an

active body or subject ad focuses on other elements than an objectified appearance, the presence of the model alone still implies appearance. Also, the sole purpose of a beauty ad (i.e., selling beauty products) is linked to appearance. Some scholars therefore describe the beauty industry as a 'sin' industry. The same industry that caused poor body image is now trying to alleviate this with body positivity ads (Luck, 2016). Yet, these supposedly body positivity ads are still trying to sell women products that should improve their appearance. This 'sin' element or inherent focus on appearance might thus prevent women from forming alternative schemas.

A final explanation might be that although the different framing approaches are a result of a rigorous theoretical framework, they are difficult to adequately put into practice. The idea of different frames might be theoretically novel but may be a bit unnatural in real life. De Pelsmacker (2020) indeed points out that many experimental studies are set-up within an artificial research context lead by theory but therefore lacking external validity.

Second, the role of thin-ideal internalization in the effects of framing on body image outcomes was investigated. Since no significant moderation effects occurred, the results raise the question whether other psychological traits might be more relevant to study within the context of non-idealized models. Thin-ideal internalization has repeatedly been found to be an important factor when studying idealized models (e.g., Brown & Dittmar, 2005). As such, this variable is often taken into account in body image studies, including studies researching non-idealized models (e.g., Diedrichs & Lee, 2011). However, internalization has originally been theorized as a process explaining the effects of idealized models. Positive body image scholars have convincingly argued that a positive body image has different underlying psychological mechanisms than a negative body image (Tylka & Wood-Barcalow, 2015). Potentially, other traits than thin-ideal internalization should thus be considered when comparing idealized to non-idealized models. For instance, within positive body image

literature, the internalization of a broad appearance ideal is considered a key feature (Tylka & Wood-Barcalow, 2015). It might be the case that such levels of internalization may be more important when studying the effects of non-idealized models.

Although this study was not able to clarify the current inconsistent literature on idealized vs. non-idealized models, our results do highlight efforts to continue to promote a diverse set of bodies in ads should be made. As such, research taking into account the above described limitations in the current study's framing set-up, is still encouraged to further examine when frames do have a positive effect. We have several reasons to conclude with this viewpoint. First, for now, we can conclude that the subject and active body frame do not have a *negative* effect on well-being. Second, our explorative results revealed that an active body frame generates better advertising outcomes than a passive body frame for idealized models. The finding that focusing on the model's body functionality generates better ad outcomes than focusing on her appearance, might encourage beauty brands to move away from those typical objectifying beauty ads. As such, it seems worthwhile to see if we can stretch the effects of such ads from no effects to positive effects on well-being

Several limitations must be considered. This study examined a student sample. However, the phenomenon of poor body image is not limited to student populations. Moreover, ads including non-idealized models, such as the Dove Real Beauty Campaign, are also focused on older women (Bissell & Rask, 2007). Additionally, ads started to include male non-idealized models and research has indicated that such models affect men's body image too (Diedrichs & Lee, 2010). Future research, should investigate the effects of differently framed ads featuring non-idealized models in later adulthood and among men (Halliwell & Dittmar, 2004). Furthermore, the satisfaction and schemas measures were newly developed scales. Future research could further improve these measures. Another limitation linked to measurement is the operationalization of the active body frame. We mainly included

functions related to physical possibilities. Yet the concept of body functionality is broader than that (Alleva & Tylka, 2021) and future research is encouraged to also investigate other functions, such as using the body as a means of self-expression. This research is warranted that taking into account expressive functions of the body might induce an overlap with the personality frame and should thus further be reflected on. Finally, our study is limited to print ads. Other formats such as television ads may allow for more context and may thus be better media outlets to examine framing effects.

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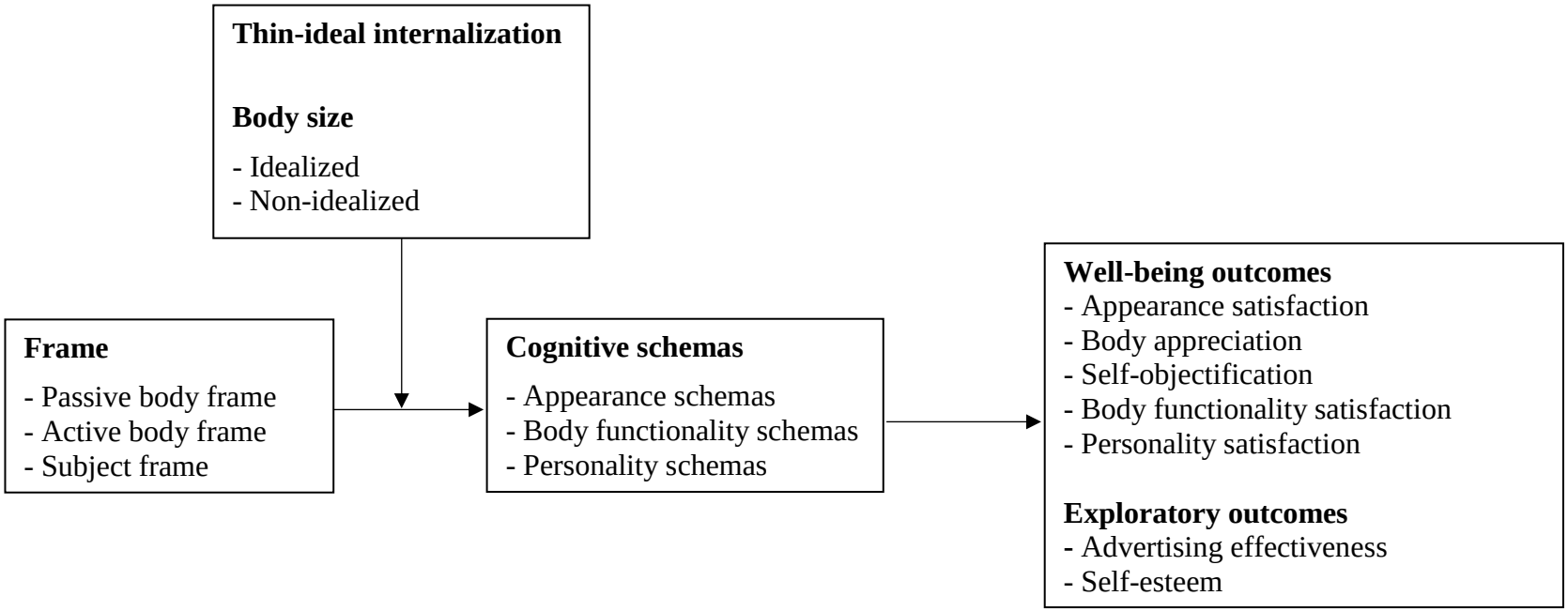

Figure 1. Proposed model of the effects of framing, model's body size, and thin-ideal internalization on cognitive schemas, well-being outcomes, and advertising effectiveness.

