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“The influence of goal attainability on motivation –
Consequences for marketers and companies that
advertise fitness products.”

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IV. **List of abbreviations**

AVE	Average Variance Extracted
β	Beta (path coefficient between an endogenous and another endogenous variable)
BMI	Body Mass Index
CB- SEM	Covariance-based structural equation modeling
CMB	Common method bias
CMV	Common method variance
ed.; eds.	Editor/ s
e.g.	For example
FOM	Hochschule für Oekonomie & Management
H	Hypothesis
HTMT	Heterotrait-monotrait ratio
MAG	Multigroup analysis
n	Sample size
No.	Number
p value	probability value
PLS	Partial Least Squares
Q ²	Predictive relevance (Stone- Geisser – Criterion)
R ²	Squared correlation
SEM	Structural equation models/ modeling
TOL	Tolerance
VIF	Variance Inflation Factor
VOL	Volume
γ	Gamma (path coefficient between an exogenous and an endogenous variable)

1. INTRODUCTION OF THE TOPIC

Especially at the beginning of each year people are discussing their goals for the next year like losing weight, stop smoking or exercising more often. When you are entering a gym in the first months of a year it is crowded, a lot of people are highly motivated and it seems that they are following their goals. But after a few weeks this situation changes and people are losing their motivation to exercise.

Motivation seems therefore to be the key driver to reach a specific goal, not just a personal goal but also goals we have at work or at university. Motivation is driving us to do things that we think are good for us or stop doing things that aren't.

Especially today in the highly competitive global markets companies and advertisers have to be aware of the fact that they have to motivate the people to buy their products. The question that remains is how people can be motivated to buy a specific product that helps them to reach a specific goal like losing weight, gaining muscles or staying healthy.

The *goal gradient hypothesis* (Brown, 1948; Hull, 1932; Levin, 1938) and the *goals loom larger* effect (Brendl & Higgins, 1995, p. 95ff.) claim that the motivation to reach a certain goal increases as the desired end state comes closer. Therefore people tend to put more effort into a closer goal than into one that seems to be far away.

A study done by Klesse et al. about the influence of the exposure to a slim model on the motivation of people to diet (Klesse et al., 2012, p. 355ff.) underlines the above mentioned hypothesis and effect. In this study there have been two groups of persons that participated in a one week dieting program: one group has been exposed to a slim model on an eating diary they had to maintain, the other group to a neutral diet-related picture. The persons in both groups had an average weight at the start of the experiment (Klesse et al., 2012, p. 357). The result of the experiment was that the group who was exposed to the slim model, a desired end state that seemed to be far away, lost less weight than the other group or even gained weight.

Until today none of the results of the study done by Klesse et al. (Klesse et al., 2012, p. 355ff.) have been explored by marketers and advertising agencies. Companies who want to sell a product that helps customers to reach a specific goal need to be aware of the effect the design of a product or advertisement design of a product might have on the motivation of the customers to buy it. Especially when the customer loses the motivation to follow a specific goal, he will probably stop to buy the product as well.

1.1 RESEARCH QUESTION

People tend to compare themselves always with others in all kind of fields, like how successful somebody is in his career, how much money somebody is earning or how somebody looks like. This effect is called *social comparison* which leads to a discrepancy between the desired end state and the actual self because it shows the contrast effect between these two (Klesse et al., 2012, p. 356.). As the study from Klesse et al. shows the discrepancy can be so high or in other words the goal can be so far away that it leads to demotivation.

In this dissertation it should be examined how marketers or advertising companies in the field of fitness products can motivate their consumers to buy their products by using different type of testimonials in their advertising. The following research questions should be answered in order to give recommendations concerning the most appropriate advertising design:

Is there a difference in the relationship between:

- (I.) attitude toward an ad and purchase intention,
- (II.) social comparison and purchase intention and
- (III.) distance (BMI of participants vs. BMI of the testimonial) and attitude toward the ad in the following cases:
 - (1.) Consumers are exposed to a fitness center advertising with a testimonial which:
 - (a)...represents a desired end state (a goal in which an ideal end state should be attained)
 - (b)...represents an undesired end state (a goal which should be eliminated/ avoided)
 - (2) Between female and male participants

The first question refers to different ways how an ad could look like e.g. a neutral product image can be shown or an ideal type of person can be portrayed in an ad, the consumer's attitude toward this kind of ad and the effect on the purchase intention. The type of testimonial in an advertising can influence the attitude toward the ad in a specific way which in turn can influence the purchase intention.

This effect and difference in the effect based on the testimonial shown can be demonstrated by one campaign of the company Dove in 2004, which was different than the standard advertisings in TV and magazines (see Unilever, 2017). Dove used women with an average shape to advertise their lotion like it is displayed in Figure 1 compared to other companies that hire slim models most of the time to advertise their products.

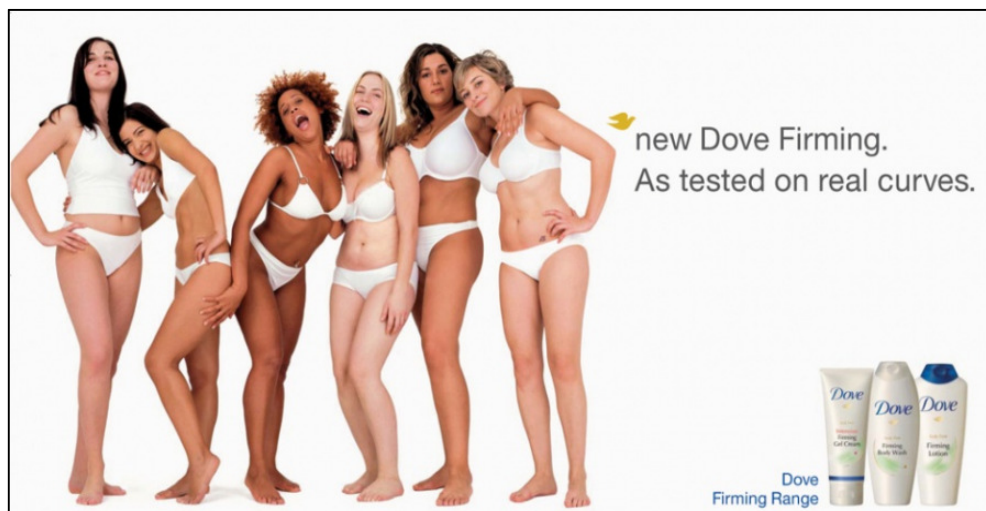


Figure 1. Dove advertising; source: Unilever, 2017.

Was this campaign successful because of the normal looking women? It seems so as the sales volume of Dove personal hygiene products increased by 50% after using these type of models in their campaign (see Spiegel Online GmbH, 2005).

In order to influence the profit of a company it needs to be determined what type of person should be portrayed in an ad: Is it better to show an ideal, a kind of optimum or to try to be closer to the customer so the identification is higher with the product? Especially for marketers, it is important to know how the purchase intention can be influenced. It seems to be clear that customers are price sensitive and care about a good product quality, but marketers have to be aware that also

the ad or attitude toward the advertisement in general can have a high influence on the profit of a company like it was with the campaign of Dove in 2004.

This leads us to the second question: As supported by e.g. the goal gradient hypothesis closer goals lead to higher motivation. If an ad for a fitness center is showing an ideal end state, that means a goal that is difficult to attain, like a very muscular model, is the consumer less motivated to join the club as he compared himself with the model? Does social comparison have an effect on the purchase intention and is this effect dependent on the exposure to a specific testimonial in an ad?

In the social comparison process, it seems to be important who the target persons are. If a marketer wants to sell some barbells with a bodybuilder portrayed on the package to a muscular man, the goal of being in the same shape like the bodybuilder is closer for him as if the marketer would like to sell the barbells to a man, who isn't in a good shape at all. This remark shows that the distance to a goal also depends on the own characteristics compared to the ones of the person portrayed in an ad. Furthermore, the distance between displayed testimonials can influence the attitude toward the ad in general. It seems to be interesting to examine if the effect of the distance on the attitude toward the ad differs between genders and if it is dependent on the exposure to a specific testimonial.

To sum up, the answer to these three questions should on the one hand verify the theoretical finding in the area of goal attainability and attitude toward the ad and on the other hand should give marketers a recommendation how testimonials in advertisements have to be shaped in order to increase the purchase intention. Especially the recommendations for advertising seem to be important as there might be a risk that some testimonials are resulting in a dissatisfaction of the buyer and therefore are influencing the buying behavior in a negative way like it happened with the campaign of Protein World in 2015 (Davies, 2015). Protein World wanted to sell weight loss products by an advertisement, which is shown in Figure 2. This ad shows a skinny woman in a bikini with the slogan "Are you beach body ready?".



Figure 2. Advertisement of the company Protein World in London Underground; source: Bose, 2015.

Just after two weeks since the start of the campaign thousands of people have signed to get these advertisements removed and forbidden as it is showing unrealistic body standards (Bose, 2015). These unrealistic standards could result in eating disorders or encourage woman to starve themselves.

1.2 RELEVANCE FOR THE MARKETING PRACTICE

Nowadays consumers have a lot of choices in all product categories from cheap daily products like toothpaste or shampoo to the more expensive products like cell phones, cars or even services like holidays. All products or services can be purchased in a store or online and consumers are nearly overwhelmed with all the possibilities they have. Especially in these times it is important for marketers that their products and services will be noticed by the customers.

To convince customers, marketers do not only have to decide on the pricing strategy, also the channel (online vs. store) as well as the communication design and presentation plays an important role. All these decisions might be different based on the product or service a marketer wants to sell. It might be required to define a categorization of goods into tangible products and into intangible services in order to decide on the marketing strategy that has the highest probability to succeed in convincing customers to purchase a specific good. Next to this categorization, there are products where the behavior of the customer itself has a direct influence on the outcome/ -result of the product. Imagine a consumer wants

to buy toothpaste that should white his teeth. If the consumer uses this toothpaste three times every day for the next two weeks the result will be visible in a better way than if he forgets it or doesn't believe in the effect anymore after the first three days and uses his regular one. Therefore it seems to be important to build up a trustworthy image with the product.

To sum up, marketing strategy is such a complex and difficult field that the main focus of the dissertation will be lying on just one thing: How should the testimonial in an advertising for a fitness product look like in order to motivate a customer to buy the product?

In some ads a person is portrayed which shows a specific end state or specific attribute which is important to the customer. As consumers have a human drive to compare and evaluate their own attributes to the ones of others (Festinger, 1954, p. 117ff.) and are also doing this with persons portrayed in ads, they might notice a discrepancy between themselves and the comparison standard (Higgins, 1987, p. 322) which they hope to solve with a specific product. Comparison seems therefore to be a basic human motive (Pettigrew, 1967, pp. 241ff.) which could result in consumer dissatisfaction and arising needs. The general question hereby is just if the discrepancy noticed by the consumer has a negative or positive effect on the purchasing behavior.

Below some examples are listed from different areas for which the research questions can be applied.

Example 1:

Imagine a customer who is wearing a jeans and a sweater is entering a bank and wants to decide whether he wants to invest his money. The banker that is advising him how he could invest his money is wearing casual clothes. Will the customer trust the banker more or less if he is wearing casual clothes as well? If he is wearing casual clothes he seems to be more similar to the customer itself, the distance is therefore smaller, but is this something that will motivate the customer to trust the banker? The question hereby is how close should the banker be to the customer with his appearance? Is it more profitable for the bank if all bankers wear formal attire as this seems to be more trustworthy? Next to that, it seems that customers who are entering a bank have the expectation that the bankers are

wearing formal clothes. In this context, the research questions are also relevant. It is important to know for the bank what effect the appearance of the banker has on the consumer's motivation to invest money and how the banker can show some similarity to the consumers with his appearance without losing his trustworthy image.

Example 2:

If a person is joining a fitness club and the personal trainer is overweight, will the member be ready to pay extra for the personal trainer's assistance or does he expect somebody in a better shape? The personal trainer who is in a better shape will be some kind of desired end state which could motivate the member to exercise more often and intensively. But also the opposite effect might occur: if the personal trainer is in an extreme good shape the fitness club member might get demotivated and stop using the personal trainer's assistance. So the research question is not only applicable for advertisements but also for the decision of companies what type of persons should be employed for what kind of position. Is it better for the fitness club to look for a personal trainer that is very muscular and represents therefore an ideal end state but with the risk to be far away from some of the members or to look for some kind of average muscular trainer? Is it better to be closer to the member or to correspond to the expectations which members have concerning the appearance of a personal trainer?

Example 3:

The research question is also applicable in the area of the private education sector: A university wants to make an advertising campaign to motivate people to continue learning by doing a bachelor, master or doctorate program. On which degree should the campaign focus on: Should there be an ad which shows what jobs people can get who make a bachelor degree? Or is it better to show that even a Ph.D. can be done at the private university which enables to work e.g. at a university later on? This decision is influenced by the target persons: Somebody who just finished school may be more interested in knowing if a bachelor degree can be done at a private university as this is his next step in this educational career. On the one hand the Ph.D. may be the optimum or final target goal for the person

who just finished school but on the other hand this goal is quiet far away as around 8 years are needed to reach it. The distance of the goal in this example can be measured by the years needed to reach a specific degree like shown in Figure 3.

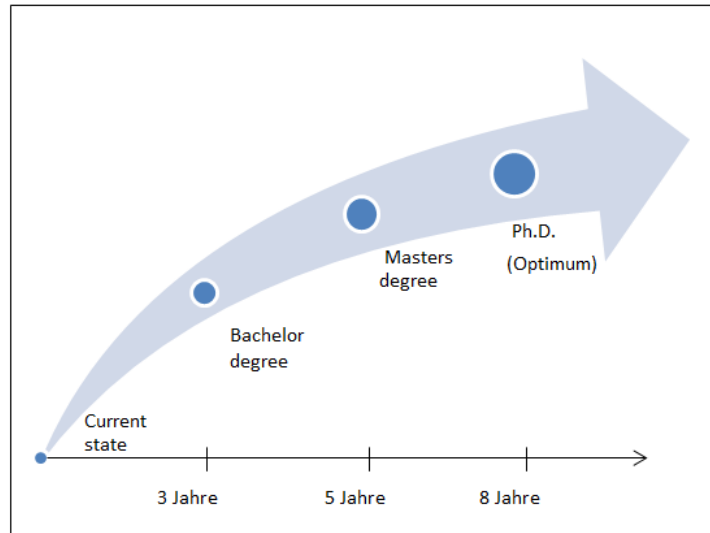


Figure 3. Goals in the private education sector.

To sum up, the main question is how far the target can be to motivate the person who just finished school to start studying at the private university? Is it better to be closer with the goal or desired end state to the customer or is it better to show an optimum like the Ph.D. possibility? In order to be in line with the theory, the campaign should show the bachelor degree to be closer to the person who just finished school. Based on the theory, this more reachable goal will result in a higher motivation to start studying at this private university.

Example 4:

Most companies define each year targets for the entire company and for the individual employees. For example employees in the sales department are getting sales volume as personal targets and often the variable component of their salary depends on the fact if they reach these targets or not. Examples of targets for the company are total revenue, market share or growth rate. The targets, as these are linked to their salary, should motivate the employees to reach the goals of the company. Sometimes companies set targets for an entire year, quarterly or targets which are checked on a monthly basis. The question hereby is what are the most

effective targets a company can set for their employees? Is it better to set a target that seems to be more reachable or realistic or a very high or difficult target? Target setting in the context of companies and in the context of employee motivation seems to be a difficult topic. If the target is too far away the employee could be demotivated because he thinks he will never be able to reach it and therefore he will never receive the additional variable salary component. If the target is easy to reach, the company will not reach the best possible outcome and won't reach the overall company goals like gaining market share or a specific total revenue. It is important to understand what effect different types of targets have on the employee's motivation to reach it and what the best target for each specific area is.

All these examples show that the research question is applicable to multiple scenarios and is interesting in a multitude of areas. Next to that the findings, even if the hypothesis will be just tested for one specific product, could be valid in more areas.

1.3 OBJECTIVE AND STRUCTURE OF THE DISSERTATION

The objective of the dissertation or the study itself is to examine how the testimonial in an advertising should look like in order to result in a positive attitude toward the ad and increase the purchase intention. Is it better to be closer to the customer with a neutral ad or to show an ideal end state by the person portrayed in an ad? This question arose as Richins noticed an apparent contradiction between marketing theory, that claims the central goal of marketing should be to satisfy the consumer, and the marketing practice, which dissatisfies the consumer in the short-term by the advertisement (testimonial) itself, that bears further examination (Richins, 1991, p. 82). The focus of the main study is on fitness centers. Which is the best testimonial to use for an advertising for a fitness center? Is it better to use an average, muscular or overweight one? The reasons why the main study will focus just on fitness centers and not on any another sector are the following:

- In the end of 2017 10.61 million people are enrolled in a fitness center in Germany (Statista, 2018)
- Compared to soccer clubs with just 6.8 million members, fitness center are the leading training form (Tagesspiegel Online, 2014)

- In comparison to 2012 the member growth rate was 8.1% in the fitness center sector
- Each tenth person in Germany is a member of the 8.988 fitness facilities in Germany (2017)
- Even in difficult economic periods the fitness sector showed growth and it is expected that it will grow even further (Tagesspiegel Online, 2014)

All the facts mentioned above (see Statista, 2018; Tagesspiegel Online, 2014) show the high importance of the fitness center sector and the high potential for companies in this area, which was the main reason why the focus will be on fitness centers in the current research.

The dissertation is divided into five chapters. In the *first chapter* an introduction to the topic was given where the research question as well as its application in different areas was pointed out. Next to that, the underlying motivation for this topic as well as the relevance for the marketing practice was shown.

In the *second chapter* a detailed review of the literature of the concepts of *goal attainability* and *attitude toward the advertisements* will be performed as these are the main constructs of the research questions. Constructs describe variables that can't be directly observed. Other relevant constructs will be derived from the theory presented and their relationship will be explained. Furthermore it will be investigated what kind of studies have been already done in order to test the presented theories and concepts. The results and limitations of these studies as well as the study design will be shown. This part of the dissertation should give the reader an overview of the relevant theories and studies as well as the relationship between the constructs. The relationships between the constructs will be summarized as hypothesis and visualized in a structural equation model (SEM).

The *third chapter* will describe the methodology approach (methodical background of structural equation models) as well as the conceptualization of the model. The constructs, which are latent variables, have been derived from the literature or in other words from the previously analyzed theories and studies. Last, the selection of items which are used to measure each relevant construct, which is called *operationalization*, will take place.

In the *fourth chapter* the empirical assessment of the model will be conducted. First, one part of the structural equation model will be used in a preliminary study. The model for the preliminary study is one part of the complete model, which will be tested as a whole in the main study. The goal of the preliminary study is on the one hand to limit the number of items per construct and on the other hand to test the measurement of the distance. In order to find the best images for the main study a second preliminary study will be undertaken. Afterwards the main study will be conducted. The complete structural and measurement model will be evaluated on the basis of statistical quality criteria.

The interpretation of the structural equation model and its implications for the marketing practice will be done in *chapter five*. Furthermore, limitations of the study as well as further research will be pointed out.

Table 1 illustrates the structure of the dissertation.

Table 1
Structure of the dissertation

Structure of the dissertation	
Chapter 1	Introduction of the topic
	<ul style="list-style-type: none"> • Research questions • Relevance for the marketing practice • Objective and structure
Chapter 2	Theoretical framework and current research
	<ul style="list-style-type: none"> • Theoretical models and empirical studies • Relevant and derived constructs • Hypothesis about their relationship, summarized and visualized in a structural equation model
Chapter 3	Theoretical measurement considerations
	<ul style="list-style-type: none"> • Classification of the study designs • Structural equation modelling (SEM) and selection of the appropriate estimation method • Operationalization of the constructs and determination of measurement model type
Chapter 4	Empirical assessment of the model
	<ul style="list-style-type: none"> • Approach: Preliminary study 1, preliminary study 2 and main study For each: design and organization, population and sample, coding and scaling, stimuli and experimental group, results and consequences for main study • Main study: Evaluation of the measurement and structural model, mediator and moderator analysis
Chapter 5	Conclusion and recommendations
	<ul style="list-style-type: none"> • Results of the studies • Implications for the marketing practice and research

2. THEORETICAL FRAMEWORK AND CURRENT RESEARCH

In the following chapter the two main aspects of the research/ research question, *goal attainability* and *attitude toward the advertisement*, will be defined and a demarcation of these will take place. Furthermore, relevant theoretical models, where goals or goal attainability as well as the attitude toward the advertisement play a crucial role, will be shortly summarized. Next to that, empirical studies will be described in order to show the current research in relation to the before described theoretical models. The theoretical models or parts of these as well as the results of the empirical studies will serve as a theoretical framework in order to answer the research questions by deriving hypothesis about the relationship between the constructs. From the theoretical models and empirical studies additional relevant constructs, next to goal attainability and the attitude toward the advertisement, will be derived. These are important in order to answer the research questions. The relevant constructs will be defined, empirical studies in this area shortly summarized and further hypothesis derived. Table 2 visualizes the structure of the second chapter.

All derived hypothesis will be summarized in a structural equation model (SEM), which is shown for the first time in Figure 8. In order to simplify the understanding of the causal relationships between the constructs the complete model will be shown from the beginning even if it is the result of all hypothesis. The causal hypothesis and constructs which are derived in each part are highlighted in red. All constructs and relationships which aren't mentioned yet are highlighted in grey and shown by black arrows. This approach makes it easier to understand each hypothesis and relationship as one part of a whole model and it shows the step by step composition of the SEM.

Table 2

Structure of the theoretical chapter.

I. Goals/ goal attainability (Chapter 2.1)	
<p>Theoretical models (Chap. 2.1.1)</p> <ul style="list-style-type: none"> • Concept of goal feasibility and desirability • Goal gradient hypothesis • Goals loom larger effect • Concept of goals as reference points and the Prospect Theory 	<p>Empirical studies (Chap. 2.1.2)</p> <ul style="list-style-type: none"> • Klesse et al., 2012 (Chap. 2.1.2.1) • Kivetz et al., 2006 (Chap. 2.1.2.2) • Scott & Nowlis, 2013 (Chap. 2.1.2.3) • Fishbach & Dhar, 2005 (Chap. 2.1.2.4)
<p>Hypothesis and derived constructs (Chap. 2.1.3) <i>Derived from theoretical models and empirical studies</i></p>	
II. Attitude towards the advertisement (Chapter 2.2)	
<p>Theoretical models (Chap. 2.2.1)</p> <ul style="list-style-type: none"> • Framing • Self-congruity theory • Social comparison theory • Theory of reasoned action 	<p>Empirical studies (Chap. 2.2.2)</p> <ul style="list-style-type: none"> • Chae et al., 2013 (Chap. 2.2.2.1) • Richins, 1991 (Chap. 2.2.2.2) • Abayi & Khoshtinat, 2016 (Chap. 2.2.2.3) • Martin & Gentry, 1997 (Chap. 2.2.2.4)
<p>Hypothesis and derived constructs (Chap. 2.2.3) <i>Derived from theoretical models and empirical studies</i></p>	
III. Derived constructs (Chapter 2.3)	
<p>Defintion/ delimitation, empirical studies and hypothesis</p>	
<ul style="list-style-type: none"> • Health motivation (Chap. 2.3.1) • Reference point (Chap. 2.3.2) • Purchase intention (Chap. 2.3.3) • Satisfaction (Chap. 2.3.4) • Trust (Chap. 2.3.5) • Social comparison (Chap. 2.3.6) • Risk (Chap. 2.3.7) 	<ul style="list-style-type: none"> • Moorman & Matulich, 1993 (Chap. 2.3.1.1) • McDonald & Thompsen, 1990 (Chap. 2.3.1.2) • Tiggemann & Williamson, 2000 (Chap. 2.3.1.3) • Hsu et al., 2010 (Chap. 2.3.1.4) • Von Nitzsch, 1998 (Chap. 2.3.2.1) • Chandran & Menon, 2004 (Chap. 2.3.2.2) • Baumgartner, 2002 (Chap. 2.3.3.1) • Bellenger et al., 1978 (Chap. 2.3.3.2) • Mittal & Kamakura, 2001 (Chap. 2.3.4.2) • Akrouf & Akrouf, 2011 (Chap. 2.3.5.1) • Pavlou, 2003 (Chap. 2.3.5.2) • Smeesters & Mandel, 2006 (Chap. 2.3.6.1) • Liao et al., 2010 (Chap. 2.3.7.1) • Römer & Tscheulin, 2008 (Chap. 2.3.7.2)
IV. Overview of all constructs and their relationships (Chapter 2.4)	

2.1 DEFINITION AND DELIMITATION: GOALS AND GOAL ATTAINABILITY

Consumer behavior is *goal directed*; that means each decision or action that somebody is doing has a specific aim (Bagozzi & Dholakia, 1999, p. 19; Latham & Locke, 1991, p. 212). When deciding for something like joining a fitness club or spending more time at work people have a *desired outcome* related to this behavior. By joining a fitness club the member has a healthy and active person in mind which he wants to become. When somebody is spending more time at work he wants to get noticed as a good worker, get his tasks done in time and earn more money or get more responsibility in the future. Therefore, goals can be characterized as motivational or in other words are motivating to specific actions (Latham & Locke, 1991, p. 213).

Goals can be either directed toward *attaining something desirable* like gaining for money or *toward the elimination of something undesirable* like quitting smoking (Soman & Cheema, 2004, p. 54). This differentiation in goals for the elimination of something undesirable and goals for attaining something desirable already took place in prior research (Cochran & Tesser, 1996; Heath et al., 1999) and will be applied in the current research as well.

The desired outcome can be described as a specific end point (Pervin, 1989, p. 474). Next to the goals with specific end points, there are also open-ended goals (Bagozzi & Dholakia, 1999, p. 19). If somebody is going on vacation, the aim of the vacation isn't a specific place or city but to spend free time abroad and relax from the daily stressful routine. The focus in this research will be on goals with a specific end point.

Next to the type of goal, with an end point or open-ended, it is possible that goals focus on different directions like career goals, personal goals or consumption goals. It seems to be obvious that goals can be linked to each other or be conflictive. If somebody wants to get his work done in time and needs to do extra hours at work he probably won't find the time to go to the gym after work. Therefore the career goal and the goal of getting in shape seem to be contrary. However this effect of conflictive goals will be excluded by assuming the goal itself has such a high importance or relevance for the individual that it will be followed (Bagozzi & Dholakia, 1999, p. 31).

Goals seem to be motivational (Larrick & Wu, 1999, p. 79) and have been in the focus in many classic theories of motivation. Already in 1890 James defined goals as “the pursuance of future ends and the choice of means for their attainment” (James, 1890, p. 8). James was interested in the goal directed behavior and wanted to know if this also happens for lower mammals (Pervin, 1989, p. 2). Furthermore he was concerned about the relationship between consciousness and movements as well as cognition of end results and actions.

Watson had a more mechanistic view on behavior which is more stimulus determined (Watson, 1930), whereas McDougall thought that people are actively striving towards goals (McDougall, 1908, 1930; Pervin, 1989, p. 3).

Another focus on goal directed behavior was set by Adler who said that individuals are motivated by their expectations of the future (Adler, 1930; Pervin, 1989, p. 4). So it is not the past like traumata or previous experiences that is guiding the individual but the final goal alone that explains behavior.

How are people deciding if they want to follow a goal or not? According to Zhang people commit themselves to specific goals if they rate their chances to attain it as feasible (Zhang & Huang, 2010, p. 642). Furthermore, when people aren't making a lot of progress towards their goal it seems to be far away and they may judge it as difficult to attain (Zhang & Huang, 2010, p. 641). If goals are too difficult to attain, people are more likely to be demotivated to continue following the goal (Bandura, 1997). Goal difficulty can be defined as one attribute of goals, which is part of the content of a goal (Latham & Locke, 1991, p. 213). Difficulty can range from impossible, moderate to easy and it describes the relationship between the person and the goal. Depending on the person the same goal can be classified as easy, moderate or impossible (Latham & Locke, 1991, p. 214).

Goal attainability itself is playing a role in the judgment whether a goal can be reached and whether it is realistic or not. Based on the definition of Bettman who defined consumer choice as a “process of moving from some initial stage to a desired state” (Bettman, 1979, p. 45),

Goal attainability can be defined as the judgment of how easy it is to move from this initial stage or the current situation to a desired end state as well as the ability and feasibility to reach this desired end state in a specific period of time.

In the current research the goal in the main study is *being healthy and getting fit*. The goal can be reached by for example joining the fitness center, for which an advertising is promoting.

2.1.1 The influence of goal attainability on motivation in theoretical models

Concept of goal feasibility and desirability

While defining the goal process Bagozzi and Dholakia differentiate between *goal setting* in a *conscious* and a *nonconscious* way. During conscious goal setting the consumer is actively deciding for a goal. This can happen in one of the three following ways: First, a sales employee can be forced by his employer to follow a specific sales goal. This can be described as a conscious goal that is set by an external person (Bagozzi & Dholakia, 1999, p. 20). Second, there are goals that emerge unconsciously because of emotional or biological reasons and are followed consciously. For example, if somebody is getting sick his goal is to get healthy again. Therefore he goes to the supermarket and buys medicine in order to feel better. This can be classified as a conscious internal goal. Last there are conscious goals which emerge from reasoned actions to internal or external stimuli. An external stimulus might be a new ad for a product. The exposure to this ad is resulting in a desire to own this product. An internal stimulus is a need that a person is feeling without any external influence.

In routinized processes like buying groceries it is possible that goal directed behavior happens *unconsciously* in contrast to the above mentioned conscious way. Without paying a lot of attention the consumer is buying the same products every day again.

Next to that, goal setting is influenced by goal feasibility as well as goal desirability (Bagozzi & Dholakia, 1999, p. 30). Furthermore, the goal relevance plays a crucial role in the goal setting process (Bagozzi & Dholakia, 1999, p. 31). Figure 4 illustrates the different types of goal setting and the influences on goal setting.

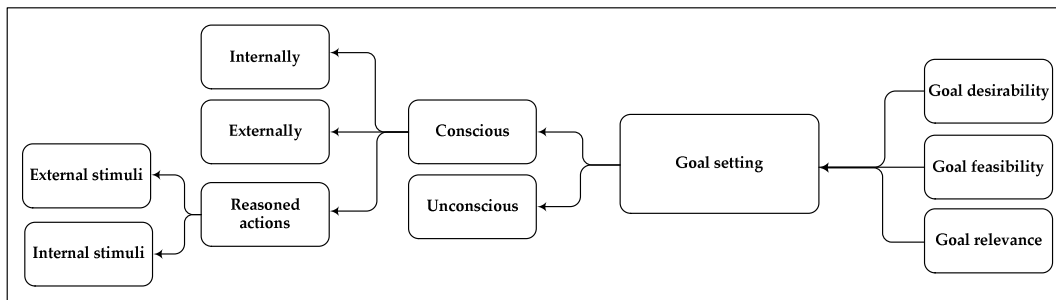


Figure 4. Different types of goal setting and influences on goal setting; source: Bagozzi & Dholakia, 1999, p. 31.

The focus of the current research will be on conscious goal setting because of reasoned actions. Hereby, reasoned actions are caused by an external stimulus, which is an advertisement for a fitness club.

Next to the different types of goal setting, it can be stated that goal directed decision making is following a specific process, which will be shown in Figure 5:

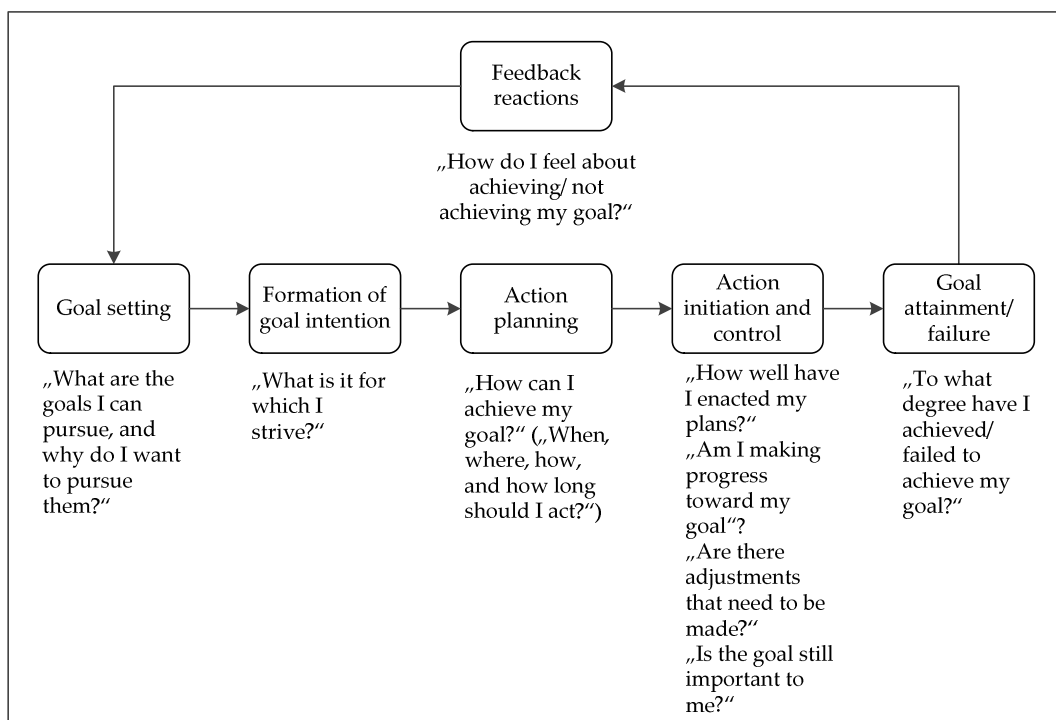


Figure 5. Goal directed decision making process; source: Bagozzi & Dholakia, 1999, p. 20.

The process can be described by the following example: A consumer is seeing an ad for a fitness product or service like a fitness center with an image of a very muscular person on it. The consumer is comparing himself with the portrayed man

and is noticing a discrepancy between his actual state and the muscular man. Because of this external stimulus (the muscular man on the ad) he is setting himself the goal to get in shape. This step is called *goal setting* – to define what the personal goals are and why somebody wants to reach them. The next step is the *formation of the goal intention*. In the mentioned example the goal intention might be to gain five kilogram of muscular mass. A goal intention might be directed towards an outcome which can be achieved by using a specific product or service – like the fitness product or service in the mentioned example - or towards specific actions as end performances (Bagozzi & Dholakia, 1999, p. 20). If the goal intention is directed towards specific actions as end performances, the action itself represents the goal. The next step in the process is the *action planning*. In this step the consumer is thinking about how he can gain more muscular mass and how long it will take to reach this goal. He will probably decide to buy the fitness product or join the fitness club that can help him to reach his goal in this stage and start using it. However, after a while using the fitness product or going to the fitness club he will ask himself how successful he is in reaching his goal. He will compare himself to the man in the ad and will judge how close he gets to his ideal. Next to that, the consumer will think about the importance of the goal and if it is worth spending time on following it. This step is called *action initiation and control*. After controlling the result the consumer is judging about his goal attainment or failure. Here he is evaluating his performance, if he has gained the five kilogram muscular mass or not. After this evaluation the last step in the process takes place, the *feedback reactions*. In this step the consumer is either satisfied that he reached his goal or he will get dissatisfied because of his failure. Based on his reaction he will re-think his goals and decide if he will put either more effort into the goal or give up.

Goal-gradient hypothesis

In 1932 Hull was the first researcher to assume that the motivation or tendency to follow a goal increases the closer the goal comes. Goal proximity seems to have an influence on behavior. He tested his assumption by using the following experimental design: Rats had to run through a runway, which was divided into five sections, in order to get some food. The running speed of the rats have been measured with electrical contacts. The conclusion of the experiment, which was supported by various other studies as well, was that the closer the rats came to the

food, the faster they run (Hull, 1932, p. 42). Figure 6 shows an example of the results of Hulls experiment:

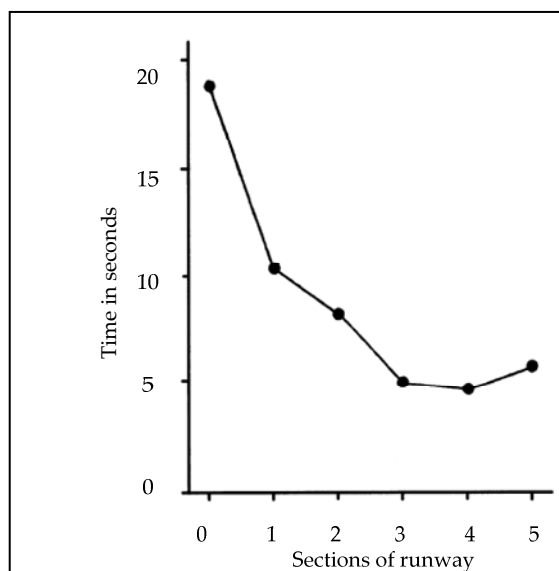


Figure 6. Time needed for a section of the runway; source: Kivetz et al., 2006, p. 40.

The zero point on the 'sections of runway' line in the Figure 6 represents the starting point of the runway. It is visible that the closer the rats came to the end of the runway (like section three or four) the less time in seconds they needed per section (visible on the y-axis). From these results the goal gradient hypothesis was developed. The goal gradient is referring to the change or increase in motivation as a result of a closer coming goal or goal proximity. There have been some studies with humans to test the goal gradient hypothesis. However as just physiological measures like heart rate and blood pressure have been used it was difficult to interpret non-instrumental behaviors and psychological measurements in order to reject or support the goal gradient hypothesis for humans (Kivetz et al., 2006, p. 41). Though, the Kivetz et al. study in the area of reward cards tried to apply the goal gradient hypothesis for humans (Kivetz et al., 2006).

Goals loom larger effect

One concept in the area of self-regulation theory is the *goals loom larger effect* researched by Lewin (1935) as well as by Miller (1944). On the one hand Lewin figured out that if a desired end states towards somebody is approaching is coming closer the motivation to reach it is increasing. On the other hand, if there is an

undesired end state like pain, the avoidance motivation increases if the pain is coming closer (Försters, Higgins, & Idson, 1998, p. 1115). The goals loom larger effect was tested and supported by Brown in 1948 as well. Brown used rats that had to run through a runway in order to get food at the end. At one point in this runway the rats have been stopped and the strength of their pulls towards the food has been measured. Brown figured out that the closer the rats have been to the end point of the runway where the food was lying the stronger their pulling was (Försters, Higgins, & Idson, 1998, p. 1117). Therefore it can be stated that the motivation is stronger the closer the goal comes (Försters, Higgins, & Idson, 1998, p. 1117). The results that the motivation increases to follow a goal when it comes closer is not valid just for animals like rats but also for people (Försters, Higgins, & Idson, 1998, p.1115 ff.).

Wiebenga and Fennis are mentioning that the goal gradient hypothesis can also be called goals loom larger effect (Wiebenga & Fennis, 2014, p. 50.) as both are describing the fact that motivation increases as the goal nears.

Concept of goals as reference points and the Prospect Theory

Heath et al. claim that goals can be seen as reference points and influence the judgment of outcomes like it was already researched by Kahneman and Tversky's *Prospect Theory* value function (Heath et al., 1999, p. 79). The value function embodies three basic principles (Heath et al., 1999, p. 82):

1. *Reference point*

Based on a reference point each outcome is categorized either as a gain or a loss. Gains can be interpreted as a success whereas losses are assumed to be failures.

2. *Loss aversion*

The loss aversion is summarizing the fact, that it is worse to lose for example 100 € than to gain 100 €, or in general terms: When considering losing something compared to winning something in the same amount, the loss is weighting always more than the gain. This was called "losses loom larger than gains" by Kahneman and Tversky (Kahneman & Tversky, 1979, p. 279).

3. *Diminishing sensitivity*

The third principle assumes that outcomes have a smaller impact the further away these are from the reference point. For example it is worth more to win 20 € instead of 10 € than winning 120 € instead of 110 €. Same counts for losses: Loosing 20 € instead of 10 € is worse than losing 120 € instead of 110 € (Heath et al., 1999, p. 83). By analyzing the value function it can be predicted how people will react to *risk* or risky choices: Contrary to the traditional economics literature people are not risk averse in general, the risk preference always depends on the individual reference point (Heath et al., 1999, p. 93).

Figure 7 is illustrating a typical value function. The characteristic S- shape is showing the third basic principle of the value function, the *diminishing sensitivity*:

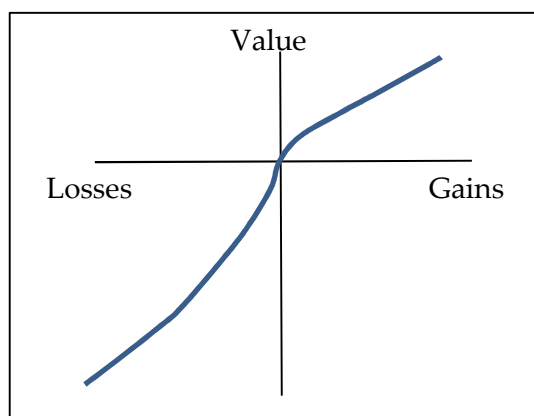


Figure 7. Prospect Theory - value function; source: Kahneman & Tversky, 1979, p. 279.

Heath et al. showed by using various examples that goals carry the same properties or characteristic as the value function: Goals serve as a reference point, contain loss aversion and are characterized by a diminishing sensitivity (Heath et al., 1999, p. 102). Furthermore, Heath et al. pointed out that in the process of goal setting people are identifying various reference points from which they have to decide which one to follow (Heath et al., 1999, p. 104). Based on the reference point or goal progress somebody is deciding if the outcome is a success or failure. Therefore the same outcome can be seen as a success or failure based on the reference point, and is in turn influencing somebody's *satisfaction* (Heath et al., 1999, p. 85).

Next to goals, other comparisons like *social comparison* may serve as a reference point and show the same effects. When people are comparing themselves to somebody that is better off (*upward comparison*) this can be on the one hand motivational but on the other hand also unfavorable. Whereas a comparison to somebody that is worse off (*downward comparison*) can be seen as favorable and will protect one's self-esteem (Heath et al., 1999, p. 105). Coming from the diminishing sensitivity characteristic of the value function, Heath et al. mentioned the so-called *starting problem* in the area of goals. The starting problem describes the demotivation people might feel if goals are set too high. This might be caused by the fact that the progress towards the goal won't be noticed that much if goals are set to high (Heath et al., 1999, p. 103). In order to solve this people tend to compare themselves in the area of upward comparison rather to *close* than to *distant* others (Heath et al., 1999, p. 105).

2.1.2 Empirical studies in the area of goals/ goal attainability and motivation

In the following four different studies which have been conducted in the area of goals and goal attainability will be presented. The authors have done these in order to verify the above mentioned theories. The studies will be described in the following way: goal of the study, experimental design, central results and conclusion, important aspects for the own study and research gaps/ reasons for own study.

2.1.2.1 Influence of idealized models on goal attainability and dieting motivation (study of Klesse et al., 2012)

Goals of the study

In the study of Klesse et al. done in 2012 the authors wanted to figure out how the exposure to an ideal end state, which was represented by a slim model on a cover of a diet diary, influences women who want to lose weight. In the first study a neutral cover was used for the diet diary for the control group. In a second study a woman with an average weight was displayed on the diary, which the participants had to fill out every day. In contrast to previous studies that have been conducted in the area of eating behavior influences after the exposure to an idealized model, the study of Klesse et al. wanted to analyze the long term effect

on the motivation to diet after a repeated exposure to an ideal end state. The theoretical background of this study was among others *the goal gradient hypothesis* as well as the *theory of social comparison*.

Experimental design

In the first study female undergraduate students who wanted to lose weight had been invited to participate in a one week dieting program. During that week each participants needed to fill out a diet diary after each food intake. Half of the participants got a diet diary with a slim model (treatment condition) on the cover, the other half a neutral one (a measuring tape on the cover). The group assignment was done by a previously conducted online questionnaire, where the participants needed to fill out when they wanted to start with the dieting program. Dependent on their starting day, they were assigned to one of the two groups (neutral cover or slim model on the cover of the diet diary). On the first day of the diet program there was an information session where the participants had been informed how the diary needed to be filled out and information was provided about unhealthy food behavior like dieting pills and the resulting yo-yo effect. Next to that each participant was weighed and the weight was written down into the diary next to the target weight which the participant wanted to reach. The participants had been informed that they would be reweighed at the end of the week and that they could call a specific number if questions would arise about the diet diary during the dieting program. In total 54 participants took part in the first study and each of them got 50 € for the participation. However, six of them needed to be excluded as they didn't fill out the diet diary continuously and didn't take the study seriously enough. The study was done in the beginning of the year as the goal to lose weight is one of the top New Year's resolutions. After the one week dieting program the participants needed to fill out another questionnaire in which their motivation, the perceived goal attainability as well as their self-esteem regarding their appearance was measured on a seven point Likert scale.

In the second study the design was slightly changed: A picture of a model was changed in order to look quite normal in size and not extremely thin anymore, which was then used for the cover of the diet diary. Next to that, a very skinny model was used for the cover of the diet diary for the control group. The goal of this study design was to figure out if the exposure to the model itself results in a

declining motivation to diet or if the extreme slimness leads to this behavior. During the dieting week the participants hadn't been called nor contacted via E-Mail, which was the case in the first study in order to ask if the participants were filling out the diary on a daily basis. In the second study the participants only had been informed that they could call if they have any questions.

Furthermore, in the second study side effects that could have occurred in the first one had been eliminated. The measuring tape, which was visible on the neutral cover of the diet diary could have resulted in a process oriented focus rather than the model, which lead to an outcome focus. Given the fact that previous studies in this area showed that a process oriented focus results in better results than an outcome focus, Klesse et al. used just a picture of a model on the cover (one extreme skinny and another of average weight). For the second study also female undergraduate students had been selected, who received 50 € for their participation. In total 42 females participated in the study.

Central results and conclusion

The findings of the first study supported the hypothesis that the participants who had the slim model on their diet diary, an ideal end state, have been less confident that they would reach their goal of losing weight than the participants in the control group. Consequently, the likelihood to attain the goal was rated as higher when the participants had seen the neutral cover. The question that remained was what kind of consequences this low goal attainability had on the motivation to follow the goal of losing weight. To answer this question the goal success was derived from the weight that was lost during the one week dieting program. Hereby, not the absolute numbers had been taken for the analysis but the relation to the weight of the participants before they took part in the program. The analysis showed that the participants exposed to the slim model had lost less weight than the participants in the control condition. Next to the weight also the snacking (eating unhealthy snacks like chips, cakes or chocolate in between of meals) had been compared as well as the total amount of calories of these snacks. This comparison also showed that the participants in the control condition with the neutral diet diary snacked less than the participants in the treatment condition. This behavior made the discrepancy between their actual state and their desired end state even higher. To sum up, these findings supported the hypothesis that if the

goal attainability was rated as low the effort spend on following a specific goal by appropriate behavior is getting less as well.

In the second study both groups, the treatment and the control condition, had been exposed to models with a different level of slimness. The different slimness of the models represented different distances to the goal. In this study the participants in the treatment condition, who had the slim model on the cover, had been less confident in regards to reaching the goal or goal attainability in general than the participants in the control condition. Furthermore, the participants in the treatment condition lost less weight or even gained some in comparison to the control group. This second study showed that it is not the model itself that influence the motivation to follow a specific goal but the slimness of the model. Therefore it can be stated that the distance perceived between the desired end state and the actual state results on the one hand in different judgments of the goal attainability and on the other hand influences the motivation to follow a specific behavior to reach this goal.

Important aspects for own study/ appreciation of the study with regards to own problem statement

The main conclusion of Klesse et al. which are important aspects for the further research, are the following:

- The judgment in regards to the goal attainability is influenced by the perceived distance to a desired end state or goal. Therefore the perceived distance or reference point should be added to the model/ analysis as well.
- The goal attainability is influencing the motivation to follow a specific goal by appropriate/ goal compliant behavior. Therefore, motivation seems to be an important construct as well.

Research gaps and reasons for own study

Klesse et al. mentioned the consequences of their findings on marketers that advertise dieting or different products as further research possibilities. They pointed out that dieting products that show slim models, which represent ideal end states for consumers, on their packages could be counterproductive. Counterproductive in this sense means, that as the consumption won't result in a weight loss what could therefore result in dissatisfaction with the product.

The study and mentioned research gap by Klesse et al. was the starting point for the current research.

2.1.2.2 *Consequences of goal proximity on consumer buying behavior* (study of Kivetz et al., 2006)

Goals of the study

Clark Hull was one of the first researcher who discovered that rats are getting more motivated to get some food the closer they get to it which was observable because they ran faster when they come closer to the food than at the beginning of their way. This phenomenon, also called *goal-gradient hypothesis*, was in the focus of many studies with mainly animals, but there has been paid little attention to the consequences of this effect on consumer behavior. Kivetz et al. wanted to close this research gap by figuring out how consumers will react to different types of reward programs when they come closer to their goal of getting something for free.

Last but not least the authors invented a goal-distance model (GDM) to describe the effect the remaining distance to a goal has on the effort that is used in order to reach the goal.

Experimental design

The first study done by Kivetz et al. was a field experiment which was conducted in a café at a university on the East Coast. A reward card was offered to students for free. For each coffee they bought they received a stamp on the card, which was counted by an automatic numbering machine in the café. When they bought ten coffees they could get one coffee for free. The students needed to fill in their E-Mail address as well as their name on the reward card, which enabled the experimenter to track the redeemed cards by the participants of the study. After a reward card had ten stamps it was returned to the café. In order to get the uncompleted cards back, the café offered each student that owned one, a \$4 cash award to bring it back as well as the opportunity to win \$100 with a probability of one percent.

Next to that, there has been a control group, which consisted of 42 students who received a *transparent card*. The only difference to the other reward card was that the control group didn't get a coffee for free when they bought ten. However,

they received a \$5 compensation for their participation as well as \$15 if they returned their card at the end of the study, which was six weeks later.

In order to exclude other explanations like the timing of the experiment e.g. graduation phase a post-redemption purchase behavior analysis was done. Therefore, 110 participants who also participated in the first experiment received a second reward card.

The second study was done in the same café as in the first study: 108 customers received again either one reward card where they needed to collect ten stamps, one for each coffee they bought, in order to get one coffee for free, or one reward card where they needed in total twelve stamps to get one coffee for free. However, the group who received the twelve stamps reward card received already two stamps as an offering for everybody who joined the reward program. Hence, both groups had to collect ten stamps in order to get one coffee for free.

In order to confirm the results of the second study, a third questionnaire-based study was done in a train station with 65 waiting travelers. Each of them received a reward card from a pizza chain where they had to collect eight stamps in order to get one pizza for free. However, the experimental condition group received a reward card where originally ten stamps would have been needed but with two bonus stamps as a gift for joining the reward program. The control group received the normal reward card with only eight stamps needed and no bonus stamps. The participants had to answer two questions in the questionnaire: First they had to rate on an eleven-point-scale the probability that they would really join this reward program. Afterwards, they had to judge how many weeks they would need to complete the eight stamps on their bonus card to get one pizza for free.

As a next step the third experiment was slightly modified: Three groups have been asked how sad, upset, mad and disappointed they would be if they would lose their reward card. They needed to rate their feelings on a seven-point scale. The first group had lost an eight stamps reward card without any bonus stamps and the second one a ten stamp reward card with two bonus stamps like in the previous experiment. The third group, the so-called sunk cost group, received a ten stamp bonus card with already two stamps because they actually bought two pizzas to get them.

In order to generalize the findings of the previous studies a fourth experiment was done in the area of music ratings websites. The technology company Mood Logic, who wanted to get data about the music preferences and taste of the customers, offered a reward program to them where they could receive a \$25 Amazon voucher if they would rate 51 songs on their website. In order to be able to rate a song the customer needed to register on the website with their E-Mail address, a user name and a password. This allowed the company to count the music ratings of each participant. In contrast to the other experiments the reward program continued for two years after the experiment took place. Therefore the participants didn't have to be afraid that the reward program would expire before they can reach their goal of winning the Amazon voucher. A rating took in average four minutes and each song was rated on a couple of categories like mood e.g. peaceful, relaxing and sad or likeability.

Central results and conclusion

In the first study, 949 reward cards have been returned to the café, which had ten stamps, and 73 incomplete cards have been bought back. The analysis showed that the more stamps the students had on their cards, the closer they got to the goal of getting one coffee for free, the more often they bought another coffee. The time period between two purchases got consequently smaller. In other words: purchase acceleration took place. The experiment showed that the last coffee on the reward card was bought 20% faster than the second one. In total, two coffees more per month had been bought by the students than under normal circumstances without the rewards card. The results have been confirmed by the post redemption purchase behavior analysis as well, where the purchase behavior slowed down at the beginning of the second reward card and speeded up again when the students had more and more stamps on their card and got closer to the goal to get one coffee for free.

In contradiction to the results of the reward card holders, the transparent card holders' time period between two purchases decelerated. As their reward, in total \$20, didn't depend on how many coffees they bought, they didn't see the necessity to gain ten stamps and have a completed reward card. The same deceleration effect occurred in the buyback card group as well: The time intervals between the purchases of the next coffee had been extended.

The second experiment, where customers received either a ten stamps or a twelve stamps reward card with already two bonus stamps for joining the program showed the following: The customers with the twelve stamps reward card completed the remaining ten stamps in around 12.7 days, whereas the customers in the other group needed in average 15.6 days. Therefore the illusionary goal progress, which was caused by the two bonus stamps, resulted in a smaller psychological distance to the goal to get one coffee for free. As a consequence the smaller psychological distance resulted in more effort into reaching the goal, even if the absolute remaining distance to get the reward was equal for both groups.

The findings of the second study could have been confirmed by the questionnaire-based experiment in the train station. Travelers who received a ten stamp bonus card with two bonus stamps judged that they would need in average eleven weeks for the completion. In comparison, the control group, who received a reward card without any bonus stamps, judged the completion time to be in average 16 weeks. In order to rule out alternative explanations the likelihood of joining the reward program was compared between the two groups. The comparison didn't show any significant differences.

The modified experiment with the travelers in which they should imagine they would lose the reward card showed that the participants in the sunk cost group had the most negative feelings about their loss. There was no significant difference in sad or upset feeling between the experimental and control group. This was a result which was not expected by the experimenter.

In the music rating experiment the number of ratings as well as the time between two visits of the website had been in the focus of the experiment. In total, 148 members visited the website 472 times and rated 14,886 songs during these visits. In total 262 Amazon voucher had been won by the participants. As 114 of them had been won by members who rated all 51 songs in one visit, these had to be excluded from the further analysis as no inter-visit times could be analyzed. The remaining 148 vouchers had been won by participants who did two or more visits of the website. The analysis showed that the time between two visits got smaller the closer the member reached the necessary number of 51 songs rated. Therefore, this experiment shows that a closer distance to the goal of getting the Amazon voucher motivated the members of the music rating website to visit it more frequently. The analysis of the quantity of ratings showed that the closer the

members got to their goal, the more songs they rated during their visit. To sum up, in later visits more songs have been rated as in earlier ones.

There had been incomplete vouchers or member who didn't receive one because they didn't rate 51 songs in the given time period. Here, a deceleration effect occurred. When the members gave up on reaching the goal of rating 51 songs and winning the Amazon voucher they visited the website less often and the time between their visits became larger and larger. To sum up, the consumers abandon to follow the goal which led to deceleration.

The analysis of the data showed further that - consistent with the goal-gradient hypothesis- the likelihood of terminating a rating of a song before the rating was fully done was higher after somebody received a voucher. This effect can be explained as the distance to the new goal, of winning another Amazon voucher, is far away as 51 songs need to be rated again. As the new goal seems to be far away the motivation to reach it declined and resulted in more visit terminations. In addition the likelihood of a visit termination decreased the closer the member came to the goal of rating 51 songs and winning the voucher and therefore reaching the goal.

Important aspects for own study/ appreciation of the study with regards to own problem statement

The study of Kivetz et al. showed that the goal-gradient hypothesis which was tested often by studies with animals is also applicable for consumers and their behavior. The closer a consumer is getting towards a specific goal - in the experiment done by Kivetz et al., the fewer stamps a student needs on his coffee reward card to get one coffee for free - the more effort he puts into reaching this goal. Therefore, it can be stated that goal proximity is increasing the motivation to follow a specific goal as it seems to be more valuable the closer the consumer gets towards it. Next to that, the acceleration effect which occurred is an evidence for customer loyalty and their motivation to engage in the future into similar goals.

Furthermore, it is not the absolute distance to the goal that is influencing the motivation or effort a customer is putting into reaching a specific goal. The psychological distance is the relevant one, which seem to have an important effect on the customer behavior. Like shown in the second experiment done by Kivetz et al. this psychological distance or illusionary goal progress can be manipulated.

Even if the absolute distance is the same, the illusionary goal progress gives the consumer the feeling that the goal is closer and more attainable. The manipulation of the distance in order to influence the customer behavior seems therefore the key aspect for the creation of the own study.

Research gaps and weaknesses/ reasons for own study

Kivetz et al. stated that as far as he knows his study which was published in 2006 was the first one which used the goal-gradient hypothesis to explain human or consumer behavior. Before, the goal-gradient hypothesis was just used to explain the behavior of animals. However, Kivetz et al. made experiments in the area of reward cards for free coffee and Amazon vouchers for rating of songs. So his focus was mainly on incentive systems. In the own study the focus will be on attitude toward the advertisement and images. How can a testimonial in an ad show a reachable goal and motivate consumers to reach it? How can an advertisement be manipulated to show an attainable goal so the consumer's achievement motivation increases and the consumer buys the product which helps him to reach his goal? Kivetz et al. mentioned that further research in the area of illusion of goal progress would be needed. This can be defined as the research gap that needs to be filled.

2.1.2.3 *The effect of goal attainability on motivation and buying intention* (study of Scott & Nowlis, 2013)

Goals of the study

Scott and Nowlis wanted to prove in their study done in 2013 that consumers are more engaged in following their goals when the goal is defined as a range and not as a total amount, e.g. if the goal of losing weight is defined as "losing 3 to 5 kg" and not "losing 4 kg". The reason behind this phenomenon is that a range is categorized as more attainable than a specific single number goal. Furthermore a high-low range can influence the feeling of accomplishment, which also has an effect on the goal reengagement. The underlying theory of Scotts' and Nowlis' research was the *concept of goal feasibility and desirability*.

Experimental design

In the first study 45 adult female members of a large organization in the Midwest of the United States had been recruited to participate in a ten week dieting program. The average age of the participants was 47 and the average BMI 30.38. For their participation the female took part in a weekly raffle where they could win a \$25 voucher for Whole Foods, Target and Dick's Sporting Goods. Each week the participants were weighted and they attended a one hour lesson where they learned facts about healthy food and eating. Each participant defined each week their weight loss goal for the coming week which was either a single number goal or high-low range goal. Furthermore each participant had to pay \$25 for a ten weeks participation in the weight loss program.

A second study was done in order to analyze if and how consumers could resist seductions which are goal inconsistent. Next to that, the results of the first study needed to be reviewed and generalized. Therefore, 64 undergraduate students had been recruited from the University of Kentucky who received course credit for their participation. The experiment took part in a laboratory and took 25 minutes. First, each participants received a package of M&M, which contained 56 pieces, with the request to eat as little as possible while completing some filler tasks and watching some videos, which weren't related to the main task of eating as little M&Ms as possible. Besides they had to judge how many M&Ms they would eat – either as a single number or within a range. At the end of the experiment the undergraduate students answered a questionnaire where they had to rate on a seven point scale their feelings of accomplishment and goal reengagement.

In order to proof the assumption about the judgment of attainability and challenge of single number and range goals 90 Amazon Mechanical Turk (MTurk) participants had been asked to complete sentences about their goals concerning water saving, money saving or weight losing. They either had to enter a range like "My goal is to save between __ and __ dollars within the next three months" or as a single value "My goal is to save __ dollars within the next three months". Afterwards, they had to rate on a seven point scale the attainability and challenge of this goal.

The third study was split into two parts: In the first part of the study 174 participants had to buy within four minutes 25 items, which had been on their grocery list for the lowest price possible in a virtual grocery store. In order to

complete this task they received 16 coupons, from which not all had been relevant for the task. The experimenter told them that they would receive points if they really bought an item at the cheapest price: Two points if they really bought the cheapest item, one point when they selected the second cheapest and one point would be deducted from their score if they bought an item which wasn't on their grocery list at all. The maximum number of points which could be earned in this game was 50. There had been three different groups: Participants in the high-low range condition had to judge in which range they thought they would earn points in this game, e.g. between 35 and 40 points. The second group was the single number condition, where participants had to set themselves one specific goal like earning 35 points. The last group was the low single number condition, which was the same like the single number condition but it was pointed out that a realistic and attainable goal should be written down which can be reached within four minutes. At the end of the game the participants had to rate on a seven point scale if they would be motivated to try the game again or if they wanted to try to do it better in the future. This enabled the experimenter to judge about the participant's goal reengagement.

For the second part of the third study 256 undergraduate students from the Arizona State University had been recruited to participate for additional course credit. Each student was assigned randomly to one of the following three groups: *high-low range goal*, which stood for solving two to eight five letter anagram puzzles, which was the task in the study, *low single number condition* with the goal of solving two anagrams correctly or *high single number condition* with the goal of solving eight anagrams correctly. The study started with an exercise five letter anagram so the participants could get familiar with the task. Afterwards each participant - based on the assigned condition - saw the instruction where the corresponding goal was mentioned e.g. "You have two minutes time where you will see 20 anagrams. Your goal is to complete eight anagrams". Last the participants had to answer some questions about their feelings of accomplishment as well as goal reengagement.

In the previous studies it was figured out, that feelings of accomplishment had a mediating effect between goals and goal reengagement. In order to exclude this mediator, the fourth study focused on gamble games where only luck and not the efforts done by the participants influenced the outcome. For the study 64 undergraduate students from the University of Kentucky had been recruited for

extra course credit. Each student played in a laboratory a game called *Find the Ace*, where they had ten chances to find the ace in between five other cards. There had been two different kind of set ups: In the first one the experimenter told the participants that this was a game of luck. He shuffled the cards behind his back and then the participant had to point on the ace card or what he thought where it could be. Therefore, it was purely luck if he found it or not. In the second set-up of the experiment, the game was called a skill-based game where the experimenter shuffled the cards in front of the participants so it could have been possible to follow the ace card. All participants needed to set themselves a goal of how often they would find the ace card among the other cards in the ten rounds of the game. The goal was either a single number or a high-low range goal. Last, all participants in both groups answered questions about their feelings of accomplishment and goal reengagement on a seven point scale and one manipulation check question. In the manipulation check question the undergraduate students needed to judge if the game was influenced by luck or their skills.

A fifth study was done in order to test if the previously gained results were relevant just for goals which were set by the participants or by the experimenter or also for irrelevant reference points. Therefore, 132 MTurk members had been asked to solve anagrams like in the third study. They either received a goal related to the task of solving anagrams (high-low range goal or single number goal) or have been in the irrelevant reference point group. The participants in the irrelevant reference point group needed to first solve the anagrams and then answer how many cars the participant has owned. Next to that, the participants in the irrelevant reference point group received the information that previous participants of this study owned six cars (single number group) or four to eight cars (high-low range group). At the end all participants needed to rate on a seven point scale their goal reengagement and their feelings of accomplishment.

Central results and conclusion

First the single number goals have been compared with the higher end of the low-high range goals as the high end represents the challenge of a goal. The comparison shows that the single number goals have been less challenging than the high range of the range goals. The comparison between the low end and the single number goal showed that the range goal was more attainable over the

observation period of three weeks than the single number goal. The goal reengagement was measured by the willingness to pay another \$25 for a further participation in the weight loss program after the first ten weeks. Hereby, the participants in the range group continued their participation slightly more often than those in the single goal group. Last, the performance level was detected by comparing the actual weight loss in both groups. Even if the weight loss was marginally higher over the three weeks observation period in the range group than in the single number goal, the difference in performance level was not significant.

In the second study the participants set themselves a goal to eat in average 4.97 M&Ms in the single goal condition and between 2.87 and 7.80 M&Ms in the range condition. As the aim was to eat as little M&Ms as possible the lower end of the range represented the challenging goal. When the lower end was compared to the single number goal it became clear that the participants in the range group set themselves a more challenging goal than the participants in the single goal group. Furthermore, the higher end of the range seemed to be more attainable than the single number goal and the participants had slightly greater feelings that they accomplish the goal of not eating a lot of M&Ms. However, the real number of M&Ms eaten didn't significantly differ between the two groups.

In order to support the assumption that range goals are seen as more challenging and more attainable 90 Amazon Mechanical Turk participants had to rate these two characteristic for their set goals, which had been either single number or range goals. The analyses of this experiment confirmed the above mentioned hypothesis.

The first part of the third study showed that there had been no significant differences in the performance between the three groups (single number goal, high-low range goals and low single number goals). However, the participants in the high-low range goal group had been more reengaged in the goal than the participants in the low and single number goal group. The second part of the third study pointed out that a high single number goal like completing eight anagrams correctly was rated as more challenging as a low single number goal e.g. two anagrams should be completed correctly. There was no significant difference in the judgment of challenge between the range goal (completing between two and eight anagrams) and the high single number goal of completing eight anagrams. Furthermore, the low single number goal was rated as the most attainable one,

followed by the high-low-range goal and the high single number goal. However, the attainability between the first two mentioned ones hadn't been that significant as expected by the experimenter. The analysis demonstrated that the participants in the high-low goal condition had a greater feeling of accomplishment than the participants in the two other groups, which in addition didn't differ significantly among each other. As in the first part of the third study the performance was not significantly different between the three groups. Moreover the results of the first part of the third study, that the goal reengagement in the high-low range group is the highest, had been confirmed by the second part.

The fourth study brought the following insights: The manipulation check showed that the participants in the luck group judge luck to be the main influence, the participants in the skill group rated that their skills had the main effect in this game. On the one hand the goal range was 4.23 to 7.85 and the single goal 6.13 in the skill condition. The single goal was less attainable than the lower end of the range group and less challenging than the high end of the range condition. On the other hand, the goal range was 3.16 to 6.16 and the single goal 3.31 in the luck group. There was no significant difference in the attainability when comparing the single goal and the low end of the range goal. However, the high end of the range goal was by far more challenging than the single number goal.

Furthermore the type of game, if it was a game of skill or luck, didn't have a different effect neither on the judgment of goal reengagement nor on the feelings of accomplishment. There were only greater feelings of having accomplished the goal if it was a range goal instead of a single number goal in the skill condition. In addition, the goal reengagement was higher in the skill condition if it was a range goal in comparison to a single number goal. The performance itself wasn't significantly different between both groups.

The fifth study showed that there was no difference on the effect of goal type (single number vs. range goal) on feelings of accomplishment when the set goal or reference point was irrelevant to the task. The same effect occurred for the goal reengagement: There was no significant difference in the judgment of goal reengagement among the single number versus range goal in the irrelevant reference point group.

Important aspects for own study/ appreciation of the study with regards to own problem statement

One of the important findings of Scott and Nowlis is that the specificity of a goal, if it is a single low or high number goal or a high-low range, is influencing the goal reengagement of the participants because of the combined effect of *goal attainability* and challenge. High-low range goals have been rated as more challenging than single number goals as the high end of the range is serving as a *reference point* to judge the challenge. Next to that high-low range goals are judged as more attainable than single number goals. This is caused by the effect that the second reference point, the low end of the range is easier to attain. However, a single number goal can be more challenging (high single number goal) or more attainable (low single number goal) than a high-low range goal, but not both at the same time. Therefore a range goal is combining both effects: being more attainable and more challenging at the same time.

This effect is mediated by feelings of accomplishment which occur only if the goal can be reached because of skills and not because of luck. Next to that, it is important that the goal is related to the task and is not an irrelevant reference point. Irrelevant reference points are not resulting in feelings of accomplishment for different tasks. Therefore these anchors are not motivating people in goal reengagement.

The main results of the study are consistent with the research in the area of motivation: Motivation to continue following a goal is either higher when people focus on what they still need to accomplish or on what they have already accomplished (Koo & Fishbach, 2008, p. 93). The high-low range goal is following both objectives: The low end of the high-low range goal can be seen as the reference point for what has been already accomplished, the high end as a reference point for what still needs to be accomplished.

Research gaps and weaknesses/ reasons for own study

Scott and Nowlis focused in their studies on the area of weight loss programs and games. The own study would like to extend the studies and proof the results in the area of advertisements. How can an advertisement show a goal that is attainable and challenging like it was done by range goals?

2.1.2.4 *The influence of perceived goal progress on goal consistent behavior*
(study of Fishbach & Dhar, 2005)

Goals of the study

In the study done by Fishbach and Dhar in 2005 the authors wanted to explore the effect which the aspiration towards an initially set goal, which they call *focal goal*, has on other non-related goals or also conflicting ones. Hereby, goals are defined as the movement or progress towards a desired end state. Next to that, they want to figure out if the perceived progress towards a goal has an influence on the striving for that goal.

Experimental design

In a pretest 23 female dieters had been asked how far away they were from their target weight. This question had to be either answered on a wide scale which range to the end point of -25 lbs. or a scale that was narrow which ranged to -5 lbs. The wide scale gave the female dieters the impression that their actual weight was not that far away anymore from their ideal weight so their progress towards their goal was quite good. This was confirmed by the pretest where the participants had to rate on a seven-point scale their progress towards their goal.

In the main study 42 students from a large Midwestern university had been recruited to participate for a compensation of US\$1. First they had to write down their current weight and mark either on a narrow scale, which ranged from -5lbs to +5lbs, or on a wide one, which ranged from -25lbs to +25lbs, how much weight they would like to lose or gain. After this question, which had been embedded in a couple of other filler questions in order to hide the real aim of the study, the experimenter offered either an apple or a chocolate bar as a present for the participation to the students. Last, the students had been debriefed which showed that none of them guessed the hypothesis or the aim of the experiment.

In a second study 40 students had been asked how much time they were spending normally to do their course work. To create a comparison standard the students received a questionnaire that was partially filled out by another fictive student who didn't want to complete the full survey. It was claimed that the participants could use this partially filled out survey again to save some paper. Some of the participants received a survey where 30 minutes had already been written into the first question of the survey, the other half got one where 5 hours

had been recorded as the time spend on course work. After this first question all students had to rate on a seven-point scale what their goal progress was to reach their academic goals. Last they had to rate, also on a seven-point scale, how much they are following other activities like going out, having fun and spending time watching TV.

A third study was done, in which 50 students had been asked to evaluate and rate their behavior in regards to saving, health maintenance and studying on a seven-point scale. There had been two different kinds of set-up of these questionnaires: Half of the students had to rate their goal commitment, the other half their goal progress towards three different goals. At the end the students had to estimate the probability that they would spend the evening at a party after a full day of studying. This represented a goal incongruent behavior to the goal of studying.

By the fourth and last study Fishbach and Dhar wanted to discover if overoptimistic evaluation of the effect of exercising before the workout would lead to goal inconsistent behavior like eating unhealthy food. For this experiment 52 students who just entered or had been on their way out of a gym had been asked to rate on a ten-point scale how effective their workout was or would be in order to reach their goal of staying fit. Afterwards they needed to rate on a five-point scale how much they wanted to eat something unhealthy this evening.

Central results and conclusion

The first experiment showed that the participants colored 80% of the narrow scale which represented a target weight loss of 3.92 lbs. and 46% of the wide scale which corresponded to 11.67 lbs. Even if the total amount of weight the participants wanted to lose was more on the wide scale, visually it seemed to be a smaller distance that the participants needed to overcome and therefore the progress towards their goal of losing weight was higher. This result lead to the behavior that 85% of the participants who would mark their weight they wanted to lose on the wide scale chose a chocolate bar instead of an apple as a gift for their participation. On the other hand only 58% of the participants who would mark their target weight loss on the narrow scale chose the chocolate bar instead of the apple.

In the second experiment the participants had been exposed to a high (five hours spend for course work) versus low (30 minutes spend for course work)

comparison standard. The students that had a low comparison standard had the feeling their own goal progress was higher than the students that have been exposed to a high comparison standard. Furthermore, the students that compared themselves to another fictive student that was just spending 30 minutes for course work had been more interested in non-academic activities like spending time with friends, TV or having fun than students that compared themselves to a high comparison standard.

The third experiment showed that the probability to choose a goal inconsistent behavior after the students had worked the whole day on their goal was higher in the goal progress condition than in the goal commitment condition. Therefore, it can be stated that goal commitment results in the avoidance of goal incongruent behavior whereas a higher goal progress leads to it. This result is supporting the findings of the first two studies.

The last experiment showed that students that had done their workout at the gym rated this workout as less effective than those that haven't exercised yet. Next to that, before doing the workout at the gym the students have been more willing to eat an unhealthy burger the upcoming evening than those who exercised already.

Important aspects for own study/ appreciation of the study with regards to own problem statement

Fishbach and Dhar figured out that perceived goal progress e.g. how much weight somebody already lost, has a direct effect on the behavior like how much and what the individual selects to eat. Furthermore, they pointed out that a high perceived progress towards a goal leads to more goal inconsistent activities and behavior. This seems to be a contradiction to previous studies. For example the study done by Klesse et al. claim that the closer a specific goal comes the higher the motivation gets to reach it.

The second study confirmed the findings of the first one. Students that compare themselves with a high comparison standard are less likely to follow goal-incongruent behavior than those that compare themselves with a low comparison standard. However, it is not the objective progress that influences the behavior, e.g. how much weight somebody wants to lose (study 1) or how much time somebody

spends actually for studying (study 2), it is rather the perceived goal progress that has an effect on goal consistent or inconsistent behavior.

One important aspect of the studies of Fishbach and Dhar is the experimental design. The authors used a scale (wide vs. narrow) on which the participants marked how much weight they wanted to lose. Next to that, the goal progress was measured on a seven-point scale in a pretest. So they used two different ways (scale and items) for measuring the goal progress. This will be done in the main study in the current research as well: Goal attainability should be measured on the one hand directly with the use of different items. On the other hand, a scale should be used where the participants should mark the distance between their own BMI and the BMI of the testimonial in an ad.

Research gaps and weaknesses/ reasons for own study

All four studies done by Fishbach and Dhar show the opposite effect from the one mentioned by Klesse et al.. Fishbach and Dhar's studies showed that the expected progress towards a goal leads at the end to goal inconsistent behavior. Individuals are moving away from the goal which they set themselves. This finding is also contradicting the *goal gradient hypothesis* which claims that the closer a goal gets the higher the motivation is to reach this specific goal. This was the main reason this study was described as it is contrary to the results of Klesse et al. and the theoretical foundation of the goal gradient hypothesis. Next to that, it shows that further studies to confirm or reject the relationship between the constructs *motivation* and *reference point* are needed.

2.1.3 Preliminary summary: Influence of goal attainability on motivation

Goals/ goal attainability is the first construct that was analyzed as it is the starting point of the research. First, the following relevant theoretical models have been described:

- The concept of goal feasibility and desirability,
- The goal gradient hypothesis,
- The goals loom large effect and
- The concept of goals as reference points (which included the Prospect Theory).

Coming from this theoretical framework four studies have been described, which tested the relationship described in the theoretical models mentioned above. Table 3 summarizes these four studies.

Table 3

Studies which tested the relationship of goal attainability on motivation.

Author/ Year	Relationship tested	Methodology	Results
Klesse et al. (2012)	Influence of exposure to slim models on dieting behavior	Different diet diary covers (1. study: idealized model vs. neutral one; 2. study: normal vs. idealized model)	Different distance between the participant and the shown model resulted in different judgments of goal attainability and therefore in goal inconsistent or consistent behavior
Relationship direction:	If the <i>goal</i> (being slim) is judged as <i>attainable</i> , the dieting <i>motivation</i> is high. Goal attainability (+) → Motivation (+)		
Other relevant constructs/theories:	<i>Social comparison, distance</i> <i>Theory of social comparison</i>		
Kivetz et al. (2006)	Goal-gradient-hypothesis tested for humans: Influence of goal progress on buying intention	Reward cards for coffee (buy ten and get one for free; check the days needed to complete the card) and music rating websites (rate songs and get an Amazon voucher for free; check the inter-visit times).	Goal proximity increases the motivation to follow a goal. Not the absolute goal but the psychological distance, which can be manipulated, to the goal has an influence.
Relationship direction:	If the <i>goal</i> (getting one coffee or a voucher for free) is judged as <i>attainable</i> , the <i>motivation</i> to revisit the coffee shop within a short period of time is high. Goal attainability (+) → Motivation (+)		
Other relevant constructs:	<i>Purchase intention</i>		
Scott & Nowlis (2013)	Influence of different types	Participants had either to rate how many M&Ms	Goal reengagement is the highest for

	of goals (single vs. range goal) on goal reengagement	they would eat (single or range goal) or they have been assigned to a single or range goal condition in a weight loss program	high-low range goal as it has two reference points (low: what has already be accomplished; high: what still needs to be accomplished)
Relationship direction:	<i>Goals</i> which are rated as more <i>attainable</i> (range goals in comparison to single goals) result in a higher <i>motivation</i> to lose weight (to continue the participation in a dieting program; eat less M&Ms). Goal attainability (+) → Motivation (+)		
Other relevant constructs and theories:	<i>Reference point</i> <i>Theory of reasoned actions (from the theory of goal feasibility and desirability)</i>		
Fishbach & Dhar (2005)	The effect of the aspiration towards the focal goal on conflicting goals.	Weight loss wish should be marked on either a narrow or a wide scale. Amount of time spend for course work per week should be filled into a questionnaire where somebody already has written in either 30min or 5hrs.	High perceived progress towards a goal leads to more goal inconsistent behavior
Relationship direction:	High goal progress lead to a demotivation to follow the goal (dieting motivation, motivation to spend time for course work). Goal progress (+) → Motivation (-)		
Other relevant constructs:	<i>Social comparison</i>		

To sum up, the following hypothesis can be derived from the relevant theories and concepts as well as the presented studies:

Klesse et al. figured out that the judgment in regards to the goal attainability is influenced by the perceived distance to a desired end state or goal. The perceived distance is evaluated in a process called *social comparison*. Furthermore, Klesse et al. stated that the goal attainability is influencing the *motivation* to follow a specific goal by appropriate/ goal compliant behavior (Klesse et al., 2012, p. 360ff.).

Kivetz et al. performed an experiment in coffee shops with reward cards (Kivetz et al., 2006, p. 55). He gave students a reward card and whenever they reached a specific number of stamps on it (they received one stamp per coffee they bought), they received one coffee for free. Kivetz et al. noticed that the fewer stamps a student needed on the reward card to get one coffee for free, the more effort he put into reaching this goal (Kivetz et al., 2006, p. 55). Therefore, it can be stated that goal proximity is increasing the motivation to follow a specific goal as it seems to be more valuable the closer the consumer gets to it. Kivetz et al. study showed that the *purchase* of coffees increased which was shown by the shorter inter-visit times.

Scott and Nowlis supported the assumption that goals or how these are set have an influence on the motivation to follow them. They showed in their studies that the consumers are more engaged in following their goals when the goal is defined as a range and not as a total amount, e.g. the goal of losing weight is defined as “losing three to five kilogram” and not as “losing four kilogram”, which is caused by the fact that ranges are categorized as more attainable than a specific single number goal (Scott & Nowlis, 2013, p. 456ff.). From this it follows that more attainable goals lead to higher motivation to continue with specific behavior like continuing using a product that helps to reach a goal. Furthermore the authors pointed out that the *reference point* is playing a crucial role in the judgement of goal attainability.

Last, a study that showed a contrary result was the one of Fishbach and Dhar in 2005. The authors pointed out that high perceived progress towards a goal leads to more goal inconsistent behavior.

Based on the goal gradient hypothesis, the concept of goal feasibility and desirability and supported by the study of Klesse et al., Kivetz et al. and Scott and Nowlis the following hypothesis will be derived:

H1: The better the goal attainability rated, the higher is the health motivation.

In the current research the goal will be to being healthy, therefore it is not the motivation in general but the health motivation that will be in the focus. The advertising message used in the ad in the main study will underline the health character further.

Figure 8 illustrates the relationship between goal attainability and health motivation which has been theoretically based on the above mentioned theories

and concepts and supported by the studies described above. As mentioned in the beginning of the chapter the complete SEM model is shown and the mentioned

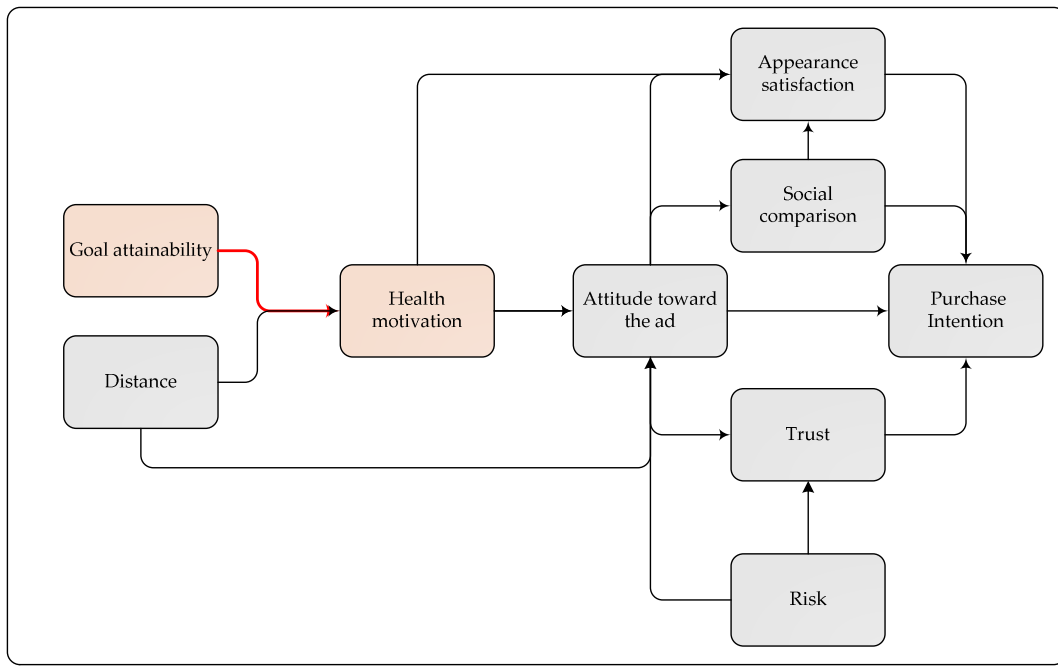


Figure 8. Influence of goal attainability on health motivation.

relationships are highlighted in red. The ones that will be discussed later are highlighted grey.

The studies above figured out that there are other constructs which seem to be important for goals/ goal attainability. On the one hand the motivation and social comparison, on the other hand the reference point somebody has and the purchase intention. In the third part of this chapter these will be defined and relevant empirical studies will be shortly summarized.

First the second main aspect of the dissertation will be defined: the advertising or to be more precise the attitude of the consumer toward the ad.

2.2 DEFINITION AND DELIMITATION: ATTITUDE TOWARD THE AD

After the first main concept of the research, *goal attainability*, has been analyzed, theoretically and in empirical studies, the construct *attitude toward the advertisement* will further analyzed. As consequences should be derived for

marketers that advertise fitness products, it is important to have a closer look at the advertisement and the consumer's attitude toward it.

For marketers there are different ways to attract consumers to buy their products. One possibility is to launch it under a well-known brand which may lead to positive expectations towards the quality by the customers (Grewal, 1995, p. 228/229). Apart from that, sales promotions can be used or advertisements can be created, which are *marketer-dominated* sources of information for the customer (Cox, 1967, pp. 172ff.). Furthermore, marketers can place commercials on TV, product references in press or radio which can be characterized as a *neutral* source of information for the consumer (Cox, 1967, pp. 172ff.). The source of information is positive word of mouth advertising, which can be defined as a *consumer dominated* way of communication (Grewal, 1995, p. 229; Cox, 1967, pp. 172ff.).

The focus in the current research will be just on the marketer-dominated source of information, to be more precise on the *advertising* of the product. Although the influence of advertising on e.g. online purchasing attraction and tendency is well-established, it is still unclear to some extent how the efficiency and effectiveness of ads can be increased (Abayi & Khoshtinat, 2016, p. 533). It seems to be important to focus on advertising as good advertising can establish a positive image of a company and as it is an important element of success (Abayi & Khoshtinat, 2016, p. 537). Furthermore, advertising is playing a major role in the communication between the consumer and the company (Abayi & Khoshtinat, 2016, p. 538).

Based on the *concept of goal feasibility and desirability*, the exposure to an advertisement can be defined as an *external stimulus* (Bagozzi & Dholakia, 1999, p. 20). This external stimulus is resulting in a conscious goal setting followed by reasoned actions. In the *theory of reasoned action* the *attitude toward behavior* is influencing the intention and consumer behavior (Chang, 1998, p. 1826). On the basis of the theory of reasoned action the attitude toward the external stimulus, the advertising, should be further analyzed as it might influence consumer intention and behavior.

Based on Petty and Cacioppo, *attitude* can be defined as a general favorable, unfavorable or neutral evaluation of another person, oneself, objects and issues (Petty & Cacioppo, 1986, p. 127). Based on this definition, the

attitude toward the advertisement will be defined as the judgement of the consumer about the advertisement with the portrayed model (testimonial).

Ads in print media like magazines can be described as containing the following two elements (Mcquarrie & Mick, 1999, p. 37):

- an advertising message/slogan, which can be also called the linguistic element (Mcquarrie & Mick, 1999, p. 51) and
- an individual/ image of a person, which can be described as the imagery part or visual element of the advertisement. The individual or image of a person portrayed in an ad can also be called *testimonial*.

In the following both elements will be considered in more detail theoretically as these have an influence on the attitude toward the ad. This assumption can be supported by a study done by Bower who figured out that highly attractive models used in advertising can destroy the advertising effectiveness (Bower, 2001). This is caused by the deflated self-image in contrast to the highly attractive ad models (Lin & Tsai, 2006, p. 23). This underlines the effect advertising has on the attitude toward the ad, which in turn can influence the consumer, his judgment and behavior.

2.2.1 Theoretical models in relation to attitude toward the advertisement

Framing

The *advertising message/ slogan* can be formulated in three different ways (Gierl et al., 2002, p. 146) by using

- a risky choice frame,
- an attribute frame or
- a goal frame.

In 1981 Tversky and Kahneman introduced the *risky choice framing*. In the risky choice framing the individual has a choice between different options which result in a specific outcome. Each option has a specific level of risk and therefore the risk preference is affected (Levin et al., 1998, p. 150). The example which Tversky and Kahneman used was the *Asian disease problem*. When people need to select between two options from which one was risky and the other wasn't with the same probability of occurrence, the choice seems to be dependent on the formulation of the options. If the option was formulated in a negative way e.g. how many lives will be lost, the people tend to be more willing to take the risk than if

the choice was formulated in a positive way e.g. how many lives can be saved (Levin et al., 1998, p. 152). Other studies confirmed this tendency: If the focus is on the avoidance of losses people are more willing to take the risk than in the case of realizing gains (Levin et al., 1998, p. 154ff.).

The next type of framing is the *attribute framing*. In the case of attribute framing the characteristics of a product are in the focus of the manipulation. In contrast to the risky choice framing there aren't different options that are independent from each other. Only an evaluation of different attributes of a product e.g. how good/ bad or acceptable/ unacceptable it is, is taking place (Levin et al., 1998, p. 158). In a study done by Levin and Gaeth (1988) in which ground beef was labeled once in a positive way "75% lean" and once in a negative way "25% fat", it was figured out that the judgments of the quality had been superior if the label was formulated in a positive way.

In other areas like the choice of medical treatments, studies also supported these findings: The formulation of product attributes in a positive way resulted in better evaluations than the negative formulation or framing of attributes (Levin et al., 1998, pp. 161ff.).

At last there is the *goal frame* in which the behavioral goal or the goal of an action is manipulated (Levin et al., 1998, p. 150). The goal frame can be either positive or negative. In the case of a positive goal frame the advertising message is pointing out the positive consequences the consumer will have by using the product e.g. "If you are the owner of a credit card and you are losing it, the damage will be replaced" (Ganzach & Karsahi, 1995, p. 12). On the other hand the negative goal framing is formulating a loss message e.g. "The disadvantage of using cash instead of a credit card is that in the case of theft the damage won't be replaced".

A study done by Ganzach and Karsahi in the area of credit cards showed that a message of loss was more effective to motivate the consumer to use the product than a message of gain. The same results have been confirmed by the study done by Meyerowitz and Chaiken (1987) in the area of cancer prevention and by the study done by Homer and Yoon (1992) in the area of mouthwash (Gierl et al., 2002, p. 147). However, studies done by Smith (1996), Smith and Wortzel (1997) as well as Berger and Smith (1998) in the area of video camera brands disprove the assumption that negative goal framing is more effective than positive one. In these studies positive messages have been more effective than negative ones. Smith is

explaining these different results by the product category. He stated that it depends on the type of product if a positive or negative goal framing is more effective (Smith, 1996, p. 52). On the one hand there are products which the consumer is buying to avoid negative consequences like insurances. On the other hand there are products that are just bought in order to increase the social status like cars or mobile phones (Gierl et al., 2002, p.147). In the first product category negative goal framing seems to be more effective, in the second one positive goal framing.

Self- congruity theory

The next element of an advertisement is the *individual or image of a person*. The individual or image of a person in an ad can be either a well-known person like an actor, an athlete or a singer or just an individual which isn't famous. Hereby, one factor which is influencing the consumer's judgment of the displayed person in an ad is the *self- congruity* (Grewal, 1995, p. 230). Self-congruity can be described by using an example: A consumer is seeing an ad portraying an athletic man wearing sport shoes. Sport shoes indicate an active lifestyle and are also casual and comfortable. This man in the ad is representing the typical person using and buying this product. To formulate this in a more general way: Consumers have expectations about the personality of the person who is buying a specific product. When the consumer is examining the ad he is comparing his view of himself with the product personality image. When the consumer's self-image and the product personality image are matching, the self-congruity can be described as high. The set of attributes shown in the portrayed ad is therefore showing the typical user of the product and the consumer is deciding based on this image if the product is appropriate for him or not (Grewal, 1995, p. 230). The *actual self- congruity*, which describes the matching between the product personality image and the image the customer has of himself, is influencing the popularity of the product as well as the purchase intention. Previous research has supported that a high self-congruity is influencing the purchase intention in a positive way (Sirgy, 1985, p. 204; Sirgy & Samli, 1985, p. 274).

Social comparison theory

Festinger's social comparison theory of 1954 presumes that humans have a drive to evaluate their abilities and opinions (Festinger, 1954, p. 117; Lin & Tsai, 2006, p. 24). Festinger defined abilities as *what a person is capable to do* and opinions

as *the cognition of his own situation*. Based on Festinger it is important for humans to evaluate abilities and opinions as these influence and cause behavior and a wrong evaluation may have negative consequences (Festinger, 1954, p. 117). The evaluation takes place by social comparison, if no objective or social means are available (Festinger, 1954, p. 118). Furthermore, Festinger claims that the social comparison tendency decreases, if the difference in abilities and options between oneself and the person increases (Festinger, 1954, p. 120). Next to that Festinger hypothesized that a discrepancy of the options and abilities of oneself and others, which is noticed during the social comparison process, will result in actions to reduce this discrepancy (Festinger, 1954, p. 124).

There are two different ways for social comparison: upward and downward comparison (Martin & Gentry, 1997, p. 22). When people are comparing themselves to somebody that is better off (*upward comparison*) this can be on the one hand motivational but on the other hand also unfavorable. Whereas a comparison to somebody that is worse off (*downward comparison*) can be seen as favorable and will protect one owns self-esteem (Heath et al., 1999, p. 105).

For Festinger social comparison takes place within groups or face-to-face. However, other authors like Merton pointed out that social comparison can also take place with people who aren't in the same group, but share a common social status (Merton, 1957; Richins, 1991, p. 72). Furthermore, Festinger just focused on social comparison process of abilities and opinions whereas other authors like Wood argue that people compare themselves to others as well to evaluate their traits and circumstances (Wood, 1989; Richins, 1991, p. 72). Based on Richins models in advertising also form a social category and therefore also social comparison will take place (Richins, 1991, p. 72).

Festinger's work didn't mention consequences of the social comparison process for satisfaction, self-feelings nor self-esteem. However, he mentioned that the comparison to persons who have superior abilities and opinions could result in feelings of failure (Richins, 1991, p. 72). Woods review of studies showed that social comparison has an effect on self-concept and self-feelings (Wood, 1989, p. 231ff.).

Theory of reasoned action

The theory of reasoned action was developed by Fishbein and Ajzen in 1967 and assumes that intention (BI) is directly leading to consumer behavior (Chang,

1998, p. 1826). Intention is influenced by the following two components: the attitude toward the behavior (A) and the subjective norm (SN). Furthermore, the attitude toward behavior is a function of the belief for outcome (BI) and the evaluation of the outcome (E). The subjective norm is a function of the motivation to comply and the normative belief. Figure 9 visualizes the theory of reasoned action.

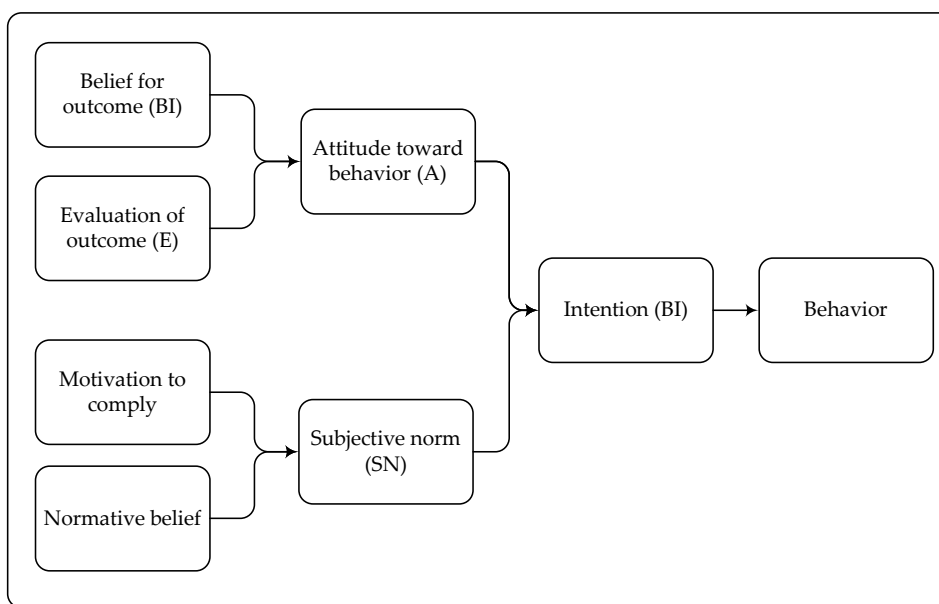


Figure 9. Theory of reasoned action; source: Chang, 1998, p. 1826.

In comparison to the theory of reasoned action the theory of planned behavior, which was developed by Fishbein and Ajzen in 1975, extended the model by the perceived behavior control, which influences intention (Ajzen, 1985). The perceived behavior control is made by the control beliefs and the perceived facilitation. However, this extension is not relevant for the current research. Therefore just the theory of reasoned action will get further attention.

In the theory of reasoned action, the subjective norm can be defined as what a person thinks he/she should do based on the opinion of others (Ajzen & Fishbein, 1980). Whereas the attitude toward the behavior describes the positive and negative evaluations and feelings toward the behavior.

The two main hypothesis in this theory that are important for the own research are the following:

- *intention is leading to behavior*

- For the current research that means purchase intention is leading to purchase behavior. Therefore purchase intention can be measured in order to predict consumer behavior.
- *attitude* leads to *intention*
 - For the current research it will be therefore assumed that attitude toward an ad can lead to purchase intention.

2.2.2 Influences of attitudes toward ads in empirical studies

As specified in the previous chapters an advertisement in print media is containing an image of a person, an advertising slogan and sometimes further information like the brand name or product relevant information next to the product. The main focus in the following chapter will be on the image of a person in an advertisement. The selection of an image for a campaign can have an influence on the buying intention as well as on the credibility of an ad.

In the study of Klesse et al. it was pointed out that dieters exposed to a slim model on their dieting diary are influenced by the image on the diary. The group with the slim model was less motivated to lose weight than the group with an average model on the cover (Klesse et al., 2012, p. 360ff.). Therefore it can be stated or assumed that the design has an effect on the consumer, it doesn't matter if it is a dieting diary or a product with a specific design. Even the positioning of the objects on a product can have an effect on the buyer.

In the following further studies will be described in which the relationship or influence of the attitude toward the advertisement is analyzed.

2.2.2.1 *The relationship between different ad designs and product judgements* (study of Chae et al., 2013)

Goals of the study

Chae et al. conducted five different studies in order to prove that the spatial proximity in an ad between the cause, e.g. a face crème against acne, and a target effect (a spotless face) has an influence on the judgment of the effectiveness of the product. The underlying hypothesis is that the closer the cause and the desired effect are shown in an advertising, the more effective is a product judged by the consumer.

Experimental design

In the first experiment two ads for crème that should help people with acne problems have been designed: One in which a woman with a perfectly clean face is far away from the crème that should help to get rid of acne and the second one in which the woman is placed next to the crème. A pretest was done by 76 participants, in which they should rate on a seven point scale if both layouts of the ads have been liked equally, showed no significant differences. In total, 82 college students from the National University of Singapore participated in the main study; 39 of those have been females. All students received one of the two ads and needed to rate six questions concerning the effectiveness on a seven point scale. The answers of these six questions have been added up to one single score.

In the second part of the first experiment, the woman in the ad with the perfectly clean face was replaced by a woman with acne. So not the desired outcome was shown but the problem for which the product should be the solution for. Next to that, the position of effect and cause was changed: In the first experiment the crème was on the left side and the woman on the right. In the second experiment it was the other way around. By changing the position Chae et al. wanted to exclude the possibility that the specific location and not the spatial proximity was the cause for the different judgments in product effectiveness. A pretest done by 119 participants showed that there was no difference in the judgments of the design of the two layouts. The main experiment was done by 62 undergraduate male and female students, who had to rate six items for one of the two advertisements on a seven point scale. At the end of the second experiment the participants were asked if they wanted to get either the product from the advertisement as a gift or a product against acne which was available in the local supermarket.

In the second experiment Chae et al. wanted to use another product in order to support the hypothesis that spatial proximity has an influence on product effectiveness. Therefore a cockroach killer was used as another type of product. The design of this experiment and the result were the same as the ones in the previous two studies: There was a pretest done by 40 participants to evaluate the differences in design of the two advertisements, which didn't show any significant distinctions. For the main experiment 76 students were recruited. Each one of them needed to mark on a line, which ranged from zero to hundred, where zero stands for no

connection at all and hundred for a strong connection, how related the two images in the advertisement were. Each participants saw either the advertisement in which the cockroach killer was close to the cockroach or far away. Finally the participants needed to judge the effectiveness by the same measure like they did in the first experiment.

A third experiment was done in order to figure out if the participant's knowledge in a specific product domain has an influence on the product effectiveness judgment based on the spatial proximity. The product used for this experiment was a muscle pain reliever, which was advertised in two different ways: In one advertisement the product was close to the effect, in the other it wasn't. A pretest which was done by 75 participants showed, like in the previous studies, that both designs had been liked without significant differences. In order to have one group of participants with a high degree of knowledge 46 students from the Department of Human Kinetics from the University of British Columbia were recruited, as they had already a couple of classes about causes of muscle pains and how these problems could be treated. The underlying assumption was that these students would have more knowledge about this area than the control group, which was recruited from students of different disciplines like art, science or business. For the control group 46 students were recruited out of these other disciplines. The first part of the study was the same like in the previous studies: The participants received one of the two advertisements and had to evaluate it on a rating scale. The next task contained 15 statements for which the participants had to mark if the statement was wrong or correct. By using this task the experimenter wanted to figure out if the knowledge level between the participants of the Department of Human Kinetics and the control group was different. Next to this objective measure of the knowledge the participants also had to rate their level of knowledge on a seven point scale which ranked from "1 – no knowledge at all" to "7- very knowledgeable". This added a subjective measure to the already objective measure of knowledge. Finally the participants also ranked their level of involvement during the experiment on a seven point scale and answered some general demographic questions about their age and gender.