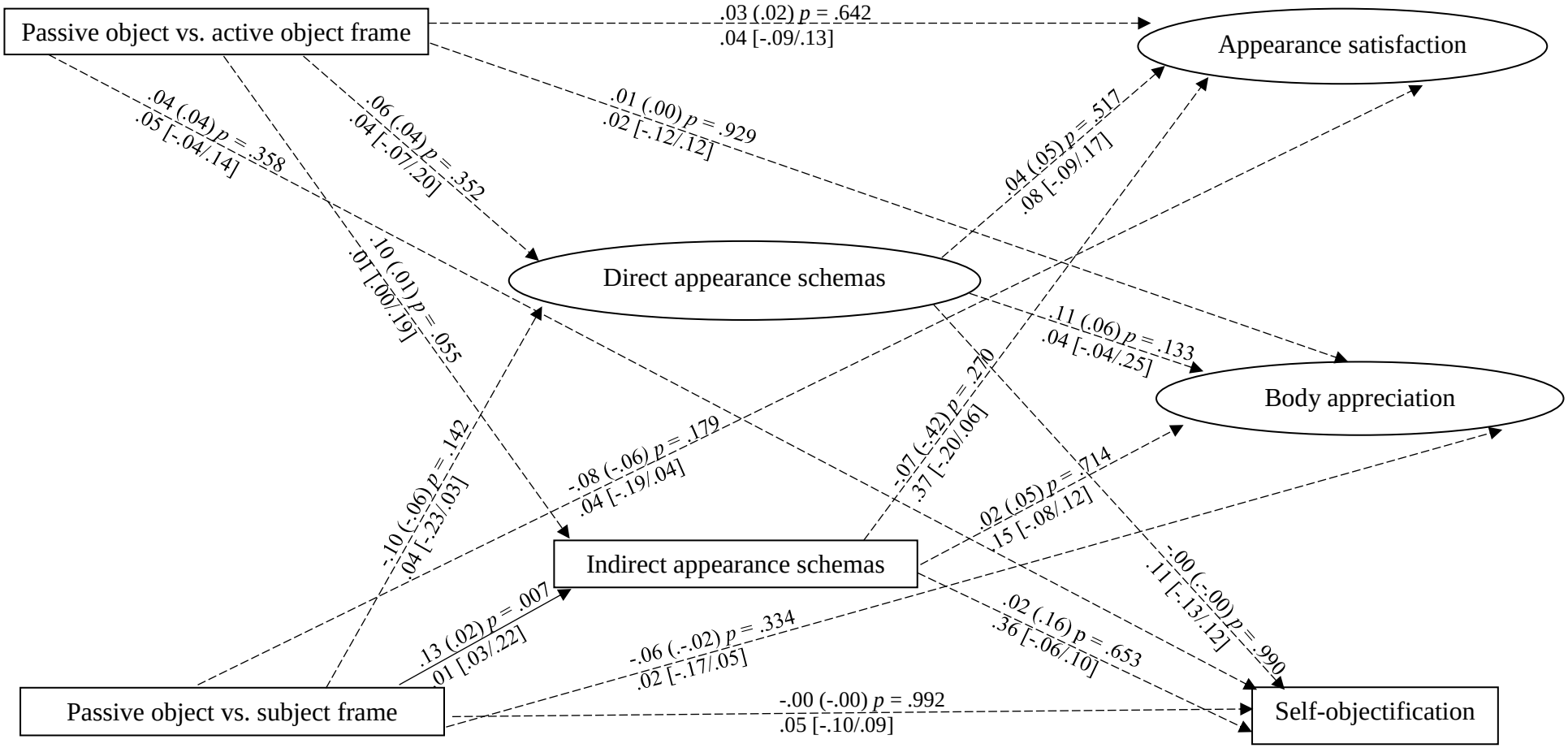

Figure 2. Structural equation model 1 of the effects of framing on appearance satisfaction, body appreciation, and self-objectification via direct and indirect appearance schemas. *Note*. These results were controlled for the model's clothing style attractiveness.
Above the arrow: First value reflect standardized coefficient (beta), value within brackets reflects unstandardized coefficients (b-value).
Below the arrow: First value reflects standard errors, values within squared brackets reflect 95% confidence intervals.
P values of standardized coefficients are reported. Dashed lines are non-significant paths.