For the fourth experiment 78 students in the library of the National University of Singapore had been asked to participate in a study for a compensation of US\$1.50. The first part of the study was a *mental exercise* which had the goal to

prime the students either with mechanical or non-mechanical causal process thinking. In the case of the mechanical causal process prime the students read sentences like “a moving ball causes another one to move” and had to describe other scenarios afterwards like “how a nail will get into the wall with a hammer”. The students that were to be primed to a non-mechanical causal process read sentences like “how a tree gets flowers” and should describe other biological processes afterwards e.g. “how somebody who is smoking can get lung disease”. Afterwards they needed to rate on a seven-point scale how important a physical contact was. In the second part of the experiment the students saw an advertisement – either one in which the images of a fabric softener and a bath towel were closer or far away from each other. Both advertisements were rated as equally liked in a previously done pretest. Finally the students needed to rate the effectiveness of the displayed product.

The fifth and last experiment was split into two parts: In the first part Chae et al. wanted to figure out if the spatial proximity was just used as a cue for effectiveness when people are judging about the short-term effect of a product. Therefore the same ads like in the first experiment of Chae et al. were used but the questions concerning the effectiveness were changed slightly: One half of the 187 participants of the National University of Singapore were asked to rate the short-term effect and the other half were asked to focus on and evaluate the long-term effect, which was highlighted in the respective questionnaire.

In the second part of the last experiment four different advertisements were created. The product used was a new drug which would help people with nasal allergies. One of the ads was presented to each of the 166 students who participated in the study. In two of the ads the headline indicated that the effect would happen in the long run, in order to change the expectations of the participants. Next to that, the spatial proximity was altered (close versus far away). After seeing one of the ads each student had to rate the effectiveness by the same six-item effectiveness measure as used in the previous experiments. Finally, the students had to rate their overall estimation of the product on two seven-point scales ranging from “very bad” to “very positive”.

Central results and conclusion

The first and second part of the first experiment underlined the hypothesis that the students rated the effectiveness of a product higher when the crème was closer to the displayed person. Therefore, the proximity of the cause and effect had an influence on the judgment of the effectiveness of the product. Furthermore, the second experiment showed the behavioral consequences of spatial proximity: The participants who saw the ad in which the woman was close to the product chose this product as a gift more often than participants who saw the ad in which the woman was far away from the product. The latter group preferred a product against acne from the local supermarket rather than the presented product. To sum up, the spatial proximity is not just influencing the judgment of effectiveness of a product but is also influencing the product choice.

The second experiment, in which a cockroach and a cockroach killer have been used as images in an advertisement, showed that also in this different product category the effectiveness of the product was judged to be higher when the product and the cockroach have been closer to each other. Furthermore, this experiment showed that the participants evaluated the connection higher of the two images when the images have been closer to each other.

In the third experiment the knowledge level was taken into account during the analysis of the effectiveness judgment of products based on spatial proximity. Students from the Department of Human Kinetics were recruited as it was assumed that they would have more knowledge about the product. This was confirmed as they had more correct answers in the 15 statements part of the study as the students from other type of disciplines like art or business. Next to that the subjective grading of their knowledge level differed in the same way between these two groups. However, the involvement level of both groups didn't show significant differences. On the one hand the third experiment confirmed the finding from the previous studies that people use spatial proximity to judge about the effectiveness of a product and assume a smaller distance means a higher effectiveness. On the other hand the experiment showed that even if the spatial proximity is manipulated, the group with more knowledge in this area didn't change their judgments of the effectiveness.

The fourth experiment showed that the students that were primed to *mechanical causal process thinking* rated the effectiveness of a product much higher

when the images on an ad have been closer to each other than the control group which was primed by *non-mechanical causal process thinking*. Therefore, spatial proximity seems to be a critical cue to determine the effectiveness of a product especially for the causal process primed participants.

The first part of the last experiment evidenced that spatial proximity wasn't a cue for effectiveness when people needed to evaluate the long-term effect of a product. This was just the case when the short-term effectiveness needed to be rated. The second part of the fifth experiment supported the findings from the previous studies that spatial proximity influences the effectiveness judgments, when a short-term effect needed to be evaluated. However, spatial proximity doesn't have an influence when participants needed to evaluate the long term effect of a product. Spatial proximity doesn't lead to a better ranking of the effectiveness when the students needed to rate the long term and not the immediate effect of a product.

Important aspects for own study/ appreciation of the study with regards to own problem statement.

The study done by Chae et al. showed that advertisers need to convince consumers of their product effectiveness and could do this by the spatial proximity of the images of the cause and the desired effect in an advertisement. The study pointed out that for consumers with a lower level of knowledge about a specific product domain the distance of the two images in an ad had an influence on the effectiveness judgment. The product was rated as more effective when the desired outcome like a clean skin was closer to the crème that should reduce acne.

Next to that, the following findings seem to be relevant:

- Consumers are focusing more on the short-term or even immediate effect of a product when they judge the effectiveness of a product.
- The judgment of the participants is therefore more myopic and they focused more on immediate gains or time frame than on long-term effects.

These conclusions have also been confirmed by a follow-up study done by Chae et al. which showed that 78% of the 142 participants added *immediately related attributes* like "soon", "fast" or "as soon as possible" to their important considerations when they would judge the effectiveness of a product.

Research gaps and weaknesses/ reasons for own study

Chae et al. have shown that the distance of two images in an advertisement plays a critical role on the judgment of the effectiveness of a product. However the distance between the consumer and the image of the desired outcome or end state on the advertisement wasn't taken into account. The focus of Chae et al.'s study was the advertisement itself, the two pictures presented and their place in the ad, but not the interaction or the distance between the picture presented and the consumer itself. This should be the focus of the own study: How can the distance, not between the images in an ad, but between the desired outcome, like the image of the woman without acne, and the current state of the consumer influence the consumers attitude toward the ad. If the spatial proximity has an effect on the effectiveness judgments of the participants in the studies of Chae et al., it may be possible that also the proximity or distance between the consumer and the desired end state shown as an image in the ad has an effect on the attitude toward the ad as well which in turn influences the product trust.

2.2.2.2 *The effect of advertising and social comparison on consumer satisfaction* (study of Richins, 1991)

Goals of the study

In advertising, TV or in magazines some kind of ideal is always shown concerning beauty, wealth and life in general. All these ideals in different areas of life seem to be unrealistic and not reachable even by using the products advertised by marketers. In this context, Richins wanted to figure out in a study done in 1991 on the one hand if female students are comparing themselves with ideal persons portrayed in ads and if this comparison is resulting in a lower satisfaction with their own appearance. On the other hand, Richins analyzed if this comparison process results in a raise of the comparison standard as well as a lower self-perception of physical attractiveness. The theoretical background was the *social comparison theory* of Festinger.

Experimental design

The first study was a focus group interview which wanted to figure out if female students compare themselves with a person portrayed in an ad shown in a fashion magazine. There were two focus groups: one of them consisted of four and

the other of five female students, who received extra credit for the participation in the study. Eight ads were shown to the female students; four ads showed full-body images and the other half just facial images of highly attractive models. After being exposed to the ads the female students had to write down their feelings and reactions. In the discussion afterwards the participants admitted that they envied the displayed models because of their beauty and that they focused especially on the parts of the body with which they were dissatisfied in order to get reassured that it was not that bad.

The second study used a survey design for asking 80 female college students; 34 were asked after their marketing class for extra credit and the remaining ones were asked on campus or in their dormitories. A seven-point scale was used in the questionnaire, which included items which allowed deriving if the participants compared themselves with the shown ads. Next to that, items were included that allowed to assess the respondents satisfaction with their appearance, their self-esteem as well as their level of physical attractiveness.

In the third study Richins wanted to analyze the effect of social comparison. Therefore 80 female students were asked to participate in a questionnaire during their marketing class for extra credit. One week later they had to come back to get a picture taken from them. Seven out of the group of 80 had to be excluded from the analysis. These participants didn't follow the requirements for the study like coming back for the second session or they didn't fill out the questionnaire properly. During the class six ads for products like perfume, clothing and cosmetics were shown for 30 seconds – for one experimental group the ads displayed the face of a highly attractive model; for the other experimental group only the product without the model was shown. In order to select highly attractive models for these ads a pretest was done, in which 19 students had to rate ads in general and ads that contained a model. After seeing the ad for 30 seconds the participants had to rate different characteristics like the model attractiveness, the purchase intention and the product feature.

Afterwards pictures of average attractive female college students, which had been selected in a pretest before as well, were rated by the participants on a seven-point scale. The cover story behind this was that an advertiser for cosmetic products was thinking about using college students instead of models for his ads. At the end, the participants rated also their level of physical attractiveness. In order

to get an objective opinion about the level of the participants' physical attractiveness, their pictures were shown and rated by other college students as well.

As the third study showed no effect of highly attractive models in ads on the judgment of the participants own level of attractiveness, a fourth study was conducted in order to rule out that this might have been influenced by the sequence of the third experiment. The participants had seen highly attractive models and afterwards average attractive college students. This could have affected their comparison standard. Last, they had to rate their own level of attractiveness. Therefore, 145 undergraduate students were asked to participate in the fourth and last study. Eighteen of these had to be excluded because of different kind of reasons like they refused to get a picture taken of them. There were three kind of stimuli: In the first one the participants had seen ads for clothing and cosmetics like in the third study, in the second one the face of a highly attractive model was part of the ad, in the third one the full body of the model was shown next to the product. Pictures of average students, which hadn't been used in the third study before, were shown as the comparison standard. The procedure was the same like in the third study, except that the rating scale for the rating of the own level of attractiveness was extended from a seven to a nine point scale in order to make it more sensitive. Next to that, the model's attractiveness was not rated but the participants needed to judge their satisfaction with their face and body on a seven point scale.

Central results and conclusion

The first study, the focus group interview, showed that social comparison between female students and models displayed in ads takes place. Therefore the hypothesis of Richins supports that people compare their level of attractiveness with the one of models displayed in ads. In the second study Richins supported the hypothesis that social comparison takes place and furthermore figured out that comparison takes place *about half of the time* or even more. Next to that, the frequency or the comparison in general resulted in dissatisfaction with the physical appearance of the female college students. To sum up, comparison leads to dissatisfaction. This is what the third study showed as well: Students who had seen highly attractive models in ads were less satisfied with their own level of physical

attractiveness. Next to that the third study supported the hypothesis that the comparison standard got influenced: Students who saw highly attractive models in ads rated average attractive college students worse than otherwise. The third study showed no effect of highly attractive models in ads on the judgment of the participants own level of attractiveness. This was confirmed by the results of the fourth study as well, in which the order of seeing average college students, seeing highly attractive models and judging the own level of attractiveness was changed. However, the fourth study supported the finding of the third one that the comparison standard is influenced by the highly attractive model and that this is having a negative influence on the satisfaction with one owns appearance.

Important aspects for own study/ appreciation of the study with regards to own problem statement

The following aspects of Richins studies seemed to be important scientific finding for the own problem statement:

- Advertising in general leads to social comparison.
- Idealized advertising images will lower one owns satisfaction, e.g. seeing highly attractive models in ads will lower one owns judgment of physical attractiveness, and negatively affect one owns feeling about the self.

Furthermore Richins noted that in theory marketing's central goal is to satisfy the customer but that in practice marketing activities are doing sometimes the opposite. This contradiction bears further research.

In the experimental design it can be highlighted that Richins conducted a preliminary study in order to find the best advertising for her main study. This approach will be applied in the current research as well.

Research gaps and weaknesses/ reasons for own study

Richins mentioned that the ads in the studies were shown just 15 to 30 seconds which doesn't reflect realistic conditions as some of the participants in the study reported that they are sometimes focusing and looking at ads very carefully when they contain highly attractive models (Richins, 1991, p. 81). Next to that the ads have been shown as quite big pictures on a screen which doesn't reflect normal circumstances. These two limitations which Richins mentioned should be taken

into consideration for the own study: Ads should be visible not just a limited period of time so the respondents can decide how long and carefully they will look at them. Next to that they should be in normal size, which means the size like ads are shown normally in magazines.

In addition, Richins mentioned the effect of satisfaction with one self on the buying behavior as one additional research possibilities in this area. This effect will be included into the own study as well.

2.2.2.3 The positive impact of advertising on trust (study of Abayi & Khoshtinat, 2016)

Goals of the study

Abayi and Khoshtinat wanted to take motivating and emotional factors into account during the analysis of the influence of advertising on online shopping. Motivational factors include engagement with the product and trust. Emotional factors are composed of enjoyment and arousal (Abayi & Khoshtinat, 2016, p. 535). The main focus of the study was on online sales of airline tickets.

Experimental design, central results and conclusion

A questionnaire was filled out by 286 participants who lived in Tehran. Based on the results Abayi and Khoshtinat pointed out that online advertising is influencing trust, which in turn influences the online purchase tendency (Abayi & Khoshtinat, 2016, p. 537). Furthermore, advertising through arousal, enjoyment and engagement with the product influences the shopping tendency. The results of Abayi and Khoshtinat are in line with previous studies e.g. with the study of Kafashpour et al. (Kafashpour et al., 2010). Kafashpour et al. demonstrated the positive impact which advertising has on trust, which in turn has a positive influence on the purchase intention.

Important aspects for own study/ appreciation of the study with regards to own problem statement

The results of the study of Abayi and Khoshtinat as well as the results of Kafashpour et al. show that advertising is creating a positive impact on trust in the product. Furthermore, trust is having an effect on the shopping tendency (Abayi & Khoshtinat, 2016, p. 537).

2.2.2.4 *The influence of highly attractive models in advertising on self-esteem and self-perception (study of Martin & Gentry, 1997)*

Goals of the study

Based on the social comparison theory Martin and Gentry wanted to research the effect of highly attractive models in advertising on the self-esteem and self-perception of female pre-adolescents and adolescents (Martin & Gentry, 1997, p. 19). Martin and Gentry assumed that the effect was influenced by one of the following motives for social comparison: Self-evaluation, self-improvement or self-enhancement.

Experimental design

A questionnaire was distributed to fourth, sixth and eighth graders of a public school in the Midwest of the United States during their class time. Five types of questionnaires which contained ads were used for the study. The ads had been taken out of the magazines *Seventeen*, *Teen*, *YM* or *Sassy*, which were some of the most popular teen magazines in the US (Donaton, 1990). Fictional brand names were created in order to avoid any side effects. Some of the ads showed full-body models, others just parts like the face of a model. In order to guarantee that the model was judged as highly attractive, the participants had to rate the attractiveness of the model first. The different motives for social comparison (self-evaluation, self-improvement or self-enhancement) were manipulated before the exposure to the ad. The self-evaluation motive was primed e.g. by the advertising headline "Do you look this good?" and by the advertising message "You. Your hair. Think about it. Do you look this good?". The self-improvement motive was manipulated by e.g. the headline "Get Better!" and by the message "Improve yourself... You can learn to be just as beautiful". Last, the self-enhancement motive was primed by e.g. the headline "You're better looking than she is!" and the message "Be proud of yourself... You are just as beautiful, or more!" (Martin & Gentry, 1997, p. 25).

Central results and conclusion

The authors assumed the following three effects: If self-evaluation is the motive for social comparison a highly attractive model in an ad will result in a lower self-esteem and self-perception. If self-improvement is the motive, highly

attractive models will lead to higher self- perception and –esteem. Last, if self- enhancement is the motive, the self- perception and –esteem will increase in the case of downward comparison. In the case of self- enhancement by discounting the highly attractive models, there will be no effect of the ad on the self-esteem nor – perception.

Table 4 shows the hypothesis and results of Martin’s and Gentry’s study.

Table 4

Overview of the results of Martin’s and Gentry’s study of 1997.

Motives for social comparison	Hypothesis and results
Self- improvement	Increase ofself- perception of physical attractiveness (<i>confirmed for all</i>) ...self- esteem (<i>rejected</i>)
Self- enhancement*	Increase of... ...self- perception of physical attractiveness (<i>confirmed for all</i>) ...self- esteem (<i>confirmed for 4th graders</i>)
Self- evaluation	Decrease of... ...self- perception of body image (<i>confirmed for 6th graders</i>) ...self- perception of physical attractiveness (<i>confirmed for all</i>) ...self- esteem (<i>rejected</i>)

Note. *in the case of downward comparison. No effect assumed in the case of self- enhancement by discounting the highly attractive models.

Source: Martin & Gentry, 1997, p. 27ff.

The results show that on the one hand self-perception of physical attractiveness was also increased when the motive for social comparison was self- enhancement or self- improvement. If the motive was self-evaluation the opposite effect appears. On the other hand self- esteem was unchanged for eight and sixth graders, but increased for fourth graders when the motive for social comparison was self- enhancement. There was no effect on the self-esteem if the motive for social comparison was self- improvement or self- evaluation.

Furthermore, self-perception of body image of sixth graders was lowered after the exposure of a highly attractive model if the motive for social comparison

was self- evaluation (Martin & Gentry, 1997, p. 28). However, the result was just valid for sixth graders, not for fourth or eighth graders.

Important aspects for own study/ appreciation of the study with regards to own problem statement

Martin's and Gentry's study shows the different effects of social comparison on self-perception of physical attractiveness and body image as well as on self-esteem dependent on the different motives for social comparison. The consideration of the motives of social comparison explains the different results of previous studies in the area of advertising and social comparison (Martin & Gentry, 1997, p. 29). Martin and Gentry only focus on fourth, sixth and eighth graders, which allows further research on experimental groups which are older. Furthermore, they claim that further research is needed to determine "the unintended consequences of advertising" (Martin & Gentry, 1997, p. 31). Therefore, the effect of social comparison on appearance satisfaction, influenced by an exposure to different models in advertisements, will be analyzed in the current research.

2.2.3 Preliminary summary: Influence of the attitude toward the advertisement on further constructs

Attitude toward the ad is the second construct that was analyzed in detail. First, the following relevant theoretical models have been described:

- Framing,
- Self- congruity theory,
- Social comparison theory and
- The theory of reasoned actions.

Coming from this theoretical framework four studies have been described, which tested the relationship described in the theoretical models mentioned above.

Table 5 summarizes the studies of Chae et al., Richins, Abayi and Khoshtinat and Martin and Gentry from which further relevant constructs and hypothesis are derived.

Table 5

Overview of studies in the area of attitude toward the advertisement.

Author/ Year	Relationship tested	Methodology	Results
Chae et al. (2013)	Spatial proximity in an ad between the cause and a desired effect influences the judgment of the effectiveness of a product.	An image of a product against acne and a woman without acne was shown to the participants. The distance between the product and the woman has been manipulated. Further examples have been used as well e.g. cockroach killer and muscle pain reliever.	The closer the product was displayed to the woman the more effective the product was judged.
Relationship direction:	The closer the distance between cause and effect in an ad, the more effective the product is judged. Distance (-) → Product effectiveness (+) Advertising (+) → Trust in effectiveness (+)		
Other relevant constructs:	<i>Distance, Trust</i>		
Richins (1991)	The effect of social comparison (comparison with models in advertisements) on satisfaction with own appearance.	Exposure to ads portraying images of persons and judging about feelings. Rating ads with highly attractive models and afterwards own attractiveness.	Advertising in general leads to social comparison. Comparison to highly attractive models lowers appearance satisfaction.

Relationship direction:	Exposure to idealized ad images will lead to social comparison, which in turn will lower the physical appearance satisfaction of the consumer.		
	Advertising (+) → Social comparison (+)		
	Attitude toward the ad (+) → Appearance satisfaction (-)		
Other relevant constructs:	Social comparison (+) → Appearance satisfaction (-)		
	<i>Appearance satisfaction</i>		
Abayi & Khoshtinat (2016)	The effect of advertising, emotional and motivational factors, on online shopping tendency emotional factor.	Survey: 286 participants from Tehran. Online shopping tendency for airline tickets was in the focus of the study.	Advertising is influencing through emotional and motivational factors the purchase tendency. Trust and engagement as motivational factors influence purchase intention.
Relationship direction:	Advertising (+) → Trust (+)		
	Trust (+) → Purchase intention		
Other relevant constructs:	<i>Purchase intention</i>		
Martin & Gentry (1997)	The effect of ads with highly attractive models on pre-adolescents' and adolescents' self-	Questionnaire was done by fourth, sixth and eighth graders of a public school in the Midwest of the US,	Self-esteem and – perception was lowered when the motive for social comparison was self-evaluation,

<p>esteem and self-perception in connection to the motive of social comparison</p>	<p>in which ads of highly attractive models have been shown. The motive for comparison was manipulated by the ad headline and message</p>	<p>and increased when the motive was self-improvement or – enhancement through downward comparison</p>
<p>Relationship direction:</p>	<p>Social comparison (motive: self- evaluation) → Self-perception of physical attractiveness (-)</p>	

The studies done by Chae et al. and Abayi and Khoshtinat show that advertising and the attitude of the consumer toward the ad has an effect on the trust into e.g. the effectiveness of a product. Out of these findings the following hypothesis can be derived:

H2. The better a consumer is rating his attitude toward the advertisement, the more she/ he trusts the product.

The study done by Richins demonstrated that advertising in general leads to *social comparison* (Richins, 1991, p. 81). The females that participated in this study had the tendency to compare themselves to the models shown in magazines in order to judge their own level of attractiveness. This was supported by the study of Martin and Gentry who called this social comparison with the self- evaluation motive (Martin & Gentry, 1997, p. 24). Furthermore, these idealized advertising images decreased the satisfaction and lowered self- esteem of the participants. By seeing highly attractive models in ads the judgment of one owns physical attractiveness was lowered and one owns feelings about the self were negatively affected. Therefore the following hypothesis can be derived from the studies of Richins and Martin and Gentry:

H3. A positive rating of the attitude toward the advertisement will result in a higher tendency for social comparison.

H4. The better a consumer is judging about the attitude toward the advertisement, the lower is his own satisfaction with his/hers appearance.

H5. The more a consumer is engaged in social comparison, the lower is his satisfaction level.

From the conclusions of the studies of Chae et al., Richins, Abayi and Khoshtinat and Martin and Gentry as well as based on the social comparison theory

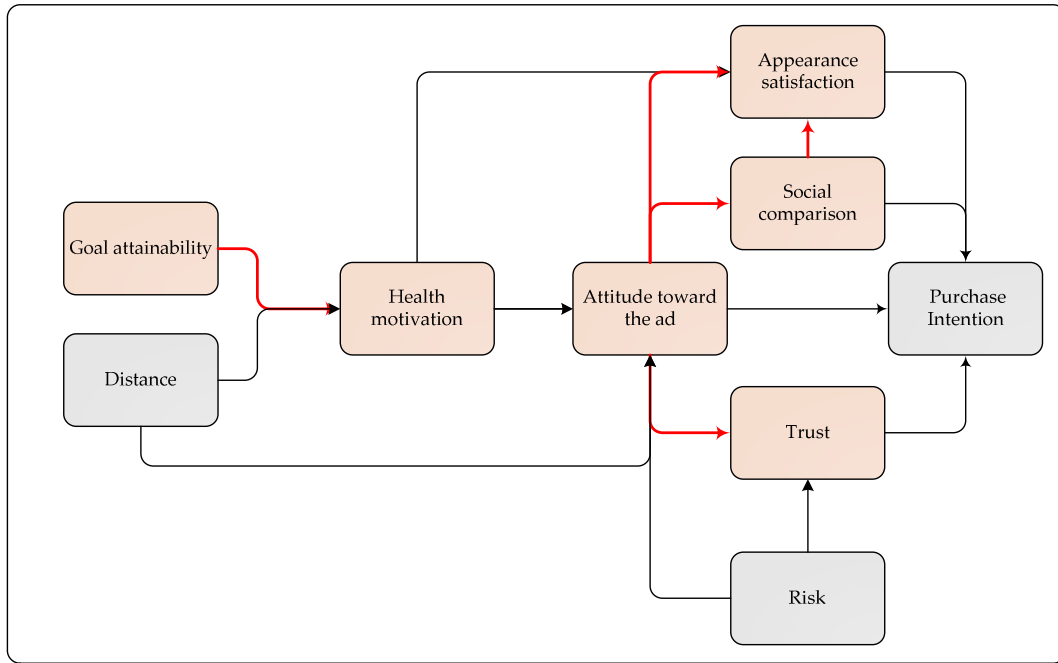


Figure 10. The influence of the attitude toward the advertisement on trust, social comparison and satisfaction.

the following relationship between the attitude toward the advertisement and the satisfaction ratings, the level of trust as well as the tendency to be engaged in social comparison can be derived:

In the following chapter the three relevant constructs which have been identified - satisfaction, trust and social comparison – will be further analyzed.

2.3 DERIVED CONSTRUCTS

In the following the focus will be on the constructs, which have been derived from the theories and empirical studies on the one hand in the area of *goal attainability* (health motivation, purchase intention, social comparison and the reference point) and on the other hand in the area of *attitude toward the ad* (appearance satisfaction, trust and social comparison).

2.3.1 Health motivation

Heckhausen and Kuhl defined *motivation* as being pre-decisional and that it is giving an impulse toward a goal (Heckhausen & Kuhl, 1985, pp. 134ff.). It can be stated that motivation arises as the individual is experiencing some kind of tension which results in a disequilibrium (Bayton, 1958, p. 282). This disequilibrium is resulting in a goal selection process with the aim to get rid of this feeling of tension. Next to the goal, the individual is planning the following steps with which he might reach this goal. The tension experienced can be either physiological like thirst or hunger or psychological like the individual's relationship to others.

Motivation will be defined as this inner tension or also as a wish, drive or desire that results in a sequence of actions also known as consumer behavior (Bayton, 1958, p. 282).

Furthermore, motivation can be *conscious* or *unconscious*. There are different types of conscious motivation like *self-protective*, *performance-* or *achievement- rated motivation*.

Self-protective motivation always occurs in the case of danger like being in a risky situation (Lisjak & Lee, 2014, p. 56). Already Maslow named safety as one fundamental motivation drivers that is guiding the behavior of individuals in his hierarchy of prepotency (Maslow, 1943, p. 395). In the context of *health studies* the self-protective motivation can be measured by health oriented behaviors like getting tested for possible diseases or avoiding unprotected sex (Lisjak & Lee, 2014, p. 56). Next to that, self-protective motivation increases when the individual feels vulnerable.

Performance – or achievement- rated motivation can be split into two different orientations: learning goals or performance goals (Eppler & Harju, 1997, p. 557ff.). The difference between these two orientations can be explained by using the following example: students are facing a difficult academic challenge – some of them are highly motivated and optimistic to master the new problem whereas others are giving up before even trying. The first group has an achievement motivation toward learning goals that means they are happy that they can try new problem solving strategies and increase their competence through facing a new challenge. The second group can be characterized as being oriented toward a performance goal achievement motivation. Hereby, the students are more result

than process oriented. Therefore, they prefer easier tasks where they can succeed and don't have to face negative evaluations (Eppler & Harju, 1997, p. 558).

Next to the above described conscious motivation, there is also an unconscious one. Unconscious motivation are for example *psychological needs* like being addicted to something, or hedonic impulses (Bargh, 2002, p. 280).

Figure 11 illustrates the different types of motivation.

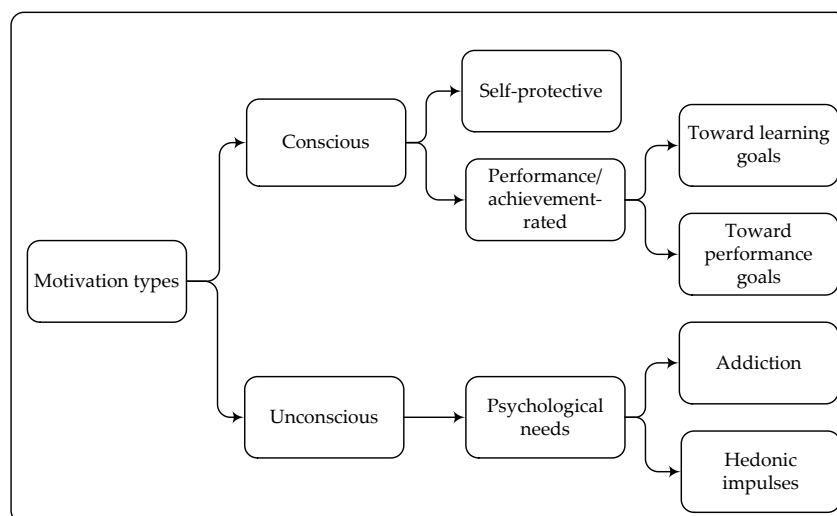


Figure 11. Motivation types; source: Lisjak & Lee, 2014, p. 56; Eppler & Harju, 1997, p. 557ff.; Bargh, 2002, p. 280.

In the next research the *conscious self-protective motivation* or more precise the health motivation will be in the focus, all other types of motivation won't be taken into account. Based on the definition of motivation of Bayton,

health motivation will be defined as a wish, drive or desire to be healthy that results in a sequence of actions to follow this goal.

Next to the fact that motivation can be unconscious or conscious, there is also one important dimension of motivation which is called degree or level of ego-involvement (Bayton, 1958, p. 283). Motivation can be described as being or feeling involved in a choice situation (Batra & Ray, 1986, p. 433). An example would be a consumer who is describing a product category choice as a situation where the choice matters (Batra & Ray, 1986, p. 436). In this case the ego-involvement degree is quite high like the significance to the individual.

2.3.1.1 The influence of health motivation on health behavior (study of Moorman & Matulich, 1993)

Moorman and Matulich researched the influence of *health motivation* on consumer's preventive health behavior in a study done by 404 consumers in 1993. The authors assumed that a higher health motivation would result in more healthy behavior (Moorman & Matulich, 1993, p. 210). This positive relationship was supported by the results of the study of Moorman and Matulich by the participant's behavior which included an increase of the amount of information, the contact to health professional and diet restrictions (Moorman & Matulich, 1993, p. 217).

2.3.1.2 The effect of exercising on self- esteem (study of McDonald & Thompsen, 1992)

McDonald and Thompsen wanted to research the difference between males and females in the area of body image dissatisfaction, exercising and eating disturbance. In the area of exercising the authors differentiated between exercising because of health motives, weight control, improving body tone, attractiveness and enjoyment. There was a difference between the genders concerning their body image satisfaction e.g. women were less satisfied than men. However, the effect of exercising because of health motivation resulted for both genders in a higher level of self- esteem (McDonald & Thompsen, 1992, p. 291). In contrast to exercising because of tone or attractiveness reasons, which resulted in eating disorders and body image dissatisfaction for men and women.

2.3.1.3 The effect of exercise on body satisfaction and self- esteem (study of Tiggemann & Williamson, 2000)

Comparable to McDonald and Thompsen, Tiggemann and Williamson investigated the effect of the amount of exercise and different reasons to exercise on body satisfaction and self- esteem. Tiggemann and Williamson differentiated the participants based on gender and age (young/ mature). This resulted in four different experimental groups. The different reasons for exercising were the same ones like used in McDonalds and Thompsen's study: weight, attractiveness, health, fitness, tone, mood and enjoyment. The analysis showed that if exercising is done because of weight or tone reasons, body satisfaction is lowered. If somebody is exercising because of health or fitness reasons body satisfaction is enhanced (Tiggemann & Williamson, 2000, p. 124).

2.3.1.4 The effect of motivation on attitude (study of Hsu et al., 2010)

In the study of Hsu et al. the authors wanted to explore Chinese tourist's behavior in the pre-visit stage by an expectation, motivation and attitude (EMA) model, which they derived from previous studies and literature (Hsu et al., 2010, p. 282). Based on Katz motivation influences the attitude formation and change (Katz, 1960, p. 170). Hollander (1971) and Katz (1960) claimed that a modification of the attitude is caused by a change of the motivational basis (Hsu et al., 2010, p. 285). Therefore, Hsu et al. assumed, based on the support of the literature review, that attitude is determined by motivation (Hsu et al., 2010, p. 286). Furthermore, Hsu et al. hypothesized an influence of expectation on motivation and of expectation on attitude. All these relationships were supported by a consumer survey done by 1514 residents of Beijing, Shanghai and Guangzhou. These cities had been selected as their residents have a high propensities to travel (Hsu et al., 2010, p. 286).

2.3.1.5 Preliminary summary: Influence of health motivation on appearance satisfaction and attitude toward the ad

The Moorman and Matulich study showed a positive relationship between health motivation and health behavior. Derived from the results of McDonald and Thompsen it can be stated that exercising because of health motives has a positive influence on self- esteem. Exercising because of health motives can be categorized as one possible health behavior. Therefore it can be assumed that health motivation will also have a positive influence on self- esteem.

The study of Tiggemann and Williamson also supported the assumption that exercising because of health or fitness motivation has a positive influence on body satisfaction.

Based on the studies of Moorman and Matulich, McDonald and Thompsen and Tiggemann and Williamson it will be stated:

H6. The higher the health motivation, the higher the appearance satisfaction.

The study of Hsu et al. supported the effect of motivation on attitude in the area of Chinese tourists. The motivation to visit a destination has a direct influence on the attitude toward visiting this destination (Hsu et al., 2010, p. 282).

Furthermore, Katz differentiated different types of motivational basis for attitude: one of these is the value- expressive function. In the value- expressive motivational function the individual is satisfied when he expresses attitudes which match to his personal values and his self-concept (Katz, 1960, p. 170).

Therefore it can be stated:

H7. The higher the health motivation, the better the attitude toward the ad.

Based on Katz, it can be assumed, that if a person thinks of himself that he has a healthy lifestyle and has a high health motivation, he will rate advertisements who are targeted at health-conscious persons as positive.

Figure 12 illustrates the above mentioned hypothesis/ relationships.

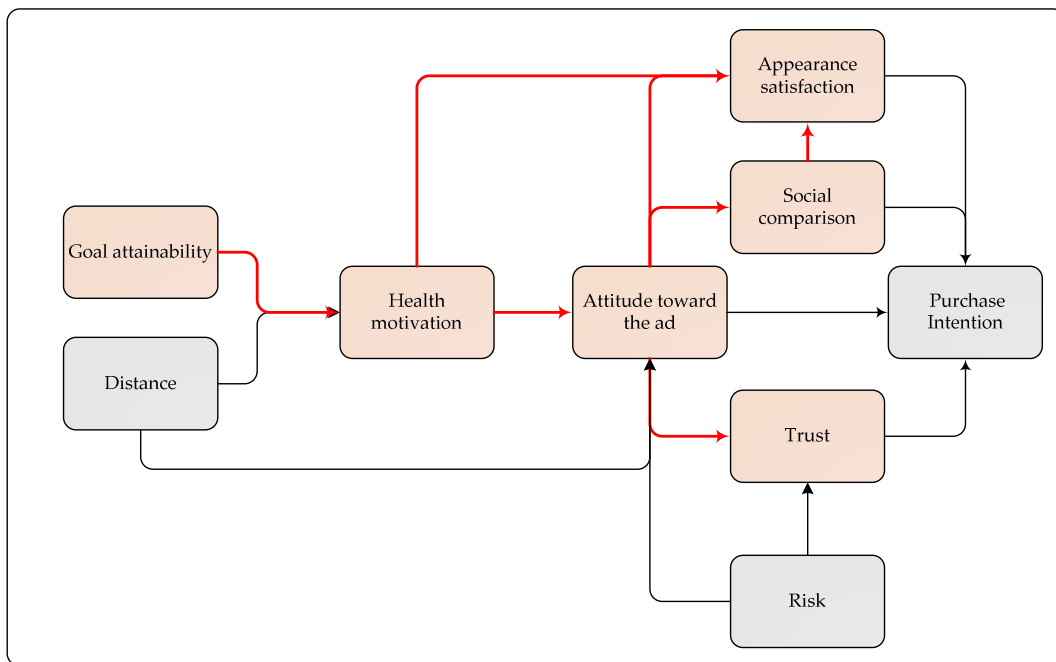


Figure 12. Influence of health motivation on attitude toward the ad and appearance satisfaction.

2.3.2 Reference point

Consumers are judging results as positive or negative based on their specific reference point. The *reference point* could be defined as the current status of the consumers, e.g. what he owns or how he looks like (Heath et al., 1999, p. 104). The reference point can be influenced by previous experiences as well as by the social environment (Gierl et al., 2002, p. 148). The approach of the reference point is

conceptualized in the Prospect Theory which was established by Kahneman and Tversky in 1979 (von Nitzsch, 1998, p. 623). The Prospect Theory was described already before in this dissertation. One part of the theory should be highlighted: The Prospect Theory assumes that individuals are judging not absolute but relative to a specific reference point. Therefore it seems to be important in order to evaluate the goal attainability on the one hand to take the judgment of the goal attainability into account, on the other hand also the distance between the participant (the personal reference point) and the image in an advertising.

*2.3.2.1 Reference point manipulations and the effect on attitude toward the product
(study of von Nitzsch, 1998)*

By manipulations of the reference point marketers can reach specific consumer behavior. One example for a manipulation of the reference points which was mentioned by von Nitzsch was the price setting for a product (von Nitzsch, 1998, p. 625f.). He pointed out that it is better to offer a product for 33.000 DM with a discount of 3.000 DM instead of just offering it for 30.000 DM. Even if the absolute price is the same for the consumer, he will perceive the discount of 3.000 DM as a gain. Next to that the higher price will give the consumer the feeling that the product has a higher quality. The assumption of von Nitzsch has been confirmed by a study done by Herrmann and Bauer in a big German car dealership (Herrmann & Bauer, 1996). The main question that von Nitzsch mentioned in his conclusion was how these manipulations of reference points can be done in an effective way without a lot of investments (costs) and how it can be predicted what kind of reference point a consumer is selecting. However, he also underlined that considerations in this area won't be easy. This might be caused by the fact that individuals are different and their problem perceptions vary from each other. This will lead to different results (von Nitzsch, 1998, p. 631).

*2.3.2.2 Effect of different reference points on attitude and behavior intention
(study of Chandran & Menon, 2004)*

Chandran and Menon researched the effects of different time frames like "every day" or "every year" on the judgement of health risks. Both time frames are referring to the same time period, the present, however Chandaran and Menon assumed that "every day" will be judged to be more proximal/ concrete than "every

year". "Every year" is a reference point that is quite far away. The studies done by Chandran and Menon supported their hypothesis that the temporal frame has not only an effect on the *risk* perception and *attitude* but also on the *behavior intentions* (Chandran & Menon, 2004, p. 377/ p. 385).

Furthermore, Chandran and Menon analyzed the type of framing, negative versus positive, and used the distance as the temporal dimension ("a year from now" versus "tomorrow"). The results show that the day versus year frame leads to more concerned attitudes when the outcome is framed negatively. If the outcome is framed positively, the effects are reversed (Chandran & Menon, 2004, p. 378). If the temporal dimension "a year from now" is used for a positive outcome (averting a disease) the higher the attitude (Chandran & Menon, 2004, p. 383). The results have been valid for the attitude toward the health hazard and the attitude toward the message.

2.3.2.3 Consequences for current research design and derived hypothesis

For the own problem solving the concept of *reference point* seems to be important as a distance to a specific goal is always judged as being close or far away based on the individual reference point. The distance is another measure of the goal attainability as a small distance shows a goal that is close. Based on the goal gradient hypothesis, the goal loom larger effect and the studies of Klesse et al., Kivetz et al. and Chandran and Menon the following hypothesis can be derived:

H8. The smaller the distance is rated, the higher is the health motivation.

The distance to a model shown in an ad can be manipulated by showing e.g. extremely slim to extremely heavy models. This manipulation has been done in a couple of studies e.g. by Klesse et al. in the area of consumption behavior (Klesse et al., 2012). The distance or reference point can therefore be described as the similarity to the shown image in an ad. Further studies have shown that consumers chose and buy products that reflect their self-image (Townsend & Sood, 2012, p. 415/ p. 426). Furthermore, a study done by Dolich proved that on the one hand consumers relate the brand image with the self-concept and on the other hand a greater similarity of the self-concept to the brand image results in a higher preference for a specific brand (Dolich, 1969, p. 84).

Furthermore, Debevec and Romeo noticed that the self-referencing process is essential to the reception and processing of information provided in advertisements (Debevec & Romeo, 1992, p. 83). Next to that, self-referencing is influencing the evaluation of the ad (Debevec & Romeo, 1992, p. 87).

Therefore it can be stated:

H9. The smaller the distance between the consumer and the shown image in the advertisement, the better is the attitude toward the advertisement.

Figure 13 shows the influence of the distance on health motivation as well as on the attitude toward the advertisement.

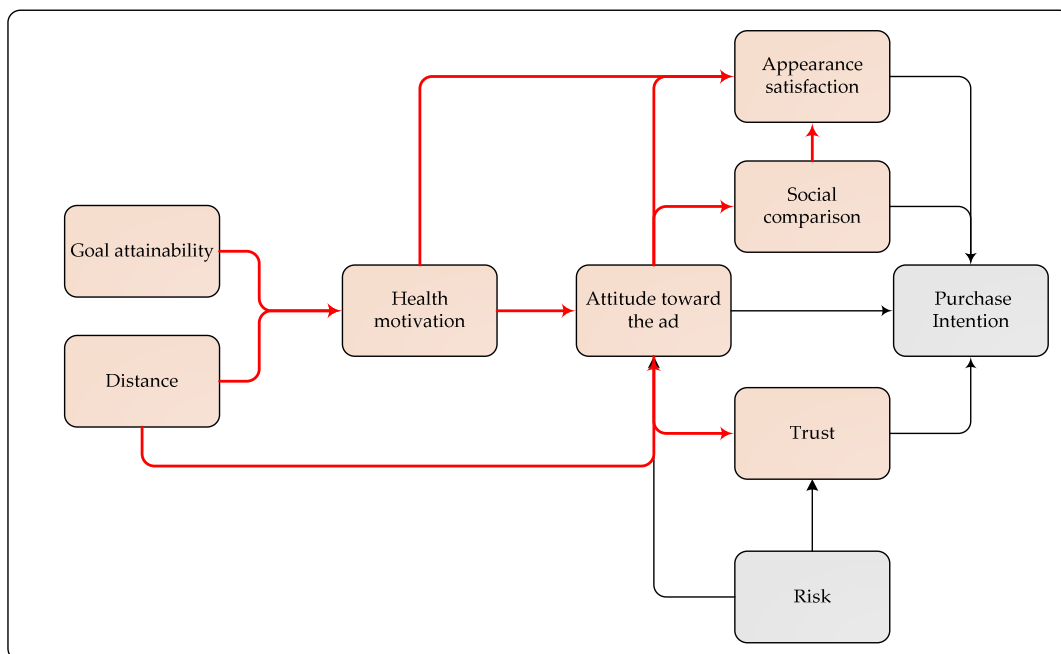


Figure 13. The influence of the distance on the judgement of the attitude toward the advertisement and health motivation.

2.3.3 Purchase intention

Purchase situations can be differentiated between *unplanned purchases*, in which the consumer is deciding to buy a specific product after he enters the store, and *planned purchases* (Rook, 1987, p. 190). Unplanned purchases can also be called impulse buying. Impulsive buying takes place when a consumer is just grabbing a product like a candy bar in the checkout line in the grocery store without checking

for alternatives. Most of the time impulse buying is perceived to be more emotional and negative than rational and positive (Rook, 1987, p. 191ff.). The mood of the consumer is playing a crucial role in this type of buying (Gardner, 1985, p. 281). When the consumer is satisfied he will be more willing to buy specific products and reject to buy others. Some people have the tendency to get in a better mood by eating candy when they are actually in a bad mood.

Next to the type of buying, if it is planned or unplanned, it is possible to differentiate between *purchase intention* and *buying behavior*. On the one hand the intention to buy a specific product doesn't ultimately lead to buying behavior. Consumer behavior can be influenced without their intent or awareness (Wheeler & Berger, 2007, p. 357). On the other hand, purchase intention represents what we would like to buy in the future and stands also for the possibility that the consumer will buy a product (Lin & Lu, 2010, p. 20ff.). Furthermore, based on the former described theory of reasoned action intention is leading to behavior. Therefore, purchase intention and buying behavior will be considered as being equal in the own study for practical reasons as it is easier to measure the intent to buy something than to check if a consumer has actually bought the product.

Next to that, there are different types of purchase behavior which are either *deliberate* or *spontaneous*. Examples for deliberate purchases are the following (Baumgartner, 2002, p. 289):

- Extended buying behavior, which means to buy something based on objective and logical criteria
- Symbolic, which occurs when something is bought to project a certain image or to meet social approval
- Repetitive, which stands for routinized purchases or buying because of loyalty and
- Hedonic, which means you just like something and therefore you are buying it.

In contrast to the deliberate purchases, the following are spontaneous ones:

- Promotional - occurs when something is on sale and you are buying it,
- Exploratory - buying something out of curiosity or because of a desire for variety,
- Casual - buying something without thinking much about it, and

- Impulsive - buying something on impulse.

In the current research the purchase intention represents the intention to join a fitness club. This intent to join the fitness club can be categorized on the one hand either as *extended buying behavior*, because of the objective criteria that it is important to do something for the health or as *symbolic*. Symbolic in this context means that somebody would join the fitness club in order to build up an image of a healthy and athletic life style and to get approval from friends and family. On the other hand it can also be classified as *promotional* as the advertising message is mentioning a good price.

To sum up, the

purchase intention will be defined as the willingness to join a fitness club because of promotional or symbolic reasons with the goal to get healthy.

This definition will be valid for the main study. As products instead of services like joining a fitness center will be in the focus of the preliminary study, the definition will be slightly different: The purchase intention is the willingness to buy a product. Hereby, the buying behavior can be spontaneous or/ and deliberate.

2.3.3.1 *Purchasing in order to follow goals (study of Baumgartner, 2002)*

Consumers are buying something as they are following some kind of goal. In a study done by Baumgartner consumers had to list ten important goals they wanted to reach during their shopping experience (Baumgartner, 2002, p. 289). The goals that were listed could be categorized as *quality related*, *deal seeking* and/or *hedonic*. An example for a quality related goal is buying something that has a high quality like a notebook from e.g. the company Apple is well-known and has a good reputation. A deal seeking goal might be buying something that is on sale in order to save money. When somebody is buying something to show off, this can be defined as a hedonic goal. The ten goals that were listed by the consumers needed to be further rated on 14 dimensions. Examples for the dimensions were the importance of the goal, the effort used to attain the goal and the pleasure of goal pursuit.

2.3.3.2 *Influences on purchase intention and behavior (study of Bellenger et al., 1978)*

When consumers are entering a supermarket they are intensively exposed to marketing stimuli. These marketing stimuli should motivate consumers to buy a product. In a study done by Bellenger et al. they figured out that 62% of the purchases consumers did in a department store hadn't been planned before (Bellenger et al., 1978, pp. 15ff.). This high percentage shows how consumers can be influenced to buy products they didn't intend to in the first place (Heilman et al., 2002, pp. 242ff.). This can be done by the location of the product and the space the product has in the retail shelf, the advertising or also by promotions/ price reductions (Rook, 1987, p. 190).

2.3.3.3 *Derived hypothesis in the area of purchase intention*

Based on the theory of reasoned action, which claims that the *attitude* has a direct influence on the *intention* the following hypothesis can be derived:

H10. The better a consumer is judging about the attitude toward the advertisement, the higher is the purchase intention.

The same relationship was described in the theory of planned behavior, which extended the theory of reasoned action by the variable perceived behavior control. Furthermore, the study of Baumgartner pointed out that consumers are following goals by purchases: The goal to get healthy by joining a fitness center is visualized to the consumer by the advertising. This representation of the goal is causing a specific attitude which can in turn influence the willingness to join the fitness club. Next to that, the studies done by Bellenger et al. and Rook pointed out that advertisement and attitude toward the advertisement might play an important role in the consumer's decision to buy something.

Figure 14 illustrates the relationship between attitude toward the ad and purchase intention.

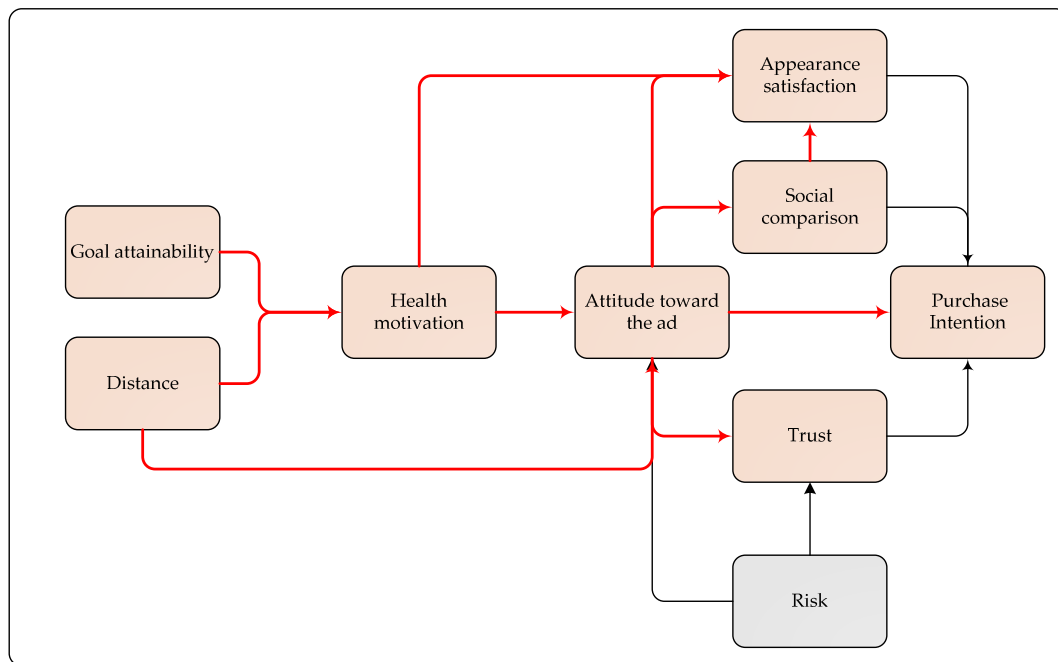


Figure 14. Relationship between attitude toward the ad and purchase intention.

2.3.4 Appearance satisfaction

Consumer satisfaction seems to be one important goal for companies (Fournier & Mick, 1999, p. 5). If consumers are satisfied with the choice they made, they are more willing to buy a product again or recommend it to others (Mittal & Kamakura, 2001, p. 131). The satisfaction with the choice or purchase decision is called *decision satisfaction* (Heitmann et al., 2007, p. 234; Czepiel & Rosenberg, 1977; Westbrook & Newman, 1978; Westbrook et al., 1978). Next to the decision satisfaction, there is also the *consumption satisfaction*. Consumption satisfaction defines the satisfaction which occurs after a product has been purchased and is conceptualized as the product related judgement (Yi, 1991; Heitmann et al., 2007, p. 234). Whether a consumption is evaluated as satisfying depends on the pre-consumption standard confirmation (Oliver, 1989).

Next to the satisfaction with the purchase decision or consumption there are other types of satisfaction. One subtype of the overall life satisfaction is the appearance satisfaction (Matthews et al., 2012, p. 57) which is playing a crucial role in the current research.

Appearance satisfaction will be defined as the satisfaction of the participant with her/ his own physical attractiveness (Aydinoğlu & Cian, 2014, p. 509).

Total global investments in appearance have been estimated over \$200 billion a year (Rhode, 2009, p. 1034), which shows how important physical attractiveness is and how much people invest in getting or keeping it up. Discrimination based on physical attractiveness happens quite often e.g. in the workplace where attractive employees are promoted more often than unattractive ones (Rhode, 2009, p. 1035). This discrimination can result in a dissatisfaction/ satisfaction with the own appearance. Furthermore, satisfaction with the physical appearance showed a strong effect on eating behaviors in studies that examine eating disorder behaviors (Matthews et al., 2012, p. 61ff.).

2.3.4.1 Expectancy- disconfirmation model of satisfaction

The expectancy- disconfirmation model of satisfaction proposed by Oliver in 1980 assumes that a consumer is satisfied when he compares his performance to his own expectancies and these are being met. The expectancy in this context can also be a specific goal. If the expectancies are not being met, the consumer will be dissatisfied (Oliver, 1980, p. 465ff.). The comparison standard is the key that drives and influences consumer satisfaction (Parasuraman et al., 1994). This effect is summarized in Figure 15 and is called the comparison standard paradigm (Fournier & Mick, 1999, p. 5).

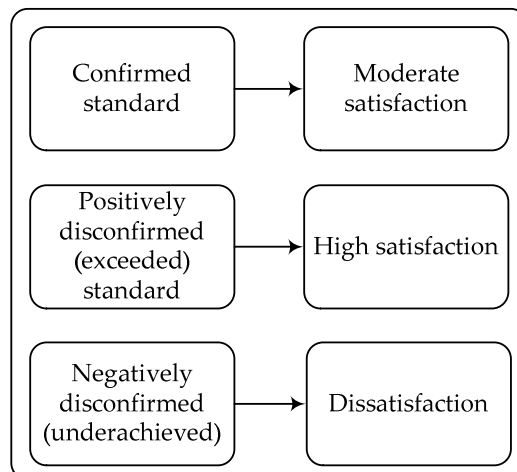


Figure 15. Comparison standard paradigm; source: Fournier & Mick, 1999, p. 5.

Fournier and Mick are going even one step further: It is not just a comparison of the initial set expectations and the outcome but rather the contextual framework that can influence satisfaction (Fournier & Mick, 1999, p. 16; Cho & Johar, 2011, p. 622). Satisfaction is a dynamic process, which is influenced by emotions and motivations, and not a cold and cognitive phenomenon (Fournier/ Mick 1999, p. 15). On the one hand product satisfaction is connected to overall life satisfaction like self- esteem or self- efficacy (Ryff, 1989). On the other hand, dissatisfaction is accompanied by unrealized goals. This underlines the role of product purchases which helps achieving and maintaining overall life quality (Fournier & Mick, 1999, p. 17).

*2.3.4.2 The effect of satisfaction on purchase intention
(study of Mittal & Kamakura, 2001)*

Goals of the study

Mittal and Kamakura wanted to figure out how satisfaction ratings are influencing the repurchase behavior and what kind of effect the characteristics of the consumers play in this relationship. The focus of their study which was done in 2001 was on automotive customers.

Experimental design

A questionnaire was sent by E-Mail from an automotive company to all consumers, which owned their car for 33 months. All consumers purchased the same car model (Honda). The questionnaire was divided into three parts: In the first part the customers overall satisfaction with the car was measured on a five-point scale which was further split into the satisfaction with service quality at the dealership, the engine, the body fit and the accessories. The rating of the repurchase intention formed the second part of the survey. A five-point scale was used to rate the repurchase intention. In the last part some personal data was collected like the consumer's age, gender, educational level, marital status and the number of children in the household.

Last the purchase behavior was investigated by the interviewer. Hereby the interviewer figured out what type of car the customer really purchased as her/ his next one (a Honda or another model). The purchase intention, which is measured at the same time like satisfaction, may be not the same like the real purchase

behavior, which occurs after some temporal distance. Therefore the authors didn't use the intention but the real purchasing behavior.

Central results and conclusion

The results of the questionnaire showed that the satisfaction rating varied based on the demographic characteristics of the consumers of cars e.g. women have been more satisfied with their car than men. Next to that, older consumers are more satisfied than younger ones. The educational background plays a role in the satisfaction rating as well: Consumers with a 'college degree' are less satisfied than those with a 'high school or less' education. Next to that, the consumer characteristics have an influence on the repurchase behavior, e.g. women over 60 years without children are the most loyal consumer group, when consumers with the same satisfaction ratings are compared to each other.

Important aspects for own study/ appreciation of the study with regards to own problem statement

Purchase intention can't always be used as a good measure of real purchase behavior. However it is often used in studies as it is easier to collect data on purchase intention, which can be measured at the same time as the overall satisfaction with a product. In most cases data of purchase behavior can only be collected with a time delay. In spite of this fact the purchase intention will be used as a prediction of purchase behavior in the own model.

One important finding of Mittal and Kamakura which seems to be important for the own problem solving seems to be the fact that satisfaction has a direct influence on the purchase intention. The correlation between the satisfaction ratings and the purchase intention ratings in their study showed a high correlation. The correlation value was always between 0.58 and 0.66 - depending on the demographic characteristics of the consumer.

Differences between genders, which have been analyzed by Mittal and Kamakura, will be analyzed in the current research as well as differences that have been detected by the authors in the relationship between satisfaction and purchase intention.

Research gaps and weaknesses/ reasons for own study

Mittal and Kamakura focused on the automotive sector and on the car model Honda only in their study. Next to the fact that their research could be repeated or extended for other categories or industrial fields, they mentioned that it wasn't investigated why consumers changed their purchasing behavior. To be more precise, why did owners of a car of the manufacturer Honda buy another car model afterwards even if they had been satisfied with the old model?

In the own study it should be investigated if satisfied consumers will purchase a product in other product categories than cars (or to be more precise: if satisfied participants are willing to join a fitness club). Like in most studies the purchase intention will be measured instead of the purchase behavior.

2.3.4.4 Summary: Influence of satisfaction on buying behavior

The study done by Mittal and Kamakura in the automotive area supported the assumption that satisfaction has an influence on purchase intention (Mittal & Kamakura, 2001, p. 140). However, the authors pointed out that the influence is different for customers with different characteristics like gender, age or education level (Mittal & Kamakura, 2001, p. 135). Based on Mittal's and Kamakura's study the following hypothesis will be derived:

H11. A higher satisfaction is resulting in a higher purchase intention.

Figure 16 illustrates this relationship.

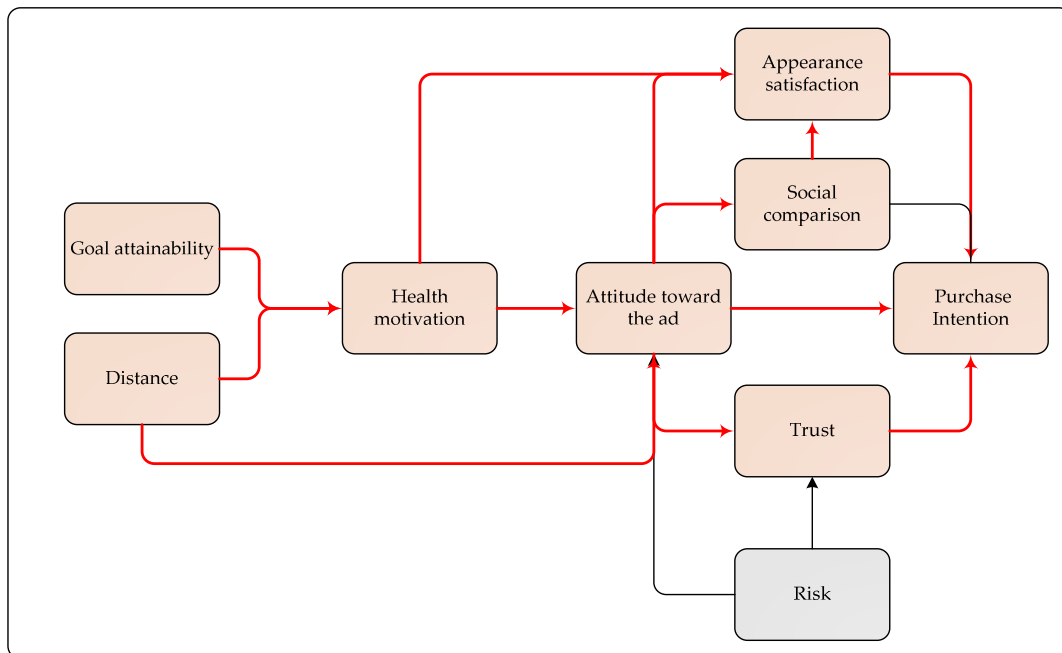


Figure 16. The influence of satisfaction on the purchase intention.

However, it needs to be highlighted that it is not the satisfaction with a product but the satisfaction with the appearance that will be in focus for the current research. It will be assumed that if somebody is satisfied with the physical appearance, he/she is more willing to buy a specific product.

Richins mentioned this relationship between appearance satisfaction and purchase intention as one research gap in her study (Richins, 1991, p. 82).

2.3.5 Trust

In a relationship trust is important, it doesn't matter if it is a relationship between people in an organization or between sellers and buyers. If a buyer is trusting the seller that he is keeping his promises he will be more willing to buy a product. Next to that he will be more loyal, recommend the product to others and his satisfaction will be higher (Akrouf & Akrouf, 2011, p. 1). Therefore, trust seems to be an important concept in business relationships, especially because of the existence of *risk* in any customer-supplier relationship (Akrouf & Akrouf, 2011, p. 2).

However, there is no single definition of trust which is commonly accepted (Hosmer, 1995, p. 380). Kennedy is categorizing the existing definitions into the following three categories (Kennedy et al., 2001, p. 74):

- trust as a response pattern (Rotter, 1967, p. 653)
- trust as a risking behavior (Matthews & Shimoff, 1979, p. 538ff.) and
- trust as a predisposition somebody has toward somebody else (Pruitt, 1965, pp. 36ff.).

Next to that there are different categorizations like the one of Akrouf that differentiates trust as a *psychological (cognitive)* variable from trust as a *behavioral variable* (Akrouf & Akrouf, 2011, p. 2). Akrouf reviewed the studies in the area of trust in the field of business-to-business relationships performed from 1982 until 2009 and figured out that trust is either seen as an *expectation that another party will fulfill its obligations* (psychological variable) or the emphasis is on the *behavioral effects of trust*. The behavioral approach can be described as a *desire to count on another party in a vulnerable situation* or an exchange situation that can be characterized as *risky*. For the psychological approach he found 19 studies, for the behavioral one four. Next to these two approaches, the cognitive and behavioral one, there is a third *integrative approach*. For the integrative approach the authors are combining both definitions of trust: They are seeing trust as an expectation or belief as well as a risk taking behavior (Akrouf & Akrouf, 2011, p. 3). Four studies which used the integrative approach have been found by Akrouf in the above mentioned time interval.

In the current research *trust* will be defined as follows:

Trust is a risking behavior where the consumer is trusting that the other party is benevolent and the product will fulfill its obligations.

Consequently the integrative approach which is also used by authors like Swan et al. or Moorman et al. will be applied (Swan et al., 1988; Moorman et al., 1992/1993).

Furthermore, Kenning differentiated between general trust (personal trait) and specific trust (trusting the retailer). General trust can't be influenced by marketing as it is build up in early childhood and can be seen as the general ability

or attitude to trust somebody (Kenning, 2008, p. 466). When *trust* is mentioned in the current research specific trust is meant as this can be influenced by advertising.

2.3.5.1 *Antecedents and consequences of trust (Akroul & Akroul, 2011 - study review)*

Next to the definition of trust, it is also important to have a look at the antecedents of trust. Akroul and Akroul mentioned the following antecedents, which have a positive effect on trust: sympathy, ethics, fairness, *similarity*, competence, expertise/experience, race/gender and power (Akroul & Akroul, 2011, p. 6).

In the area of *similarity* Crosby figured out that salespersons who are similar to the customer are more successful than others in terms of sales efficiency – if all other circumstances are kept equal (Crosby, 1990, p. 71ff.). Similarity can be seen in a couple of areas. Similarity can be defined in having the same cultural background which result in the same or shared values (Anderson et al., 1989, p. 314). It might be better to use a Chinese salesperson than an American salesperson in China to sale typical Chinese food. Maybe the Chinese customers will think that the American salesperson doesn't know the typical Chinese traditions or will have other prejudices. In the area of attitude toward the advertisement it might be better to use non-Caucasian models in Africa in the area of marketing for clothing for example as the customers will have a higher level of identification to them than to Caucasian models. Furthermore, the appearance, lifestyle and the socioeconomic status of the salesperson can result in a similarity feeling in the customer (Crosby, 1990, p. 71).

Next to the reasons or antecedents of trust it is also important to have a look at the consequences of trust. Akroul and Akroul differentiated between *relational* and *economic* consequences. The following relational consequences have been mentioned in the studies done between 1982 and 2009: conflict resolution, conflicts, satisfaction, communication, commitment, continuity and long-term orientation, cooperation, opportunism, integration, involvement, control and loyalty intention. There is a positive relationship between trust and all of these except conflicts, opportunism and control. There is a negative relationship between the last three ones and trust. As economic consequences of trust Akroul and Akroul mentioned performance, sales efficiency, choice, *purchase intention*, product use and

negotiation cost (Ruyter et al., 2001). In the study done by Kenning the positive effect of trust on buying behavior have been supported (Kenning, 2008, p. 469).

2.3.5.2 *The effect of trust on online transactions (study of Pavlou, 2003) and derived hypothesis*

Pavlou has done a study in 2003 in the area of E-commerce acceptance. He wanted to propose a set of key drivers that result in an engagement of consumers in online transactions: two of those have been risk and trust. Risk and trust are important as the e-commerce can be defined as an environment with a high degree of uncertainty (Pavlou, 2003, p. 106). Furthermore, trust has a high impact on the consumer behavior and a lack of trust has been the source of consumers declining to make an online transaction.

Based on Kenning and Pavlou the following hypothesis will be derived for the current research:

H12. A higher level of trust is resulting in a higher willingness to buy a product.

Figure 17 shows the relationship between trust and purchase intention as defined by Akrouf, Ruyter et al., Kenning and Pavlou:

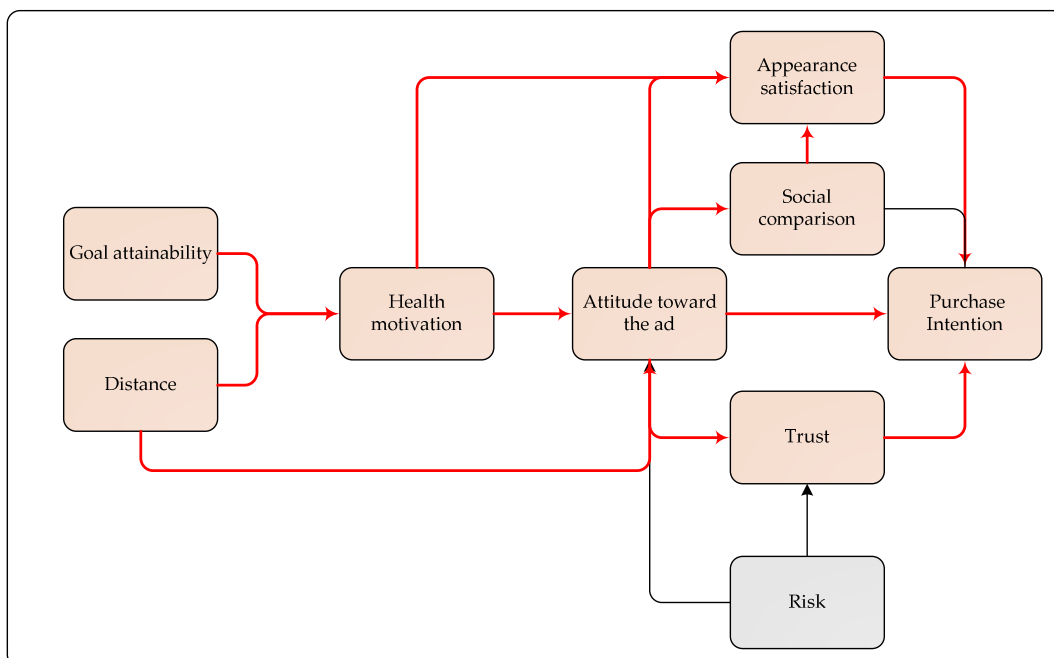


Figure 17. Relationship between trust and purchase intention.

2.3.6 Social comparison

Individuals tend to compare themselves to others in order to judge how well or bad they perform in a specific situation (Festinger, 1954, p. 117ff.). It seems to be important in the social comparison process to gain information that is relevant to do this judgement about oneself (Häfner, 2004, p. 188). Imagine somebody is doing an exercise like running 500 meters. After he ran this distance he wants to know how long it took others to run this distance or how much faster or slower he was compared to the last time he ran this distance. Comparison seems to be a basic human need - not only in the area of performances (Richins, 1991, p. 72). There are idealized models displayed in ads, shown in TV and on product covers. The media is showing us how the ideal should look like and how we can use specific products to become this ideal or at least get closer to it.

There are different ways how a consumer might feel after she/he has been exposed to an ideal e.g. in an advertisement. Mussweiler mentioned in the *Selective Accessibility Model of comparative thinking* that there are two different ways of individual's behavior during the social comparison process: similarity or dissimilarity testing (Mussweiler, 2003, p. 475). Similarity testing means focusing on the characteristics of the comparison standard that are similar to oneself. In contrast, dissimilarity testing means looking at the differences between the comparison standard and oneself (Häfner, 2004, p.188ff.). Lockwood and Kunda assumed that it depends on the target itself, how attainable it is, if an assimilation or dissimilation testing occurs. That means on the one hand if somebody looks at a muscular man in an ad and the body of this man is attainable with some kind of effort an assimilation effect occurs. This assimilation effect can be motivational and inspirational (Lockwood & Kunda, 1997, pp. 91ff.). On the other hand, if the muscular man seems to be a perfect ideal which is very difficult to attain or not attainable at all the social comparison process will result in dissimilation (Tesser, 1988, pp. 181ff.). Dissimilation may then result in demotivation and dissatisfaction with oneself. Dissimilation is also called contrast effect (Brown et al., 2007, p. 62).

To sum up,

social comparison will be defined as the human drive to compare one's own situation with regard to performance and appearance to the one of a comparison standard, which will be the displayed model in an ad.

2.3.6.1 *The effect of extremity of the comparison standard on consumer satisfaction*
(study of Smeesters & Mandel, 2006)

Goals of the study

Based on the findings of Richins, Smeesters and Mandel wanted to figure out under which circumstances a negative or positive effect occurs when people are exposed to an idealized media image. Hereby, two different moderators should be analyzed: the extremity, which means how thin or heavy the displayed model is, and the way the participant's self-judgments are measured (rating scale or open response questions).

Experimental design

Four advertising models were selected by a pretest, in which 62 female university students had to rate 23 ads on a ten point scale concerning their size and attractiveness for the following conditions: extremely heavy, moderately heavy, moderately slim and extremely slim. A second pretest was done, in which 123 female university students participated, which showed that the moderately slim and heavy models from the first pretest were rated as more similar to the participants than the extremely heavy and extremely slim ones.

The first experiment, which was done with 62 female students, consisted of four parts: First the participants had to rate eight color ads, from which four showed a model and four have been just filler ads without a model. The order was chosen randomly. The model was extremely heavy, moderately heavy, moderately slim or extremely slim. In the second part the participants had to fill out 20 open response statements. In the third part, they had to answer questions on a five point rating scale about e.g. their appearance and self-esteem. The last part was a questionnaire in order to figure out if one of the participants guessed the real cause for the study. This wasn't the case.

After the first study two independent judges who had been blind to the conditions and underlying hypothesis selected self-descriptive statements that described the participants. Afterwards two other independent judges rated the self-descriptive statements on a scale from one to five. Both judgments were added to one single score.

In the second experiment 84 female students participated in a laboratory experiment for course credit. They had been informed that they had to do two

different but unrelated tasks. The first task was the same like in study one – they had to rate eight ads on a five-point scale if these ads are convincing, informative and/or original. Four of these ads contained a model and four have been just filler ads without a model. The shown models were extremely slim, moderately slim, moderately heavy or extremely heavy. The second task was done by using a computer: The participants had to look at the computer screen on which they saw either a word or a not existing word (“non-word”). Each time they saw a real word they had to press “1” on the keyboard. Each time they saw a non-word, they had to press “3”. The goal was to push the number as fast as possible. Out of the 42 trials six were just practice trials and 36 were critical. Half of the critical ones were non-words, the other half were real words. Out of the 18 real words, six were words associated with slimness; six were related to heaviness and six were just neutral words. Furthermore, a self-prime like “I”, “me” or “my” was shown on the screen for a couple of seconds before the target word appeared for half of the critical trials. For the other half of the critical trials a control prime like “a”, “the” or “on” appeared before the target word. At the end of the second experiment the participants had to fill out a questionnaire in order to analyze if they guessed the underlying reason or aim for the experiment or if they have been aware that they have been influenced by a prime. This wasn’t the case.

Central results and conclusion

Smeesters and Mandel studies led to the conclusion that individuals tend to compare themselves spontaneously with models displayed in ads. In contrast to Richins finding, Smeesters and Mandel showed that slim models displayed on a cover were not ultimately leading to a negative effect on self-esteem. Slim models can lead to an assimilation effect, which could motivate people to follow the goal of being thin. This was the case when the judging of the self-esteem was done as an open response task. In contrast, extreme slim models are leading to a contrast effect and therefore have a negative effect on the self-perception.

Furthermore, Smeesters and Mandel figured out that the type of scale used for measuring had an effect on the occurrence of a contrast or assimilation effect: When a rating scale was used a contrast effect occurred. The underlying reason for this is that a rating scale measure results in a reference point whereas an open response question doesn’t.

In the second experiment, the lexical decision task, the responding time was faster for words associated with slimness when the participants saw a moderately slim model before than for neutral words or words associated with heaviness. However, when the participants saw an extremely slim model before the task, they reacted faster to heaviness related words than to neutral or slimness related words. The same effect occurred when the female students were exposed to a moderate or extremely heavy model: When the participants saw a moderately heavy model before, the responding time was faster for words associated with heaviness than for neutral words or words associated with slimness. However, when the participants saw an extremely heavy model before the task, they reacted faster to slimness related words than to neutral or heaviness related words.

Important aspects for own study/ appreciation of the study with regards to own problem statements

Smeesters' and Mandel's studies led to following two central results which can be used in regards to the own problem statement:

- Idealized models (extremely slim models) in advertising are negatively affecting the individual's body satisfaction.
- Exposure to moderately slim models can have also a positive effect on the self-esteem of the individual.

In general it can be stated that the body of the model, who represents a comparison standard for the individuals, can lead to a contrast or assimilation effect.

Research gaps and weaknesses/ reasons for own study

Smeesters and Mandel mentioned following researching gaps for further studies: As they only asked female college students, further studies should focus also on men. Furthermore, other age groups next to students should be taken into account as well. Next to that, the effect of idealized models should be examined on more consumer-oriented categories like purchase intention or product preference. These two point will be taken into account for the own study.

2.3.6.2 Derived hypothesis in the area of social comparison

Using the social comparison theory which was developed by Festinger 1954 as a framework, it can be assumed that social comparison takes place with portrayed models in ads. Furthermore, it can be stated that this social comparison process will have an influence on the consumer's satisfaction level. The influence of social comparison on appearance satisfaction was already stated in hypothesis H5 based on the study results of Richins (Richins, 1991). This hypothesis is supported by the findings of Smeesters and Mandel.

Based on Klesse et al. social comparison is resulting in a discrepancy between the desired end state and the actual self because it shows the contrast (Klesse et al., 2012, p. 356). Consumers may try to solve this discrepancy by buying products to get rid of the discrepancy. Therefore it can be stated:

H13. The higher the tendency for social comparison is, the higher is the purchase intention

Figure 18 illustrates these two relationships.

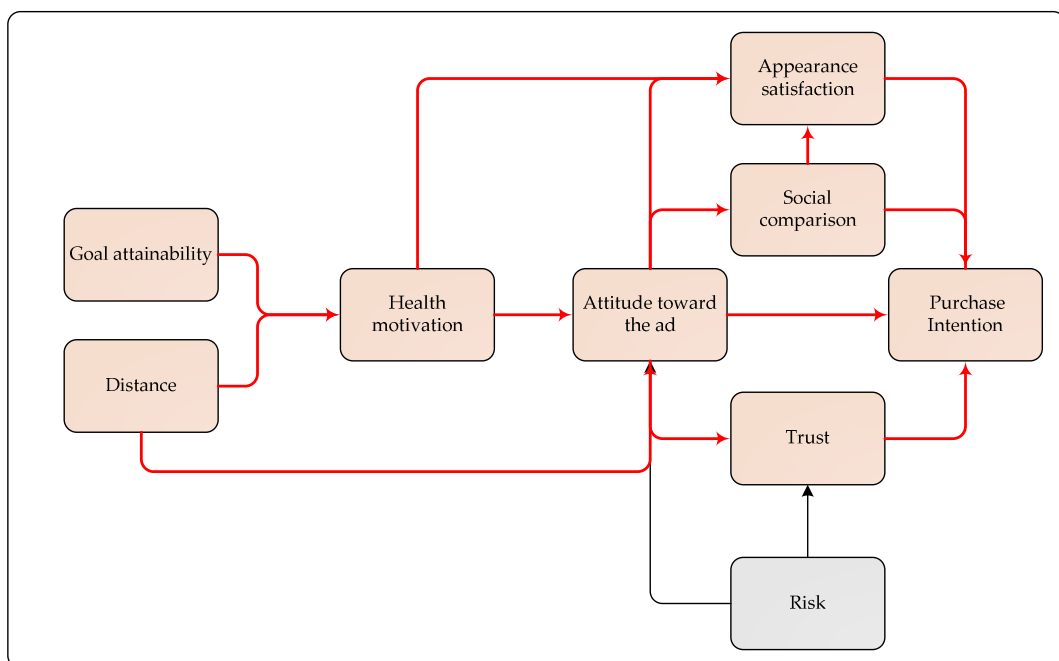


Figure 18. Influence of social comparison on purchase intention.

2.3.7 Risk

As mentioned earlier in the definition of *trust*, risk is present in each buyer-seller- relationship (Grønhaug, 1972, p. 247). Bauer was the first one who mentioned that each consumer behavior is characterized by risk (Bauer, 1960, p. 389ff.). He pointed out that consumers need to make choices which can be seen as risk taking behaviors. As the outcome of a choice can only be evaluated after it is done, each decision is taken under uncertainty. The consumer is not certain if the seller is keeping his promises and if the product will fulfill its duties. This uncertainty is resulting in consumer's anxiety to decide in a wrong way. However, risk is not just to be uncertain about the *outcome* it is also to be uncertain about the *consequences* (Taylor, 1974, p. 54). Let's underline these two aspects of risk by using an example: A consumer wants to buy a daily product like eggs. When he is selecting one possible box how can he be sure that all eggs are still good and have not gone bad? This can be defined as the uncertainty about the outcome of a buying decision. If the consumer selects a box of eggs what will happen if one egg has gone bad and somebody of his family eats it? This can be described as the uncertainty about the consequences of a product choice (Taylor, 1974, p. 57).

As the consequences as well as the outcome of a choice are uncertain a loss can happen. This loss can be either functional or economic but also social in nature. Figure 19 highlights the two aspects of risk and the resulting loss.

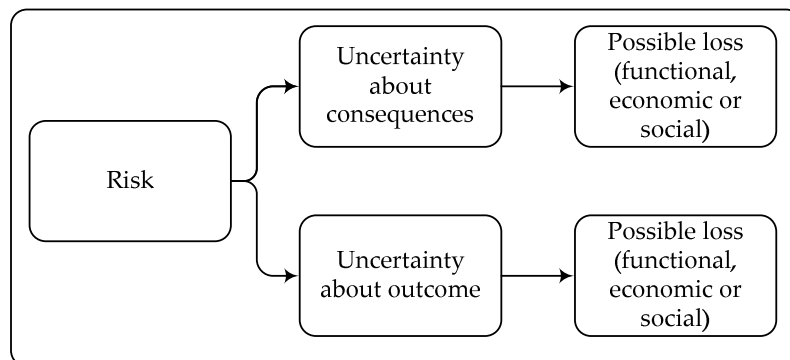


Figure 19. Aspects of risk in consumer behavior.

Consumers are using different types of strategies to avoid these losses. Example for sellers to reduce the risk and the potential loss of the consumers are

money back guarantees, free samples or also good brand reputation (Roselius, 1971, pp. 55ff.).

In the literature uncertainty and risk are often used as equivalents (Taylor, 1974, p. 56). However, Cunningham differentiated these two concepts in the following way: In the case of uncertainty the *probability* that negative consequences will occur is *not known*. On the other hand, if a specific risk is present, the *probabilities are known* (Cunningham, 1967, pp. 82ff.). Nevertheless, this differentiation between risk and uncertainty won't be used in the current research.

There are a few studies that prove the existence of perceived risk in consumer choice situations (Taylor, 1974, p. 57). A study done by Arndt proved that housewives who should either decide to try a new coffee brand or not characterized this situation as risky (Arndt, 1968, pp. 330ff.). Another study done by Cox and Rich analyzed the shopping behavior of women in a department store and confirmed the assumption that consumer behavior can be defined as risk taking behavior (Cox & Rich, 1964, p. 32ff.).

Furthermore, Bauer differentiated between *perceived risk* which is subjective and *actual risk*, which is objective (Liao et al., 2010, p. 239). For the current research the perceived risk will be relevant one. Perceived risk can be defined as being multi-dimensional (Liao et al., 2010, p. 239). Table 6 gives an overview of some of the dimensions highlighted by different authors.

Table 6

Dimensions of perceived risk suggested by different authors.

Author/ s	Dimensions of perceived risk
Cunningham, 1967	Performance, financial, opportunity/ time, psychological, social and safety risk
Jacoby & Kaplan, 1972	Performance, financial, physical, psychological, social risk
Tan, 2002	Performance, financial, prosecution, psychological, social risk
Liao et al., 2010	Performance, prosecution, psychological, social risk

Of course, there are other authors which used different dimensions for their studies. The short illustration in Table 6 should just shows that there is no consensus among the researchers regarding the dimensions of perceived risk.

For the current research,

risk is composed of perceived social and performance risk and will be defined as the uncertainty of the consequences or outcome of a choice.

Next to that, perceived risk will be limited to the time until the purchase intention occurs. Perceived risk can be different during the purchasing process and depends also on the characteristics of a person (Grønhaug, 1972, p. 247). The same buying situation can be classified as risky by one person whereas another person doesn't evaluate it as risky at all.

2.3.7.1 *The effect of risk on attitude (study of Liao et al., 2010)*

Liao et al. wanted to figure out why people purchase pirate software and how this can be avoided in the future in order to limit the negative consequences for the national and global economies. Liao et al. claim that perceived risk is influencing the attitude-intention relationship which was hypothesized in the theory of planned behavior and serves as the theoretical foundation of their study. Liao et al. differentiated between four different types of risk: social, performance, prosecution and psychological risk (Liao et al., 2010, p. 237). The authors assume an influence of all four types of risk on the attitude to purchase pirate software (Liao et al., 2010, p. 240ff.). They characterized the effect as negative: A lower level of risk (social, performance, prosecution or psychological) will result in a better attitude toward using pirate software. A two months online questionnaire was conducted in Taiwan in order to test these hypothesis. In total 305 questionnaires were completed.

On the one hand the results didn't show a significant influence of either performance or social risk on attitude. The authors explained this by the fact that pirate software and problems associated with it could be solved by users easily because of the literature in this area (Liao et al., 2010, p. 246). Furthermore, the authors pointed out that in Asian countries where the income is lower than in Western countries, it is more expensive for people to buy original software. Therefore, other people like friends or family are not judging somebody who purchase pirate software in a negative way. Besides, copyright is more a Western concept than an Asian one. For this reason Asians are not feeling the social pressure to follow it. The authors pointed out that further studies would be needed in Western countries in order to test the negative effect which social risk can have on

the attitude. On the other hand the influence of psychological risk showed a significant effect on the attitude toward using pirate software. Psychological risk is described as the possibility to lose the self-concept or image.

2.3.7.2 The influence of risk on trust (study of Römer & Tscheulin, 2008)

Römer and Tscheulin analyzed the influence of different risk levels on trust in decision situations. Therefore a survey was conducted in 2005, in which 136 students participated. A patient – doctor relationship was used as the experimental scenario for the study. A regression analysis was done which showed the following results: Trust is having a positive effect on trusting behavior. This represented the first hypothesis of Römer and Tscheulin. Secondly, perceived risk is influencing trusting behavior in a negative way (Römer & Tscheulin, 2008, p. 451). With increased risk level in a decision situation the level of trust decreases and consumers are following an information seeking strategy (Römer & Tscheulin, 2008, p. 452).

Römer and Tscheulin focused mainly on students with an average age of 22 years. They mentioned an extension of their results to different age groups and status (next to students) as further research possibilities (Römer & Tscheulin, 2008, p. 454).

2.3.7.3 Derived hypothesis in the area of risk

Even if the results of Liao et al. couldn't fully confirm the negative effect of risk on attitude (some risk types showed a significant effect whereas others didn't), the authors mentioned the research gap to test this relationship in a Western country to exclude the participants characteristics like income and values. Therefore the following hypothesis should be tested:

H14. The lower the risk, the better the attitude toward the ad.

Based on the results of Römer and Tscheulin in the experimental scenario of patient – doctor relationships, it can be stated that:

H15. The higher the risk, the lower the trust.

This is the last hypothetical relationship in the SEM which will be analyzed in the current research. Figure 20 shows the complete SEM.

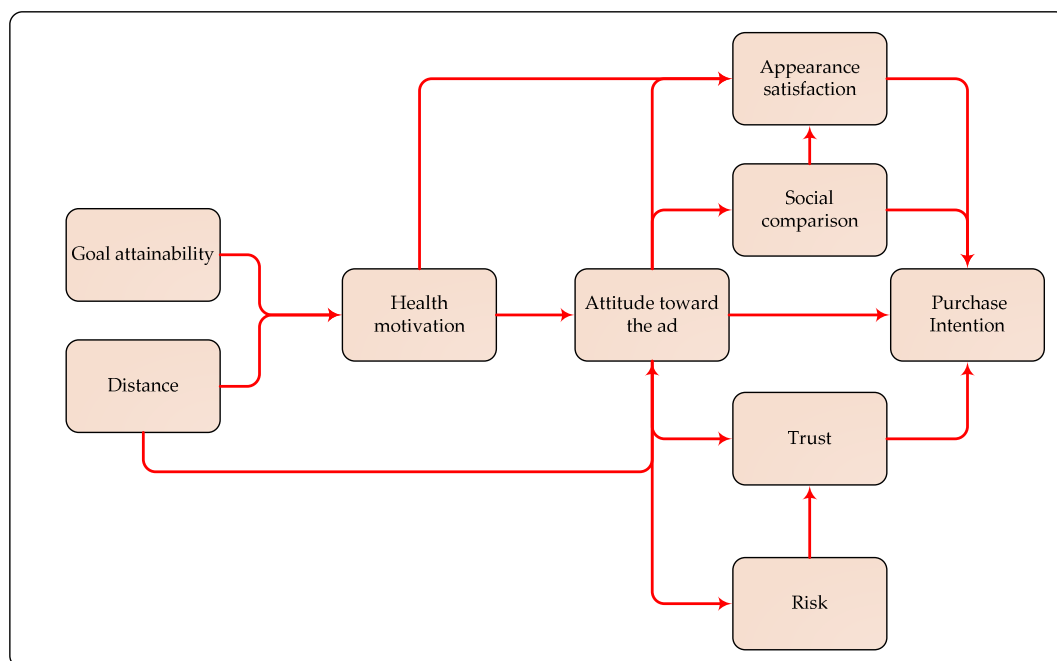


Figure 20. The influence of risk on trust and attitude toward the ad.

2.4 OVERVIEW OF ALL CONSTRUCTS AND THEIR RELATIONSHIPS

To sum up the theoretical foundation and empirical studies, Figure 21 illustrates the relationships between all constructs in a structural equation model (SEM) with the corresponding hypothesis about the relationship.

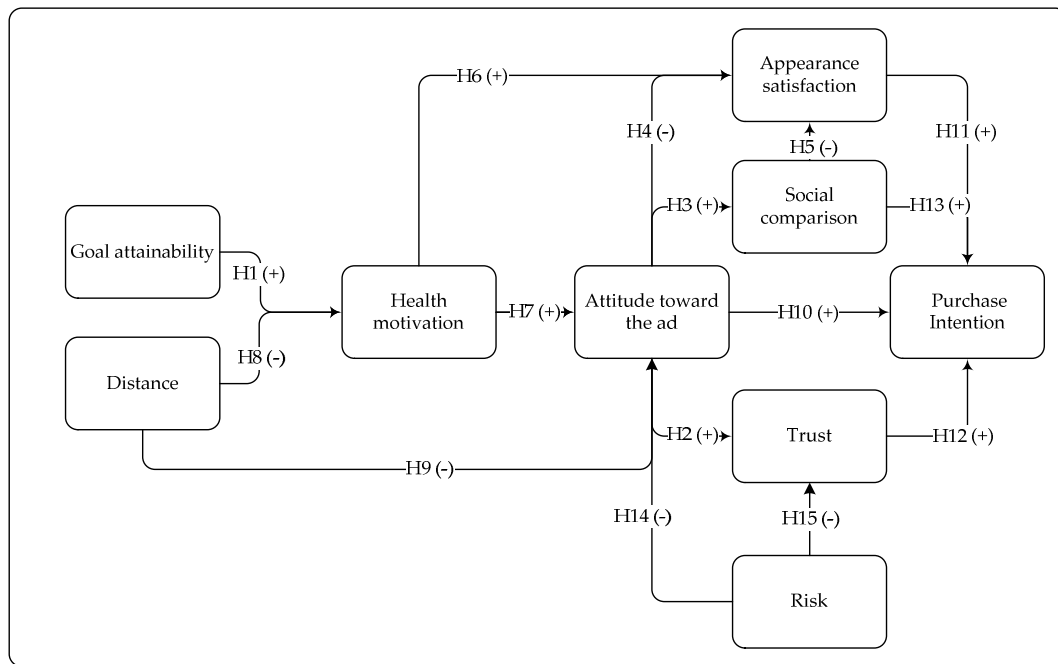


Figure 21. Structural equation model.

Furthermore all hypothesis, their theoretical and empirical foundation as well as the type of relationship (negative or positive) are summarized in Table 7.

Table 7

Overview of all hypotheses, the empirical and theoretical foundation and type of relationship.

Hypothesis	Theoretical/ empirical foundation	Relationship between constructs
H1: The better the goal attainability is rated, the higher is the health motivation.	Goal gradient hypothesis Goals loom larger effect Klesse et al., 2012 Kivetz et al., 2006 Scott & Nowlis, 2013	Positive (+): Goal attainability → Health motivation
H2: The better a consumer is rating the attitude toward the advertisement, the more she/ he trusts the producer.	Chae et al., 2013 Abayi & Khoshtinat, 2016	Positive (+): Attitude toward the advertisement → Trust

H3: A positive rating of the attitude toward the advertisement will result in a higher tendency for social comparison.	Social comparison theory Klesse et al., 2012 Richins, 1991	Positive (+): Attitude toward the advertisement → Social comparison
H4: The better a consumer is judging about the attitude toward the advertisement, the lower is his own satisfaction with his/her appearance.	Richins, 1991 Martin & Gentry, 1997	Negative (-): Attitude toward the advertisement → Appearance satisfaction
H5: The more a consumer is engaged in social comparison, the lower is his satisfaction level.	Social comparison theory Richins, 1991	Negative (-): Social comparison → Appearance satisfaction
H6: The higher the health motivation, the higher the appearance satisfaction.	Moorman & Matulich, 1993 McDonald & Thompsen, 1992 Tiggemann & Williamson, 2000	Positive (+): Health motivation → Appearance satisfaction
H7: The higher the health motivation, the better the attitude toward the ad.	Hsu et al., 2010	Positive (+): Health motivation → Attitude toward ad
H8: The smaller the distance is rated, the higher is the health motivation.	Goal gradient hypothesis Goals loom larger effect Klesse et al., 2012 Kivetz et al., 2006 Chandran & Menon, 2004	Negative (-): Distance → Health motivation
H9: The smaller the distance between the consumer and the shown image in the ad, the better is the attitude toward the advertisement.	Self-congruity theory Klesse et al., 2012 Townsend & Sood, 2012 Von Nitzsch, 1998 Chandran & Menon, 2004 Dolich, 1969	Negative (-): Distance → Attitude toward the advertisement

H10: The better a consumer is judging about the attitude toward the advertisement, the higher is the purchase intention.	Theory of reasoned action Theory of planned behavior Bellenger et al., 1978 Rook, 1987 Lin & Tsai, 2006	Positive (+): Attitude toward the advertisement → Purchase intention
H11: A higher satisfaction is resulting in a higher buying intention.	Mittal & Kamakura, 2001 Richins, 1991 (research gap)	Positive (+): Appearance satisfaction → Buying intention
H12: A higher level of trust is resulting in a higher willingness to buy a product.	Akrout & Akrou, 2011 Kenning, 2008 Pavlou, 2003	Positive (+): Trust → Purchase intention
H13: The higher the tendency for social comparison is, the higher is the purchase intention.	Klesse et al., 2012	Positive (+): Social comparison → Purchase intention
H14: The lower the risk, the better the attitude toward the ad.	Liao et al., 2010	Negative (-): Risk → Attitude toward the ad
H15: The higher the risk, the lower the trust.	Römer & Tscheulin, 2008	Negative (-): Risk → Trust

3. THEORETICAL MEASUREMENT CONSIDERATIONS

3.1 APPROACH

In this chapter the nine criteria for the classification of study designs will be reviewed (Döring & Bortz, 2016, p. 183) and it will be pointed out which study design will be used for the current research.

3.1.1 Empirical theoretical approach of the study

There are three different research processes: The first one is the *qualitative research approach*, in which just a limited number of participants have to answer open questions, which aren't structured or just structured partly (Döring & Bortz, 2016, p. 184). The goal of the qualitative research strategy is to describe the research object and to formulate or develop theories. The second strategy is the *quantitative research*. With this strategy the hypothesis, which are derived from the literature, will be analyzed by using many participants. The aim of this strategy is to verify the theory or to be more precise the hypothesis which are derived from the theory. For this type of research structured data collection methods are used. The third and last process is the *mixed methods approach* which combines the qualitative and quantitative research. It has on the one hand the goal to derive hypothesis by using the qualitative research approach and on the other hand to test these hypothesis afterwards by using quantitative research methods.

For the current study it was decided to use the *quantitative research method* as the hypothesis have been derived from the theory and these should be tested.

3.1.2 Scientific object

The research process can have different types of objects like solving an empirical problem by enhancing theories and models. *Basic research studies* have this kind of objective (Döring & Bortz, 2016, p. 185). However, basic research doesn't have the aim to have a benefit or use for the practice directly. In contrast to

these, *applied research studies*, want to solve practical problems by using empirical methods and theories.

The current study will be an applied research study. The goal will be to solve a practical problem. The practical problem is to figure out how the attitude toward an ad can be influenced by different goals, which are represented by a testimonial in an ad. Furthermore, recommendations to marketers should be given on how consumers' purchase intention can be increased by different ad designs.

3.1.3 Object of the study

Figure 22 gives an overview of the different objects a study can have:

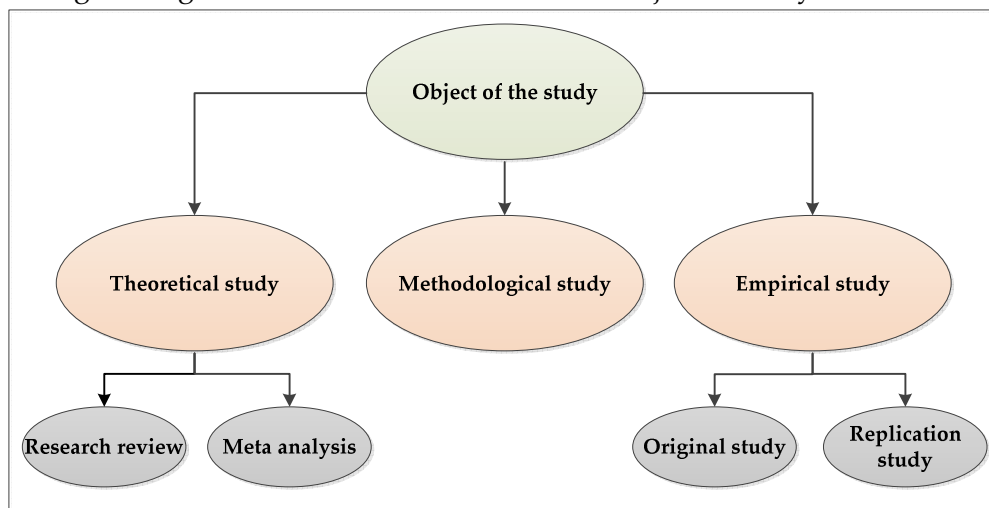


Figure 22. Different objects of a study.

A *theoretical study* is giving an overview of the current research. This can be either done by reviewing all literature for a specific topic, which is called *research review* or by a summary of all relevant results of previous studies, which is called *meta analysis* (Döring & Bortz, 2016, p. 186). In contrast to a theoretical study, a *methodological study* is comparing and enhancing research methods. Last, there is the *empirical study*, which wants to solve research problems by using, collecting and analyzing own data. The empirical study can be an original study or replication of an existing study (Döring & Bortz, 2016, p. 187).

Even if a short review of the current research/ other studies took place in the second chapter, which built the theoretical foundation for this research, the main object of the study is empirical. Hereby no replication of an already existing study

is taking place, but an original study will be done. This object is needed as the research wants to solve a research problem.

3.1.4 Data basis for the study

In order to do an empirical study it is necessary to collect data. Data can be collected in one of the following three ways: *primary*, *secondary* or *meta-analysis*. Primary analysis means that the data is surveyed by the researcher in person. In contrast to the primary analysis, during a secondary analysis already existing data is used and evaluated again in a new way (Döring & Bortz, 2016, p. 191). Last, the meta-analysis summarizes of the results of comparable studies, which cover the same topic. This summary combines the results to one overall result.

Most human and socio-scientific studies are using the primary analysis (Döring & Bortz, 2016, p. 191), which will be the case for the current research as well. This procedure has the advantage that the details of the research design, the sample size and the way how the data is collected can be defined by the researcher.

3.1.5 Cognitive interest in empirical studies

Empirical studies can be categorized into three different groups based on the cognitive interest. These are the following ones:

- Exploratory study,
- Explanatory study and
- Descriptive study of populations.

In an *exploratory study* the researcher is using open questions to generate theories and derive hypothesis about concepts. This is in contrast to an *explanatory study*, where hypothesis which are already derived should be tested. A *descriptive study of populations* is done in order to figure out how characteristics are spread over a whole population (Döring & Bortz, 2016, p. 192).

The current research can be categorized as an *explanatory study*. In the previous chapter hypothesis have been derived than these should be tested in a study.

3.1.6 Creation and treatment of study groups in explanative studies

There are different ways to test a causal hypothesis. One of them is the *experimental study* where two groups are used to which each participant is randomly assigned. Each group is treated differently because of a manipulation of the independent variable. The effects of this manipulation on the dependent variable are measured in the experimental and control group. This is also called *randomized controlled trial* (Döring & Bortz, 2016, p. 193).

Next to the experimental study, there is the *quasi-experimental study*, which is also described as *non-randomized*. In the quasi-experimental study the groups are not formed randomly but are already generated or formed in another way. However, the further process is the same as in the experimental study: A manipulation of an independent variable takes place and the effect on the dependent one in the experimental and control group is measured.

Last there is the *descriptive study (non-experimental)*. Hereby, already generated or formed groups are used and their differences are considered. No manipulation of variables takes place. Therefore this study design is not really useful to test causal hypothesis (Döring & Bortz, 2016, p. 194).

For the current study the descriptive study approach will be excluded as it doesn't help to test the established hypothesis nor the causal relationship between variables.

In order to solve the issue of confounding variables like the differences between the participants in the experimental and control group a randomization will take place. Randomization in this case means that the participants are randomly assigned to the research/ treatment conditions (Döring & Bortz, 2016, p. 196). In the current research each participant in the main study will be exposed by coincidence to one stimulus (one picture) which will be different between the experimental group and the control groups. Therefore the current research can be classified as an experimental/ randomized controlled study.

3.1.7 Location of the empirical study

An empirical study can take place in a *laboratory* or in the *field*. A laboratory study is taking place in a controlled environment, where no interruptions are

occurring. This control seems to be good to exclude other explanations for a phenomenon, but laboratory studies makes it difficult to generalize the results to the real world/ everyday life. A field study is done in a natural environment. Therefore the research environment is equal or comparable to the everyday life/ real world. However, external influences or interruptions can't be excluded. This can result in a difficulty to draw conclusions about the causal relationship.

For the current research it was decided to use online questionnaires. This can be categorized as a field study (Döring & Bortz, 2016, p. 207).

3.1.8 Timing of studies

An experimental study can be done just once, which is called *independent measures design*, or multiple times in a form of a *repeated measures design*. If an independent measure design is used, there are no values *before* just *after*. Different participants are in the experimental and the control group in an independent measure design. In contrast, in a repeated measures design there are values before and after. Furthermore, the same or nearly the same participants are used for the experimental and control group which reduces confounding variables. However, there are also risks and disadvantages of this design like testing tiredness. An example of a repeated measure design study might be a study in the area of antidepressant drugs where the experimenter wants to measure the effectiveness of these drugs before, after one year and maybe after five years again (Döring & Bortz, 2016, p. 209).