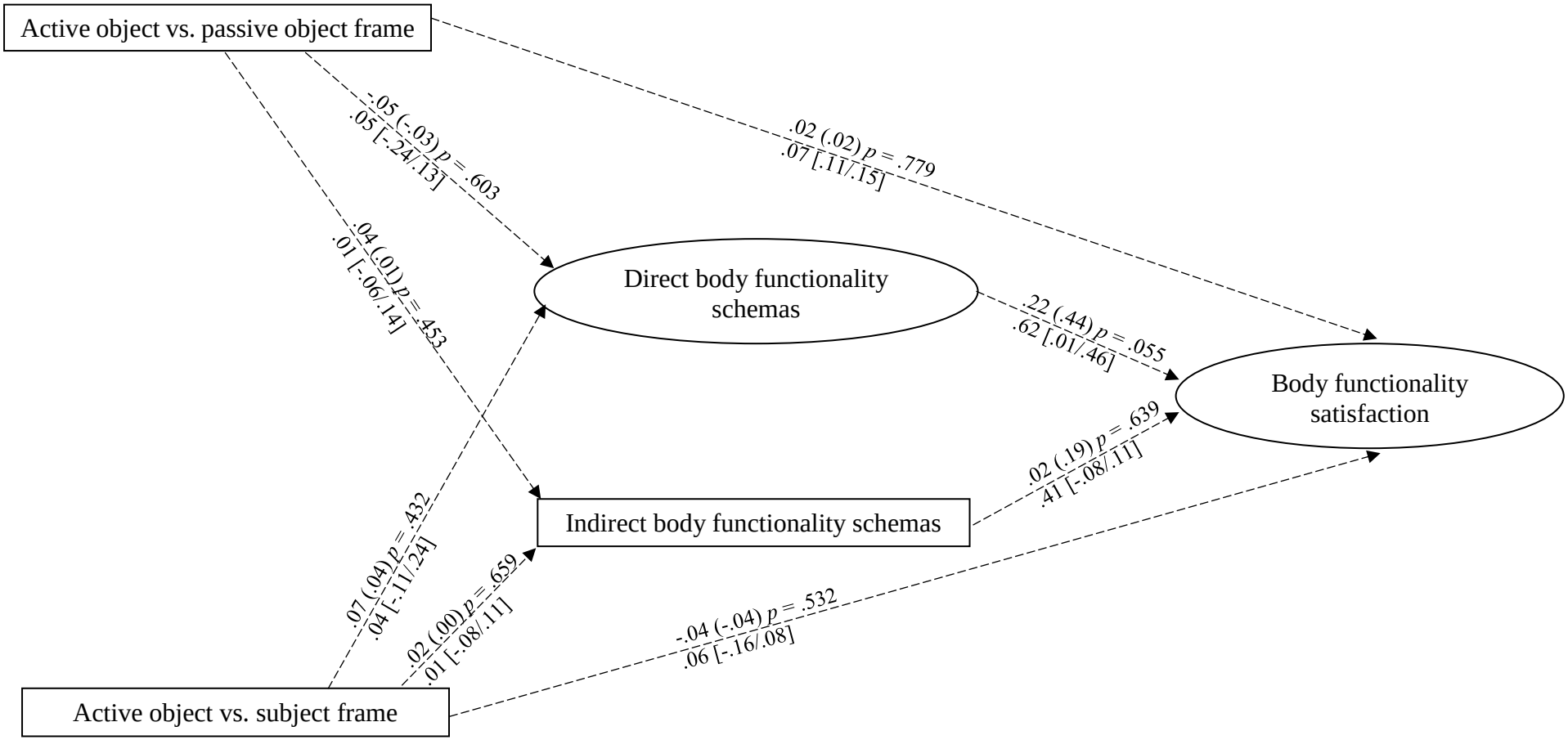

Figure 3. Structural equation model 2 of the effects of framing on body functionality satisfaction via direct and indirect body functionality schemas.
Note. These results were controlled for the model's clothing style attractiveness.
Above the arrow: First value reflect standardized coefficient (beta), value within brackets reflects unstandardized coefficients (b-value).
Below the arrow: First value reflects standard errors, values within squared brackets reflect 95% confidence intervals.
P values of standardized coefficients are reported. Dashed lines are non-significant paths.