There are also non-experimental studies with or without repetition like *cross-sectional*, *trend* or *longitudinal studies* (Döring & Bortz, 2016, p. 210). These won't be described further as the non-experimental study design was already excluded before as it is not a relevant study design for the current research.

The own study is an experimental one without any repetition, therefore it can be stated that the independent measures design is used. A repetition doesn't make sense as no long term effect of any medicine needs to be analyzed but the effect of an exposure to an advertisement.

3.1.9 Number of participants for an empirical study

For an empirical study it is possible to use a *group design* or to do a *case study*. For a group design a sample of the whole population, which is important for the

study, is taken and explored. For a group study it is also possible that the whole population is explored not just a sample. Of course, this is just possible if the population is not too large (Döring & Bortz, 2016, p. 215). On the contrary, in a case study just one case which is typical or not typical is used and examined.

For the current research a group design will be used: A sample of the population will be selected but not the whole population.

Due to the just mentioned approach, which is summarized in Table 8, and because of the theoretical foundation which was described in chapter 2 the structural equation modeling (SEM) seems to be a suitable model to test the hypothesis that have been established.

Table 8

Classification of current study design.

Criteria for the classification of study designs and chosen design for current research

Empirical theoretical approach of the study:

- **Quantitative research method (chosen)**
- Qualitative research method
- Mixed method approach

Scientific object:

- Basic research studies
- **Applied research studies (chosen)**

Object of the study:

- Theoretical study
- Methodological study
- **Empirical study (chosen)**

Data basis for the study:

- **Primary analysis (chosen)**
- Secondary analysis
- Meta analysis

Cognitive interest in empirical studies:

- Exploratory study
- **Explanatory study (chosen)**
- Descriptive study of populations

Creation and treatment of study groups in explanative studies:

- **Experimental study (randomized controlled trial) (chosen)**
- Quasi-experimental study
- Descriptive study (non-experimental)

Location of the empirical study:

- Laboratory
- **Field (chosen)**

Timing of studies:

Experimental study:

- **Independent measures design (chosen)**
- Repeated measures design

Non- experimental study:

- Cross- sectional
- Trend
- Longitudinal studies

Number of participants for an empirical study:

- **Group design (chosen)**
 - Case study
-

3.2 STRUCTURAL EQUATION MODELING (SEM)

In the following the methodical principles of structural equation modeling (SEM) as well as the difference between co-variance and variance based estimation methods will be explained. Afterwards the reasons for choosing a variance based estimation method will be highlighted.

Thereafter the operationalization of the constructs of the structural equation model will take place. Hereby, all indicators of each construct will be analyzed based on the quality criteria for the determination of the measurement model type.

3.2.1 Methodical principles of structural equation modeling (SEM)

In marketing and in other disciplines causal models are often used to explain specific relationships or facts in the practice. An example in the economics area is the relationship between demand and supply which is influenced by the price. This relationship can be described or a prediction can be made by the use of a causal model. The model is therefore an overview of the hypothesis which are made beforehand between the causal relationships of different variables. These variables can be either directly observed or not. If a variable is directly observable it is called a manifest variable; if it can't it, it is a latent one (Döring & Bortz, 2016, p. 224). One example for a manifest variable is the price for a product. Examples for latent variables are satisfaction, trust or motivation. Furthermore, latent variables can be

split into endogenous and exogenous ones. Endogenous variables are explained by another variable, whereas exogenous variables are the reason for an effect of another variable. Endogenous variables are sometimes also called dependent variables as they are explained by the causal model and exogenous variables are called independent as they aren't. Figure 23 illustrates the structural equation modelling. The red arrow between the latent variables represents the relationship between different hypothetical constructs. The two reddish exogenous variables have an effect on the greenish endogenous variable. The strength of the relationship of an exogenous variable on an endogenous one can be measured by the path coefficient γ (gamma). The strength of a relationship of an endogenous variable on another endogenous can be measured by the path coefficient β (beta) (Döring & Bortz, 2016, p. 951). The path coefficient is between $[-1; 1]$, where -1 represents a strong negative relationship, 1 represents a strong positive relationship and zero no relationship between the constructs.

In order to measure the latent variables indicators are used. Indicators or

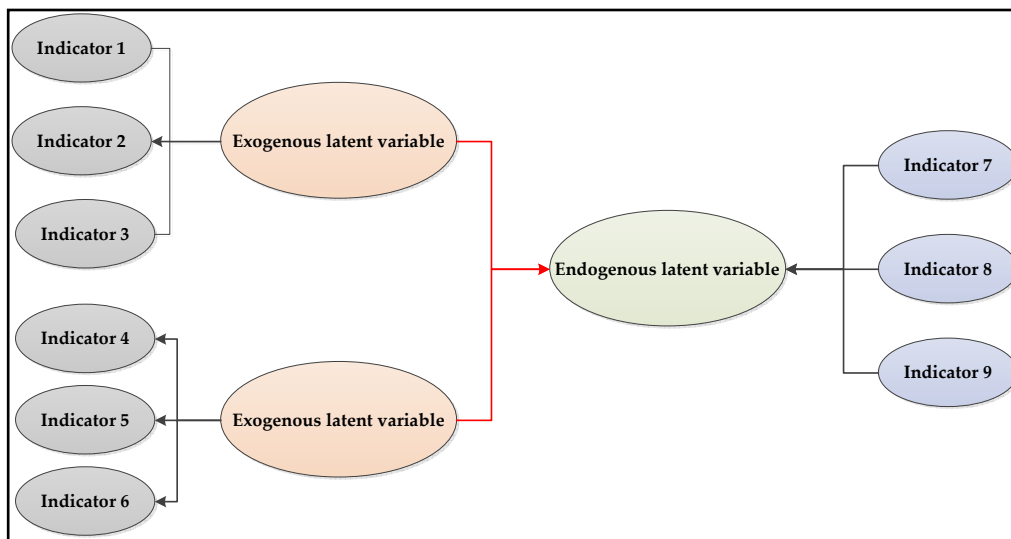


Figure 23. Visualization of relationships between variables in a structural equation model.

items are manifest variables which can be observed. These indicators can be either formative or reflective. In Figure 23 the blue indicators seven, eight and nine are formative and all gray ones are reflective. This is demonstrated by the direction of the arrows: If the arrow points from the indicator to the construct (latent variable), the indicator is a formative one. If the arrow points from the construct (latent variable) to the indicator, the indicator is a reflective one. In order to identify if

indicators are formative or reflective the following question need to be answered: If a change in the parameter value of the measurement variable is resulting in a change of the variable, than the indicator is a formative one. If a change in the latent variable is resulting in a change of the measurement variable, than the indicator is reflective (Weiber & Mühlhaus, 2014, p. 42). It is important for the estimation and evaluation of the structural equation model to define if the indicators are reflective or formative. In order to answer this question the quality criteria will be used which are listed in Table 9:

Table 9

Overview of quality criteria for the determination of the measurement model type (reflective or formative); source: Jarvis et al., 2003, p. 203.

Criteria	Reflective measurement model	Formative measurement model
Causal direction	From construct to the indicator (“effect indicators”)	From the indicator to the construct (“cause indicators”)
Replaceability of indicators	Possible	Not really possible
Correlation/ Covariance of the indicators	Correlation and covariance between the indicators is expected	Indicators don’t necessarily have to be correlated/ covariance doesn’t necessarily need to be between the indicators
Indicator characteristics	Indicators should have the same consequences and causation	Indicators don’t need to have the same consequences and causation

3.2.2 Statistical estimation methods

Structural equation models can be divided into a structural model and a measurement model. The structural model represents the relationship between the hypothetical constructs, whereas the measurement model characterizes the process of making the latent variables measurable with the help of manifest variables or indicators. The structural model is sometimes also called inner model and the measurement model outer model.

Figure 24 illustrates the structural and measurement model.

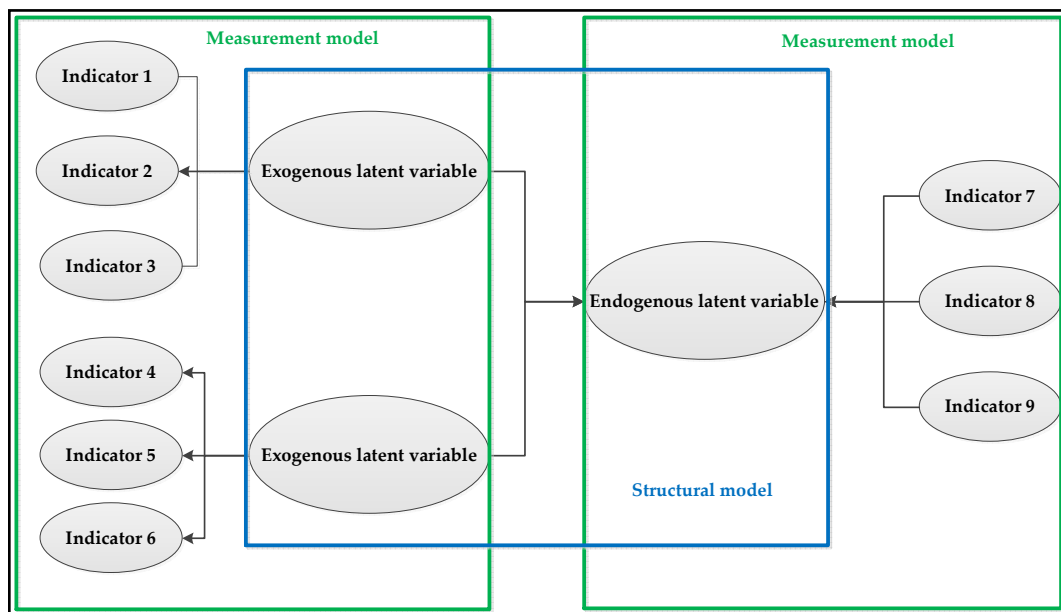


Figure 24. Structural equation models composed of measurement model and structural model; source: Weiber & Mühlhaus, 2014, p. 46.

In order to evaluate the structural and measurement model there are two different types of methods: variance based and co-variance based statistical estimation methods. Table 10 gives an overview of the difference between these two.

Table 10

Differences between variance and co-variance based estimation methods; source: Weiber & Mühlhaus, 2014, p. 74.

Criteria	PLS as variance based estimation method (PLS-SEM)	Co-variance based estimation method (CB-SEM)
Goal of the study	Forecast oriented (“soft modeling”)	Theory testing oriented (“hard modeling”)
Solution algorithm	e.g. Partial Least Squares (PLS)	e.g. <i>L</i> inear Structural <i>REL</i> ationships (LISREL), EQS or AMOS
Model assumptions	No specific assumptions about the distribution	Multi normal distribution
Parameter estimated values	“Consistency at large” (consistent with increasing indicator and sample size number)	Consistent
Values of the latent variable	Explicit estimation of the latent variable	Latent variables aren’t determined
Model specification	Reflective or/and formative	Typically reflective
Model complexity	High complexity possible (high number of constructs e.g. 100 and high number of indicators e.g. 1000)	Small to medium complexity (less than 100 indicators)
Sample size	For small sample sizes, dependent from the number of formative constructs and accordingly exogenous variables	Only for quite big sample sizes
Implications	Optimal method for forecast accuracy	Optimal method for parameter accuracy

On the basis of the differences between the statistical estimation methods it can also be explained why a variance based approach will be used for the model assessment. One of the main reasons for selecting one method over the other should be the goal of the study (Hansmann, 2010, p. 17). Should the study confirm a model that is already existing and proved by theory or should a forecast be made for a relationship for which there aren’t so many theories and measurement data

available? On the one hand there are theories about the influence of goals on motivation like the goal gradient hypothesis (Brown, 1948, p. 450ff.; Hull, 1932, p. 42; Levin, 1938) and the goals loom larger effect (Brendl & Higgins, 1995, p. 95ff.). Next to these, the theory of planned behavior is describing the influence of attitude on intention and the self-congruity theory explains the positive effect of high self-congruity on the purchase intention. On the other hand these theories didn't take into account the attitude toward the advertisement which is influenced by a goal represented by a testimonial in the ad and which may in turn influence the buying intention. The character of the study can be described as forecast orientated rather than theory testing as it wants to figure out what the best advertising design is (to display a desired end state or undesired goal) in order to increase the purchase intention.

Next to the goal of the study, another criterion that influenced the decision for a variance based estimation method is the sample size. The sample size for the study will be rather small to medium and not quite high, which is mandatory for co-variance based estimation methods. Hereby, it is difficult to decide what a medium sample size is compared to a large one. In a study done by Hair et al. the authors reviewed studies of the 30 top ranked marketing journals and found 204 studies which used PLS as the estimation method. In these studies they wanted to identify the reasons for the usage as well as the evaluation methods and reporting. Hereby, 48% of the studies mentioned the small sample size as one reason for selecting PLS (Hair et al., 2012, p. 420). The average sample size in the reviewed studies was $n = 211.29$. From the reviewed studies 24.44% had a sample size that was lower than 100, but there have also been a few with a very high sample size which used atypically PLS (e.g. Sirohi et al., 1998, $n = 16,069$; Johnson et al., 2006, $n = 2,990$). Therefore it can be assumed that a sample size of 211 can be defined as small, whereas 2,990 or even 16,069 is a very big sample size.

Reinartz et al. are recommending PLS as the appropriate estimation method if the sample size is below 250 (Reinartz et al., 2009, p. 342). Whereas Chin had another rule of thumb: The construct with the highest number of items should be used and this number should be multiplied by five or rather ten (Chin, 1998, p. 311). Homburg and Baumgartner claimed that if the number of participants is at least five to ten times of the total number of variables than a co-variance based

estimation method can be used (Homburg & Baumgartner, 1995, p. 1103; Scholderer & Baderjahn, 2006, p. 66).

To sum up there is no consensus in the literature which sample size can be categorized as small, medium or large. Next to that there are studies that are also published in the top ranked marketing journals that had clearly a large sample size and nevertheless used PLS (Hair, 2012, p. 420).

For the operationalization of the constructs reflective and formative indicators can be used. This model specification is characteristic for the use of the variance based estimation methods.

The fact that non normal data should be analyzed was mentioned as the main reason for using PLS in the study of Hair et al. Half of all analyzed studies (n = 102) mentioned this as the selection criterion for a variance based estimation method. For the own research PLS will be used mainly because of the purpose of the study that is forecasting oriented and not just theory testing.

To sum up, the goal of the study that is forecast oriented, the small sample size as well as the existence of no specific assumption about the distribution resulted in the decision to use a variance based estimation method for the analysis of the structural equation model.

3.2.3 Measurement theory: Operationalization of the constructs

Theories in the area of marketing or business economics are often describing the relationship between non-observable circumstances, which can also be called constructs. In order to test these theories in an empirical way it is necessary to first operationalize the construct. During the operationalization the construct will be attached to observable items (Döring & Bortz, 2016, p. 228). These items can either be formulated in a reflective or formative way (Eberl, 2006, p. 651).

For the operationalization of a construct it is possible to use *single* or *multi-item measures*. Single item measures, which use a global item, have the advantage that the answer rate might be higher because the respondents are not getting tired of answering a similar set of questions. Therefore the discontinuation rate is lower. Next to that the sample size can be smaller. However, in order to avoid possible distortion of individual items in the mapping of the construct, it is better to use a multiple item measure (Weber & Mühlhaus, 2014, p. 111ff.). Multiple item

measures are using psychometric scales or an index (Döring & Bortz, 2016, p. 228). Next to that the usage of multiple items is generally accepted in science and it is possible to check the reliability and validity of multiple item concepts (Weiber & Mühlhaus, 2014, p. 114). This validation and reliability check is just possible in a limited way when a single item measure is used. Furthermore, errors in measurement will be compensated over all items in multiple items measurements which isn't the case when a global item is used (Hair et al., 2017, p. 7). These advantages and the ability to check the consistency between the multiple items that measure the same construct lead to the decision to use multiple items to operationalize nearly all of the following constructs.

There are different views on the number of items needed per construct; e.g. Churchill is mentioning 10 items (Churchill, 1979, p. 69), Peter is stating that half of the studies are taking 3-6 items (Peter, 1979, p. 12ff.), Bollen said that 3-4 items are enough (Bollen, 1989, p. 288ff.). However, there is no consensus on the number of items required to measure a construct.

The items are formulated in a negative and positive way. This will enable to figure out if the participants are paying attention. Next to that, the respondent's behavior is different if an item is formulated in a positive or negative way. This effect will be diminished if positive and negative items are both used in a questionnaire (Rossiter 2002, p. 323).

All indicators are taken from previous studies/ the literature. This procedure was chosen to avoid the so-called *construct overflow*. If each researcher would use his/ her own indicators for the operationalization of a construct this would result in an enormous number of indicators. Next to that the studies and results of them couldn't be compared to each other anymore (Weiber & Mühlhaus, 2014, p. 105ff.). However, some small modifications have been done to the wording of the adapted item. These changes have been made because the original item wording was too product specific; for example a specific producer or product name was mentioned. In order to make it applicable the neutral word *product* was often used. The validity and reliability criteria have been checked during the selection process for proper indicators for each construct. Sometimes the criteria of validity and reliability are not mentioned in the sources. These items will therefore be excluded from the further research.

Operationalization of trust

On the one hand, according to Kumar, Scheer and Steenkamp trust can be defined as the extent to which a firm believes that its exchange partner will act in an honest or benevolent way (Kumar et al., 1995, p. 58). In this context, honesty means that the partner will keep his promises, and benevolent that the partner has an interest in the firm's welfare. On the other hand trust can also be related to the product. In the current research trust will be defined as a risking behavior where the consumer is trusting that the *other party is benevolent* and the *product will fulfill its obligations* (Akrouf & Akrouf, 2011, p. 3). Trust as a latent variable can't be observed directly and will therefore be operationalized by the following 14 indicators:

Table 11

Operationalization of the construct trust.

Construct: Trust	
Item	Item wording
TR1	This product keeps its promises and commitments.
TR2	This product is trustworthy.
TR3	Open me a product with constant quality level.
TR4	Help me to solve any problem I could have with the product.
TR5	Offer me a new product I may need.
TR6	Be interested in my satisfaction.
TR7	Value me as a customer of its product.
TR8	This product fulfills its job.
TR9	The producer of this product cares about its customers.
TR10	We believe in the information that the supplier provided to us.
TR11	This product will please all who use it.
TR12	This product will not unreservedly meet our needs.
TR13	This product will give us little trouble in using it.
TR14	This product will do everything we want it to do.

Note. On the basis of Azize et al., 2012, p. 1365; Kim et al., 2012, p. 245; Jain et al., 2014, p. 319; Doney & Cannon, 1997, p. 48/ 49; Seppänen et al., 2007, p. 263; Grazioli & Jarvenpaa, 2000, p. 395ff.; Plank et al., 1999, p. 71.

All these indicators have been taken from the literature and just the item wording for TR1, TR2 and TR9 has been slightly modified. In the next step it will be checked on the basis of the quality criteria for the determination of the measurement model type which are shown in Table 9, if the indicators are reflective or formative.

The first criterion for determining the measuring model type mentioned by Jarvis is the *causal direction*. In order to determine if the direction is from the indicators to the construct or the other way around, it can be helpful to analyze the chronological order or sequence (Edwards & Bagozzi, 2000, p. 157ff.; Eberl, 2004, p. 17). In the case of the item TR13 with the item wording "This product will give us little trouble in using it" it seems to be comprehensible that the participant needs to have trust first, before having the opinion that the product won't give him/ her issues during usage. The result or effect that trust has on the consumer is described in the indicators, e.g. the consumer will think that the producer will help him to solve any problem he has with the product (indicator TR4) or that the product will unreservedly meet his needs (TR12; stated in an inverse way). All indicators can be therefore called *effect indicators* as they represent results of the construct. Because of the fact, that the construct has an effect on all indicators, it can be stated that all indicators have the same causation, which is trust. Therefore the criterion *indicator characteristics* also supports the assumption that all indicators are reflective.

Next to the criteria *causal direction* and *indicator characteristics*, there is the criterion *replaceability* of the indicators, which determines if an indicator is reflective or formative. If e.g. the indicator TR1 with the item wording "This product keeps its promises and commitments" would be replaced by the item TR8 with the item wording "This product fulfills its job" the content of the construct trust won't be changed (Diamantopoulos & Winklhofer, 2001, p. 271). The construct would still have the same meaning as each indicator just represents one example of the theoretical concept. This fact results in the categorization of the indicators for the construct trust as reflective. If the content of a construct would be different or changed, it would be characterized as a formative indicator (Weber & Mühlhaus, 2014, p. 43).

The last criterion mentioned by Jarvis is the *correlation* and *covariance*. It needs to be kept in mind that correlation is not a proof of a causal relationship but a causal relationship can be falsified by the correlation. The correlation is just evaluating whether there is a relationship between two variables but not whether this relationship is a causal one (Weber & Mühlhaus, 2014, p. 16). This is the reason that not only the correlation needs to be considered but also the causal direction which was the first criterion which was analyzed. The correlation can be explored theoretically by answering the following question: Is a change of the parameter

value of one indicator resulting in a change of the value of another (Fassott, 2006, p. 71)? For example: A participant is evaluating the item TR2 “this product is trustworthy” on a Likert type of scale as “1= I strongly disagree” because of a negative experience with the product she/he had the last time he bought it. If he is rating the item TR2 in a negative way than he will also judge the item TR8 “This product fulfills its job” and the item TR1 “This product keeps its promises and commitments” with a high disagreement. This is applicable for all other indicators for the construct trust as well. As the item TR12 with the item wording “This product will not unreservedly meet our needs” is stated in an inverse way, this item will of course have a stronger agreement if all other indicators have a strong disagreement rating. To sum up: If the parameter value of one trust indicator is changing, it will result in a change of the other parameter values as well. This characteristic isn’t necessary for formative models but it is preexisting in reflective ones. Statistically the correlation can be measured by the construct validity instruments like Cronbach’s alpha (Weiber & Mühlhaus, 2014, p. 138), which will be analyzed later in the statistical considerations.

Operationalization of appearance satisfaction

From an economic point of view satisfaction can be defined as the perceived discrepancy between prior expectations about something and the actual profit (Brown et al., 1991, p. 16). Alternatively, it also can be described as the total consumption experience of a customer with a specific product which he bought (Johnson & Fornell, 1991, p. 272). For Van Raaij satisfaction goes even one step further and is equal to subjective well-being (Van Raaij, 1981, p. 11).

However, in the current research one specific type of satisfaction will be focused on: The satisfaction with one owns appearance. Appearance satisfaction will be defined as the satisfaction of the participant with her/his own physical attractiveness.

As a latent variable appearance satisfaction can’t be observed directly and will therefore be operationalized by the following three indicators, listed in Table 12.

Table 12

Operationalization of the construct appearance satisfaction.

Construct: Appearance satisfaction	
Item	Item wording
SAT1	I'm pretty satisfied with my level of physical attractiveness
SAT2	I wish I could change the way I look.
SAT3	I would describe my satisfaction with my physical appearance as... Terrible, unhappy, mostly dissatisfied, mixed (about equally satisfied and dissatisfied), mostly satisfied, pleased, delighted

Note. On the basis of Richins, 1991, p. 76; Matthews et al., 2012, p. 59.

All these indicators have been taken from the literature and haven't been modified. The measurement model can be described as reflective when the questions or item wordings are the results of the corresponding construct, so the *causal direction* is from the construct to the indicator. This is the case for the construct satisfaction, which is measured by e.g. the item SAT1 which consists of the item wording/question "I'm pretty satisfied with my level of physical attractiveness" which describes a consequence of appearance satisfaction. If somebody is satisfied with his own appearance he will also state that he is pretty satisfied with his level of physical attractiveness.

Furthermore, the decision whether an item is reflective, that means whether it shows the effects of the construct (Bollen & Lennox, 1991, p. 305) or formative, where the item is the source or cause of the construct, can be decided by answering the following question (Eberl, 2004, p. 16): Is it possible to replace one item with another (Jarvis et al., 2003, p. 203)? In the example of the construct satisfaction the item SAT2 with the item wording "I wish I could change the way I look" can be replaced by e.g. the item SAT1 with the item wording "I'm pretty satisfied with my level of physical attractiveness". These two items show different aspects of the consequences/feelings of the satisfaction with the own appearance. The *replaceability* is therefore present, which is a characteristic for a reflective measurement model.

The *correlation* can be described by answering the following question: Under the assumption that all indicators are coded in the same direction is it than necessarily true that if one of them suddenly changes in a particular direction that the others will change in a similar way (Chin, 1998, p. 9)? Assuming that the satisfaction with one owns appearance is low, than the item SAT1 will be answered with a lower agreement e.g. 1 = strongly disagree by the participant. At the same

time the item SAT2 which is formulated in an inverse way will be ranked with a higher agreement. Consequently, it can be stated that if one item is changed in a particular direction the others will change in a similar manner (if coded in the same direction), which also supports the assumption that appearance satisfaction is a reflective construct.

Operationalization of risk

The concept of perceived risk in a buying situation was first mentioned by Bauer (Bauer, 1960, p. 390). He claimed that buyer behavior always involves some kind of risk as the decisions that are taken and the result of them are unknown and may be unpleasant for the consumer. Risk can be seen in the outcome or effect which the product itself has or doesn't have even if it was promised. Next to that perceived risk can also be seen in the alternatives that haven't been bought which may have even a better effect or outcome (Grønhaug, 1972, p. 247). Therefore, risk can be seen as a state of uncertainty in a specific situation like buying a product to solve some kind of problem and the consequences of this specific choice, which may be good or bad for one self (Grønhaug, 1972, p. 246). Consequently, the main component of risk is that it involves consumer's experience of uncertainty and consequences. As risk can't be observed directly, the following six indicators will be used to measure it (see Table 13).

Table 13
Operationalization of the construct risk.

Construct: Risk	
Item	Item wording
RISK1	How important was it to you to make the best choice?
RISK2	How sure are you that a new product in the same prize class, which has previously not been on the market, would be just as good as the one you chose?
RISK3	What is the probability that this product will fail to work like it should?
RISK4	What is the probability that this product will malfunction or damage your body?
RISK5	If your friends, relatives or associates are aware that you have used this product, what is the probability that you will lose their respect?
RISK6	If your friends, relatives or associates are aware that you have used this product, what is the probability that they will look down on you?

Note. On the basis of Liao et al., 2010, p. 249; Grønhaug, 1972, p. 253.

All these indicators have been taken from the literature. The item wording has been slightly changed for the following items: RISK2, RISK3, RISK4, RISK5 and RISK6.

Liao et al. divided the items, which are named RISK2 - RISK6 in Table 13, into the two constructs *perceived performance risk* and *perceived social risk*. However, for the own study it will be assumed that these two constructs just show two different aspects of the construct risk and will be therefore used together for measuring the construct risk.

Liao et al. used the co-variance based estimation method LISREL for analyses that could lead to the assumption that they classified the indicators above as reflective (Liao et al., 2010, p. 243). As in the article no categorization of the items has been made the indicators will be checked in the following to confirm the assumption that all of them are reflective.

In order to analyze the *causation* and *indicator characteristics* the following example will be used: Somebody has saved money for over a year and wants to buy an expensive car now. As the consumer has put a lot of effort and time to save all the money the buying process can be described as risky. This risky situation will result in a higher rating of the indicator RISK1: It is really important for the consumer to make the best choice and buy the best possible car. Next to that, he doesn't want that another car which has nearly the same price is better than the one

he bought (RISK2). Furthermore, it seems to be comprehensible that the consumer wants that the car works like it should and doesn't have any problems with it (RISK3/ RISK4). As a car is some kind of status symbol, the consumer wants that his friends and relatives are looking up on him and admire him (RISK5/ RISK6). To sum up all, indicators have the same causation (a risky buying situation) and have the same characteristics.

Next, the *correlation* will be analyzed by another example: A consumer wants to buy toothpaste. Toothpaste represents a rather inexpensive product for daily use which the consumer buys every other month. The offer of toothpaste in a normal supermarket is enormous, so the consumer has a lot of choices. However, the importance of toothpaste can be described as rather low and the perceived buying risk as the product is inexpensive is nearly not present. In this situation the consumer would evaluate the importance to buy the best product in the same price category as low (RISK2). The ratings of all other indicators would be in the same way: The probability that the toothpaste won't work like it should (RISK3) or that the toothpaste will damage the consumers tooth (RISK4) would be considered as low. Therefore it can be summarized that a buying situation with a low risk level will change the evaluation of all the indicators in the same way. This characteristic is given when correlation between the indicators is present, which is a sign for reflective indicators.

The indicator RISK5 with the item wording "If your friends, relatives or associates are aware that you have used this product, what is the probability that you will lose their respect?" could have been replaced by the indicator RISK6 with the item wording "If your friends, relatives or associates are aware that you have used this product, what is the probability that they will look down on you?" without losing content of the construct trust. Even if just one of the two indicators would have been used the aspect of perceived social risk would be measured. Same counts for the indicator RISK4 ("What is the probability that this product will fail to work like it should?") and RISK 3 ("What is the probability that this product will fail to work like it should?"): One of them could have been removed and the perceived performance risk would still be measured and no content of the construct risk will be lost. Therefore it can be stated that the *replaceability* within the different aspects of risk is present. This results in the confirmation that the indicators are reflective.

Operationalization of attitude toward the advertisement

Petty and Cacioppo defined *attitude* as a general favorable, unfavorable or neutral evaluation of another person, oneself, objects and issues (Petty & Cacioppo, 1986, p. 127). Based on this definition, the attitude toward the advertisement was defined as the judgement of the consumer on the advertisement with the portrayed model (testimonial). The attitude toward the advertisement can't be observed directly. Therefore the reactions to or judgement of the attitude toward the advertisement will be measured with the following seven items (see Table 14).

Table 14

Operationalization of the construct attitude toward the advertisement.

Construct: Attitude toward the advertisement	
Item	Item wording
AtAD1	I react favorably to the advertising and promotions of this product.
AtAD2	I feel positive towards the advertising and promotions of this product.
AtAD3	The advertising and promotions of this product are good.
AtAD4	I am happy with the advertising and promotions of this product.
AtAD5	This advertisement is important.
AtAD6	This advertisement is good.
AtAD7	This advertisement is interesting.

Note. On the basis of Azize et al., 2012, p. 1365; Kemp et al., 2012, p. 344.

All these indicators have been taken from the literature and just the item wording for AtAD1, AtAD2, AtAD3 and AtAD4 has been slightly modified. As Azize et al. used PLS as the variance based estimation method for analysis it can't be derived if the indicators are reflective or formative as both are possible for PLS. Whether the indicators are reflective or formative wasn't mentioned in the article either and therefore the quality criteria for determination of the measurement model will be checked in the following.

First, the *causation* should be checked by following example: Somebody wants to buy a body lotion and sees a product with a smiling woman on the cover. This product results in a positive feeling (AtAD2) as the woman is attractive and the skin of her seems to be healthy and fresh. Therefore the consumer evaluates the advertisement of the body lotion as good (AtAD3) and is happy about it (AtAD4). This example underlines that the attitude toward the advertisement is the cause of the happiness and the positive feelings of the consumer. The indicators represent different effects which the construct "attitude toward the advertisement" has.

Therefore the causation is from the construct to the items. All indicators have the same causation as well as the same consequences. If the attitude toward the advertisement is good, it can result in positive feelings and will maybe lead to a buying intention (=consequence).

Next, the correlation is analyzed by the following example: The company Protein World wanted to sell weight loss products by an extremely criticized advertisement which is showing a skinny woman in a bikini with the slogan "Are you beach body ready?". Two weeks after the start of the campaign thousands of people had signed a petition to get these advertisements removed and forbidden as it was showing unrealistic body standards. This popular outrage shows how important it is for marketers of a product to decide on which models to portray in an advertisement. In this example a female consumer would say that she is not very happy with the advertisement (AtAD4) and that she doesn't feel positive about it (AtAD2). Therefore a change in the attitude toward the advertisement would change the evaluation of the indicators. Next to that all indicators would change in the same direction if one of them would change. This supports the assumption that there is a correlation between the reflective items.

The last criterion for determining whether the indicators are reflective or formative is the *replaceability*. When comparing the indicators it seems to be possible to replace one with another or to eliminate one indicator without losing content of the construct "attitude toward the advertisement". For example the indicator AtAD3 with the item wording "The advertising and promotions of this product are good" can be easily replaced by the indicator AtAD1 with the item wording "I react favorably to the advertising and promotions of this product".

Operationalization of health motivation

Mitchell defines motivation as an energizing force that gives people's behavior a direction and is the reason for the persistence of a specific behavior (Mitchell, 1982, p. 81). Bayton defines motivation as this inner tension or also as a wish, drive or desire that results in a sequence of actions also known as consumer behavior (Bayton, 1958, p. 282). Based on these definitions health motivation was defined as a wish, drive or desire to be healthy that results in a sequence of actions to follow this goal. In order to operationalize health motivation the following eight items, which are listed in Table 15, have been derived from the literature.

Table 15

Operationalization of the construct health motivation.

Construct: Health motivation	
Item	Item wording
MOT1	I try to prevent health problems before I feel any symptoms.
MOT2	I am concerned about health hazards and try to take action to prevent them.
MOT3	I try to protect myself against health hazards I hear about.
MOT4	I don't worry about health hazards until they become a problem for me or someone close to me.
MOT5	There are so many things that can hurt you these days. I'm not going to worry about them.
MOT6	I often worry about the health hazards I hear about, but don't do anything about them.
MOT7	I don't take any action against health hazards I hear about until I know I have a problem.
MOT8	I'd rather enjoy life than try to make sure I'm not exposing myself to a health hazard.

Note. On the basis of Moorman, 1990, p. 367; Moorman & Matulich, 1993, p. 221.

First, the *causal direction* will be analyzed for e.g. the item MOT1: If I am motivated to stay healthy, I will try to prevent health problems before I feel any symptoms. Same counts for MOT2: When my motivation to avoid any health risks is high, I will be concerned about health hazards and try to take action to prevent them. On the other hand if the motivation to take actions in advance is low, I don't take any action against health hazards I hear about until I know I have a problem. It can be summarized, that all indicators represent different effects of the construct health motivation. Different levels of motivation will result either in actions to prevent health problems or people will wait until a serious problem occurs. The *causation* or *causal direction* is therefore from the construct to the items. Next to that, all indicators – if they would be coded in the same direction – will have the same consequences: Somebody who is motivated to stay healthy and wants to avoid health hazards will go e.g. on a regularly basis to the doctor to get checked, eat healthy food and do sports. Therefore, it can be stated that the indicators don't only have the same causation but also the same consequences.

Next the correlation will be tested by using following example: Somebody is facing a serious health issue and will therefore rate the indicator MOT2 with the item wording "I am concerned about health hazards and try to take action to prevent them" with a high level of agreement. On the other hand MOT6 with the

item wording “I often worry about the health hazards I hear about, but don't do anything about them” would be rated with a high level of disagreement. This is caused by the inverse formulation of this indicator. If all indicators would have been directed in the same direction and wouldn't be formulated in an inverse way it can be stated that if one indicator changes in an opposite direction, all others will change as well. This shows that there is a correlation between the indicators.

When considering the *replaceability* it seems to be understandable that e.g. the indicator MOT1 with the item wording “I try to prevent health problems before I feel any symptoms” can be easily replaced by the indicator MOT3 with the item wording “I try to protect myself against health hazard I hear about”. If one of these indicators is replaced by the other or would be eliminated the construct health motivation wouldn't lose any content.

Operationalization of social comparison

Festinger stated that people have a drive to evaluate themselves compared to others in order to evaluate their attributes. These others may be models in media (Festinger, 1954, p. 117ff.) or other chosen comparison standards. If there is a discrepancy between the comparison standard, which symbolizes a desired end state, and oneself the motivation to follow a certain goal can emerge (Klesse et al., 2012, p. 356). To summarize, social comparison can be defined as the comparison process between a comparison standard like a person portrayed in an ad and oneself in order to judge on his own attributes. As social comparison as a latent variable can't be observed directly the following eight items will be used for the operationalization (see Table 16).

Table 16
Operationalization of the construct social comparison.

Construct: Social comparison	
Item	Item wording
SCOM1	When I see models in ads, I think about how well or how badly I look compared to the models.
SCOM2	I have wished I looked more like the models in personal care/ cosmetics advertisements.
SCOM3	I compare myself to others who are better off than me (...) in terms of physical attractiveness.
SCOM4	How often do you compare yourself with others who are performing worse than you are?
SCOM5	I am not the type of person who compares often with others.
SCOM6	If I want to find out how well I have done something, I compare what I have done with how others have done.
SCOM7	I always pay a lot of attention to how I do things compared with how others do things.
SCOM8	I never consider my situation in life relative to that of other people.

Note. On the basis of Richins, 1991, p. 76; Gibbons & Buunk, 1999, p. 142; Brown et al., 2007, p. 65; Buunk et al., 2003, p. 377.

The item wording has been slightly changed for the item SCOM3 in order to fit into the own analysis.

Young adults are often comparing themselves to others in order to judge e.g. how good they look compared to them (Martin & Gentry, 1997, p. 20). Therefore they would probably rate the item SCOM3 with the item wording "I compare myself to others who are better off than me (...) in terms of physical attractiveness" with a high level of agreement. Same counts for the item SCOM1 with the item wording "When I see models in ads, I think about how well or how badly I look compared to the models". If the young adults become older they have probably a higher level of self-esteem and would rate the item SCOM8 with the item wording "I never consider my situation in life relative to that of other people" with a high level of agreement. This will result that the rating of the other items will change as well. They will probably rate the indicator SCOM7 with the item wording "I always pay a lot of attention to how I do things compared with how others do things" also with a high level of disagreement. This example shows that there is a *correlation* between the indicators. A change of one of the indicators into another direction, will result in a change of the others as well.

In terms of *replaceability* it can be stated that each indicator can be removed without losing some content of the social comparison construct. If the indicator SCOM7 (“I never consider my situation in life relative to that of other people”) is deleted and just the indicator SCOM2 (“I am not the type of person who compares often with others”) is kept, the meaning of social comparison remains the same.

When considering the *indicator characteristics* it seems to be understandable that an individual that agrees to the indicator SCOM7 with the item wording “I never consider my situation in life relative to that of other people” is also confirming the indicator SCOM2 “I am not the type of person who compares often with others”. To sum up, if one indicator changes in one direction all other will change as well. People who have a tendency to compare themselves to others in a high degree will confirm the indicators SCOM1, SCOM3, SCOM5 and SCOM7 and neglect the indicators SCOM2 and SCOM7 as they are stated in a negative way. Individuals with a low tendency to social comparison behavior will do the opposite.

Operationalization of goals/ goal attainability

Goals can be defined as the key driver for a specific behavior (Klesse et al., 2012, p. 356). If somebody wants to reach a specific end state like losing weight certain tasks need to be performed e.g. going to the gym or eating healthy food in order to reach this goal. Continuously, during the process of trying to lose weight the actual state is being compared with the desired end state in order to judge how good the efforts have been. Based on these judgments, the expectations about the goal attainability are made (Brendl & Higgins, 1995, p. 95ff.). Therefore goal attainability can be defined as the ability and feasibility to reach a desired end state in a specific period of time. As goals and their attainability can't be observed directly the following five indicators will be used to operationalize this construct (see Table 17).

Table 17

Operationalization of the construct goal attainability.

Construct: Goal attainability	
Item	Item wording
GOAL1	Please rate the extent to which your goal is perceived to be realistic.
GOAL2	Please rate the extent to which your goal is perceived to be feasible.
GOAL3	Please rate the extent to which your goal is perceived to be challenging.
GOAL4	Please rate the extent to which your goal is perceived to be difficult.
GOAL5	How likely are you able to reach your goal? (not at all =1; very much = 7)

Note. On the basis of Scott & Nowlis, 2013, p. 450; Zhang & Huang, 2010, p. 649.

All indicators have been taken from the literature and have been slightly changed in order to fit to the own study.

If somebody has lost already 15kg and still wants to lose 3kg the goal attainability can be described as quite low. Because of the high goal attainability, he would judge the likelihood of reaching this goal as high as well (GOAL5). This example shows that the goal attainability is causing a judgment of the goal as challenging/difficult and realistic/feasible. Therefore, it can be stated that the *causal direction* is from the construct goal attainability to the indicators.

Next the correlation should be analyzed by using following example: A sales person is getting a goal to reach a sales volume of 80.000 € per year. If he rates this goal as realistic to attain (GOAL1) we would probably say that it is very likely that he reaches his goal (GOAL5). Next to that, he would judge this goal to be not that challenging as he can reach it with moderate effort (GOAL3). If suddenly the employer changes the sales targets for next year to 100.000 € per year, the sales person will perceive the goal to be more challenging (GOAL3). He may think that he may fail to reach the goal (GOAL5) as it is not that feasible (GOAL2). This example shows that a change if one of the ratings of one item, will result in a change of the others as well. Therefore it can be stated that there is a **correlation** between the indicators.

In order to reduce the number of indicators it is possible to replace the item GOAL1 with the item wording "Please rate the extent to which your goal is perceived to be realistic" with the item GOAL 2 with the item wording "Please rate the extent to which your goal is perceived to be feasible". Through this replacement no content of the construct goal attainability will be lost. Therefore, it can be stated that the criterion *replaceability* for reflective items is present.

Operationalization of purchasing intention

The purchasing process can be described as goal oriented, that means people have some kind of problem they want to solve by buying a specific product (Grønhaug, 1972, p. 246). This problem may be caused by a new product alternative or an inner tension which can be also called dissatisfaction (Grønhaug, 1972, p. 247). Purchasing intention is – in contrast to the real buying itself- the willingness to buy something or the tendency to select one product over another. As the purchasing intention as a latent variable can't be observed directly, the following five indicators will be used to measure it (see Table 18).

Table 18

Operationalization of the construct purchasing intention.

Construct: Purchasing intention	
Item	Item wording
INT1	The probability that I would consider buying this product is very high.
INT2	If I were to buy this type of product, I would consider buying this one.
INT3	The likelihood of my purchasing this product is high.
INT4	My willingness to buy this product is high.
INT5	I will use this product in the future.

Note. On the basis of Sichtmann, 2007, p. 1006; Kim et al., 2012, p. 245.

All items have been taken out of the literature and all of them, except INT5, have been slightly modified.

First, the causal direction is considered by the following example: Somebody is in the supermarket and wants to buy a cell phone. If the purchase intention is high, he will probably consider buying it (INT2). Next to that, a high purchase intention will result in a higher likelihood and willingness to purchase this product (INT3/ INT4). This shows that the causal direction is from the construct purchase intention to the indicators. Next to that, all indicators have the same consequences: If my purchase intention is high, I will consider buying this product which will result in a specific buying behavior (=consequence).

It seems to be comprehensible that a person who is not happy with the cell phone he bought would rate the item INT1 with the item wording "The probability that I would consider buying this product is very high" with a low level of agreement. Next to that, he would rate the item INT2 with the item wording "If I were to buy this type of product, I would consider buying this one" with a high level of disagreement. Therefore, it can be stated that the items are correlated.

Correlation is present because a change of one indicator into one direction will result into a change of all other indicators as well.

If the item INT4 with the item wording “My willingness to buy this product is high” will be replaced by the item INT3 with the item wording “The likelihood of my purchasing this product is high” no content of the construct purchase intention will be lost. Therefore, the *replaceability* of the indicators is present.

To sum up, it can be stated that the indicators used to measure the purchase intention are reflective.

Operationalization of reference point

Debevec and Romeo noticed that the self-referencing process is essential to the reception and processing of information provided in advertisements (Debevec & Romeo, 1992, p. 83). Next to that, self-referencing is influencing the evaluation of the ad as well as the behavior (Debevec & Romeo, 1992, p. 87). Therefore it needs to be measured on the one hand whether self-referencing takes place and on the other hand what the reference point of the participant is.

For this purpose one indicator will be used (see Table 19). This is the only construct where the indicator has not been taken like it is from the literature. However, Fishbach and Dhar used a scale (wide vs. narrow) in their study, on which the participants should mark their desired weight loss (Fishbach & Dhar, 2005). This approach was adapted and modified: Not a scale but a scroll bar will be used to measure the distance.

Table 19

Operationalization of the construct distance.

Construct: Reference point/ distance	
Item	Item wording
RP1	Please rate your own BMI compared to the BMI of the displayed model in the advertisement (<i>a scroll bar will be used for this question</i>).

In this item the participant should judge how close or far away she/he is from the displayed testimonial in the advertising. In contrast to all other constructs one single item measure is used for the reference point (a global item). As this item has not been taken directly from the literature a preliminary test should be done in order to test this measurement of the reference point.

However, the result of this question doesn't represent the reference point, as it is assumed the participant himself/herself is the reference point but the distance between the participant's current state and the state of the testimonial. Therefore the term *distance* will be used in the following instead of the reference point.

Next to that, information about the respondent's BMI will be gained from a combination of the height and weight, which will be asked at the end of the questionnaire. This will allow a more objective measurement of the reference point than the subjective evaluation done by the participant by answering item RP1.

4. EMPIRICAL ASSESSMENT OF THE MODEL

4.1 APPROACH: PRELIMINARY STUDIES AND MAIN STUDY

Figure 25 shows the structural equation model which was established from all the hypotheses which linked the constructs to each other.

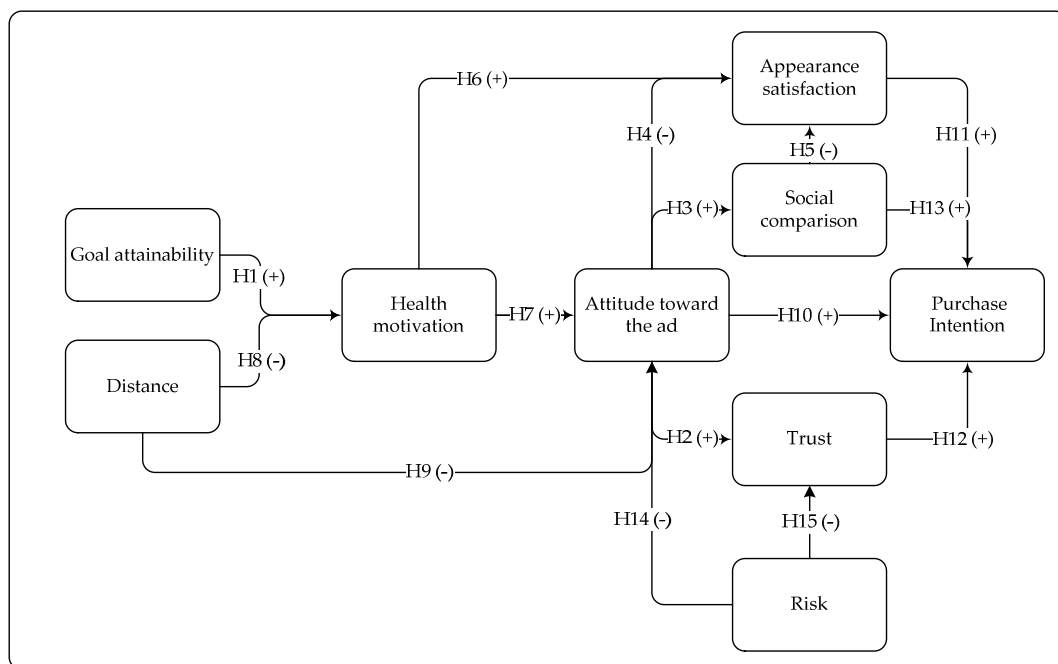


Figure 25. Structural equation model.

In the following, first one part of this structural equation model will be tested in a preliminary study (preliminary study 1). This approach has the following goals:

- The number of reflective items for some of the constructs should be limited. As the relationship between a large number of constructs should be analyzed, it should be avoided that the participants quit their participation in the questionnaire because of its length.
- Furthermore, the operationalization of the reference point/ distance should be tested in the preliminary study. The operationalization will be done by a

subjective judgement of the participants of their BMI compared to the BMI of the displayed model.

- Last, the questionnaire should be pretested with a limited number of participants before the main study takes place. If a high number is not answering questions because they e.g. didn't understand it, these will be eliminated as well.

After the preliminary study 1 implications for the main study will be drawn. Modifications of the operationalization of some of the constructs will take place, before the main study will be done. The main study will use the same constructs and items (in a reduced number) as the preliminary study 1. However some constructs will be added. Figure 26 illustrates the approach:

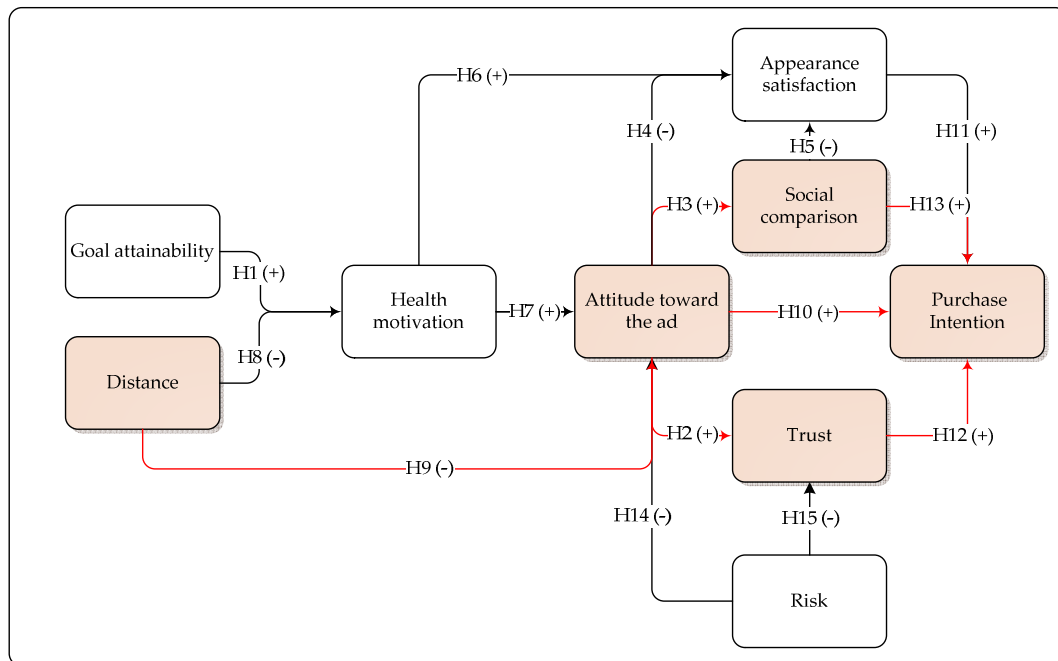


Figure 26. Constructs used for the main study and for the preliminary study (just the red highlighted ones).

The red highlighted constructs will be used in the preliminary study and later on again in the main study. For the main study all constructs will be used.

The sample for the main study won't be the same one as for the preliminary study 1. In other words: In the preliminary study a questionnaire will be answered by participants from sample 1, whereas the questionnaire in the main study will be answered by participants from sample 2, that isn't necessary the same.

After the preliminary study 1 a second preliminary study (preliminary study 2) will be done in order to select the best advertising image for the main study. Finally the main study will be conducted in which the relationship between all constructs will be tested (see Figure 26).

4.2 PRELIMINARY STUDY 1

4.2.1 Design and organization

The standard data collection method will be used for the preliminary study 1. This method is characterized by questions in a specific prearranged order (Malhotra & Birks, 2006, p. 224). All questions are fixed response questions. The participants have to select one of the presented alternatives. The survey technique used will be "E-Mail" because of its advantages like speed and low costs. Furthermore, the interviewer bias will be removed (Malhotra & Birks, 2006, p. 225/ p. 233). The online link to the questionnaire will be send to female friends, colleagues and other students of the FOM Hochschule für Oekonomie & Management. As the participation is voluntary and there is no monetary incentive, the hope is to get sufficient participants by asking in the circle of acquaintances. The participation is anonymous and the data is treated confidential. The preliminary study 1 takes place in May/ June 2015. The time period of the participation for the preliminary study 1 is two months. This time frame should allow getting a sufficient number of participants.

The questionnaire will be answered online by the participants. This will allow a fast and easy evaluation of the results. The structure of the study will be the following: First, all the participants will be exposed to one of four different types of advertisements. All four ads contain a female model which differs concerning her weight. The ads are related to the product skin care or fashion. Afterwards the participants have to answer questions on the advertisement. The questions or statements of the questionnaire are the operationalized constructs. In the preliminary study 1 five constructs will be used (trust, purchase intention, attitude toward the ad and social comparison (see Figure 26)). These have been selected as the number of items is quite high and should be limited to the items with the highest value for the loading and path coefficient to the construct.

Last some personal questions which are not related to the constructs are asked. This seems to be important as personal characteristics might influence some of the constructs as mentioned by the study done by Mittal and Kamakura.

It needs to be mentioned that the questions of the questionnaire will be translated into German as the participants of the questionnaire will be Germans.

4.2.2 Population and Samples

Before conducting the questionnaire it needs to be determined what the target population is, which sampling methods will be used, that means which individuals comprise the sample, as well as the sampling size (how many individuals should be asked).

For the preliminary study 1 the target population are female students from the Fachhochschule of Oekonomie and Management (FOM) (Malhotra & Birks, 2006, p. 358). This seems to be comprehensible as on the one hand the advertisements just show female models. On the other hand fashion, clothes and appearance seem to be important aspects especially for young women. In order to be sure that just women participated in the questionnaire, the participants have to select their gender in the personal questions part.

Furthermore the access to these participants has been easy and quick. It was decided to use the non-probability sampling method, which means the individuals are selected in a non-random way (Malhotra & Birks, 2006, p. 362ff.). Hereby the convenience sampling method was chosen as it is simple and fast to apply. For the preliminary study it is important to reduce the number of items per construct. Therefore, the limitation that the results aren't representative to the whole population is known and will be accepted. No interpretation of the results will be done after the preliminary study 1; just the reduction of items and the applicability test of the reference point measurement will be done. Therefore it is accepted in the literature to use this type of sampling method (Malhotra & Birks, 2006, p. 364).

In total 296 questionnaires have been completed by the participants. However, not all of them have been completed fully as only the first few questions have been mandatory. As some of the not-mandatory questions have been important for the analysis, just 234 questionnaires have been used as these contain answers to most of the questions.

4.2.3 Coding and Scaling

For the measurement of the agreement/ disagreement to a specific item scales can be used. Concerning Weiber and Mühlhaus it is advisable to use four to nine point scales (Weiber & Mühlhaus, 2014, p. 116). Miller stated that participants can only distinguish in a reliable way scales of 7 (plus/ minus 2) (Miller, 1956, p. 81ff.), a higher number of points than nine in a scale wouldn't make sense. Therefore it is decided that for nearly all of the questions a seven point Likert scale will be used with the end points 1= I strongly disagree and 7= I strongly agree in order to measure the item agreement/ disagreement

Next to the seven- point scale it is possible to add avoiding categories like "I don't know", "no answer" or "not relevant". These categories enable the test persons to answer a question when they can't find their opinion in the used seven-point scale (Weiber & Mühlhaus, 2014, p. 117). However as the existence of these avoiding categories motivates people to use them and the number of missing answers rises, these categories won't be used in the questionnaire.

Furthermore measurement scales are classified as nominal, ordinal, interval or ratio (Hair et al., 2017, p. 7). In the preliminary study 1 the following measurement scales are used: The first question about the gender (female or male) is measured with a nominal scale. A nominal scale is characterized by different categories which are mutually exclusive (Hair et al., 2017, p. 8). The questions to measure the constructs social comparison, attitude toward the ad, product trust and purchase intention are all measured with an interval scale. The end points of the seven- point scale are "1= I strongly disagree" and "7= I strongly agree". The numbers 1 to 7 above the points show that there is the same distances between the categories 1 and 2 as between the categories 3 and 4 etc. (Hair et al., 2017, p. 9).

The last question is the one about the reference point/ distance which is measured by a ratio scale. The participants should judge if the model shown in the ad has a higher or lower BMI. Hereby, the value 0 represents no difference. The end

points of the scale have been -10 = lower BMI and +10 = higher BMI. Figure 27 illustrates this single-item measure.

2. Please rate your own BMI compared to the BMI of the displayed model in the advertisement (please move the x to the appropriate position)

0

lower -10 ————— X ————— +10 higher

Definition and calculation of the BMI (Body Mass Index): <http://www.bmi-rechner.net/>

Figure 27. Scale to measure the distance between the displayed models BMI and the participants BMI.

After the questions to the constructs, personal questions follow. The questions about the weight, age and height can be categorized as items measured with an interval scale, as the exact spacing, which is also called *equidistance*, is known (Hair et al., 2017, p. 8). For the question about the status of the participant e.g. student, seeking for work, housewife/ househusband etc. a nominal scale is being used.



In order to minimize the problem of response bias some of the questions have been asked in an inverse way. This can be used to check if the participants have been attentive all the time.

4.2.4 Stimuli and experimental groups

In the first preliminary study one of four different kind of ads will be shown at the beginning of each questionnaire. Each ad displays a woman next to the product. There are two ads for a skin care products and two for fashion. The two categories skin care and fashion haven't been chosen for a specific reason and could have been replaced by any other product category. The important criterion in the selection process for a proper ad was to have women displayed with a different type of figure and weight. The participants of the questionnaire have been divided randomly into four different experimental groups. The group assignment happened when they clicked on the online link to participate in the questionnaire. Table 20 gives an overview of the characteristics of each of the four experimental groups which have been exposed to one of the four stimuli:

Table 20

Overview of the four experimental groups for the preliminary study.

Advertisement (Experimental Group)	Description
	<p>The advertisement of the company Dove is using a model which can be categorized as a <i>normal weighted</i>. This categorization was done by the author during the selection process of advertisements for the study, but it was supported by the analysis of the data as well. The findings will be described later on.</p>
	<p>The advertisement of the company Levi's is using a model which can be categorized as a <i>slim</i>. The Levi's model is slimmer than the model used for the Dove ad. The categorization as slim, which was done during the selection process by the author, was confirmed by the analysis of the results as well.</p>



The advertisement of the company Nivea is using a model which was categorized as *normal weighted*. However, the normal weighted Nivea model is slimmer than the model used for the Dove advertisement. This pre-defined categorization was confirmed by the questionnaire results as well.



The advertisement of the company Zizzi is using a model which was categorized as a quite *heavy*. The model is heavier than all the other ones used in the three other ads. This assumption or categorization was supported by the results as well.

The questions in the questionnaire have been the same regardless of the advertisement which the participant saw at the beginning.

4.2.5 Results and implications for the main study

The main goal of the preliminary study was the elimination of some of the indicators of the constructs in order to avoid a too long questionnaire. Like some studies show e.g. a study done by Plank et al. the length of a questionnaire can result in similar or same answers as the participant is not fully paying attention any more (Plank et al., 1999, p. 70). This behavior should be avoided by this approach. Next to that the measurement of the distance or reference point should be tested before its application in the main study. In the following the results and consequences of these two goals will be explained.

4.2.5.1 *Elimination of indicators*

The principal component analysis (PCA) will be conducted in order to check the loadings of the items to the principal components. In the following the PCA will be applied first to the whole data set and afterwards to the reduced one. In order to conduct the PCA two requirements have to be fulfilled. The first requirement is, that the Kaiser- Meyer- Olkin (KMO) statistic value is above 0.5. Values below 0.5 are not acceptable (Hatzinger, 2011, p. 395). The KMO for the full data set is 0.8298. Therefore the first criterion is fulfilled and the correlation structure of the data has sufficient information to do the PCA (Hatzinger, 2011, p. 402). The second criterion for executing a factor analysis is a significant Bartlett Test result (the p- value needs to be $P < 0.001$ in order to be highly significant). A significant Bartlett Test means that the null hypothesis that the correlation matrix is different from the unit matrix at random can be rejected (Hatzinger, 2011, p. 395). For the given data set the Bartlett Test results in a p- value of zero which stands for a highly significant Bartlett Test. The second criterion is therefore also fulfilled to do the principal component analysis.

Table 21 gives an overview of the standardized loadings based upon correlation matrix for each of the individual items. It can be seen that all indicators have been grouped to seven different components/ factors. The cumulative variance is 0.69.

Loadings of the principal components above 0.7 can be classified as very high, between 0.5 – 0.69 as high and between 0.3 – 0.49 as poor (Hatzinger, 2011, p. 389). Therefore, it can be stated that all loading for PC1 are very high. For PC2 most of the loadings can be described as very high or high. Same counts for PC3, PC4, PC5, PC6 and PC7.

The first principal component PC1 has an eigenvalue or SS loading (Hatzinger, 2011, p. 398) of 4.98 and is explaining 21% of the variance. The second PC2 has an eigenvalue of 4.67 and is explaining 19 % of the variance. Both components are therefore explaining 40 % of the total variance. The third principal component PC3 has a SS loading of 3.78 and is explaining 16 % of the variance. The cumulative proportion of these three components is therefore 56 %. PC4 has a SS loading of 3.77 and is explaining a variance of 16%. 15% of the variance is explained by the component PC5, which has an eigenvalue of 3.58. The last two components, PC6 and PC7, have a SS loading of 1.85 and 1.39. PC6 is explain 8 % and PC7 6 % of the total variance. In general it can be stated that all principal components with an eigenvalue which is higher than 1 should be taken into account (Hatzinger, 2011, p. 388). The underlying reason is, that components with an eigenvalue that is smaller than 1 have less explanation value as the original variable/ indicator (Hatzinger 2011, p. 388).

The first factor PC1 represents the construct *attitude toward the advertisement*. The items AtAD01_05 will be removed from the main study as it is not part of the factor PC1 but is grouped to another factor (PC7). Furthermore a split between the items for trust is visible. On the one hand seven items are grouped to factor PC2 which represents the *producer trust* and on the other hand six items are grouped to factor PC5 which stands for the *product trust*. Next to that one item is grouped to the same factor PC7 like the item which should originally be used for attitude toward the advertisement. This item TR01_06 will be eliminated from the main study. Six items have been grouped to the factor PC3 which represents the construct *social comparison*. The two remaining ones, which have been selected during the operationalization of this construct, are grouped to another factor (PC6). These two, SC01_06 and SC01_07, will be eliminated from the main study.

In the following the results of the PCA will be shown for the reduced data set. First, the results of the PCA will be visualized in a scree plot (Figure 28). A scree plot is a plot of the total variance explained by a factor, which is also called

eigenvalue, against the number of factors in the order of extraction (Malhotra & Birks, 2006, p. 574). In the following the scree plot of the reduced data set visualizes that the tested items in the preliminary study can be exploratory grouped to four components/ constructs. In general, it can be stated that in a scree plot all components above the line should be taken into account (Hatzinger, 2011, p. 388).

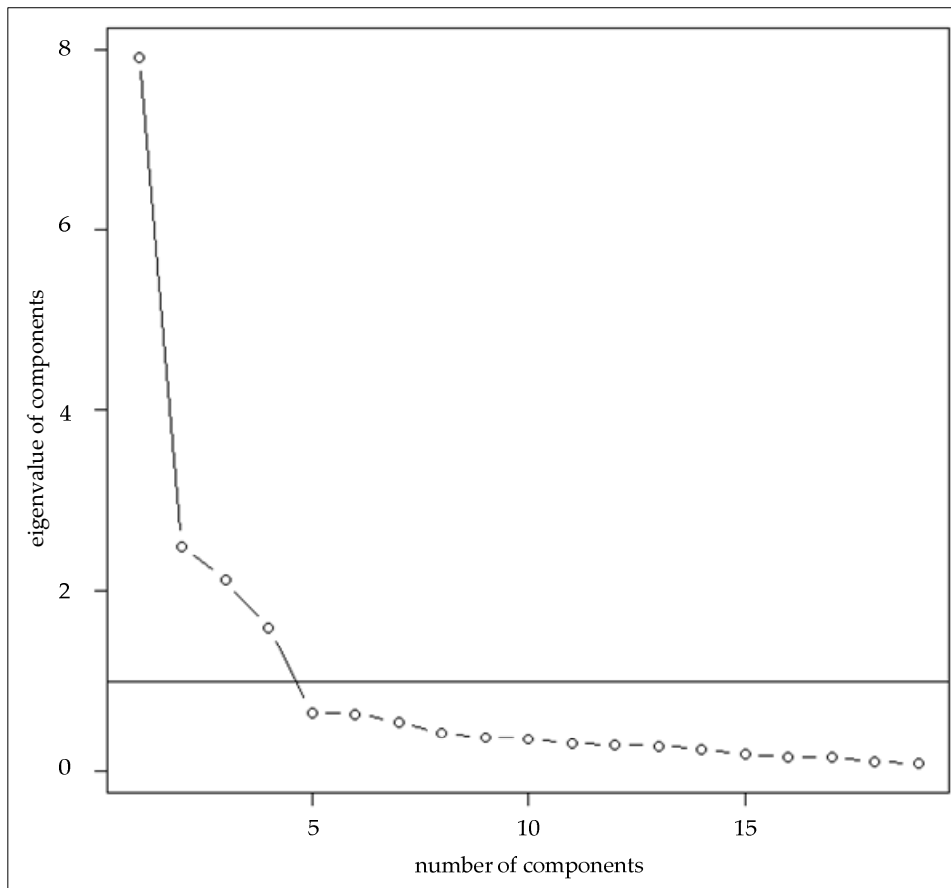


Figure 28. PCA of the reduced data set of preliminary study 1.

Table 22 show the PCA result after the elimination. There are just four factors or components visible now.

Table 22

Principal component analysis for preliminary study (reduced data set).

Item	PC1	PC2	PC4	PC3
AtAD01_01	0.88			
AtAD01_02	0.82			
AtAD01_03	0.89			
AtAD01_04	0.75			
AtAD01_06	0.85			
AtAD01_07	0.76			
PI01_01		0.71		
PI01_02		0.66		
PI01_03		0.91		
PI01_04		0.90		
PI01_05		0.85		
TR01_01			0.83	
TR01_02			0.72	
TR01_03			0.83	
TR01_04			0.63	
TR01_07			0.66	
SC01_01				0.88
SC01_02				0.89
SC01_03				0.88

Note. 0.74 is the cumulative variance.

As already stated above loadings of the principal components above 0.7 can be classified as very high, which is the case for all indicators for PC1 and PC3 and for some of PC2 and PC4. Loadings between 0.5 – 0.69 are high, which is the case for some of the indicators for PC2 and PC4.

The first principal component PC1 has an eigenvalue of 4.55 and is explaining 32 % of the variance. The second PC2 has an eigenvalue of 3.78 and is explaining 27 % of the variance. Both components are therefore explaining 59 % of the total variance. The third principal component PC4 has a SS loading of 3.23 and is explaining 23% of the variance. The cumulative proportion of these three components is therefore 82 %. PC3 has a SS loading of 2.54 and is explaining a variance of 18 %. It is visible that the cumulative variance of the reduced data set is

higher with a value of 0.74 (compared to the cumulative variance of 0.69 in the full data set).

In the following the consequences of the PCA for the items will be drawn. The first construct *attitude toward the ad* was measured by seven items in the preliminary study. As the loading of one of them was below the threshold value of 0.7 (loading of just 0.6) and the indicator reliability is just 0.562 the indicator will be removed (Hulland, 1999, p. 198). This indicator is AtAD01_05 with the item wording “This advertisement is important.”. Therefore, this indicator won’t be used for the main study. Figure 29 illustrates this and shows the corresponding indicator reliabilities for all items.

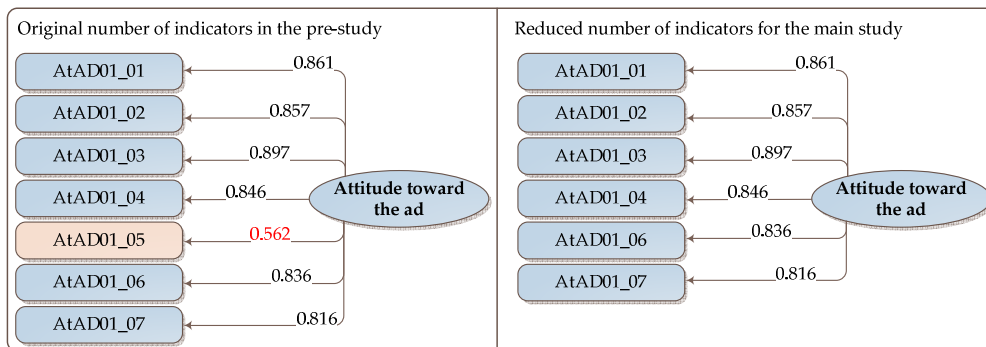


Figure 29. Indicator elimination for the construct attitude toward the ad.

The second construct *trust* was originally measured by 14 indicators. The PCA has shown that the construct trust can be split into two different types of trust: *product* and *producer trust*. Product trust had originally seven indicators from which the following two had been removed because of a low value for the loading and for the indicator reliability:

- TR01_05: This product will not reservedly meet my needs.
- TR01_06: This product will give me little trouble in using it.

These two will be excluded from the main study. Figure 30 illustrates this.

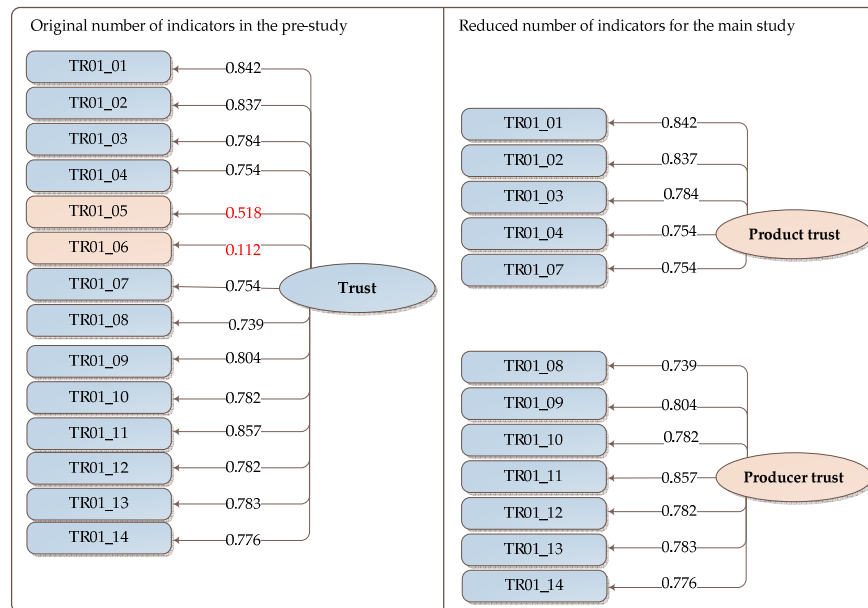


Figure 30. Indicator elimination and specification for the construct trust.

However, for the main study it was decided to use just the construct *product trust* and to exclude the producer trust, because of the following reasons:

For the main study the effect of different fitness center advertisements should be analyzed. Therefore the fitness center will be in the focus as the *product*. There is no real producer as the fitness center is more a service than a product. Furthermore, no company name will be shown in the ad, which could be interpreted as the *producer*.

The next construct that was used in the preliminary study is *social comparison* for which eight indicators should be used originally. From these eight indicators only three will be used for further analysis as these have the highest indicator reliability (values between 0.874 and 0.845) and the loading in the PCA was the highest.

The following indicators with the corresponding item wording will be excluded from the main study:

- SC01_04: How often do you compare yourself with others who are performing worse than you are?
- SC01_05: I am not the type of person who compares often with others.
- SC01_06: If I want to find out how well I have done something, I compare what I have done with how others have done.

- SC01_07: I always pay a lot of attention to how I do things compared with how others do things.
- SC01_08: I never consider my situation in life relative to that of other people.

Figure 31 illustrates the indicators that are eliminated and the ones that will be used for the main study.

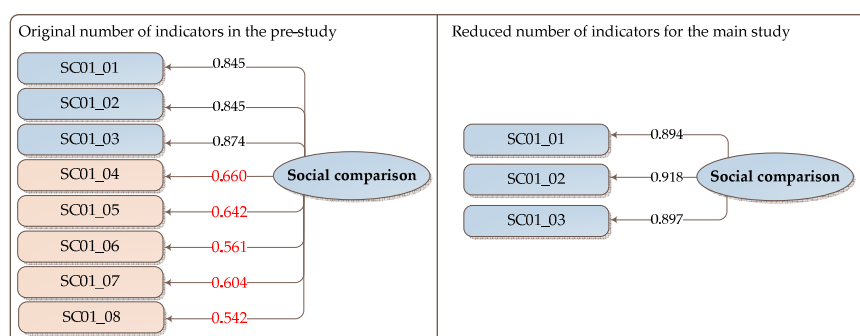


Figure 31. Indicator elimination for the construct social comparison.

The last construct used in the preliminary study was the purchase intention. The purchase intention was measured by five indicators. All of them had very high indicator reliability values and therefore none of them needs to be removed for the main study. Therefore, the number of indicators will be the same in the preliminary study than in the main one.

4.2.5.2 Measurement of the distance/ reference point

In contrast to multi-item measures the reliability and validity of single item measures can't be checked by the criteria for the assessment of measurement models (Hair et al., 2017, p. 109). In the current research the construct distance which is measured by a single-item (global item) is highly context specific and like advised by Hair et al. its applicability was tested in this preliminary study.

The distance was determined in the following way: The participants should compare the body mass index (BMI) of the model shown in the ad with their own BMI. For the comparison of the BMI the participants used a scale where they have been able to move the scroll bar to the left or right. The end points of the scale have been -10 which represented a lower BMI and +10 which stands for a higher BMI. In the results -10 was coded as 1 and +10 as 101, therefore 51 was the mean (shown as

zero in the scale). In order to have the distance independent of the direction the following calculation was done: $(51 - \text{coded value}) * (-1)$. As a result, 0 denoting no distance and 50 maximum distance. Hereby positive as well as negative numbers are possible (from -50 to 50). Figure 32 shows the scale which was used.

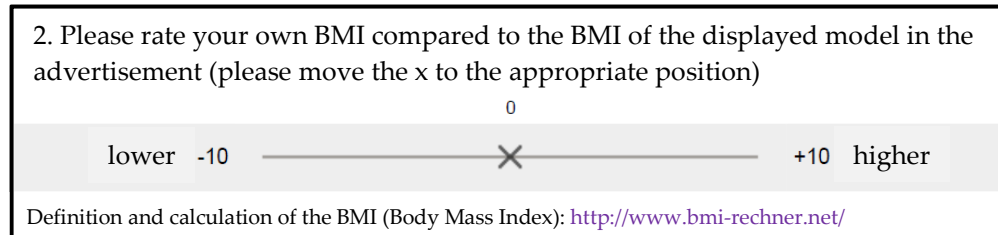


Figure 32. Scale to measure the distance between the displayed models BMI and the participants BMI.

Hereby, the real BMI of the model didn't play a crucial role as the study done by Kivetz et al. in the area of coffee reward cards pointed out. It is not the real distance to a specific end point or end status that matters but the perceived distance (Kivetz et al., 2006). Therefore it is assumed that it doesn't matter that the participants don't know the exact BMI or weight of the displayed model. It is just important how close or far away the participants feel to the shown female.

In order to exclude influences by differences in BMI between the participants in each of the four experimental groups the average BMI per group was calculated. Therefore the weight and height information was used which the participants filled out at the end of the questionnaire. There is no significant difference between the experimental groups concerning their BMI ($F = 0.687$, n.s.). Furthermore, the age difference as one influencing variable was excluded as there was no significant difference between the groups concerning their age ($F = -0.403$, n.s.).

Table 23 gives an overview of the participants in each group. The number per group is similar.

Table 23

Overview of the characteristics of each experimental group (preliminary study).

Group	Number of participants	Average BMI	Distance	Average age
Dove	61	22.421	-3.377	27.97
Levis	61	22.016	15.115	28.21
Nivea	56	22.210	9.125	28.11
Zizzi	56	22.929	-19.589	29.39

The first experimental group has been exposed to the Dove advertisement. In average the participants rated to be a little bit slimmer than the Dove model (rated their BMI as a little bit lower). The distance to this model was the smallest among all experimental groups. This supports the pre-categorization that the Dove model is normal weighted but a little bit heavier than the Nivea model. Compared to the Nivea model the participants rated their BMI as higher. This confirms the assumption as well. The most explicit results show the distance rating to the Zizzi and Levis model. The participants rated their BMI as much lower than the one of the Zizzi model which is represented by a distance value of -19.589, and much higher than the one of the Levis model (distance value of 15.115).

The second experimental group has been exposed to the Levis advertisement. Levis represented the slimmest model and the results supported this ad selection and assumption: The participants in this experimental group described themselves as having a higher BMI than the displayed model. The third experimental group has been exposed to the Nivea advertisement. Compared to the Nivea model, which was slimmer than the Dove model but not that skinny like the Levis model, the participants BMI was higher in average. Last, the experimental group has been exposed to the Zizzi model which represented a heavier type of woman. The participants of this group rated their BMI as much lower than the BMI of the displayed model. Therefore this distance was the highest. Figure 34 illustrates the comparison of the average BMI per experimental group and the distance ratings.

Figure 33 shows the average BMI per experimental group in comparison to the rated distance of the individual to the model with the advertising. The result supports the predefined categorization of the models.

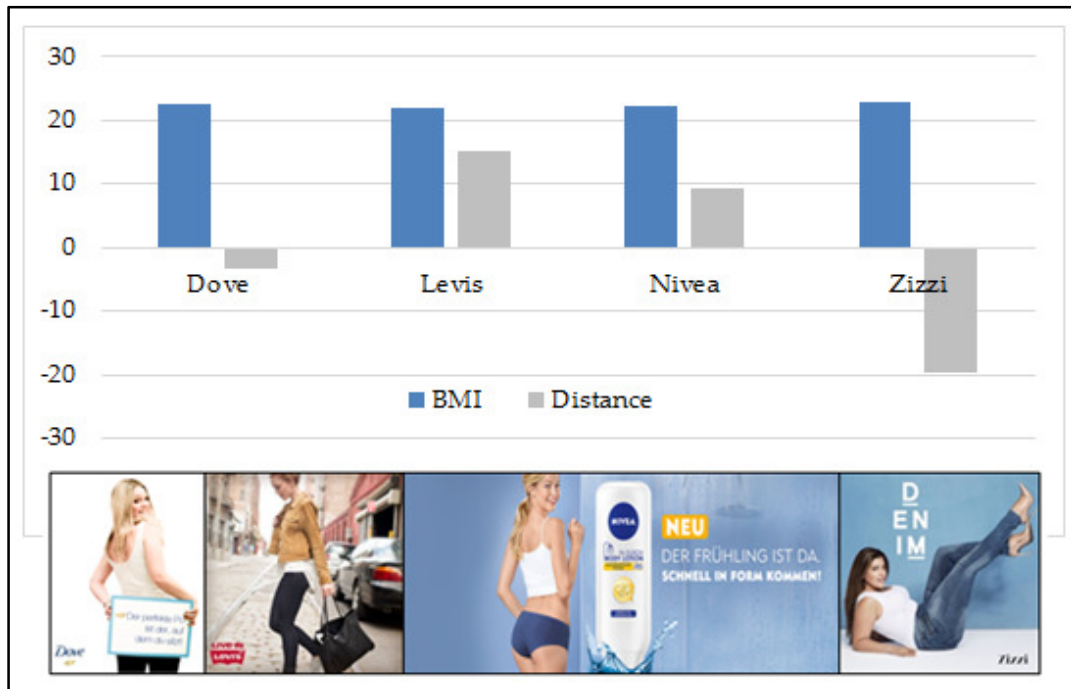


Figure 33. Comparison of the average BMI per experimental group and distance ratings.

The preliminary study shows that this method, to use a scroll bar to judge the own BMI to the BMI of the displayed person, is a good possibility of measuring the distance of the consumer and the model shown in an ad.

Furthermore, as the BMI is nearly the same per group the rating of the distance to the shown model represents the categorization of the model itself (see Table 20).

4.3 PRELIMINARY STUDY 2

4.3.1 Design and organization

In order to confirm the categorization of selected advertising images to different body types which was done by the author of this dissertation a second preliminary study was performed. Preliminary study 2 was conducted in January 2016. This approach to conduct a preliminary study for ad selection was adopted from the experimental design of the study of Richins (1991). In this preliminary study just images of models without the advertising message were shown to the participants. If the participant was a man, he was exposed to ads displaying a male testimonial. If the participant was a woman, she just saw ads with the images of a female testimonial. The reason for this procedure is that in the main study female participants would be exposed just to one ad with a female model displayed and male participants just to an ad with a male model. After the exposure to one image questions with regards to the displayed model were asked which needed to be answered in an online questionnaire. After the exposure to one image the participants had to answer a couple of questions, afterwards they saw the second image and had to answer the same questions again, than the third image and so on. The last part of the questionnaire has been personal questions: The participants needed to enter their age, height and weight. This was done in order to exclude differences between the experimental groups concerning their BMI nor age which might have influenced the results.

4.3.2 Population and sample

In total, 130 participants answered the online questionnaire. There have been 53 male participants and 77 female participants. However, just 105 of the original 130 can be used for further analysis as the incomplete ones were removed from the final sample. For the selection of participants the convenience sampling method (non-probability sampling) was used as it was fast and easy. The disadvantage that no representability is given was accepted for the preliminary study 2 as no assessment of the measurement nor structural model needed to be performed. The link to access the questionnaire was sent by E-Mail to bachelor and master students of the FOM as well as to friends of the author.

The participant's age was 23.24 years in average (females 23.31 in average, males 23.24 in average). The BMI was calculated based on the height and weight. The average BMI of all participants was 23.44. Hereby, in the female experimental group the average BMI was 23.40. The average BMI in the male experimental group was 23.44. Both average BMIs are in the normal range of BMIs, so there is no difference between the male and female participant group

4.3.3 Coding and scale

After being exposed to a picture, the participants had to rate on a seven point Likert scale attributes of the shown person. The end points of the scale have been "1 = I totally disagree" to "7 = I totally agree". The attributes have been the following ones: heavy ("dick"), athletic ("sportlich"), attractive ("attraktiv"), muscular ("muskulös"), slim ("dünn"), chubby ("mollig") and unathletic ("unsportlich"). The attributes have been taken in order to figure out if a positive or negative appearance is dominating (Smeesters & Mandel, 2006, p. 578; Heatherton & Polivy, 1991, p. 898). This part was the same for all advertising pictures the participants have been exposed to. Male participants saw six images in total, female participants seven.

4.3.4 Stimuli and experimental groups

For the preliminary study 2 different females and males pictures have been selected based on the following criteria: The face and body of the person should be visible. Next to that, it should be obvious that the person is working out. Therefore, the person should wear sportswear and some other fitness equipment like a barbell should be visible. The persons should have different types of body: slim, muscular, normal, very muscular and heavy. In some cases more than one picture was selected per body type in order to find the proper one for the main study. Table 24 gives an overview of the pictures of the female testimonials and their categorization that was assumed by the author before the preliminary study 2. Next to that the results of the preliminary study 2 are summarized.

Table 24

Experimental group females and used images.




Experimental group: Females	
Categorization	Image
<p>Image 1: Very muscular (assumed)</p> <p><u>Result of the preliminary study:</u> This image will be used for the main study, as the shown woman was rated as the one with the most positive appearance.</p>	
<p>Image 2: Very muscular (assumed)</p> <p><u>Result of the preliminary study:</u> This image will not be used for the main study, as the shown woman is too similar to the already selected image 1.</p>	
<p>Image 3: Muscular (assumed)</p> <p><u>Result of the preliminary study:</u> This image will not be used for the main study, as the shown woman is too similar to the already selected image 1.</p>	

Image 4: Normal (assumed)

Result of the preliminary study:

This image will be used for the main study as a difference to the heavy (image 6) and very muscular woman (image 1) which will be selected for the main study as well, is present. This image is very similar to image 5 and 7, therefore the other two won't be used.



Image 5: Normal (assumed)

Result of the preliminary study:

This image will not be used for the main study, as the shown woman is too similar to the already selected image 4 of the normal weighted woman. Next to that the face of the woman is too much in the focus of the picture and not the body like in the other two selected ones.



Image 6: Heavy (assumed)

Result of the preliminary study:

This image will be used for the main study, as the shown woman was rated as the one with the most negative appearance.



Image 7: Slim (assumed)

Result of the preliminary study:

This image will not be used for the main study, as the shown woman is too similar to the already selected image 4. Next to that there is no sport equipment visible in the image like in the already selected ones.



Table 25 gives an overview of the images, the categorization as well as the preliminary study results for the experimental group males.

Table 25

Experimental group males and used images.





Experimental group: Males	
Categorization	Image
<p>Image 1: Very muscular (assumed)</p> <p><u>Result of the preliminary study:</u> This image will not be used for the main study, as the shown man is too similar to the selected image 4.</p>	
<p>Image 2: Very muscular (assumed)</p> <p><u>Result of the preliminary study:</u> This image will not be used for the main study, as the shown man is too similar to the selected image 4.</p>	
<p>Image 3: Muscular (assumed)</p> <p><u>Result of the preliminary study:</u> This image will not be used for the main study, as the shown man is too similar to the selected image 4.</p>	
<p>Image 4: Muscular (assumed)</p> <p><u>Result of the preliminary study:</u> This image will be used for the main study, as the shown man was rated as the one with the most positive appearance.</p>	

Image 5: Normal (assumed)

Result of the preliminary study:

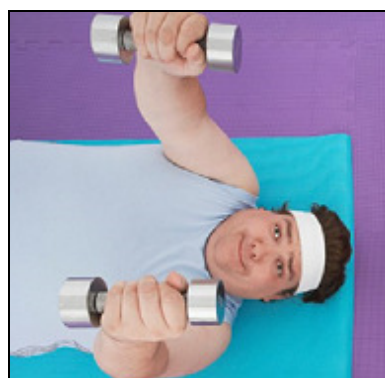
This image will be used for the main study, as the difference to the two other selected images is the highest.



Image 6: Heavy (assumed)

Result of the preliminary study:

This image will be used for the main study, as the shown man was rated as the one with the most negative appearance.



4.3.5 Results and implications for the main study

After the respondents were exposed to each advertising picture they had to rate their agreement to different attributes on a 7- point Likert scale. If these criteria or variables can be grouped to a limited number of factors which will enable an easier interpretation of the result will be analyzed first (Hatzinger, 2011, p. 402). Therefore the principal component analysis (PCA) should be applied. Based on the central limit theorem a normal distribution of the data can be assumed as the number of participants per experimental group is large enough (threshold value is above 30) (Bortz & Schuster, 2011, p. 87; Döring & Bortz, 2016, p. 641).

The scree plot shows that two principal components can be generated. Therefore the PCA will be conducted by using two principal components. In the following table (table 26) the results of the PCA are shown, two items have been recoded (item 2 "sportlich" and item 4 "muskulös"). It is visible that the loading of each variable to the corresponding principal component is higher than the threshold value of 0.5 (Hatzinger, 2011 p. 389). Values of below 0.5 are categorized as poor concerning Hatzinger. The individual loading of each variable shows how

good the variable or item fits to the principal component (Döring & Bortz, 2016, p. 482).

Table 26

PCA of full dataset for the second preliminary study.

	PC1	PC2
Muskulös* (muscular)	0.90	
Sportlich* (athletic)	0.88	
Unsportlich (unathletic)	0.81	
Mollig (chubby)	0.80	
Dick (heavy)	0.74	
Attraktiv (attractive)		0.83
Dünn (slim)		0.77
*recoded items		

The cumulative variance is higher than 0.5 – for the given data set it is 0.74. That means the two components are representing 74% of the information. The first principal component PC1 can be seen as the factor “Negative appearance” (as the two items “sportlich” (athletic) and “muskulös” (muscular) which represent positive attributes have been recoded). PC1 contains therefore the items “dick” (heavy), “mollig” (chubby), “unsportlich” (unathletic), “muskulös” (muscular) (recoded) and “sportlich” (athletic) (recoded). The second principal component PC2 on the other hand can be called “Positive appearance” factor. Table 27 gives an overview of the loadings of the two principal components as well as the proportion and cumulative variances.

Table 27

Overview of the principal components for the second preliminary study.

Component	Loading	Proportion Variance	Cumulative Variance
Component 1 (PC1): Negative appearance	3.51	50 %	50%
Component 2 (PC2): Positive appearance	1.68	24 %	74%

Cronbach’s alpha will be used in order to check if the questions fit to each other within one factor. Cronbach’s alpha needs to be above 0.7 in order to be acceptable (Homburg & Giering, 1996, p. 12). The Cronbach’s alpha for the principal component PC1 is 0.903 (alpha reliability). Therefore the PC1 contains questions or items that fit to each other.

Cronbach's alpha for PC2 is just 0.539. This is below the threshold value of 0.7. Therefore the PC2 will be excluded from the further analysis. The item "dick"(heavy) was added in order to be able to calculate the Cronbach alpha value.

In the following the principal component PC1, which will stand for the negative appearance, will be just taken into account for the variance analysis. In contrast to the principal component analysis which was done for the full data set, the variance analysis will be done for each group, female and male respondents, separately as both groups have been exposed to different pictures. First, the data of the female participants will be analyzed.

In total, seven different images have been shown to the female participants of the study (see table 25). The images are listed as e.g. "Image 6: Heavy", "Image 7: Slim" etc. in table 28. The mean negative appearance (principal component PC1) ranges from 1.154 for the image of the very muscular woman (Image 1: Very muscular) to 4.296 for the image of the heavy woman (Image 6: Heavy). Hereby, '1' represents a high level of disagreement and '6' a high level of agreement. Therefore, a low number means somebody disagrees that the shown person in the picture has a negative appearance or in other words somebody thinks that the shown female in the picture is looking good. It can be stated that the heavy woman ("Image 6: Heavy") was rated as worse looking than the very muscular one (Image 1: Very muscular). The two muscular women ("Image 2: Very muscular" and "Image 3: Muscular") have been rated as better looking than the normal ("Image 4: Normal" and "Image 5: Normal") and the slim woman ("Image 7: Slim").

Table 28 gives an overview of the descriptive statistics for the female group.

Table 28

Descriptive statistics (dataset for the experimental group females) for the second preliminary study.

	mean	sd	n
Image 1: Very muscular	1.154	0.335	65
Image 2: Very muscular	1.217	0.394	59
Image 3: Muscular	1.217	0.493	60
Image 4: Normal	2.223	0.615	62
Image 5: Normal	2.003	0.835	62
Image 6: Heavy	4.296	0.870	67
Image 7: Slim	2.052	0.659	62

Based on the ANOVA image 1 of the very muscular woman will be used for the main study as it was rated as the one with the most positive appearance (mean of 1.154). Next to that the image 6 will be used for the main study as it was rated as the one with the most negative appearance (mean of 4.296). In order to decide which of the other ones should be taken into account, the confidence intervals will be taken into account. Figure 34 gives an overview of the confidence intervals:

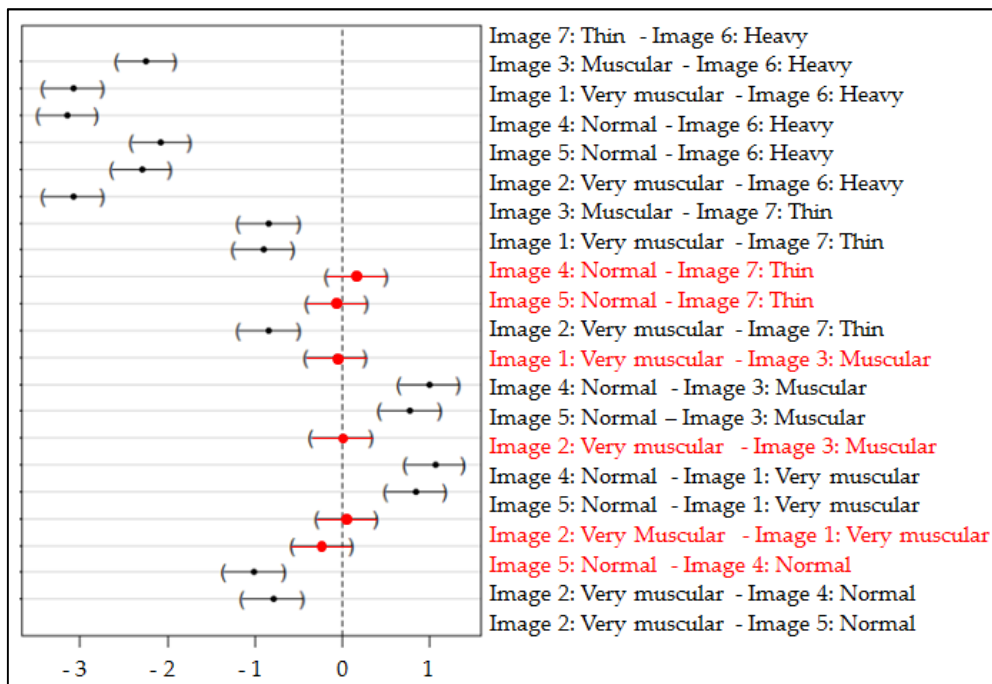


Figure 34. Exclusion of images based on 95% confidence intervals (dataset for the experimental group females).

If the confidence level is far away from the 0.0 line the difference between the pictures is high, e.g. the difference between the pictures “Image 1: Very muscular” and “Image 6: Heavy” is very high. The confidence intervals for the images which are on the zero line can be excluded or in other words these are not different enough to analyze the effect of different images on the purchasing behavior. These are the picture combinations that are highlighted in red above, which are the following ones:

- Image 4: Normal – Image 7: Slim
- Image 5: Normal – Image 7: Slim
- Image 1: Very muscular – Image 3: Muscular
- Image 2: Very muscular – Image 3: Muscular

- Image 2: Very Muscular – Image 1: Very muscular and
- Image 5: Normal – Image 4: Normal.

To sum up, it doesn't make sense to use image 4, 5 and 7, or image 1, 2 and 3 as these are respectively quite similar to each other. As image 1 of the very muscular woman was rated as the one with the most positive appearance (mean of 1.154) it will be used for the main study. Because of the fact that the images 2 and 3 are quite similar to image 1, these two will be excluded.

Image 6 was rated as the one with the most negative appearance (mean of 4.296), therefore it will be used for the main study in order to have the two extremes (positive and negative appearance). Next to that, the difference between picture 1 and 6 is very high (visible in the confidence level).

Last, it needs to be decided which picture to choose from images 4, 5 and 7. The criteria for selecting the best one is to choose the image which has the highest level of difference to the already selected ones (image 1 and 6) as the means of the three images are quite similar (image 4 has 2.22, image 5 has 2.05, image 7 has 2.00). The confidence intervals of the already selected image 1 and the three images 4, 5 and 7 are highlighted in green in Figure 35. The confidence intervals of the already selected image 6 and the three images 4, 5 and 7 are highlighted in blue.

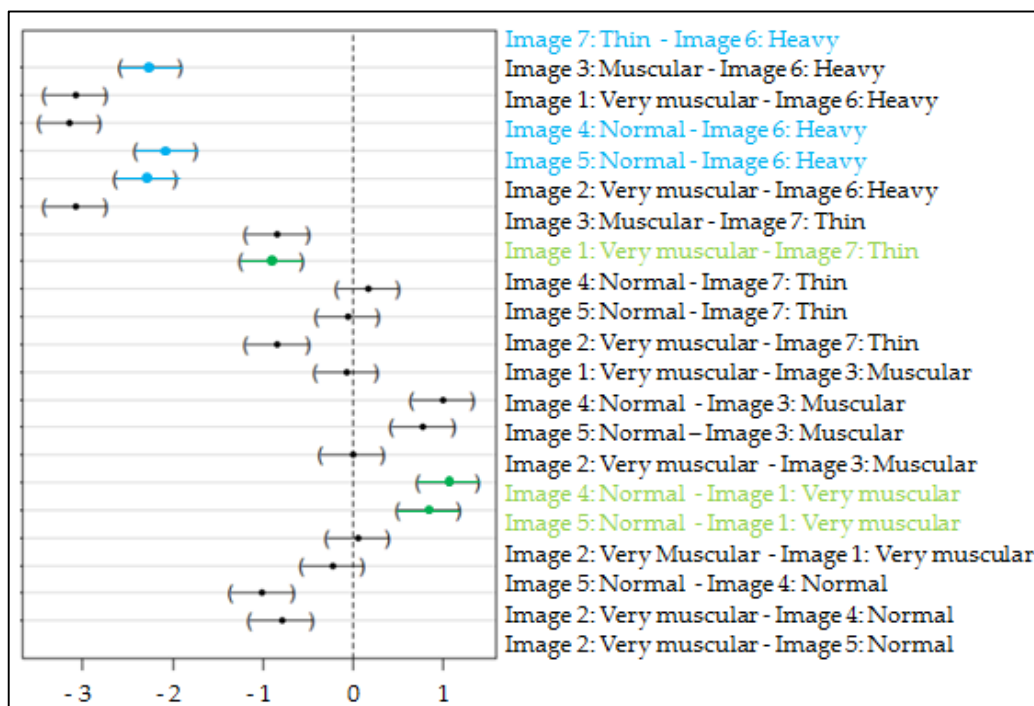


Figure 35. Selection of images based on 95% confidence intervals (dataset for experimental group females).

It is clear that the difference between “Image 5: Normal” and “Image 6: Heavy” is the highest with the estimate of - 2.292, compared to the estimates for image 4 of - 2.073 and the estimate for image 7 of - 2.244 (see Table 29). Next to that, this estimate had the highest significance. Based on the comparison to the heavy image, image 4 and 7 would be excluded and image 5 will be taken for the main study.

For the “Image 1: Very muscular” it is difficult to judge as two images are on the positive side of the confidence interval range (image 4 and 5) and one on the negative (image 7). On the positive side, the estimate for image 4 (normal) is 1.069 compared to the estimate of 0.849 for the image 5 (normal). Therefore the difference between image 1 and 4 is higher than between image 1 and 5. The image 5 can be excluded. The value for the estimate of image 7 is - 0.898. The significance for image 4 and image 7 is the same. In absolute values the difference between image 1 and 4 is higher than between image 1 and 7. Therefore image 4 should be used for the main study.

Table 29 shows the estimates for all female image combinations.

Table 29

Multiple Comparisons of means (dataset for the experimental group females).

	Estimate	std. Error	t value	p value
Image 7: Slim - Image 6: Heavy	- 2.244	0.112	- 20.104	< 0.001
Image 3: Muscular - Image 6: Heavy	- 3.079	0.113	- 27.349	< 0.001
Image 1: Very muscular - Image 6: Heavy	- 3.142	0.110	- 28.491	< 0.001
Image 4: Normal - Image 6: Heavy	- 2.073	0.112	- 18.572	< 0.001
Image 5: Normal - Image 6: Heavy	- 2.292	0.112	- 20.538	< 0.001
Image 2: Very muscular - Image 6: Heavy	- 3.079	0.113	- 27.225	< 0.001
Image 3: Muscular - Image 7: Slim	- 0.835	0.115	- 7.279	< 0.001
Image 1: Very muscular - Image 7: Slim	- 0.898	0.112	- 7.985	< 0.001
Image 4: Normal - Image 7: Slim	0.171	0.114	1.503	n.s.
Image 5: Normal - Image 7: Slim	- 0.048	0.114	- 0.425	n.s.
Image 2: Very muscular - Image 7: Slim	- 0.835	0.115	- 7.246	< 0.001
Image 1: Very muscular - Image 3: Muscular	- 0.063	0.113	- 0.554	n.s.
Image 4: Normal - Image 3: Muscular	1.006	0.115	8.770	< 0.001
Image 5: Normal - Image 3: Muscular	0.787	0.115	6.857	< 0.001
Image 2: Very muscular - Image 3: Muscular	0.0003	0.116	0.002	n.s.
Image 4: Normal - Image 1: Very muscular	1.069	0.112	9.505	< 0.001
Image 5: Normal - Image 1: Very muscular	0.849	0.112	7.554	< 0.001
Image 2: Very Muscular - Image 1: Very muscular	0.063	0.114	0.554	n.s.
Image 5: Normal - Image 4: Normal	- 0.219	0.114	- 1.928	n.s.
Image 2: Very muscular - Image 4: Normal	- 1.006	0.115	- 8.730	< 0.001
Image 2: Very muscular - Image 5: Normal	- 0.786	0.115	- 6.826	< 0.001

To sum up, the analysis of the confidence intervals doesn't result in a clear result which image to select. Therefore the following criteria will be used to choose one of the three images 4, 5 or 7. Image 7 of the slim woman is not showing any sport equipment like the other already selected images. Therefore it will be excluded from the main study. All selected pictures should contain the same composition in order to avoid side effects. Next to that the image 5 will be excluded as the focus of this image is on the face of the woman and not that much on the body like in image 4. This is the main reason for selecting the image 4 for the main study.