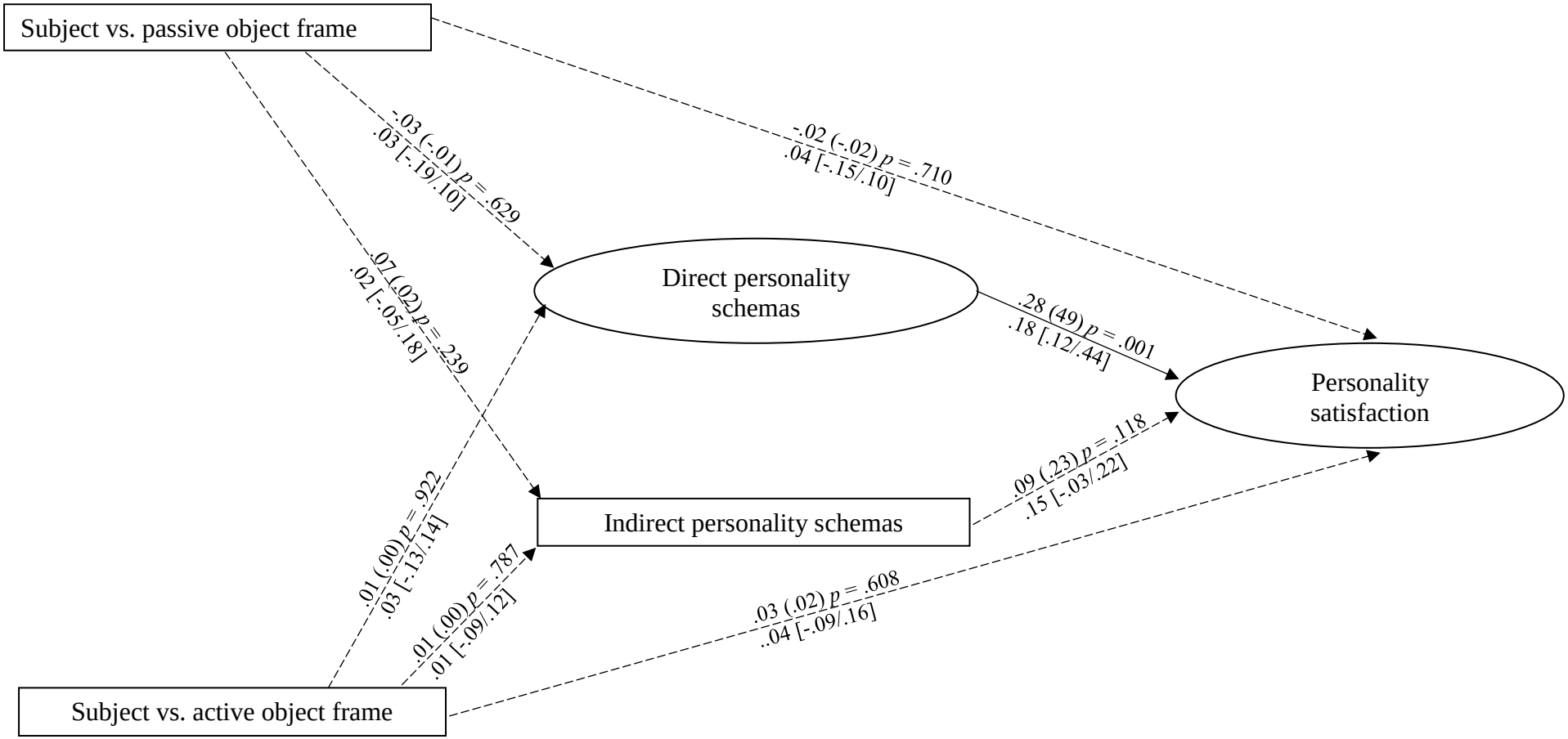

Figure 4. Structural equation model 3 of the effects of framing on personality satisfaction via direct and indirect personality schemas.
Note. These results were controlled for the model's clothing style attractiveness.
Above the arrow: First value reflect standardized coefficient (beta), value within brackets reflects unstandardized coefficients (b-value).
Below the arrow: First value reflects standard errors, values within squared brackets reflect 95% confidence intervals.
P values of standardized coefficients are reported; dashed lines are non-significant paths.

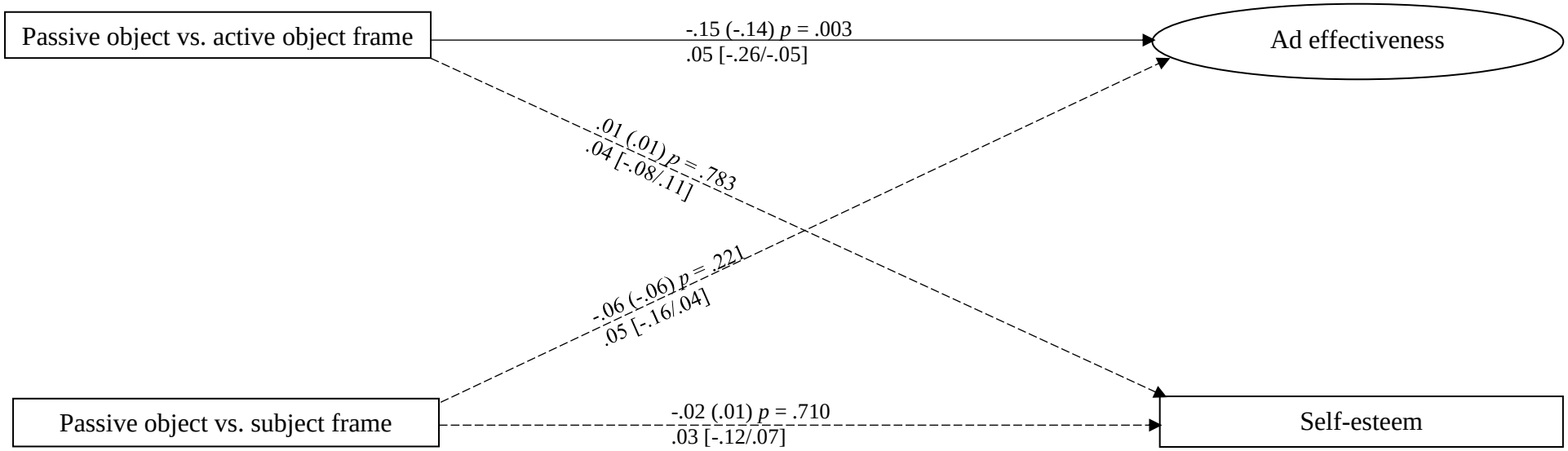

Figure 5. Structural equation model of the exploratory effects of framing on ad effectiveness and self-esteem.
Note. These results were controlled for the model's clothing style attractiveness.
Above the arrow: First value reflect standardized coefficient (beta), value within brackets reflects unstandardized coefficients (b-value).
Below the arrow: First value reflects standard errors, values within squared brackets reflect 95% confidence intervals.
P values of standardized coefficients are reported; dashed lines are non-significant paths.

Table 1. *Demographic statistics.*

	M (SD)	Percentage (%)	Differences between groups[3]
Age	21.45 (1.84)	---	$F_{5,562} = .68$, $p = .642$
BMI	22.25 (3.36)	---	$F_{5,522} = 1.04$, $p = .393$
Work status			$\chi^2 = 6.65$, $p = .743$
– College students	---	92.5%	---
– Working	---	6.7%	---
– Other	---	.9%	---
Education level			$\chi^2_{20} = 14.04$, $p = .830$
– Secondary school	---	14.2%	---
– University college[4]	---	20%	---
– University	---	63.5%	---
– Other	---	2.3%	---
Nationality			
– Country of birth = [identifying information deleted]	---	96.1%	$\chi^2 = 3.62$, $p = .617$
– (grand)parents born in another country	---	16.3%	$\chi^2_5 = 10.02$, $p = .074$
– Other mother tongue than [identifying information deleted]	---	3.2%	$\chi^2 = 3.40$, $p = .635$
Disabled	---	4.4%	$\chi^2 = 8.62$, $p = .107$

[3] The assumption that no more than 20% of expected counts should be less than 5 was violated for the variables work status, country of birth, mother tongue, and disability. Because this reduces test power of the chi-square test, a Fisher's exact test was computed.

[4] University colleges in Flanders only offer professional bachelor's programs that focuses on direct employability on the labour market, while universities offer an academic bachelor program followed by a master's program, thus allowing students to obtain a master's degree.

Table 2. *Means and standard deviations (between brackets) of all variables as a function of condition.*

	Passive body frame Idealized model *N* = 86		**Active body frame Idealized model *N* = 88**		**Subject frame idealized model *N* = 92**		**Passive body frame Non-idealized model *N* = 94**		**Active body frame Non-idealized model *N* = 101**		**Subject frame Non-idealized model *N* = 107**	
	pre-test	post-test	pre-test	post-test	pre-test	post-test	pre-test	post-test	pre-test	post-test	pre-test	post-test
Appearance satisfaction	5.90 (1.62)	6.04 (1.56)	5.87 (1.48)	6.03 (1.43)	5.95 (1.79)	6.29 (1.70)	6.24 (1.40)	6.37 (1.48)	5.92 (1.55)	6.09 (1.62)	5.93 (1.53)	6.11 (1.55)
Body appreciation	4.63 (1.00)	4.71 (1.01)	4.70 (1.07)	4.80 (1.07)	4.80 (1.07)	4.95 (.95)	4.84 (.87)	4.92 (.92)	4.75 (1.04)	4.84 (1.06)	4.68 (.95)	4.79 (.91)
Self-objectification	-.65 (1.47)	-.53 (1.33)	-.51 (1.39)	-.67 (1.20)	-.58 (1.68)	-.53 (1.62)	-.83 (1.42)	-.87 (1.24)	-.70 (1.44)	-.63 (1.25)	-.62 (1.62)	-.65 (1.40)
Body functionality satisfaction	7.08 (1.38)	7.18 (1.31)	7.14 (1.37)	7.25 (1.36)	7.05 (1.43)	7.29 (1.23)	7.25 (1.19)	7.45 (1.09)	7.08 (1.39)	7.24 (1.28)	7.10 (1.42)	7.23 (1.32)
Personality satisfaction	6.84 (1.21)	6.99 (1.02)	7.03 (1.31)	7.07 (1.36)	7.10 (1.40)	7.29 (1.13)	7.00 (1.47)	7.11 (1.28)	7.17 (1.37)	7.27 (1.34)	6.97 (1.10)	7.02 (1.12)
Direct/indirect appearance schemas	5.44/.05 (.76/.07)	5.36/.10 (.70/.14)	5.41/.05 (.88/.08)	5.29/.04 (.90/.08)	5.55/.05 (.81/.07)	5.53/.05 (.72/.08)	5.58/.05 (.75/.08)	5.47/.08 (.65/.12)	5.58/.06 (.84/.10)	5.47/.06 (.80/.11)	5.45/.05 (.72/.08)	5.47/.06 (.75/.10)
Direct/indirect body functionality schemas	5.52/.08 (.95/.09)	5.54/.07 (.86/.10)	5.60/.08 (.78/.09)	5.81/.11 (.66/.12)	5.69/.09 (.76/.08)	5.79/.08 (.75/.09)	5.63/.07 (.76/.08)	5.79/.08 (.71/.10)	5.83/.09 (.72/.10)	5.77/.07 (.74/.09)	5.73/.08 (.78/.08)	5.72/.09 (.77/.10)
Direct/indirect personality schemas	5.26/.55 (.82/.30)	5.30/.54 (.75/.30)	5.29/.63 (.89/.27)	5.31/.62 (.83/.28)	5.28/.54 (1.02/.29	5.46/.57 (.78/.30)	5.32/.60 (.92/.27)	5.48/.57 (.73/.30)	5.36/.56 (.77/.26)	5.45/.57 (.65/.28)	5.38/.54 (.75/.28)	5.36/.53 (.64/.27)
Internalization	2.60 (.86)		2.54 (.99)		2.60 (.97)		2.54 (.92)		2.61 (.87)		2.49 (1.00)	
Self-esteem	2.82 (.84)	3.08 (.83)	2.99 (.93)	3.08 (.90)	3.09 (.89)	3.14 (.92)	3.09 (.84)	3.04 (.80)	3.07 (.97)	3.15 (.95)	2.90 (.87)	3.03 (.85)
Ad effectiveness	3.05 (.75)		3.27 (.79)		3.49 (.81)		3.60 (.88)		3.87 (.68)		3.56 (.89)	

Table 3. *Model comparison tests for model's body size and thin-ideal internalization.*

						χ^2 difference test		
	χ^2 *(df)*	RMSEA, 90% CI	CFI	TLI	SRMR	χ^2	*df*	*p*
Effects of framing on body image via appearance schemas (basis model 1)								
Body size								
Unconstrained model	573.73 (402)	.04 [.03 / .05]	.86	.84	.02			
Constrained model	588.35 (418)	.04 [.03 / .05]	.86	.85	.05			
Unconstrained vs. constrained						14.62	16	p = .553
Thin-ideal internalization								
Unconstrained model	583.20 (402)	.04 [.03 / .05]	.86	.83	.05			
Constrained model	591.91 (418)	.04 [.03 / .05]	.86	.85	.05			
Unconstrained vs. constrained						8.71	16	p = .925
Effects of framing on body functionality satisfaction via body functionality schemas (basis model 2)								
Body size								
Unconstrained model	100.31 (100)	.00 [.00 / .03]	1.00	1.00	.04			
Constrained model	124.00 (108)	.02 [.00 / .04]	.96	.95	.05			
Unconstrained vs. constrained						23.69	8	p = .003
Thin-ideal internalization								
Unconstrained model	124.87 (100)	.03 [.00 / .05]	.93	.91	.05			
Constrained model	135.00 (108)	.03 [.01 / .04]	.93	.91	.05			
Unconstrained vs. constrained						10.13	8	p = .256
Effects of framing on personality satisfaction via personality schemas (basis model 3)								
Body size								
Unconstrained model	142.96 (100)	.04 [.02 / .05]	.93	.91	.05			
Constrained model	151.66 (108)	.04 [.02 / .05]	.93	.91	.05			
Unconstrained vs. constrained						8.70	8	p = .368
Thin-ideal internalization								
Unconstrained model	137.72 (100)	.04 [.02 / .05]	.93	.92	.05			
Constrained model	149.05 (108)	.04 [.02 / .05]	.93	.92	.05			
Unconstrained vs. constrained						11.33	8	p = .184

Table 3. *Continued.*

Effects of framing on ad effectiveness and self-esteem (exploratory)								
Body size								
Unconstrained model	101.67 (46)	.07 [.05 / .08]	.97	.96	.04			
Constrained model	121.46 (50)	.07 [.06 / .09]	.96	.95				
Unconstrained vs. constrained						19.79	4	$p = .001$
Thin-ideal internalization								
Unconstrained model	104.25 (46)	.07 [.05 / .08]	.97	.96	.03			
Constrained model	107.94 (50)	.06 [.05 / .08]	.97	.96	.04			
Unconstrained vs. constrained						3.69	4	$p = .450$

Note. Estimation method = maximum likelihood.