After analyzing the female data set, the data of the male participants will be analyzed. In total, six different images have been shown to the male participants of the study. To figure out, which images are the best to take for the main study, the analysis of variance will be done. Like before, the images are listed as e.g. "Image 6: Heavy" etc. in Table 30 and the images can be found in table 25 for review. The mean negative appearance (principal component PC1) ranges from 1.305 for the image of the muscular man (Image 4) to 5.6 for the image of the heavy man (Image 6). Hereby, '1' represents a high level of disagreement and '6' a high level of agreement. Therefore, a low number means somebody disagrees that the shown picture is bad looking or in other words somebody thinks that the shown man in the picture is good looking. Table 30 gives an overview of the analysis of the descriptive statistics for the male group.

Table 30

Descriptive statistics (dataset for the experimental group males).

	mean	sd	n
Image 1: Muscular	1.536	0.955	44
Image 2: Very muscular	1.662	0.994	45
Image 3: Muscular	1.595	0.736	42
Image 4: Muscular	1.305	0.443	44
Image 5: Normal	2.217	0.799	46
Image 6: Heavy	5.600	0.809	45

As the image 6 has the highest mean or is rated as the one with the most negative appearance, this picture will be taken for the main study. Next to the image 6 of the heavy man, it makes sense to use the image of the normal man for the main study as well (Image 5) as the difference to all other pictures, including image 6, is present. This is underlined by the confidence intervals, which are shown in Figure 36. It is visible that the difference between image 6 and all other ones is really high.

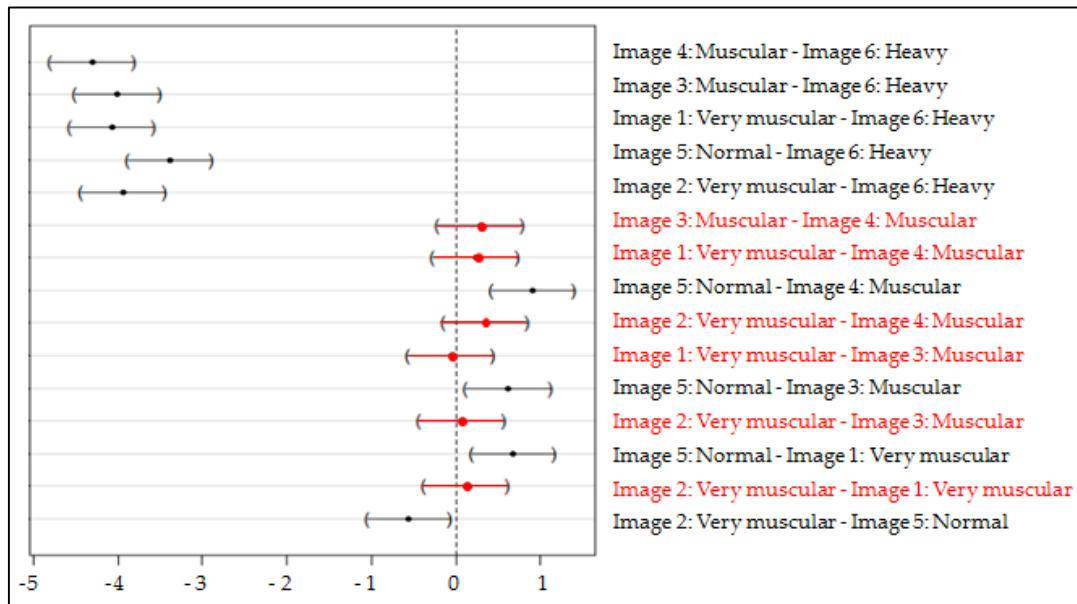


Figure 36. 95% confidence intervals for the images shown to the male experimental group.

The images which are on the zero line are quite similar to each other (highlighted in red above), which are the following ones:

- Image 3: Muscular - Image 4: Muscular
- Image 1: Very muscular - Image 4: Muscular
- Image 2: Very muscular - Image 4: Muscular
- Image 1: Very muscular - Image 3: Muscular
- Image 2: Very muscular - Image 3: Muscular and
- Image 2: Very muscular - Image 1: Very muscular.

In order to analyze the effect of different types of persons on the purchasing behavior in the main study, it doesn't make sense to use image 1, 2, 3 and 4 as these are respectively quite similar to each other. Therefore the differences between these images and the already selected ones will be analyzed. The confidence intervals of the already selected image 6 and the four images 1, 2, 3 and 4 are highlighted in blue in Figure 37. The confidence intervals of the already selected image 5 and the four images 1, 2, 3 and 4 are highlighted in green.

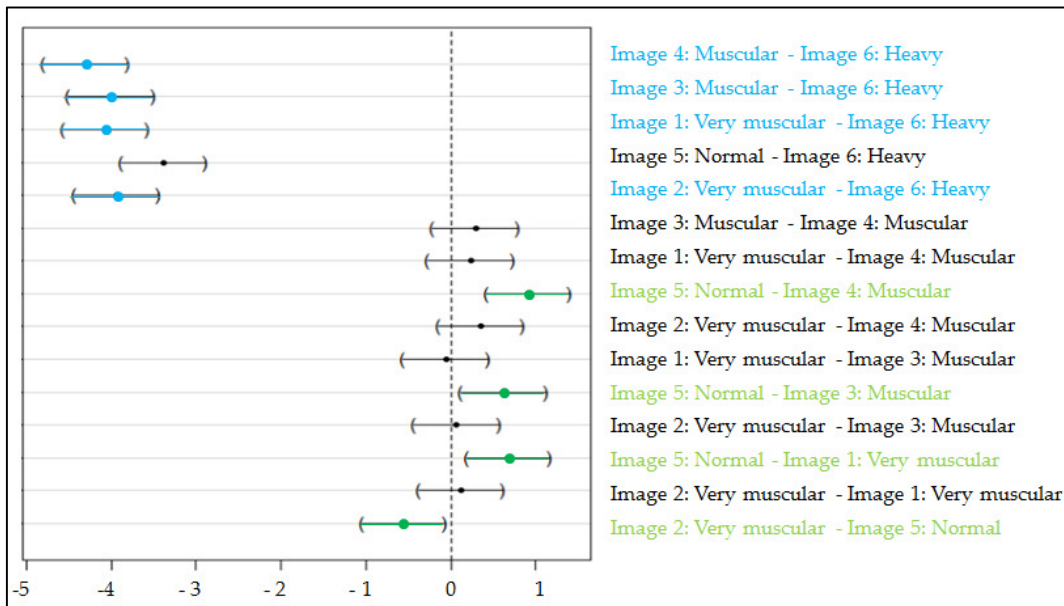


Figure 37. 95% confidence intervals for the images shown to the male experimental group.

Compared to the already selected image 6, the image 4 has the highest value for the estimate in comparison to the images 1, 2 and 3. The estimate for the image combination 4 and 6 is - 4.295 (see table 31). Therefore it can be stated that the difference between image 4 and image 6 is the highest and for this reason image 4 will be used for the main study. In comparison to image 5 the image 4 has the highest value for the estimate of 0.913. This is also the only estimate (compared to image 1, 2 and 3) where the significance value is $p < 0.001$. This supports the selection for image 4 for the main study. All other images will be excluded.

Table 31 shows the estimates for all image combinations.

Table 31

Multiple Comparisons of Means (dataset for the experimental group males).

	Estimate	std. Error	t value	p value
Image 4: Muscular - Image 6: Heavy	- 4.295	0.172	- 24.995	< 0.001
Image 3: Muscular - Image 6: Heavy	- 4.005	0.174	- 23.028	< 0.001
Image 1: Very muscular - Image 6: Heavy	- 4.064	0.172	- 23.646	< 0.001
Image 5: Normal - Image 6: Heavy	- 3.383	0.170	- 19.903	< 0.001
Image 2: Very muscular - Image 6: Heavy	- 3.938	0.171	- 23.043	< 0.001
Image 3: Muscular - Image 4: Muscular	0.291	0.175	1.662	n.s.
Image 1: Very muscular - Image 4: Muscular	0.232	0.173	1.341	n.s.
Image 5: Normal - Image 4: Muscular	0.913	0.171	5.341	< 0.001
Image 2: Very muscular - Image 4: Muscular	0.358	0.172	2.081	n.s.
Image 1: Very muscular - Image 3: Muscular	- 0.059	0.175	- 0.337	n.s.
Image 5: Normal - Image 3: Muscular	0.622	0.173	3.596	< 0.005
Image 2: Very muscular - Image 3: Muscular	0.067	0.174	0.385	n.s.
Image 5: Normal - Image 1: Very muscular	0.681	0.171	3.984	< 0.001
Image 2: Very muscular - Image 1: Very muscular	0.126	0.172	0.732	n.s.
Image 2: Very muscular - Image 5: Normal	- 0.555	0.170	- 3.267	0.016

4.4 MAIN STUDY

4.4.1 Design and organization

In the main study both women and men will participate. This was important in order to test whether any relationship in the SEM are influenced by gender. An online questionnaire will be designed for the main study. The participants should be exposed to one of a couple of different advertisements during their participation. All advertisements will look the same in order to avoid any side effects: The same advertising message will be visible in all of them and the same layout (on the right side the advertising message and on the left side the testimonial (picture of a person)). The only difference will be the testimonial displayed in the ad. The testimonial will have different body types: muscular, normal or heavy. Furthermore, female participants will be exposed just to images of females in the ad and men just to men's images. Which advertising the participant will be exposed to will be random. In order to select the advertising persons for the different body types the preliminary study 2 was performed. Based on the results of the preliminary study 2 the images have been selected.

The questionnaire will take place in the beginning of 2017 (beginning of February until the beginning of April). The structure of the main study will be comparable to the preliminary study 1: First, the participant needs to select the gender in order to be exposed either to male or female model in the ads. Afterwards the exposure to an ad displaying either a models with different weights takes place. The advertisements are related to the product health/ fitness area (membership in a fitness center). The underlying reason for choosing different types of advertisements and the line of business in the preliminary study 1 and in the main study was to point out that the results can be generalized to different types of areas and are applicable for products and services.

Afterwards the participants have to answer questions to the advertisement. The questions or statements in the questionnaire are the operationalized constructs. In the preliminary study 1 just five constructs have been used, in the main study all nine constructs will be included, like shown in Figure 26. The advertising is shown a couple of times during the questionnaire in order to take the advice of

Richins into account. Richins mentioned that the ads in her studies have been shown just 15 to 30 seconds which doesn't reflect realistic conditions as some of the participants in the study reported that they are sometimes focusing and looking at ads very carefully when they contain highly attractive models (Richins, 1991, p. 81). Next to that the ads have been shown as quite big pictures on a screen which doesn't reflect normal circumstances. This hasn't been the case in the main study design.

Last some personal questions which are not related to the constructs are asked. This seems to be important as personal characteristics might influence some of the constructs like mentioned by the study done by Mittal and Kamakura.

It needs to be mentioned that the questions in the questionnaire will be translated into German as the participants of the questionnaire will be Germans.

The main study and translation into English is displayed in the attachments (please see Chapter 6.3).

4.4.2 Population and sample

For the main study a non- probability sampling method will be used as well because the preliminary studies showed how simple and fast this method is. However, the convenience sampling as in the preliminary study won't be applied as it has the disadvantage that it is not representative. It was decided to use the snowball sampling (Malhotra & Birks, 2006, p. 362ff.). This means an initial group is selected to which the link for the online questionnaire is send via E- Mail or Facebook and they are asked to forward it to others that may be willing to participate in the survey. The following groups received an E-Mail with the link to the survey: All German speaking employees of the company Hanse Orga GmbH in Hamburg (around 100 people received the E-Mail) and all employees of the company Neusta Consulting in Hamburg (around 600 people received the E-Mail). Next to that, the link was posted multiple times on Facebook and xing on the timeline of the author and on the timeline of friends so that contacts could see it. Furthermore, it was posted in Facebook groups that are related to health, sport and fitness. It was always asked if the link to the questionnaire could be send further to friends, colleagues and family.

Next to that, it was sent to friends, family and professors of the University of Flensburg. Last it was sent to 298 bachelor and master students of the FOM in the end of February.

At the end of the data collection period 643 questionnaires have been completed fully, 938 persons participated and 3439 clicks have been counted on the link of the questionnaire. As just questionnaires which have less than 20 % missing values will be used for further analysis the number of questionnaires for further analysis is $n=643$. The distribution of the 643 respondents can be assigned as shown in table 32 to the following six groups:

Table 32

Participants characteristics.

Experimental group	Gender of participant - image shown	Number of participants
1	Females - heavy	123 cases
2	Female - muscular	118 cases
3	Female - normal	121 cases
4	Male - heavy	92 cases
5	Male - muscular	100 cases
6	Male - normal	89 cases

The average age of the participants was 34.7 years. There is a small difference between males and females (average age of females: 32.8; average age of men: 37.2).

Concerning the status the following distribution was present (see Table 33).

Table 33

Participants status.

Status	Number of participants
Schoolboy	8 cases
Student	74 cases
Working	512 cases
Pensioner	6 cases
Seeking work	8 cases
Parental leave	16 cases
Housewife/ househusband	9 cases
<i>No answer</i>	<i>10 cases</i>

Based on the height and weight which was asked in the questionnaire the BMI was calculated. The average BMI per experimental group will be shown in the Table 35. Next to the BMI the distance was calculated like it was already done in

the preliminary study. Hereby the participants should compare the body mass index (BMI) of the model shown in the ad with the own BMI. The end points of the scale have been -10= lower BMI and +10= higher BMI. In the results -10 was coded as 1 and +10 as 101, therefore 51 was the mean (shown as zero in the scale). In order to have the distance independent of the direction the following calculation was done: $(51 - \text{coded value}) * (-1)$. As a result, 0 denoting no distance and 50 maximum distance. Hereby it is important to point out that positive and negative numbers can be possible (-50 to 50). Negative values mean that the BMI is lower, positive ones that the BMI is higher of the individual compared to the model.

Table 34 shows the average BMI of the participant and the distance to the shown image (testimonial) for each experimental group.

Table 34

Overview of the average BMI per experimental group and distance to the shown image.

Experimental group	Average BMI of the participant	Distance to the shown image (testimonial)
(1) Women - heavy	22.747	-14.855
(2) Women - muscular	22.859	12.610
(3) Women - normal	23.112	13.164
(4) Men - heavy	26.254	-22.185
(5) Men - muscular	24.923	8.520
(6) Males - normal	25.169	9.300

Figure 38 illustrates the difference between the participants BMI and their distance in the main study.

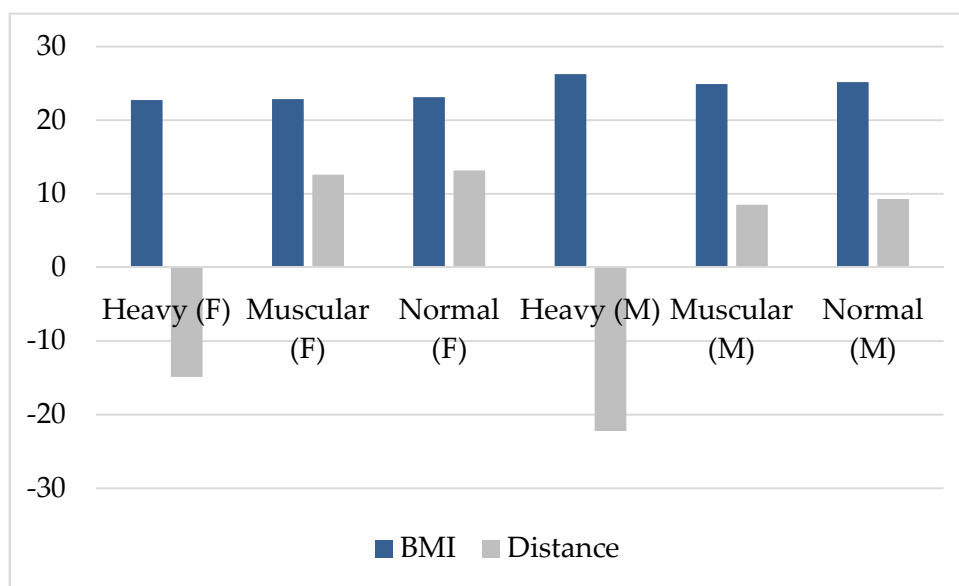


Figure 38. Comparison of the BMI and perceived distance of each experimental group.

Both female and male participants rate their BMI much lower compared to the heavy woman/ man they are exposed to. That means that women and men think that they are much slimmer than the displayed heavy person. This is shown at the distance which is quite high with values of -14.855 for females and -22.185 for males. This points out that the participants are good in shape which is represented by an average BMI that is in the healthy and normal range of BMIs which is between 18.5 and 24.9 for females (Klesse et al., 2012, p. 357). The BMI of men is a little bit above this range. However even if there are no universal valid BMI ranges for men and women which represent underweight, normal and overweight, the range for men are most of the time higher which represent normal weight.

Based on the high numbers of members of fitness clubs it is comprehensible that the participants or most of them are in the normal and healthy BMI range. It can be stated that the heavy model represents a goal of an undesired end state that should be eliminated (Soman & Cheema, 2004, p. 54).

The difference in the perceived distance between the muscular and normal model is nearly the same for both men and women participants. Compared to the normal or muscular image the participant are rating their BMI as higher than the BMI of the displayed image. That means that the men and women participants weigh more than the displayed testimonials and that they would need to exercise

and lose weight to look like them. Therefore the normal and muscular model can be categorized as a goal with represents a desired end state that the consumer wants to attain.

4.4.3 Coding and scaling

Like in the preliminary study 1 nearly all questions of the main study should be answered on a seven point Likert scale with the end points 1= I strongly disagree and 7= I strongly agree. No avoiding categories like "I don't know", "no answer" or "not relevant" have been used.

The first question about the gender is measured with a nominal scale. The questions to measure all constructs are interval scales. The end points of the seven-point scale are "1= I strongly disagree" and "7= I strongly agree". The numbers 1 to 7 above the points show that there is the same distances between the categories 1 and 2 as between the categories 3 and 4 etc. (Hair et al., 2017, p. 9). This type of scale is necessary for some analysis techniques like SEM (Hair et al., 2017, p. 8).

The last question is the one about the reference point/ distance which is measured by a ratio scale. The same question was used as in the preliminary study 1 (see Figure 27).

After the questions with regards to all constructs, the personal questions follow. The questions about the weight, age and height can be categorized as items measured with an interval scale. For the question about the status of the participant e.g. student, seeking for work, housewife/ househusband etc. a nominal scales is used.

In order to minimize the problem of response bias some of the questions have been asked in an inverse way. This can be used to check if the participants have been attentive all the time. Furthermore a rotation of the items per construct took place.

4.4.4 Stimuli and experimental groups

For the main study three different advertisements for men and three for woman have been created. It needs to be point out that just different images of persons have been selected (based on the preliminary study 2) but the advertising

message and the position of the image are in all four ads the same. In all advertisements the advertising message is on the right side and the image of the person on the left. In the advertising message a health goal is mentioned "Get a strong back – do something against or avoid issues with your back" in order to highlight the goal of joining this fitness center. A health message was used in the ad and no message that is targeting towards exercising because of tone, attractiveness or weight. The underlying reason have been the studies from McDonalds and Thompsen done in 1992 and Tiggemann and Williamson conducted in 2000. Both studies highlighted that if the reason for exercising is tone, weight or attractiveness it will have a negative effect on satisfaction, whereas exercising because of fitness and health reasons will result in a positive satisfaction. As a negative influence on the appearance satisfaction based on the health motivation which is caused by the wish to be more attractive or to weigh less should be avoided, a message was formulated which underlines the health reason for exercising. This enables to measure the effect of the attitude toward the ad, which is influenced by the exposure to a specific testimonial, on the appearance satisfaction.

Next to that, the colors of the advertisement message are the same for all of them. There was no name of the fitness center mentioned in order to avoid any side effect. A side effect could be that the participant is already a member of exactly this fitness center and has some experience with it, which could influence the judgment. This side effect should be eliminated by making all advertisements without a specific name of a fitness center. Table 35 gives an overview of all experimental groups.

Table 35

*Different experimental groups.***Advertisement (Experimental Group):**

Male participants – Advertisement 1:



**STÄRKEN SIE
IHREN RÜCKEN**

Gezielt Rückenprobleme angehen oder präventiv vorbeugen.

12-Monats-Angebot ab 25,90€ monatlich
2x pro Woche trainieren. **Sie sparen bis zu 179€!**

Male participants – Advertisement 2:



**STÄRKEN SIE
IHREN RÜCKEN**

Gezielt Rückenprobleme angehen oder präventiv vorbeugen.

12-Monats-Angebot ab 25,90€ monatlich
2x pro Woche trainieren. **Sie sparen bis zu 179€!**

Male participants – Advertisement 3:



**STÄRKEN SIE
IHREN RÜCKEN**

Gezielt Rückenprobleme angehen oder präventiv vorbeugen.

12-Monats-Angebot ab 25,90€ monatlich
2x pro Woche trainieren. **Sie sparen bis zu 179€!**

Female participants – Advertisement 1:



**STÄRKEN SIE
IHREN RÜCKEN**

Gezielt Rückenprobleme angehen oder präventiv vorbeugen.

12-Monats-Angebot ab 25,90€ monatlich
2x pro Woche trainieren. **Sie sparen bis zu 179€!**

Female participants – Advertisement 2:




**STÄRKEN SIE
IHREN RÜCKEN**

Gezielt Rückenprobleme angehen oder präventiv vorbeugen.

12-Monats-Angebot ab 25,90€ monatlich
2x pro Woche trainieren. **Sie sparen bis zu 179€!**

Female participants – Advertisement 3:



**STÄRKEN SIE
IHREN RÜCKEN**

Gezielt Rückenprobleme angehen oder präventiv vorbeugen.

12-Monats-Angebot ab 25,90€ monatlich
2x pro Woche trainieren. **Sie sparen bis zu 179€!**

4.4.5 Results: Evaluation of the model

The collected data will be used to evaluate the SEM. Table 36 is listing the criteria for evaluation of the reflective measurement and structural model. Next to that the acceptable values for each criteria are shown in brackets.

Table 36

Evaluation criteria for the measurement and structural model; source: Hair et al., 2017.

Evaluation of the measurement model (outer model/ reflective models)
<u>Principal component analysis (PCA)</u> <ul style="list-style-type: none"> • For all endogenous / all exogenous constructs together • Factor loading (above 0.7 very high, 0.5- 0.69 high, below 0.49 poor)
<u>Internal consistency reliability and convergent validity</u> <ul style="list-style-type: none"> • Cronbach's Alpha (above 0.7) • Composite reliability (above 0.7) • Average variance extracted (AVE) (above 0.5) • Indicator reliability (above 0.6)
<u>Second order factor models</u> <ul style="list-style-type: none"> • Description of the four different types and three different approaches • Reasons for selection of one approach type and implementation
<u>Discriminant validity</u> <ul style="list-style-type: none"> • Fornell Lacker Criterion (AVE higher than squared correlation between two latent variables) • Cross loadings (higher loading on the corresponding construct for which it was used than on any other construct) • HTMT (value above 0.90 – lack of discriminant validity)
Evaluation of the structural model (inner model)
<u>Collinearity Assessment</u> <ul style="list-style-type: none"> • Tolerance (below 0.2) • Inner Variance Inflation Factor (VIF) (below 5)
<u>Coefficient of determination (R² Value)</u> (above 0.19) <u>Effect size f²</u> (0.02 small, 0.15 medium and 0.35 large effect) <u>Path coefficients</u> (values higher than 0.1 or below -0.1 influence; above 0.2 until 0.3 significant influence) <u>Total effects</u>
<u>Predictive relevance</u> <ul style="list-style-type: none"> • Stone- Geisser- Criterion (Q²) (above 0) • Effect size q² (0.02 small, 0.15 medium and 0.35 large effect)
<u>Moderator and Mediator analysis</u> <ul style="list-style-type: none"> • Indirect effects (values higher than 0.1 or below -0.1 influence; above 0.2 until 0.3 significant influence) • Multigroup analysis (MGA)

4.4.5.1 *Evaluation of the measurement model*

The adequacy of the measurement model will first be evaluated by the principal component analysis. Afterwards the measurement model will be assessed by the criteria for internal consistency reliability (Hair et al., 2017, p. 111), convergent validity (Hair et al., 2017, p. 113) and discriminant validity (Hair et al., 2017, p. 115) which are listed in Table 36.

Principal component analysis (PCA)

In order to discover the pattern of the data the explorative principal component analysis will be done (Hatzinger, 2011, p. 384). First for all endogenous constructs together, afterwards for all exogenous constructs together.

Before conducting the PCA, the two requirements need to be checked: The Kaiser- Meyer- Olkin (KMO) statistic and the Bartlett Test. The first requirement is, that the KMO statistic value is above 0.5. Values below 0.5 are not acceptable (Hatzinger, 2011, p. 395). The KMO for the endogenous constructs is 0.890, for the exogenous constructs 0.626. Therefore the first criterion is fulfilled and the correlation structure of the data has sufficient information to do the PCA (Hatzinger, 2011, p. 402). The second criterion for executing a factor analysis is a significant Bartlett Test result (the p- value needs to be $P < 0.001$ in order to be highly significant). A significant Bartlett Test means that the null hypothesis that all correlations are zero can be rejected (Hatzinger, 2011, p. 395). The Bartlett statistic is 9553.7 for the endogenous constructs and 1547.9 for the exogenous ones. For the endogenous constructs data set the Bartlett Test results in a p- value of zero which stands for a highly significant Bartlett Test. For the exogenous constructs data set the Bartlett Test results in a p- value of nearly zero (1.3324×10^{-287}) which stands for a highly significant Bartlett Test as well. The second criterion is therefore also fulfilled to do the principal component analysis.

First, for all endogenous variables, which are explained by the model, the scree plot should show the number of principal components. Figure 39 visualizes the scree plot for the endogenous constructs.

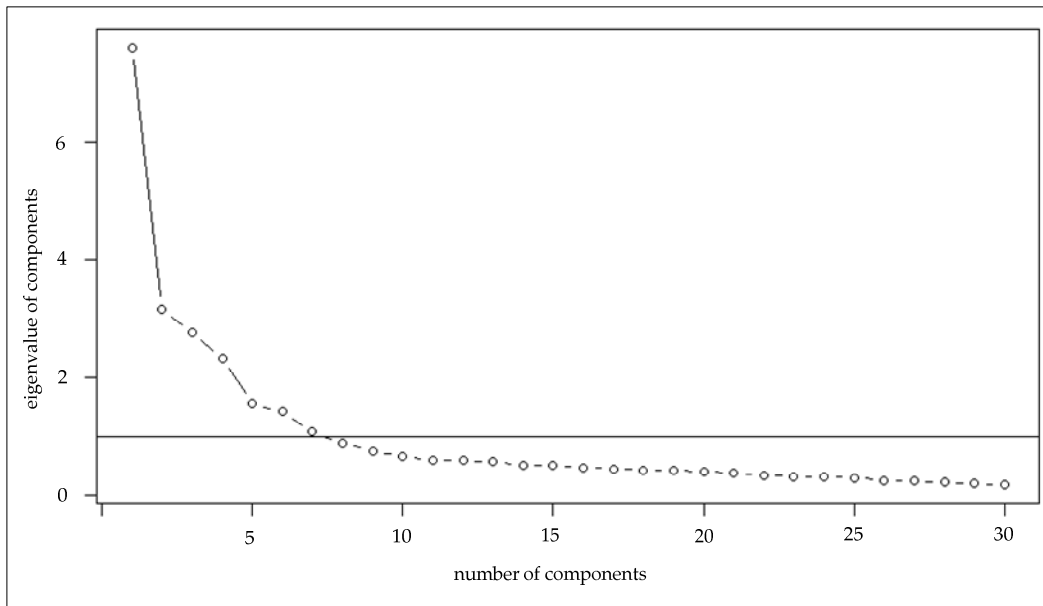


Figure 39. Scree plot of all endogenous variables.

Based on the scree plot it can be stated that the variables can be assigned to seven principal components. Table 37 shows the factor loadings of all indicators of the seven endogenous variables. All factor loadings are significant at an alpha level of 0.05. Besides that all factor loadings are very high to high. Hatzinger categorized values of above 0.7 as very high, values between 0.5 and 0.69 as high and below 0.49 as poor (Hatzinger, 2011, p.389). The cumulative variance is 67%.

Table 37

PCA of all endogenous constructs.

Factor	Factor loading
<i>PC 1: Attitude</i>	
AtAD01_01	0.72
AtAD01_02	0.81
AtAD01_03	0.70
AtAD01_04	0.75
AtAD01_05	0.68
AtAD01_06	0.63
<i>PC 2: Trust</i>	
TR01_01	0.86
TR01_02	0.84
TR01_03	0.84
TR01_04	0.80

TR01_07	0.76
<i>PC 3: Social comparison</i>	
SC01_01	0.83
SC01_02	0.84
SC01_03	0.82
<i>PC 4: Purchase intention</i>	
PI01_01	0.80
PI01_02	0.78
PI01_03	0.77
PI01_04	0.82
PI01_05	0.82
<i>PC 5: Appearance satisfaction</i>	
SA01_01	0.90
SA01_02_r	0.70
SA01_03	0.90
<i>PC 6: Health motivation (preventive)</i>	
MO01_01	0.74
MO01_02	0.73
MO01_03	0.79
<i>PC 7: Health motivation (curative)</i>	
MO01_04_r	0.78
MO01_05_r	0.73
MO01_07_r	0.64
MO01_08_r	0.67
<i>Not assigned to any factor</i>	
MO01_06_r	0.38

Note. 67% is the cumulative variance.

For the construct health motivation the indicators are not assigned to just one principal component but to two. PC1 represents the *preventive health motivation*, PC2 the *curative health motivation*. This categorization of the items into two components was done by Moorman as well (Moorman, 1990, p. 367). He claims that the items MO01_01 – MO01_03 are measuring the preventive orientation whereas the other ones are measuring the curative orientation. This categorization wasn't done by Moorman and Matulich anymore. They treated all indicators as measures for the health motivation (Moorman & Matulich, 1993, p. 221).

Furthermore the indicator MO01_06 has just a factor loading of 0.38. If the cut would have been done at 0.3 and not 0.5 this indicator would be assigned to the principal component PC 7 (health motivation – curative).

After detecting the pattern in the endogenous variables, a PCA for the exogenous ones will be done. The scree plot of the exogenous data shows that the indicators can be assigned to five different principal components (Figure 40).

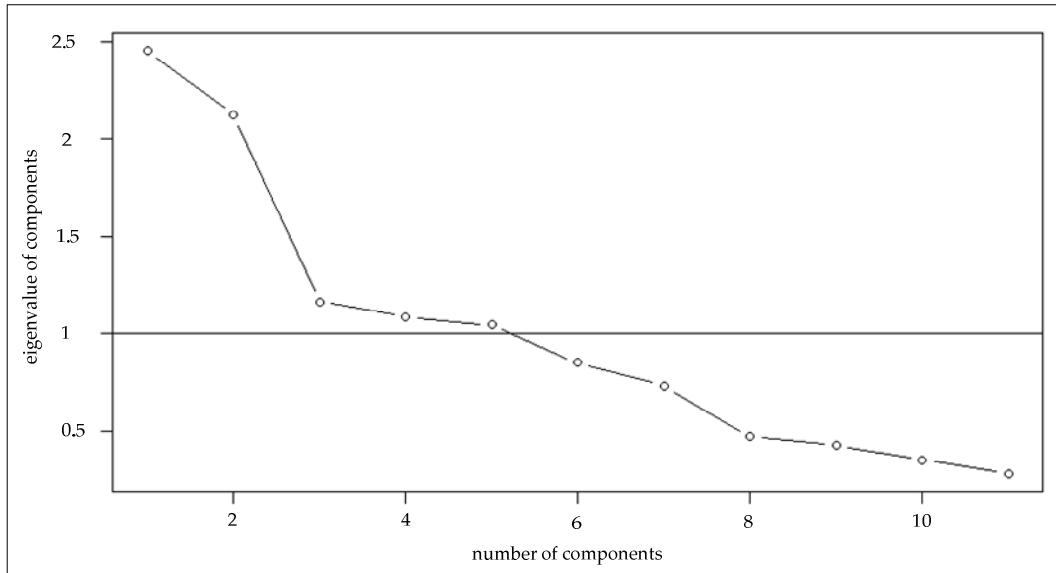


Figure 40. Scree plot of all exogenous variables.

Table 38 shows the results of the PCA for all indicators of all exogenous constructs. The cumulative variance is 72%.

Table 38
PCA of all exogenous constructs.

Principal component analysis	
Factors	Factor loading
<i>PC 1: Goal attainability</i>	
GO01_01	0.72
GO01_02	0.66
GO02_01	0.78
<i>PC 2: Goal challenge</i>	
GO01_03	0.81
GO01_04_r	0.86
<i>PC 3: Perceived risk</i>	
RI01_01	0.78
RI02_01	0.79
<i>PC 4: Social risk</i>	
RI04_01	0.89
RI04_02	0.83
<i>PC 5: Performance risk</i>	
RI04_03	0.90
RI04_04	0.83

Note. 72% is the cumulative variance.

The result of the PCA of all exogenous constructs shows that the indicators for goal attainability are assigned to two different principal components (PC 1 and PC 2). PC 1 can be called *goal attainability* and PC 2 *goal challenge*. Both components show different aspects or dimensions of a goal.

Next to that, the six variables used for risk are measuring three different constructs or three different dimensions of risk: the *perceived risk* (PC 3), the *social risk* (PC 4) and the *performance risk* (PC 5).

Internal consistency reliability and convergent validity

The internal consistency reliability is checked by Cronbach's alpha and the composite reliability whereas the convergent validity is checked by the average variance extracted (AVE) and the indicator reliability which is also called outer loading (Hair et al., 2017, p. 111ff.).

The operationalization of the construct *attitude toward the ad* was done by six items (AtAD01_01 – AtAD01_06). Cronbach's alpha is 0.933. The Composite Reliability for the construct is 0.947, which is also above the threshold value of 0.7 (Bagozzi & Yi, 1988, p. 82). Therefore the indicator can be classified as reliable.

Table 39 shows the indicator reliability values for each variable. All indicators of the construct attitude toward the ad have an indicator reliability value above 0.6. The AVE for the construct is 0.749 and is therefore above the threshold value of 0.5. Therefore, it can be stated that the convergent validity is given.

Table 39

Indicator analysis for attitude toward the ad.

Variable	Indicators for attitude toward the ad	Indicator reliability
AtAD01_01	I react favorably to the advertising and promotions of this product.	0.891
AtAD01_02	I feel positive towards the advertising and promotions of this product.	0.888
AtAD01_03	The advertising and promotions of this product are good.	0.912
AtAD01_04	I am happy with the advertising and promotions of this product.	0.846
AtAD01_05	This advertising looks good.	0.824
AtAD01_06	This advertising looks interesting.	0.829
Cronbach's alpha: 0.933; AVE: 0.749; Composite Reliability: 0.947.		

The next construct *product trust* has a value for Cronbach's alpha of 0.879, which is above the threshold value of 0.7. Next to that the composite reliability is 0.911. Consequently, the measuring model for the construct product trust is reliable as well. Furthermore, all indicators of the construct trust have an indicator reliability value above 0.6 which is shown in Table 40. The AVE for the construct is 0.673 and is therefore above the threshold value of 0.5.

Table 40

Indicator analysis for product trust.

Variable	Indicators for product trust	Indicator reliability
TR01_01	This product keeps its promises and commitments.	0.849
TR01_02	This product is trustworthy.	0.874
TR01_03	This product fulfills its job.	0.752
TR01_04	The product will please all who use it.	0.781
TR01_05	The product will do everything I want it to do.	0.841
Cronbach's alpha: 0.879; AVE: 0.673; Composite Reliability: 0.911.		

In order to measure the construct *purchase intention* five items have been used. The Cronbach's alpha is 0.930 and the composite reliability 0.947. Therefore the measurement model of the construct is reliable. The AVE is above 0.5 with a value of 0.780 and all indicators have an indicator reliability above 0.6 like shown in Table 41.

Table 41

Indicator analysis for purchase intention.

Variable	Indicators for purchase intention	Indicator reliability
PI01_01	The probability that I would consider joining this fitness center is very high.	0.903
PI01_02	If I would consider joining a fitness club, I would join this one.	0.886
PI01_03	The likelihood that I am joining this fitness center is high.	0.863
PI01_04	My willingness to buy this product is high.	0.895
PI01_05	I will go to this fitness center in the future.	0.868
Cronbach's alpha: 0.930; AVE: 0.780; Composite Reliability: 0.947.		

The construct *social comparison* was measured by the three items SC01_01-SC01_03 which just differ in the wording for male vs. female participants. For women the wording "female models" was used, for male participants the wording "male models". The Cronbach's alpha value is 0.857. The composite reliability was 0.917. Therefore the measurement model of the construct is reliable. The AVE is above 0.5 with a values of 0.787 and all indicators have an indicator reliability above 0.6 as shown in Table 42.

Table 42

Indicator analysis for social comparison.

Variable	Indicators for social comparison	Indicator reliability
SC01_01	When I see female/ male models in ads, I think about how well or badly I look compared to them.	0.887
SC01_02	I have wished I looked more like the female/ male models in ads.	0.897
SC01_03	I compare myself to other females/ males who are better off than me in terms of physical attractiveness.	0.877
Cronbach's alpha: 0.857; AVE: 0.787; Composite Reliability: 0.917.		

In order to measure the construct *appearance satisfaction* three items have been used. One item had to be inverted in order to represent the appearance satisfaction and not the dissatisfaction (SA01_02_r). The Cronbach's alpha was 0.834 and the composite reliability 0.899. Therefore the measurement model of the construct is reliable based on the above defined criteria. The AVE is above 0.5 with a value of 0.749. All indicators have an indicator reliability above 0.6 like shown in Table 43.

Table 43

Indicator analysis for appearance satisfaction.

Variable	Indicators for appearance satisfaction	Indicator reliability
SA01_01	I'm pretty satisfied with my level of physical attractiveness.	0.872
SA01_02_r	I wish I could change the way I look. (inverted)	0.839
SA01_03	I would describe my satisfaction with my physical appearance as... Terrible, unhappy, mostly dissatisfied, mixed (about equally satisfied and dissatisfied), mostly satisfied, pleased, delighted.	0.875
Cronbach's alpha: 0.834; AVE: 0.749; Composite Reliability: 0.899.		

The next construct is the *health motivation* which was measured by eight items. However the indicator HO01_06_r with the item wording "I am concerned about health hazards and try to take action to prevent them (inverted)" will be deleted as it shows an indicator reliability of just 0.572.

The PCA showed that these items can be assigned to two different components: preventive and curative health motivation. These two components will be interpreted as two dimensions of the construct health motivation and will be taken into account for the further analysis. Therefore the *repeated indicator*

approach and the second- stage of the *two-stage approach* will be used: Both dimensions of the health motivation will be combined to two scores which will be used as new variables for the construct risk, which will be than measured in a formative way. After the analysis of all variables these approaches will be described and the reason for selecting it will be explained.

Table 44 shows the indicator reliability for each indicator of both constructs. The items MO01_04 – MO01_08 have been inverted. High values represent now after the inversion a high level of health motivation, like it is the case for the items MO01_01- MO01_03. Furthermore the Cronbach's alpha values, AVE and Composite Reliability values are reported.

Table 44

Indicator analysis for health motivation (curative and preventive orientation).

Variable	Indicators for health motivation	Indicator reliability
<i>Health motivation – preventive orientation (HM1)</i>		
MO01_01	I often worry about health hazards I hear about, but don't do anything about them.	0.803
MO01_02	I don't worry about health hazards until they become a problem for me or someone close to me.	0.814
MO01_03	There are so many things that can hurt you these days. I'm not going to worry about them.	0.808
<i>Health motivation – curative orientation (HM2)</i>		
MO01_04_r	I don't take any action against health hazards I hear about until I know I have a problem. (inverted)	0.761
MO01_05_r	I'd rather enjoy life than try to make sure I'm not exposing myself to a health hazard. (inverted)	0.773
MO01_07_r	I try to prevent health problems before I feel any symptoms. (inverted)	0.788
MO01_08_r	I try to protect myself against health hazards I hear about. (inverted)	0.783
Cronbach's alpha: 0.735 (HM1) and 0.781 (HM2); AVE: 0.653 (HM1) and 0.603 (HM2); Composite Reliability: 0.850 (HM1) and 0.859 (HM2)		

All values for the indicator reliability, for Cronbach's alpha, the composite reliability as well as the AVE are above the corresponding threshold values. Therefore it can be stated that for the internal consistency reliability and the measure's convergent validity is given.

In order to measure the construct *risk* six items have been used. The PCA shows that three different constructs or dimensions of risk are measured by these items: The social and performance risk as well as the perceived risk. Perceived risk which consists of RI01_01_r with the item wording "How important was it to you to make the best choice" and RI02_01 with the item wording "How sure are you that a new fitness center in the same prize class, which has previously not been on the market, would be just as good as the one you chose?" will be excluded from the further analysis. The reasons for the deletion have been the following: On the one hand, the first indicator RI01_01 have been too general as it just asked about the importance of making decisions. The relationship with the motivation to join the fitness center and the related risk was not in the main focus. Next to that it is not clear if this item really measures risk (risk to join a fitness center) or other constructs like e.g. importance of decisions. On the other hand, the second indicator asks about a scenario that is too far away in the future. It is assumed the participant already decided to join the fitness center and another fitness center opens. It measures the risk to have already chosen to join a fitness center and the choice was wrong and not the *risk of joining* (before and not after the decision already took place).

The other two dimensions, social and performance risk, should be taken into account for the further analysis. Table 45 shows the indicator reliability for each indicator of both constructs, if the construct risk would be split into two individual constructs. Furthermore the Cronbach's alpha values, AVE and Composite Reliability values are reported.

Table 45

Indicator analysis for risk.

Variable	Indicators for risk	Indicator reliability
<i>Perceived social risk</i>		
RI04_01	If your friends, relatives or associates are aware that you have joined this fitness center what is the probability that you will lose their respect?	0.921
RI04_02	If your friends, relatives or associates are aware that you have joined this fitness center what is the probability that they will look down on you?	0.922
<i>Perceived performance risk</i>		
RI04_03	What is the probability that the fitness center will fail to function?	0.861
RI04_04	What is the probability that the fitness center will damage your body?	0.906
Cronbach's alpha: 0.823 (social risk), 0.721 (performance risk); AVE: 0.850 (social risk), 0.781 (performance risk); Composite Reliability: 0.919 (social risk), 0.877 (performance risk);		

All values for the indicator reliability, for Cronbach's alpha, the composite reliability as well as the AVE are above the corresponding threshold values. Therefore it can be stated that for the internal consistency reliability and the measure's convergent validity is given.

In order to measure the construct *goal attainability* five items have been used. The PCA showed that these items can be assigned to two different components: *goal challenge* and *goal attainability*. The indicator reliability of the two variables is shown in Table 46. Furthermore the Cronbach's alpha values, AVE and Composite Reliability values are reported. The two components goal attainability and goal challenge will be interpreted as two dimensions of the construct and will be taken into account for the further analysis. Therefore the repeated indicator approach as well as the second step of the two-stage approach will be used: Both dimensions of the goal attainability will be combined into two scores which will be used as new variables for the construct, which will be than measured in a formative way.

Table 46

Indicator analysis for goal attainability.

Variable	Indicators for goal attainability	Indicator reliability
<i>Goal attainability</i>		
GO01_01	Please rate the extent to which your goal is perceived to be feasible.	0.881
GO01_02	Please rate the extent to which your goal is perceived to be realistic.	0.898
GO02_01	How likely are you able to reach your goal? Not at all – very much	0.690
<i>Goal challenge</i>		
GO01_03	Please rate the extent to which your goal is perceived to be difficult.	0.933
GO01_04_r	Please rate the extent to which your goal is perceived to be challenging.	0.769
Cronbach's alpha: 0.765 (Goal attainability), 0.655 (Goal challenge); AVE: 0.687 (Goal attainability), 0.731 (Goal challenge); Composite Reliability: 0.866 (Goal attainability), 0.843 (Goal challenge);		
<i>Note.</i> For the item GO01_04_r the item wording is not inverted. Just the results have been inverted as the "inverted" checkbox was flagged accidentally in the SoSciSurvey online questionnaire software.		

All values for the indicator reliability, for Cronbach's alpha, the composite reliability as well as the AVE are above the corresponding threshold values. The only exception is the Cronbach's alpha value for goal challenge which is 0.655. The threshold value for Cronbach's alpha is above 0.7. However, Ohlwein argues that for constructs with two indicators a Cronbach's alpha value of above 0.5 is sufficient, for constructs with three indicator the threshold value is above 0.6 (Ohlwein, 1999, p. 224). As the goal challenge is composed of two indicators (GO01_03 and GO01_04_r) the Cronbach's alpha value of 0.655 will be categorized as acceptable. Furthermore, Hair et al. defined the range of 0.60- 0.90 as suitable values for Cronbach's alpha (Hair et al., 2017, p. 132).

Second order factor models

In the following second order factor models will be described, the difference between the four different types will be explained and three approaches to model second order factor models in PLS-SEM will be specified. Besides the second order factor model for risk, goal attainability and health motivation will be categorized into one of the four different types. Next to that, the reason for selecting one of the three different approaches to model these type of models will be highlighted.

Second order factor models consist of a *second order construct*, which is also called higher order latent variable, and other latent variables (LV), which are called dimensions or *first order latent variables* (Chin, 1998, p. 10). The second order variable isn't measured directly by indicators, but the first order LV are. Therefore they can be called standard LV (Chin, 1998, p. 10). Second order models are also called hierarchical component models (HCMs) in the context of PLS-SEM (Lohmöller, 1989). The reduction of the relationships in the path model is one of the reasons to establish a second order model (Hair et al., 2017, p. 281).

The indicators that are measuring the first order LV can be reflective or formative. The same counts for the dimensions which can be the cause or effect of the second order construct. Based on the reflective/ formative characteristic of second order factor models, four different types can be differentiated: reflective-reflective models (type 1), reflective – formative (type 2), formative – reflective (type 3) and formative- formative (type 4) (Becker, 2012, p. 362ff.). Figure 41 illustrates the different second order types.

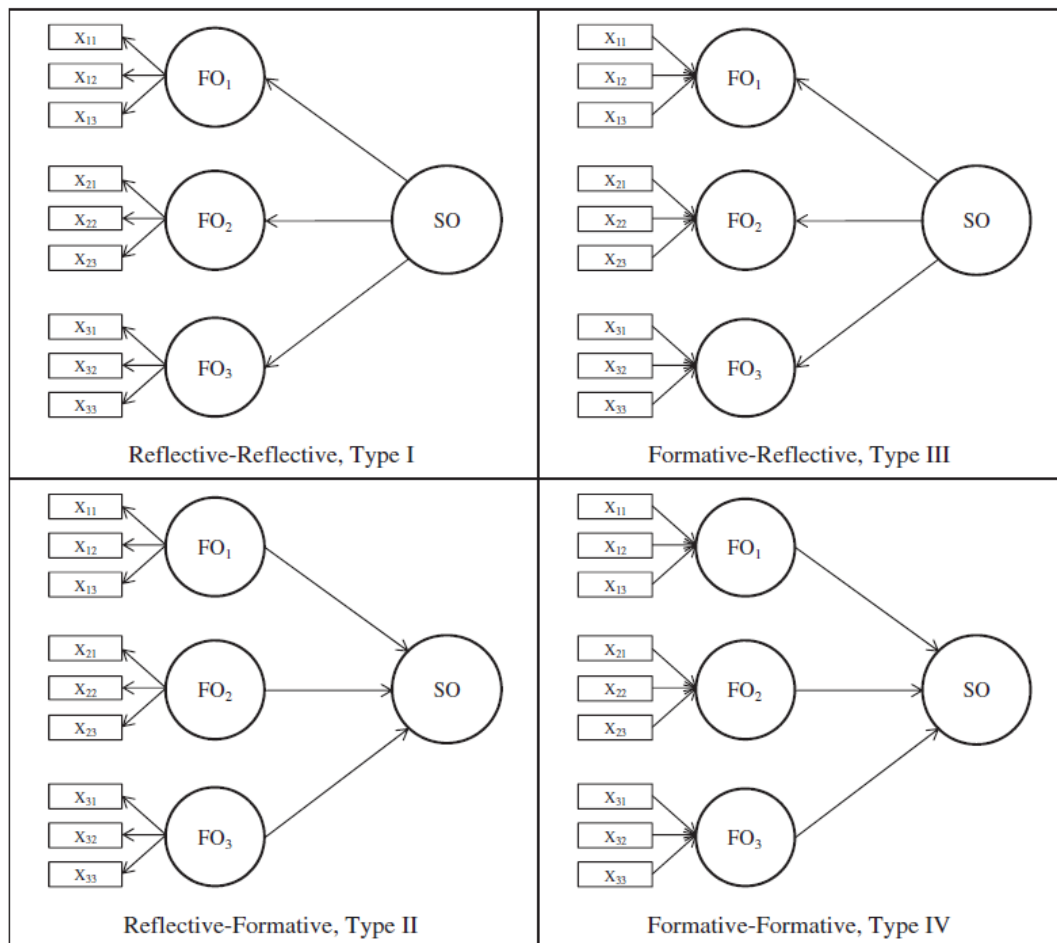


Figure 41. The four types of hierarchical latent variable models; source: Becker et al., 2012, p. 363.

In Figure 41 SO represents the second order variable, FO the first order variable and the x with a specific number the individual indicators which are used to measure the FO. In order to categorize the model the reflective/ formative question needs to be answered for the second order construct first (Chin, 1998, p. 10). All FO variables in the current research (e.g. social risk, performance risk and perceived risk) are measured with reflective indicators. This has been analyzed in the operationalization part already. Therefore, the model is either type 1 or 2 for all three hierarchical latent variable models (risk, goal attainability and health motivation).

Risk can be defined as the second order construct which is described by the three dimensions or first order variables social risk, performance risk and perceived risk. All three dimensions are measured by reflective indicators. Risk as a second

order construct is formative as social risk, perceived risk and performance risk are dimensions that form the concept and don't have a common cause (Becker, 2012, p. 364; Chin, 1998, p. 9). If social risk is present, that means e.g. my friends will lose their respect towards me if I am joining a specific fitness center, it will influence the SO variable risk in a negative way. However, just because social risk is present, that doesn't mean that performance risk will occur as well. The fitness center can fulfill its obligations and won't harm my body (no performance risk), but I will still lose the respect of my friends (social risk is present). This example shows that there is no correlation between the indicators which is a characteristic of formative indicators. Furthermore, one first level variable can't be replaced with another as the SO variable will lose some content. Figure 42 illustrates the final composition of the second order construct risk.