χ^2 = Chi-Square; *df* = degrees of freedom; RMSEA = root mean square error of approximation; CFI = comparative fit index; TLI = tucker-lewis index; SRMR = standardized root mean square residual.

APPENDIX A – PILOT STUDY

A pilot study was conducted to test the stimuli material and to validate the newly developed schema and satisfaction measures. A separate sample of 421 young women aged 18 to 32 (M = 21.60, SD = 1.70) was recruited.

Manipulations framing and body size

A panel of 22 college students from [identifying information deleted] evaluated the brand name and the wording of the slogans in the ads. In line with their recommendations, adaptations were made before further testing the manipulation of framing and body size in the pilot study. We also assessed the realism of the ads and checked whether the manipulation of body size had not affected the models' attractiveness, as research has pointed out that model attractiveness is often confounded with body size (Halliwell & Dittmar, 2004).

Participants were randomly assigned to one of the six advertisements. The manipulation of body size was checked by asking participants to rate the body size of the model on a 6-point Likert scale ranging from 1 (= *very thin*) to 6 (= *very curvaceous*) (Diedrichs & Lee, 2011). The manipulation of framing was checked by asking participants to rate the slogans and quotes in the ad and the model's overall look. Participants were asked to what extent the slogan and quote emphasized (1) appearance, (2) body functionality, and (3) personality on a 7-point Likert scale ranging from 1 (= *not at all emphasized*) to 7 (= *very strongly emphasized*). A definition of body functionality was provided so participants were able to rate the ad correctly for this construct. For the model's look, participants were asked to what extent they rated the look and clothing of the model as (1) sexy, (2) sporty, and (3) cool on a 7-point Likert scale ranging from 1 (= *not at all sexy/sporty/cool*) to 7 (= *very sexy/sporty/cool*). Because these ratings may be affected by the extent to which a participant liked the clothing style of the model, this was added as a control variable. Participants were asked on a 6-point Likert scale to what extent they thought the model's clothing style was

attractive ranging from 1 (= *very unattractive*) to 6 (= *very attractive*). For ad realism and the model's attractiveness, participants were asked on 6-point Likert scales how similar they rated the ad to the ads they encounter in their everyday life (from 1 = *very dissimilar* to 6 = *very similar*) and how they rated the model's attractiveness (from 1 = *very unattractive* to 6 = *very attractive*) (Diedrichs & Lee, 2011).

First, a multivariate analysis of variance (MANOVA) was conducted to check whether the six experimental groups did not differ on age, BMI, and clothing style attractiveness, *Pillai's trace* = .15, $F(15, 1014) = 3.48$, $p = .000$, $\eta p^2 = .05$. Significant differences were found in terms of how attractive participants rated the model's clothing style, $F(5, 338) = 7.79$, $p = .000$, $\eta p^2 = .10$. Therefore, we decided to include clothing style attractiveness as a covariate.

Next, a multivariate analysis of covariance (MANCOVA) revealed a significant difference between the passive body, active body, and subject framing conditions after controlling for the effect of clothing style attractiveness, *Pillai's trace* = 1.16, $F(14, 732) = 72.34$, $p = .000$, $\eta p^2 = .58$. There was a significant main effect for condition on the slogans and quotes, whereby the slogans and quotes in the passive body frame/active body frame/subject frame conditions were rated as significantly more focused on appearance/body functionality/personality compared to the other framing conditions (see Table A.1). There was also a significant main effect for condition on the model's look, whereby the model's look in the passive body frame/subject frame conditions was rated as significantly sexier/cooler compared to the other framing conditions. For the active body frame, results were more mixed: the model's look in the active body frame conditions was rated as significantly sportier compared to the passive body frame conditions, but no differences were found between the active body frame and the subject frame conditions. The model's look in the active framing conditions was thus evaluated as equally sporty compared to the subject

framing conditions, which is not entirely surprising since both frames present a more casual clothing style. Therefore, to further optimize the active body frame and make the look of the model more sporty, the purse that she was carrying was removed in the final stimuli material. No other adaptations to increase sportiveness were made for two reasons: 1) to avoid a full sports look, as this might put too much emphasis on training and thus draw attention to the model's appearance and 2) to not focus too much on the function of physical activity as body functionality is a broad concept that also encompasses other body functions. Moreover, the conditions still sufficiently differed from each other since the model's look in the subject frame conditions was still rated as significantly cooler than the model's look in the active body frame conditions. The successful manipulation of the slogans and quotes also assured that body functionality was integrated in the active body frame. Finally, there was a significant main effect for condition on ad realism, whereby the ads in the passive body frame conditions were rated as significantly more similar to the ads they encounter in their everyday life than the ads in the subject frame conditions. This is in line with existing research (Anschutz et al., 2009) indicating that most advertisements focus on the model's appearance.

A second MANCOVA revealed a significant difference between the idealized and non-idealized model conditions after controlling for the effect of clothing style attractiveness, *Pillai's trace* = .59, $F(3, 375) = 177.98$, $p = .000$, $\eta p^2 = .59$. There was a significant main effect for condition on body size (see Table A.1), whereby the idealized models were rated as significantly thinner than the non-idealized models. There was no main effect for attractiveness, indicating that the idealized models were not rated as more attractive than the non-idealized models. Finally, the thin model advertisements were rated as more similarly to ads they encounter in their daily life, compared to the non-idealized model advertisements.

Satisfaction and schemas measures

Exploratory factor analyses were performed by conducting principal axis factoring analyses in SPSS to validate the factor structure of the schemas and satisfaction measures. One-factor solutions and good reliability statistics were obtained for appearance satisfaction, body functionality satisfaction, and personality satisfaction (see Table A.2). Because these are newly developed scales, an additional Confirmatory Factor Analysis (CFA) in Mplus was run to further confirm the found factor structure. The model was a good fit with the data ($\chi^2(51) = 171.62$, $p = .000$, *RMSEA* = .08 (90% CI: .07 / .09), *CFI* = .96, *TLI* = .95, *SRMR* = .04.

One-factor solutions and good reliability statistics were obtained for appearance schemas and body functionality schemas (see Table A.3). However, in line with the recommendation of Stevens (2002), the factor loadings of several items were considered as too low ($\leq .40$). Therefore, in the final measures that were included in the actual study, these items were replaced. Item 4 of the appearance schemas scale was replaced by "*I think about how others evaluate my appearance*" and item 1 of the body functionality scale was replaced by "*My body functionality, which is everything my body is able to do (e.g., running, walking), is an important part of who I am*." For personality schemas, a two-factor solution was found. After rerunning the analysis without item 4, a one-factor solution was found, indicating that the second factor was mainly generated due to item 4. Moreover, the factor loading of this item was also considered to be very low and the reliability analysis indicated that the Cronbach's alpha would increase from .62 to .70 if item 4 would be deleted. Therefore, in the final measures, this item was replaced by "*I think about how my personality differs from others*." These replacements were further supported by the results of the CFA that showed that the model fit would improve (from $\chi^2(87) = 364.58$, $p = .000$, *RMSEA* = .09 (90% CI: .08 / .10), *CFI* = .80, *TLI* = .76, *SRMR* = .07 to $\chi^2(51) = 150.91$, $p = .000$, *RMSEA* = .07 (90% CI:

.06 / .08), *CFI* = .91, *TLI* = .88, *SRMR* = .05) when the abovementioned items were not included, thus indicating that the schema measures needed further development.

Table A.1. *Manipulations framing and body size*.

	Frame	*M (SD)*	*df*	*F*	*p*	*ηp²*
Slogans and quotes - appearance	Passive body	5.58 (.14)[a]	2	62.05	*p* = .000	.25
	Active body	3.82 (.14)[b]				
	Subject	3.54 (.14)[b]				
Slogans and quotes - body functionality	Passive body	2.59 (.14)[a]	2	72.62	*p* = .000	.28
	Active body	4.90 (.14)[b]				
	Subject	3.27 (.14)[c]				
Slogans and quotes - personality	Passive body	1.82 (.14)[a]	2	119.94	*p* = .000	.39
	Active body	2.56 (.14)[b]				
	Subject	4.80 (.14)[c]				
Look model - sexy	Passive body	4.51 (.10)[a]	2	48.85	*p* = .000	.21
	Active body	3.30 (.10)[b]				
	Subject	3.26 (.10)[b]				
Look model - sportive	Passive body	2.01 (.11)[a]	2	259.76	*p* = .000	.58
	Active body	5.01 (.11)[b]				
	Subject	5.20 (.11)[b]				
Look model – cool	Passive body	2.36 (.11)[a]	2	197.27	*p* = .000	.52
	Active body	4.41 (.11)[b]				
	Subject	5.54 (.11)[c]				
Ad realism	Passive body	3.97 (.15)[a]	2	3.23	*p* = .041	.02
	Active body	3.78 (.15)[ab]				
	Subject	3.43 (.15)[b]				
	Body size	*M (SD)*	*df*	*F*	*p*	*ηp²*
Body size	Idealized	1.98 (.06)[a]	1	279.86	*p* = .000	.43
	Non-idealized	3.37 (.06)[b]				
Attractiveness	Idealized	4.61 (.07)[a]	1	.01	*p* = .922	.00
	Non-idealized	4.62 (.07)[a]				
Ad realism	Idealized	4.91 (.09)[a]	1	376.23	*p* = .000	.50
	Non-idealized	2.56 (.09)[b]				

Note. Group means adjusted for the effect of clothing style were reported. *M* and *SD* with common subscripts do not differ from each other while *M* and *SD* with different subscripts differ from each other. For example, *M* and *SD* with subscript *a* differ from means and standard deviations with subscript *b, c, or d*. Bonferroni post-hoc tests were performed to obtain pairwise comparisons. It should be noted though, that the Levene's test was significant for some of the dependent variables, indicating unequal variances. However, as researchers have stopped using this approach because violating this assumption mainly matters when having unequal group sizes and serious questions have been raised about transforming observations to achieve homogeneity (Field, 2013; Zimmerman, 2004), this was not taken into account. Moreover, SPSS does not allow to perform post-hoc tests that take into account unequal variances as many of these post-hoc comparison options are known to become invalid when adding covariates.

Table A.2. *Satisfaction measures.*

Appearance satisfaction	
KMO = .79, *p* = .000, *eigenvalue* = 3.01, *explained variance* = 75.15%, α = .87	
1. My appearance	.85
2. My body shape	.86
3. My weight	.74
4. My general physical attractiveness	.83
Body functionality satisfaction	
KMO = .79, *p* = .000, *eigenvalue* = 2.74, *explained variance* = 68.60%, α = .84	
1. What my body can do	.87
2. My physical strength	.67
3. How my body can move	.83
4. My body's health	.67
Personality satisfaction	
KMO = .85, *p* = .000, *eigenvalue* = 3.21, *explained variance* = 80.24%, α = .92	
1. My personality	.87
2. How others perceive me	.82
3. Who I am as a person	.87
4. My characteristics	.87

Table A.3. *Schemas measures.*

Appearance schemas			
KMO = .74, *p* = .000, *eigenvalue* = 2.54, *explained variance* = 50.83%, *α* = .73			
1.	My appearance is an important part of who I am	.51	
2.	I am aware of the way that I look to other people	.69	
3.	I am aware of the way my body look	.73	
4.	I think about what other people think of my body[5]	.33	
5.	I am conscious of my appearance	.81	
Body functionality schemas			
KMO = .70, *p* = .000, *eigenvalue* = 2.04, *explained variance* = 40.83%, *α* = .62			
1.	Everything my body can do (e.g., I am able to walk or hold my balance) is an important part of who I am[6]	.40	
2.	I am aware of how grateful I should be that I am healthy	.68	
3.	I am grateful because I do not have any physical limitations and I can do whatever I want to do	.52	
4.	I think about how my locomotion allows me to do creative activities (e.g., a steady hand while drawing or playing a musical instrument)	.42	
5.	I am aware of how important it is to take good care of my body (e.g., going to bed early when I am tired or resting when I am sick)	.52	
Personality schemas			
KMO = .69, *p* = .000, *α* = .62			
Factor 1*: eigenvalue* = 2.13, *explained variance* = 42.67%			
Factor 2: *eigenvalue* = 1.01, *explained variance* = 20.18%		**1**	**2**
1.	My character and what I do in life is an important part of who I am	.33	.22
2.	I am aware of how others perceive me	.22	.63
3.	I am aware of how my personality makes me unique	.89	-.15
4.	I think about what other people think about my personality[7]		.26
5.	I am aware of who I am as a person	.58	.16

Note. Factor loadings below the value of .10 are not shown.

[5] This item was replaced in the final measure by "*I think about how others evaluate my appearance.*"
[6] This item was replaced in the final measure by "*My body functionality, which is everything my body is able to do (e.g., running, walking), is an important part of who I am.*"
[7] This item was replaced in the final measure by "*I think about how my personality differs from others*."

APPENDIX B – PCA, PAF AND CFA RESULTS

PCAs were performed for all existing scales. See Table B.1 below for results.

Table B.1. *PCA statistics of existing scales*.

	Pre-test				Post-test			
	KMO	**Bartlett**	**Eigenvalue**	**Explained variance**	**KMO**	**Bartlett**	**Eigenvalue**	**Explained variance**
Thin-ideal internalization	.73	p = .000	2.58	64.46%	---	---	---	---
Body appreciation	.94	p = .000	6.49	64.93	.95	p = .000	6.82	68.17
Self-objectification[8]	.79	p = .000	Competence: 4.24 / Appearance: 1.89	Competence: 35.29% / Appearance: 16.50%	.82	p = .000	Competence: 4.55 / Appearance: 1.95	Competence: 37.93% / Appearance: 16.26%
Advertising effectiveness	---	---	---	---	.73	p = .000	3.35	67.02%

[8] Initial PCAs extracted three components, in contrast to the expected two-factor structure found in previous research. Because this is a well-known validated scale, forced two-factor PCAs were conducted.

PAFs and CFAs were performed for the newly developed scales. See Table B.2 and B.3 below for results.

Table B.2. *PAF statistics of newly developed scales.*

	Pre-test				Post-test			
	KMO	**Bartlett**	**Eigenvalue**	**Explained variance**	**KMO**	**Bartlett**	**Eigenvalue**	**Explained variance**
Appearance satisf	.80	p = .000	3.09	77.24%	.82	p = .000	3.25	81.31%
Body funct satisf	.82	p = .000	2.92	73.05%	.83	p = .000	3.02	75.39%
Personality satisf	.86	p = .000	3.32	83.09%	.85	p = .000	3.34	83.53%
Appearance schemas	.72	p = .000	Factor 1: 2.38 / Factor 2: 1.11	Factor 1: 47.63% / Factor 2: 22.11%	.74	p = .000	Factor 1: 2.59 / Factor 2: 1.14	Factor 1: 51.80% / Factor 2: 22.81%
Body funct schemas	.69	p = .000	2.05	41.01%	.72	p = .000	2.29	45.75%
Body funct schemas Personality schemas	.73	p = .000	.73	44.44%	.71	p = .000	2.29	45.77%

Table B.3. *CFA statistics of newly developed scales.*

	Pre-test						Post-test					
	χ^2	**df**	**RMSEA 90% CI**	**CFI**	**TLI**	**SRMR**	**χ^2**	**df**	**RMSEA 90% CI**	**CFI**	**TLI**	**SRMR**
CFA Satisfaction measures	216.35***	51	.08 (.07/.09)	.97	.96	.04	272.62***	51	.09 (.08/.10)	.96	.95	.04
CFA Schemas measures	487.96***	87	.10 (.09/.11)	.78	.73	.07	575.69***	87	.10 (.09/.11)	.80	.75	.08
CFA Schemas measures without poor loading items	186.51***	41	.08 (.07/.09)	.89	.86	.06	267.50***	41	.10 (.09/.11)	.88	.84	.07

Note. *** p = .000

APPENDIX C – MANIPULATION CHECK

Table C.1. *Manipulation check.*

Omnibus statistics	*F*	*df*	*error*	*p*	*Pillai's trace/ ηp²*
MANCOVA 1 - Framing	139.86	*14*	*1106*	*p* = .000	*1.28/.64*
Statistics per dependent variable	*F*	*df*	*error*	*p*	*ηp²*
Slogans and quotes - appearance	118.63	2	558	*p* = .000	.30
Slogans and quotes - body functionality	168.24			*p* = .000	.38
Slogans and quotes - personality	275.42			*p* = .000	.50
Look model - sexy	87.72			*p* = .000	24
Look model - sportive	426.69			*p* = .000	.61
Look model – cool	402.82			*p* = .000	.59
Ad realism	3.92			*p* = .020	.02
Omnibus statistics	*F*	*df*	*error*	*p*	*Pillai's trace/ ηp²*
MANCOVA 2 – Body size	242.84	*3*	*561*	*p = .000*	*.57/.57*
Statistics per dependent variable	*F*	*df*		*p*	*ηp²*
Body size	475.25	1	563	*p* = .000	.46
Attractiveness	.43			*p* = .512	.00
Ad realism	359.68			*p* = .000	.39