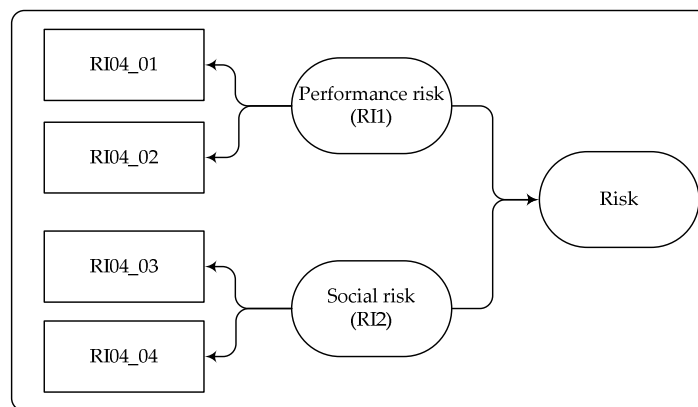


Figure 42. Second order reflective-formative model for risk.

Goal attainability can be defined as the second order construct which is described by the two dimensions goal challenge and goal attainability. Both dimensions are measured by reflective indicators. The SO variable goal attainability is measured also in a formative way by the dimensions goal challenge (GA2) and goal attainability (GA1). Both dimensions form the construct and content would be lost if one of them would be deleted. This can be underlined using an example: Somebody has the goal to lose 5kg in 5 weeks. This goal is realistic, as one kg per week is stated to be healthy and realistic. The judgement that this goal is realistic is part of the construct goal challenge (GA2). However, this goal might be rated as being difficult to attain by the participant. This is a judgment for the variable goal attainability (GA1). This goal of losing 5kg in 5 weeks lead to a negative judgement of goal attainability GA1 and a positive one of the goal

challenge GA2. This example shows that there is no correlation between the indicators (if one is changed in a positive way the other one isn't changed in a positive way) which is a characteristic of formative indicators.

Figure 43 visualizes the type of second order model for goal attainability.

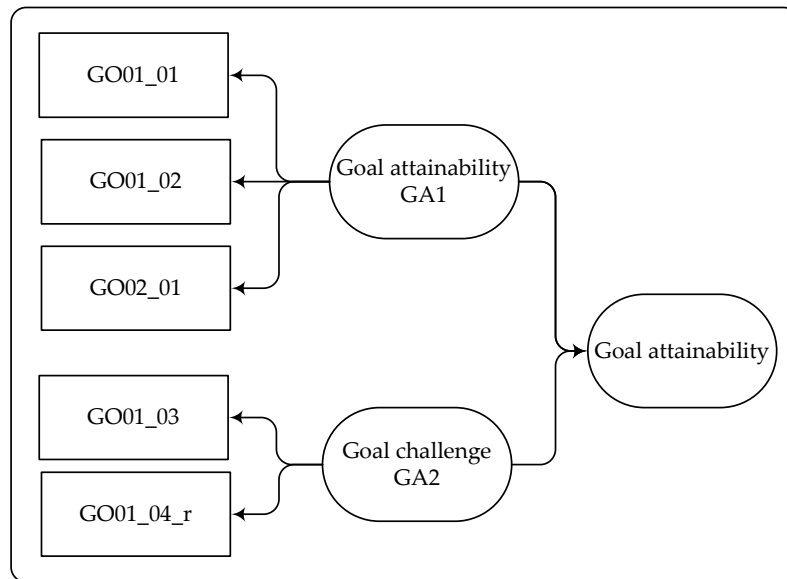


Figure 43. Second order reflective-formative model for goal attainability.

Last, health motivation can be defined as the second order construct which is described by the two dimensions curative and preventive health motivation. Both dimensions are measured by reflective indicators. The SO variable health motivation is measured also in a formative way by the dimensions curative and preventive health motivation. The two dimensions form the construct health motivation and content would be lost if one of them would be replaced by the other. On the one hand, preventive health motivation means I am doing something before I am facing any health issues. On the other hand, curative health motivation assumes I am waiting to do anything for my health until I really have any symptoms. This already shows that there is no correlation between the two variables, a change of one wouldn't cause a change of the other into the same direction. This underlines the formative character of health motivation, which consists of preventive and curative health motivation. Figure 44 visualizes the type of second order model for health motivation.

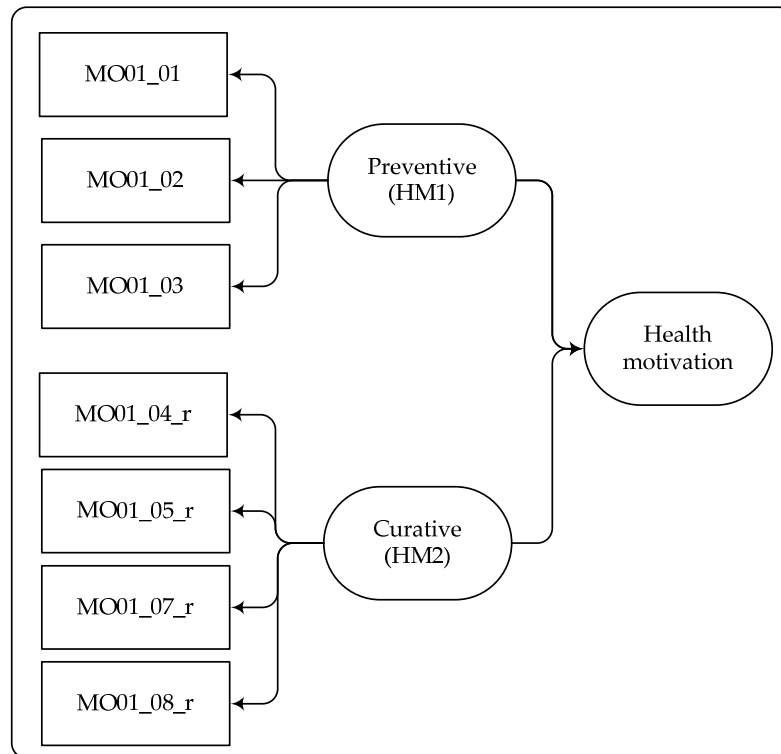


Figure 44. Second order reflective-formative model for health motivation.

After the categorization to one of the above mentioned hierarchical LV models, the construct scores should be calculated in order to do PLS-SEM. However, as the second order LV doesn't have indicators which are needed to calculate construct score, this can be modeled by one of the following three approaches (Becker et al., 2012, p. 365):

1. the repeated indicator approach (Lohmöller, 1989; Wold, 1982)
2. the sequential latent variable score method or two-stage approach (Ringle et al., 2012; Wetzels et al., 2009), and
3. the hybrid approach (Wilson & Henseler, 2007).

Table 47 gives an overview of the execution/ implementation of the repeated indicator approach, the sequential latent variable score method and the hybrid approach. Furthermore, based on the second order model risk an example for the execution is given, the advantages and disadvantages of each of the methods are listed and recommendations for the usage of each approach based on the literature are given.

Table 47

Overview of the three approaches to model second order models, their advantages and disadvantages; sources: Becker et al., 2012, p. 365ff; Ringle et al., 2012; Agarwal & Karahanna, 2000; Wetzels et al., 2009; Wilson & Henseler, 2007.

Repeated indicator approach	
Execution/ Implementation	Using all indicators of all first order variables (dimensions) which compose the second order variable for the second order variable as well. Consequently the indicators are used twice (for second order variable and first order variables).
Example	Risk (second order variable) consists of two first order variables (social risk and performance risk). Both have two indicators and these will be used for measuring social and performance risk. Next to that, risk will be specified using all four indicators of the two first order variables.
Advantages	A simultaneous estimation of all constructs is possible Interpretational confounding is avoided
Disadvantages	As all indicators are used twice artificially correlated residuals can be caused First order constructs already explain all variances of the second order construct, therefore no other antecedent construct can explain the variances (R^2 will be 1 for the second order construct and path coefficients will be zero for all antecedent constructs)
Recommendation	More appropriate to use repeated indicator approach for formative types of second order models (reflective- formative or formative – formative)
Sequential latent variable score method (or two-stage approach)	
Execution/ Implementation	First, estimation of first order variable scores without the second order variables. Second, using the first order variable scores as indicators for the second order variables and execution of second analysis. However it is also possible to estimate the variable scores by the <i>repeated indicator approach</i> first and afterwards use these for the second order variable in a second step.
Example	Estimating the variable scores for social risk and performance risk without taking the second order variable risk into account. Using these two variable scores as indicators for risk and executing a second stage analysis.
Advantages	Estimation of the model on a higher level without lower level variables

Disadvantages	Interpretational confounding might be caused by the separate estimation of the models as not the whole network is taken into account
Recommendation	Use sequential latent variable score method when the second order variable is formative and endogenous. However, this recommendation from Ringle et al. is questioned by Becker et al.. He recommends to use one of the other two approaches (hybrid or repeated indicator) for formative and endogenous second order variables.
Hybrid approach	
Execution/ Implementation	Works like the repeated indicator approach but uses the indicators just once. All indicators of the first order variables are split and one half is used to estimate the first order variables and the other one to estimate the second order variable.
Example	Social risk and performance risk are both measured by two indicators. Just one should be used for each of them and the other two indicators should be used for the second order construct risk.
Advantages	Artificially correlated residuals are avoided as each indicator is just used once.
Disadvantages	Reduced reliability as just one half of the indicators are used
Recommendations	No clear guidelines for which type of hierarchical model this approach should be used

For the current analysis the repeated indicator approach will be used first because interpretation confounding, which is one of the disadvantages of the two-stage approach, should be avoided. Furthermore reduced reliability, which is a disadvantage of the hybrid approach, should be prevented. Next to that, Becker et al. recommends the indicator approach for reflective- formative models (Becker et al., 2012, p. 366) and all three second order models (for risk, goal attainability and health motivation) are formative types of second order models.

Afterward the repeated indicator approach, the second step of the two- stage- approach will be done: The first order variable scores will be used as indicators for the second order variables in a second- stage analysis. This approach was advised by Ringle et al. and Wilson (Ringle et al., 2012; Wilson, 2010; Becker et al., 2012, p. 365). By this procedure the disadvantage or problem of the repeated indicator approach will be solved: The first order constructs won't explain all variances of the second order construct and other antecedent construct can explain the variances

(R^2 will not be 1 for the second order construct and path coefficients won't be zero for all antecedent constructs).

Results of the repeated indicator approach and two-stage approach

The execution of the repeated indicator approach will be shown for one of the three second order models (risk). The execution for the other two, health motivation and goal attainability, will be done in the same way. All indicators of the first order constructs social and performance risk will be used for the second order construct risk as well. This will be illustrated in Figure 45.

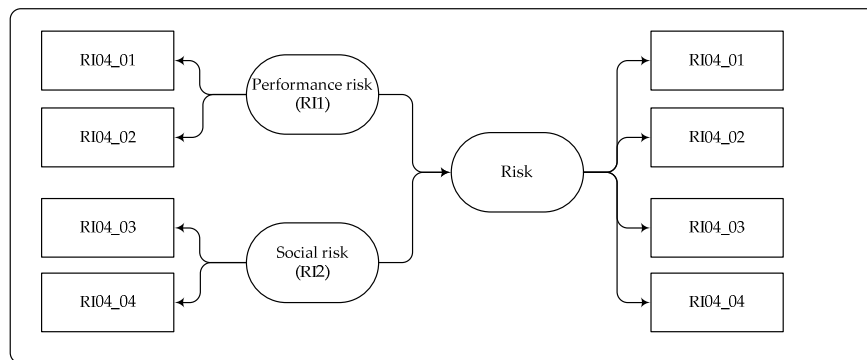


Figure 45. Repeated indicator approach for the second order variable risk.

The modeling of reflective-formative second order constructs is resulting in a couple of issues. One of these is the R^2 value of 1 or nearly 1 as all first order constructs are explaining the variance of the second order construct. This is resulting in insignificant path coefficients (very small or even zero) of other constructs which are pointing to the second order construct (Hair et al., 2017, p. 283). This issue can be solved by a two stage approach: first conducting the repeated indicator approach like it was done in order to get the latent variable scores of the first order constructs. Afterwards these scores should be used as a manifest variable for the second order construct (Hair et al., 2017, p. 283ff.). The two-stage approach can be applied if the number of items per first order construct is nearly the same. A high difference may result in a biased relationship between the second order construct and the first order construct with the higher number of constructs (Hair et al., 2017, p. 283). The number of items of the first order constructs of risk is the same: two items for performance risk and two items for social risk. There is a

difference of just one item for the first order constructs of the second order constructs health motivation and goal attainability. Therefore the approach can be applied.

The mode of measurement was mode B (formative measurement of the second order construct) and the inner weighting scheme *path* was used. Concerning Becker et al. the inner path weighting scheme is resulting in the best results compared to the factor or centroid weighting scheme (Becker et al., 2012, p. 369ff.).

The appropriateness of the first order construct should be checked based on the criteria for evaluation of reflective measurement models (as all first order constructs are reflective ones) as part of the analysis of hierarchical latent variable models (Becker et al., 2012, p. 377). This was already done before and will be continued afterwards. It needs to be taken into account that the important loadings are the ones between the first order constructs and its indicators (Becker et al., 2012, p. 377). Whereas the weights of the second order construct are the ones between the second order constructs and its first order constructs. As all second order constructs are formative the report standards for formative measurement models need to be checked. Table 48 summarizes the evaluation criteria for formative models as well as their threshold values (Hair et al., 2012, p. 329; Diamantopoulos & Winklhaus, 2001, p. 272).

Table 48

Formative measurement model evaluation criteria; source: Hair et al., 2012, p. 329.

Evaluation of the measurement model (outer model/ formative models)
<u>Indicators' relative and absolute contribution and significance</u> <ul style="list-style-type: none"> • Consideration of outer weight (relative importance) and outer loading (absolute importance) • Bootstrapping (to assess significance)
<u>Indicators' collinearity</u> <ul style="list-style-type: none"> • VIF lower than 5

Table 49 shows the indicator weights and significance of the two dimensions (HM1 and HM2) of the second order construct health motivation after the two-stage approach is conducted.

Table 49

Indicator weights and corresponding t values of the dimensions of the second order construct health motivation.

Variable	Second order construct health motivation	Indicator weight/ t value
<i>HM1: First order construct: Health motivation – preventive orientation</i>		1.096*** (23.649)
MO01_01	<i>I often worry about health hazards I hear about, but don't do anything about them. .</i>	
MO01_02	<i>I don't worry about health hazards until they become a problem for me or someone close to me.</i>	
MO01_03	<i>There are so many things that can hurt you these days. I'm not going to worry about them.</i>	
<i>HM2: First order construct Health motivation – curative orientation</i>		-0.289* (1.642)
MO01_04_r	<i>I don't take any action against health hazards I hear about until I know I have a problem. (inverted)</i>	
MO01_05_r	<i>I'd rather enjoy life than try to make sure I'm not exposing myself to a health hazard. (inverted)</i>	
MO01_07_r	<i>I try to prevent health problems before I feel any symptoms. (inverted)</i>	
MO01_08_r	<i>I try to protect myself against health hazards I hear about. (inverted)</i>	

Note. *** p<.01; ** p<.05; * p<.1 (one-tailed)

For the second order construct health motivation the first order construct or dimension preventive health orientation is relative more important than the first order construct curative health motivation. Furthermore the preventive orientation has a positive influence whereas the curative orientation has a negative one. From a conceptual point of view the negative influence makes sense as somebody who has a curative health orientation is not acting in advance to prevent health problems but waits until a problem occurs. Therefore a curative orientation is resulting in a lower health motivation.

For formative indicators it is important to test on the one hand if the indicators are significant different from zero and on the other hand if the indicators are really forming the construct (Hair et al., 2017, p. 146). Therefore the bootstrapping procedure is used to calculate the corresponding t values (Hair et al., 2017, p. 149). Both indicator weights are significant different from zero: the

preventive orientation at a significant level of 1% and the curative orientation a significant level of 10%.

Table 50 shows the indicator weights of the two dimensions (RI1 and RI2) of the second order construct risk after the second stage of the two-stage approach was conducted. It is visible that the perceived performance risk is having a higher relative contribution to the construct risk than the first order construct perceived social risk (Hair et al., 2017, p. 146). For consumers it seems to be more important that the fitness center doesn't damage their body nor fail to function than what friends think about the fact that the consumer joined the fitness center. This is represented by an indicator weight of 1.018*** for performance risk compared to an indicator weight of -0.054 for social risk. However, the indicator weight for perceived social risk is not significant (t value of just 0.295).

Table 50

Indicator weights and corresponding t values of the dimensions of the second order construct risk.

Variable	Second order construct risk	Indicator weight/ t value
<i>RI1: First order construct: Perceived social risk</i>		<i>-0.054 (0.295)</i>
<i>RI04_01</i>	<i>If your friends, relatives or associates are aware that you have joined this fitness center what is the probability that you will lose their respect?</i>	
<i>RI04_02</i>	<i>If your friends, relatives or associates are aware that you have joined this fitness center what is the probability that they will look down on you?</i>	
<i>RI2: First order construct: Perceived performance risk</i>		<i>1.018*** (16.672)</i>
<i>RI04_03</i>	<i>What is the probability that the fitness center will fail to function?</i>	
<i>RI04_04</i>	<i>What is the probability that the fitness center will damage your body?</i>	

Note. *** p<.01; ** p<.05; * p<.1 (one-tailed)

Based on Hair et al. the outer loadings should be analyzed if the outer weights are not significant. If the outer loading is high (above 0.5) the indicator should be kept. If the outer loading is below 0.1 it should be deleted. Last, if the outer loading is between 0.1 and 0.5 it should be decided based on the conceptualization (Hair et

al., 2017, p. 148). The outer loading for perceived social risk is 0.321. Based on the conceptualization and the purpose to test the relationship between social risk and attitude which was mentioned as future research possibility by Liao et al. the construct social risk will be retained for the further analysis (Liao et al., 2010).

Table 51 shows the indicator weights of the two dimensions (GA1 and GA2) of the second order construct goal attainability.

Table 51

Indicator weights and corresponding t values of the dimensions of the second order construct goal attainability.

Variable	Second order construct goal attainability	Indicator weight/ t value
<i>GA1: First order construct: Goal attainability</i>		0.742*** (6.027)
GO01_01	<i>Please rate the extent to which your goal is perceived to be feasible.</i>	
GO01_02	<i>Please rate the extent to which your goal is perceived to be realistic.</i>	
GO02_01	<i>How likely are you able to reach your goal? Not at all – very much</i>	
<i>GA2: First order construct: Goal challenge</i>		0.493 ***(3.221)
GO01_03	<i>Please rate the extent to which your goal is perceived to be difficult.</i>	
GO01_04_r	<i>Please rate the extent to which your goal is perceived to be challenging.</i>	

*** p<.01; ** p<.05; * p<.1 (one-tailed)

Note. For the item GO01_04_r the item wording is not inverted. Just the results have been inverted as the “inverted” checkbox was flagged accidentally in the SoSciSurvey online questionnaire software.

It is visible that the goal attainability GA1 is having a slightly higher relative contribution to the second order construct than the first order construct goal challenge. This is represented by an indicator weight of 0.742 for goal attainability compared to an indicator weight of 0.493 for goal challenge.

For the two constructs health motivation and goal attainability both first order constructs' outer weights have been significant. Therefore an analysis of the formative indicator's outer loading is not necessary (Hair et al., 2017, p. 150).

The VIF values will be analyzed during the structural model analysis, as these are important for formative and reflective models.

Discriminant validity

The discriminant validity is a sign for uniqueness of constructs and is measured by the cross loadings, the Fornell- Larcker criterion and the heterotrait-monotrait ratio (HTMT) (Hair et al., 2017, p. 115ff.).

Table 52 shows the cross loadings for each indicator of all constructs. As each indicator has a higher loading on the corresponding construct (marked in blue) for which it was used than on other constructs, the discriminant validity is given (Chin, 1998, p. 321ff.). As the second order constructs risk, goal attainability and health motivation are formative, they are not included as assessing convergent and discriminant validity of formatively measured constructs with the same criteria like for reflective constructs is not meaningful (Hair et al., 2017, p. 138).

Table 52

Cross loadings of all indicators.

	AtAd	DIS	INT	SCOM	TR	SAT
AtAD01_01	0.891	0.089	0.580	0.176	0.611	-0.161
AtAD01_02	0.888	-0.001	0.552	0.203	0.607	-0.135
AtAD01_03	0.912	0.044	0.604	0.206	0.636	-0.157
AtAD01_04	0.846	0.015	0.532	0.176	0.578	-0.116
AtAD01_05	0.824	0.066	0.551	0.144	0.600	-0.143
AtAD01_06	0.829	0.051	0.531	0.177	0.575	-0.154
DIS01_01	0.051	1.000	0.099	0.044	0.013	-0.224
PI01_01	0.607	0.093	0.903	0.141	0.567	-0.100
PI01_02	0.607	0.089	0.886	0.129	0.544	-0.098
PI01_03	0.571	0.059	0.863	0.146	0.459	-0.063
PI01_04	0.571	0.091	0.895	0.168	0.487	-0.073
PI01_05	0.532	0.104	0.868	0.145	0.441	-0.075
SA01_01	-0.199	-0.257	-0.075	-0.297	-0.053	0.887
SA01_02_r	-0.181	-0.113	-0.105	-0.470	-0.130	0.818
SA01_03	-0.122	-0.230	-0.057	-0.319	-0.094	0.890
SC01_01	0.177	0.027	0.148	0.887	0.188	-0.333
SC01_02	0.233	0.036	0.186	0.896	0.213	-0.395
SC01_03	0.151	0.054	0.099	0.879	0.155	-0.412
TR01_01	0.492	-0.013	0.401	0.154	0.849	-0.033
TR01_02	0.610	0.001	0.499	0.253	0.873	-0.143
TR01_03	0.441	0.059	0.323	0.148	0.752	-0.084
TR01_04	0.566	0.012	0.450	0.159	0.782	-0.114
TR01_07	0.686	0.006	0.598	0.142	0.842	-0.074

AtAd = Attitude toward ad; DIS = Distance; INT = Purchase intention; SCOM = Social comparison; TR = Trust; SAT = Appearance satisfaction

Next, the Fornell- Larcker criterion will be used to check discriminant validity. Based on Fornell and Larcker the discriminant validity is existent if the Average Extracted Variance (AVE) is higher than the squared correlation between two latent variables, which can be interpreted as the shared variance of the two constructs (Fornell & Larcker, 1981, p. 46). Table 53 gives an overview of the correlations.

Table 53
Fornell- Larcker Criterion.

	AtAd	DIS	GOAL	MOT	INT	Risk	SCOM	TR	SAT
AtAd	0.866 (0.749)								
DIS	0.051								
INT	0.646	0.099	0.022	0.072	0.883 (0.780)				
SCOM	0.209	0.044	-0.041	0.039	0.161	-0.038	0.887 (0.787)		
TR	0.695	0.013	-0.011	0.095	0.569	-0.262	0.210	(0.673)	
SAT	-0.167	-0.224	0.244	0.165	-0.093	0.028	-0.431	-0.111	0.865 (0.749)

AtAd = Attitude toward ad; DIS = Distance; GOAL = Goal attainability; MOT = health motivation; INT = Purchase intention; SCOM = Social comparison; TR = Trust; SAT = Appearance satisfaction

It can be stated that the AVE, which is shown in brackets in Table 53, is higher than the squared correlation with any other constructs, therefore the discriminant validity is given (Hair et al., 2017, p. 116).

Last, Table 54 shows the HTMT values for the constructs. Values close to 1 indicate a lack of discriminant validity (Hair et al., 2017, p. 118). Values above 0.85 or 0.90 can be seen as the threshold value. As there are no values below 0.85, discriminant validity is given.

Table 54
HTMT values for all reflective constructs.

	AtAd	DIS	INT	SCOM	TR	SAT
AtAd						
DIS	0.053					
INT	0.691	0.102				
SCOM	0.230	0.047	0.182			
TR	0.752	0.024	0.608	0.238		
SAT	0.184	0.253	0.102	0.490	0.123	

AtAd = Attitude toward ad; DIS = Distance; INT = Purchase intention; SCOM = Social comparison; TR = Trust; SAT = Appearance satisfaction

In summary, the measurement model demonstrated adequate discriminant validity.

4.4.5.2 Evaluation of the structural model

After the evaluation of the measurement model, the structural model will be analyzed. Therefore the collinearity assessment (Hair et al., 2017, p. 192), the path coefficients, the coefficient of determination, the effect size f^2 as well as the predictive relevance will be calculated and evaluated.

The evaluation of the structural model will be done for the complete data set (for all participants independent of the gender and exposure image). Later the path coefficients will be analyzed for the individual experimental groups during the moderator analysis. This procedure is recommended by Hair et al. in order to identify heterogeneous data structures in order to avoid false conclusions (Hair et al., 2017, p. 290ff.).

Collinearity Assessment

One criteria to assess the level of collinearity is the tolerance (TOL). TOL value below 0.2 are considered as critical levels of collinearity (Hair et al. 2017, p. 194). The tolerance can be calculated in the following way: $VIF = 1 / TOL$ (Hair et al., 2017, p. 143). Hereby, VIF is the Inner Variance Inflation Factors. VIF values of above 5 are considered as a critical level of collinearity (Hair et al., 2017, p. 194). If a critical VIF level is present, constructs should be eliminated or higher order constructs should be created. Table 55 shows the VIF values for all constructs (formative and reflective ones). None of them is above 5. Therefore no collinearity problems are present. As no VIF value is above 5, no TOL values is below the threshold of 0.2.

Table 55

VIF values of all constructs.

	AtAd	DIS	GOAL	MOT	INT	Risk	SCOM	TR	SAT
AtAd					1.969		1.000	1.030	1.057
DIS	1.008			1.003					
GOAL				1.003					
MOT	1.010								1.013
INT									
Risk	1.003							1.030	
SCOM					1.271				1.046
TR					1.956				
SAT					1.240				

AtAd = Attitude toward ad; DIS = Distance; GOAL = Goal attainability; MOT = Health motivation; INT = Purchase intention; SCOM = Social comparison; TR = Trust; SAT = Appearance satisfaction

Coefficient of determination (R² Value)

The coefficient of determination (R² Value) is measuring the model's predictive power (Hair et al., 2017, p. 198) and is displayed in table 56.

Table 56

R Square and R Square Adjusted values for all endogenous constructs.

	R Square	R Square Adjusted
Attitude toward the ad	0.047	0.043
Health motivation	0.072	0.069
Purchase intention	0.446	0.442
Product trust	0.504	0.503
Social comparison	0.044	0.042
Appearance satisfaction	0.228	0.224

The coefficient represents the effect of all exogenous variables on the endogenous one.

On the one hand R² values of 0.20 are considered as high in studies in the area of consumer behavior. On the other hand in studies about marketing problems 0.25 is categorized as weak, 0.50 as moderate and 0.75 as substantial (Hair et al., 2017, p. 199). In contrast to Hair et al. Chin defined R² values of 0.19 as weak, values of 0.33 as moderate and R² of 0.67 as substantial (Chin, 1998b, p. 323; Henseler et al., 2008, p. 303).

Concerning Chin a value of above 0.19 is the threshold for R² (Chin, 1998b, p. 317; Weiber & Mühlhaus, 2014, p. 331). It can be stated that for the product trust, appearance satisfaction and the purchase intention the R² has a value above 0.19.

The highest R² is 0.504 for the construct product trust, followed by an R² value of 0.446 for the construct purchase intention.

The R² for purchase intention represents all exogenous variables (attitude toward the ad and product trust in the first place, followed by the weaker influences social comparison and appearance satisfaction) combined effect on the endogenous variable purchase intention.

Effect size f^2

The effect size f^2 is showing the change in R^2 value if one exogenous construct is deleted from the model (Hair et al., 2017, p. 201). Effect size values of 0.02 are representing small effects, values of 0.15 medium effects and values of 0.35 large ones (Hair et al., 2017, p. 201). Effect size values of below 0.02 show that there is no effect of the exogenous on the endogenous construct. Table 57 shows the f^2 values. Values which are above 0.02 are highlighted in blue as these represent effects which are either small, medium or large.

Table 57

Effect sizes f^2 of the SEM (main study).

	AtAd	DIS	GOAL	MOT	INT	Risk	SCOM	TR	SAT
AtAd					0.216		0.046	0.879	0.013
DIS	0.005			0.006					
GOAL				0.069					
MOT	0.016								0.047
INT									
Risk	0.033							0.043	
SCOM					0.001				0.215
TR					0.049				
SAT					0.001				

AtAd = Attitude toward ad; DIS = Distance; GOAL = Goal attainability; MOT = Health motivation; INT = Purchase intention; SCOM = Social comparison; TR = Trust; SAT = Appearance satisfaction

It can be stated that the attitude toward the ad (AtAd) has the highest effect on the product trust (TR) ($f^2 = 0.879$), followed by the attitude toward the ad (AtAd) on purchase intention (INT) ($f^2 = 0.216$) and social comparison (SCOM) on appearance satisfaction (SAT) ($f^2 = 0.215$). Based on Hair et al. the effect of attitude toward the ad on product trust is large as f^2 values of 0.35 are characterized as large (Hair et al., 2017, p. 201). The effect of attitude toward the ad on purchase intention and social comparison on appearance satisfaction as medium, as f^2 values of 0.15 are classified as medium. All other effect sizes which are marked blue represent small effects of the exogenous on the endogenous construct e.g. goal attainability health motivation ($f^2 = 0.069$), risk on attitude toward the ad ($f^2 = 0.033$) and attitude toward the ad on social comparison ($f^2 = 0.046$).

Path coefficients

Path coefficients are in the range of -1 to 1, where values higher than 0.1 or below -0.1 have an influence that can't be undervalued according to Lohmöller (Lohmöller, 1989, p. 60ff.). The highest effect is from communication design on product trust (0.694), followed by communication design on purchase intention (0.489) and product trust on risk (-0.369). Next to that the influence of goal attainability on health motivation is quite high (0.263) and from social comparison (females) on appearance satisfaction (0.342). Figure 46 illustrates the path coefficients.

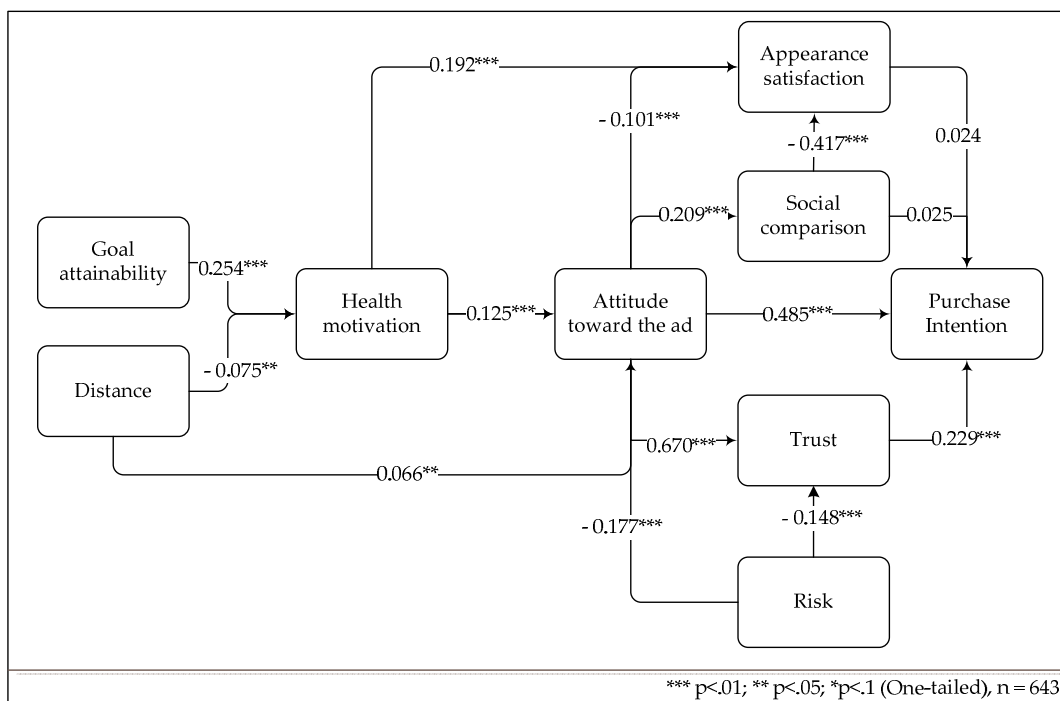


Figure 46. Path coefficients for the complete data set (main study).

Whether these path coefficients are significant is tested using the p values. Table 58 shows the exact p values. It isn't necessary to show p values and t values, but as it might have added value and is likely to increase in the future the bootstrapping confidence interval is shown as well (Hair et al., 2017, p. 197). The bootstrapping confidence interval provides additional information on the stability of the coefficient estimate (Hair et al., 2017, p. 155). The bootstrapping

confidence interval needs to include zero in order to assume that there is no significant effect of one variable on the other.

Table 58

Significance testing results of the structural model path coefficients for the complete data set of the main study.

	Path coefficient	p- value	95 % Confidence intervals
Attitude toward the ad → Purchase intention	0.485	0.000***	[0.405; 0.548]
Attitude toward the ad → Social comparison	0.209	0.000***	[0.143; 0.266]
Attitude toward the ad → Trust	0.670	0.000***	[0.628; 0.704]
Attitude toward the ad → Appearance satisfaction	-0.101	0.003***	[-0.163; -0.040]
Distance → Attitude toward the ad	0.066	0.048**	[-0.001; 0.128]
Distance → Health motivation	-0.075	0.037**	[-0.137; 0.001]
Goal attainability → Health motivation	0.254	0.000***	[0.169; 0.317]
Health motivation → Attitude toward the ad	0.125	0.002***	[0.053; 0.192]
Health motivation → Appearance satisfaction	0.192	0.000***	[0.125; 0.248]
Risk → Attitude toward the ad	-0.177	0.000***	[-0.241; -0.108]
Risk → Trust	-0.148	0.000***	[-0.187; - 0.101]
Social comparison → Purchase intention	0.025	0.235	[-0.040; 0.085]
Social comparison → Appearance satisfaction	-0.417	0.000***	[-0.465; - 0.359]
Trust → Purchase intention	0.229	0.000***	[0.167; 0.292]
Appearance satisfaction → Purchase intention	0.024	0.222	[-0.022; 0.082]

Note. *** p<.01; ** p<.05; * p<.1 (one-tailed)

Based on the p value the effect of the distance on the attitude toward the ad is significant. However, when considering the bootstrapping confidence interval, which includes zero, the relationship isn't (Hair et al., 2012, p. 429; Gudergan et al., 2008, p. 1240). The same is valid for the influence of the distance on the health motivation. Based on Chin and Henseler et al. the bootstrapping should be conducted and the bootstrapping confidence intervals should be provided in order to analyze the path coefficient significance (Chin, 1998b; Henseler et al., 2009, p. 304; Hair et al., 2012, p. 430). However, the analysis of 298 path models show that none of them reported the confidence interval but nearly all of them used t- values

or/ and the corresponding p values to determine the significance of the path coefficients (Hair et al., 2012, p. 427; Henseler et al., 2009). Following the previous research the decision if the path coefficient is significant or not will be based on the p values/ t values.

Total effects

Next to the path coefficients which represent the direct effects, the total effects need to be analyzed. The total effects are taking mediating effects (indirect effects) into account. Table 59 shows all total effects, the corresponding p value and the confidence interval. The confidence intervals are listed in order to show the stability of the total effects.

Table 59

Total effects, p- value and bootstrapping confidence interval of the complete data set of the main study.

	Total effect	p value	95 % Confidence intervals
Attitude toward the ad → Purchase intention	0.639	0.000***	[0.589; 0.687]
Attitude toward the ad → Social comparison	0.209	0.000***	[0.139; 0.275]
Attitude toward the ad → Trust	0.670	0.000***	[0.628; 0.708]
Attitude toward the ad → Appearance satisfaction	-0.188	0.000***	[-0.258; -0.123]
Distance → Attitude toward the ad	0.057	0.087*	[-0.009; 0.126]
Distance → Health motivation	-0.075	0.026**	[-0.143; -0.017]
Distance → Purchase intention	0.036	0.094*	[-0.006; 0.083]
Distance → Social comparison	0.012	0.101	[-0.002; 0.028]
Distance → Trust	0.038	0.087*	[-0.006; 0.084]
Distance → Appearance satisfaction	-0.025	0.014**	[-0.046; -0.010]
Goal attainability → Attitude toward the ad	0.032	0.005***	[0.012; 0.053]
Goal attainability → Health motivation	0.254	0.000***	[0.186; 0.324]
Goal attainability → Purchase intention	0.021	0.005***	[0.008; 0.037]
Goal attainability → Social comparison	0.007	0.013**	[0.002; 0.012]
Goal attainability → Trust	0.021	0.005***	[0.008; 0.035]
Goal attainability → Appearance satisfaction	0.043	0.001***	[0.023; 0.066]
Health motivation → Attitude toward the ad	0.125	0.001***	[0.048; 0.191]
Health motivation → Purchase intention	0.084	0.001***	[0.035; 0.129]
Health motivation → Social comparison	0.026	0.006***	[0.010; 0.044]
Health motivation → Trust	0.083	0.001***	[0.031; 0.125]
Health motivation → Appearance satisfaction	0.169	0.000***	[0.103; 0.226]
Risk → Attitude toward the ad	-0.177	0.000***	[-0.253; -0.118]
Risk → Purchase intention	-0.147	0.000***	[-0.200; -0.105]
Risk → Social comparison	-0.037	0.001***	[-0.061; -0.022]
Risk → Trust	-0.267	0.000***	[-0.335; - 0.207]
Risk → Appearance satisfaction	0.033	0.001***	[0.020; 0.053]
Social comparison → Purchase intention	0.015	0.334	[-0.046; 0.074]
Social comparison → Appearance satisfaction	-0.417	0.000***	[-0.477; - 0.363]
Trust → Purchase intention	0.229	0.000***	[0.164; 0.289]
Appearance satisfaction → Purchase intention	0.024	0.205	[-0.025; 0.070]

Note. *** p<.01; ** p<.05; * p<.1 (one- tailed)

Predictive relevance

The out-of-sample predictive power can be measured by the *Stone-Geisser-Criterion* (Q^2). Hereby values above zero for a specific variable point out that the path model has a predictive relevance (Hair et al., 2017, p. 202). Q^2 values of zero or below indicate a lack of predictive relevance (Hair et al., 2017, p. 207). The blindfolding procedure is used to calculate the Q^2 values. The omission distance (D) was set to 7, as D should be between 5 and 10 (Hair et al., 2017, p. 204). Next to that the cross-validated redundancy approach was used not the cross-validated communality approach as the second one is not including the structural model information (Hair et al., 2017, p. 207). Table 60 shows the Q^2 values of each construct.

Table 60

Q² values for all reflective constructs.

	Q² values
Appearance satisfaction	0.155
Attitude toward the ad	0.033
Product trust	0.311
Purchase intention	0.322
Social Comparison	0.032
Health motivation	0.029

It is visible that all values are above zero, therefore all paths have predictive relevance.

Next to Q^2 the effect size q^2 should be evaluated as this is important for the inner model evaluation (Hair et al., 2012, p. 426). Based on Hair et al. values of 0.02, 0.15 and 0.35 indicate small, medium and large predictive relevance of the exogenous on the endogenous construct (Hair et al., 2017, p. 208). The effect size q^2 can be calculated by using the following formula:

$$q^2 = (Q^2 \text{ included} - Q^2 \text{ excluded}) / (1 - Q^2 \text{ included})$$

Q^2 included are the Q^2 values we just received by the blindfolding estimation (see Table 60). Q^2 excluded describes “the predictive relevance if one predecessor of that endogenous variable is deleted and the model” is re-estimated without it (Hair et al., 2017, p. 220). For example, Q^2 included is 0.322

for purchase intention. If attitude toward the ad, as one predecessor of the endogenous variable purchase intention, is deleted, the Q^2 excluded value will be 0.234. Therefore the q^2 will be:

$$q^2_{\text{AtAd} \rightarrow \text{INT}} = (0.322 - 0.234) / (1 - 0.322) = 0.13$$

The q^2 value of 0.13 indicate small, nearly medium predictive relevance of attitude toward the ad on purchase intention.

Table 61 shows all q^2 sizes. The first row shows the endogenous constructs, whereas the predictor constructs are in the first column.

Table 61

Effect sizes q^2 and Q excluded values (in brackets below) of all constructs.

	AtAd	MOT	INT	SCOM	TR	SAT
AtAd			0.13 (0.234)		0.39 (0.045)	0.01 (0.148)
DIS	0.00 (0.030)	0.00 (0.032)				
GOAL		0.03 (-0.002)				
MOT	0.02 (0.022)					0.03 (0.130)
Risk	0.03 (0.011)				0.02 (0.297)	
SCOM			0 (0.322)			
TR			0.03 (0.303)			
SAT			0 (0.322)			

AtAd = Attitude toward ad; DIS = Distance; GOAL = Goal attainability; MOT = Health motivation; INT = Purchase intention; SCOM = Social comparison; TR = Trust; SAT = Appearance satisfaction

It is visible that attitude toward the ad has a large predictive relevance for product trust ($q^2_{\text{AtAd} \rightarrow \text{INT}} = 0.39$), but no predictive relevance for the appearance satisfaction ($q^2_{\text{AtAd} \rightarrow \text{SAT}} = 0.01$). The distance has no predictive relevance neither for the attitude toward the ad nor the health motivation. The goal attainability has a small predictive relevance on the health motivation ($q^2_{\text{GOAL} \rightarrow \text{MOT}} = 0.03$). Furthermore, health motivation has a small predictive relevance on the attitude toward the ad and on appearance satisfaction (q^2_{MOT}

→ SAT = 0.03). A small predictive relevance is also between risk and attitude toward the ad as well as between risk and trust. When the Q included and Q excluded values are the same like it is for purchase intention (INT) when the variable social comparison (SCOM) is deleted, the q^2 value is zero. This represents that the variable social comparison doesn't have a predictive relevance for the purchase intention. Same counts for the predictive relevance of appearance satisfaction on purchase intention. Last, trust has a small predictive relevance for purchase intention.

4.4.5.3 Mediator and Moderator Analysis

Mediator Analysis

Partial least squares structural equation modelling assumes that in cause effect relationships one exogenous variable has an effect on another endogenous one without any other variables (Hair et al., 2017, p. 227). However in reality, it is possible that a third variable, which is called a *mediator*, intervenes between the exogenous and endogenous variable. If the exogenous variable is changing, the third one changes as well, which in turn results in a change of the endogenous variable (Hair et al., 2017, p. 228).

The estimation of the mediating effects is done by bootstrapping. In the bootstrapping procedure a high number of samples, which are called bootstrap samples, are created from the original sample with replacements (Hair et al., 2017, p. 149). Afterwards the path coefficients of the bootstrap sample are calculated and a bootstrap distribution is estimated. With the help of the distribution the standard deviation of the path coefficients can be estimated. The bootstrap distribution can be interpreted as an approximation of the coefficients distribution in the population (Hair et al., 2017, p. 151). Furthermore, the standard deviation can be viewed as the standard error in the population.

To start with the mediation analysis the significance of the indirect effects needs to be tested (Hair et al., 2017, p. 239). An indirect effect can be defined as "a sequence of two or more direct effects" and is visualized by multiple arrows in the SEM (Hair et al., 2017, p. 228). Based on Henseler et al. the analysis of the direct effects should be done first and afterwards the additional analysis of the

mediating indirect effects should take place (Henseler et al., 2008, p. 304). In Table 62 the indirect effects are shown. The second column *original sample* shows the path coefficient between two constructs, which are listed in the first column. If two constructs and their relationship is not listed, there are no indirect effects. If the t value is above 1.96 it can be assumed that the path coefficient is different from zero at the significance level of 5% ($\alpha = 0.05$; two-tailed test), which means that there is an effect of one variable on the other (Hair et al., 2017, p. 153). Furthermore, t values of 2.57 are for a significance level of 1% ($\alpha = 0.01$; two-tailed test) and t values of 1.65 for a significance level of 10% ($\alpha = 0.10$; two-tailed test) the critical ones. The significance level represents the probability of error that the null hypothesis is rejected even if it is true that there is a significant effect.

Table 62

Indirect effects calculated by Bootstrapping and significance analysis of indirect effects.

	Indirect effect	95 % Confidence intervals of indirect effect	t value
Attitude toward the ad → Purchase intention	0.154***	[0.114, 0.199]	5.923
Attitude toward the ad → Appearance satisfaction	-0.087***	[-0.122, -0.063]	4.926
Distance → Attitude toward the ad	-0.009*	[-0.020, -0.001]	1.563
Distance → Purchase intention (*)	0.036*	[-0.003, 0.080]	1.394
Distance → Social comparison (*)	0.012*	[-0.001, 0.028]	1.366
Distance → Trust (*)	0.038*	[-0.004, 0.083]	1.407
Distance → Appearance satisfaction (*)	-0.025**	[-0.044, -0.006]	2.120
Goal attainability → Attitude toward the ad (*)	0.032***	[0.013, 0.052]	2.542
Goal attainability → Purchase intention (*)	0.021***	[0.010, 0.036]	2.543
Goal attainability → social comparison (*)	0.007**	[0.003, 0.011]	2.262
Goal attainability → Trust (*)	0.021***	[0.008, 0.035]	2.524
Goal attainability → appearance satisfaction (*)	0.043***	[0.021, 0.065]	3.216
Health motivation → Purchase intention (*)	0.084***	[0.037, 0.131]	2.951
Health motivation → Social comparison (*)	0.026***	[0.011, 0.045]	2.559
Health motivation → Trust (*)	0.083***	[0.037, 0.129]	2.912
Health motivation → Appearance satisfaction	-0.023***	[-0.043, -0.010]	2.368
Risk → Purchase intention	-0.147***	[-0.192, -0.098]	4.935
Risk → Social comparison (*)	-0.037***	[-0.059, -0.019]	3.166
Risk → Trust	-0.199***	[-0.165, -0.073]	4.256
Risk → Appearance satisfaction (*)	0.033***	[0.018, 0.054]	2.959
Social comparison → Purchase intention	-0.010	[-0.035, 0.009]	0.749
<i>Note.</i> (*) no direct effect	*** p<.01; ** p<.05; * p<.1 (one- tailed)		

The empirical t value of the indirect effect (0.154) for the attitude toward the ad → purchase intention relationship is 5.785, yielding a p value of 0.000. The p value is the probability value, which stands for the probability of erroneously rejecting a true null hypothesis (Hair et al., 2017, p. 153). However,

it is not necessary to report t and p values as both come to the same result concerning the significance (Hair et al., 2017, p. 217). Therefore just the t values are shown in Table 62.

Next to the t (or p values) the bootstrapping confidence intervals are shown in Table 61 as the confidence intervals provide additional information on the stability of the coefficient estimate (Hair et al., 2017, p. 155). The bootstrapping confidence interval needs to include zero in order to assume that there is no significant effect of one variable on the other.

Furthermore it can be stated that a wider confidence interval represents a lower stability of the coefficient estimate. The resulting confidence intervals (bias corrected) are not including zero, e.g. [0.103, 0.206] for the influence of the attitude toward the ad on purchase intention and [-0.169, -0.065] for the effect of risk on trust. That means there is a significant indirect effect.

Analyzing the indirect effects doesn't provide enough empirical support that a mediating effect is present (Hair et al., 2017, p. 233). Therefore the direct effects need to be analyzed. This has already been done (see Table 58) and will be summarized in Table 63. Furthermore Table 63 shows the result of the analysis of significance of the indirect effects.

Table 63

Overview of the significance analysis of direct and indirect effects.

	Path coefficient	Indirect effect
Attitude toward the ad → Purchase intention	0.485***	0.154***
Attitude toward the ad → Social comparison	0.209***	n/a
Attitude toward the ad → Trust	0.670***	n/a
Attitude toward the ad → Appearance satisfaction	-0.101***	-0.087***
Distance → Attitude toward the ad	0.066**	-0.009*
Distance → Health motivation	-0.075**	n/a
Goal attainability → Health motivation	0.254***	n/a
Health motivation → Attitude toward the ad	0.125***	n/a
Health motivation → Appearance satisfaction	0.192***	-0.023***
Risk → Attitude toward the ad	-0.177	n/a
Risk → Trust	-0.148	-0.199***
Social comparison → Purchase intention	0.025	-0.010
Social comparison → Appearance satisfaction	-0.417***	n/a
Trust → Purchase intention	0.229***	n/a
Appearance satisfaction → Purchase intention	0.024	n/a

Note. *** p<.01; ** p<.05; * p<.1 (one- tailed)

To sum up, in the relationship attitude toward the ad and purchase intention a *complementary mediation* was identified. The same is valid for the relationship attitude toward the ad and appearance satisfaction, the effect of health motivation on appearance satisfaction, the influence of risk on trust and the effect of the distance on the attitude toward the ad. In all these relationships the indirect and direct effect are significant and are pointing into the same direction (Hair et al., 2017, p. 232). Furthermore, the relationship e.g. between social comparison and purchase intention can be characterized as a *non-effect non-mediation*. In non-effect non-mediations neither the direct nor the indirect effect are significant.

Moderator Analysis

If the relationship between two variables is dependent and influenced by another third variable, this is called *moderation*. A good example for a moderator is the variable income: The effect of one variable on another one is not the same for all participants, but depends on their income (Hair et al., 2017, p. 228/ p. 243).

In contrast to the preliminary study, in which just women participated, men and women have been questioned in the main study. Therefore it should be tested if the gender, as an observable trait, is influencing the relationships in the SEM or in other words if all model relationships depend on the scores of the moderator (Hair et al., 2017, p. 243). A *multi-group analysis (MGA)* will be done in the following in order to identify the difference in the model relationships between the two groups (Hair et al., 2017, p. 246; Henseler et al., 2008, p. 309). In the first step, the same model is estimated for each of the two experimental groups (female vs. male participants). In the second step it is tested if the differences between the groups are different in a significant way. It seems to be important to conduct a MGA in order to identify heterogeneous data structures. Disregarding these structures could lead to false conclusion (Hair et al., 2017, p. 291).

Figure 47 shows the path coefficients for women and men.

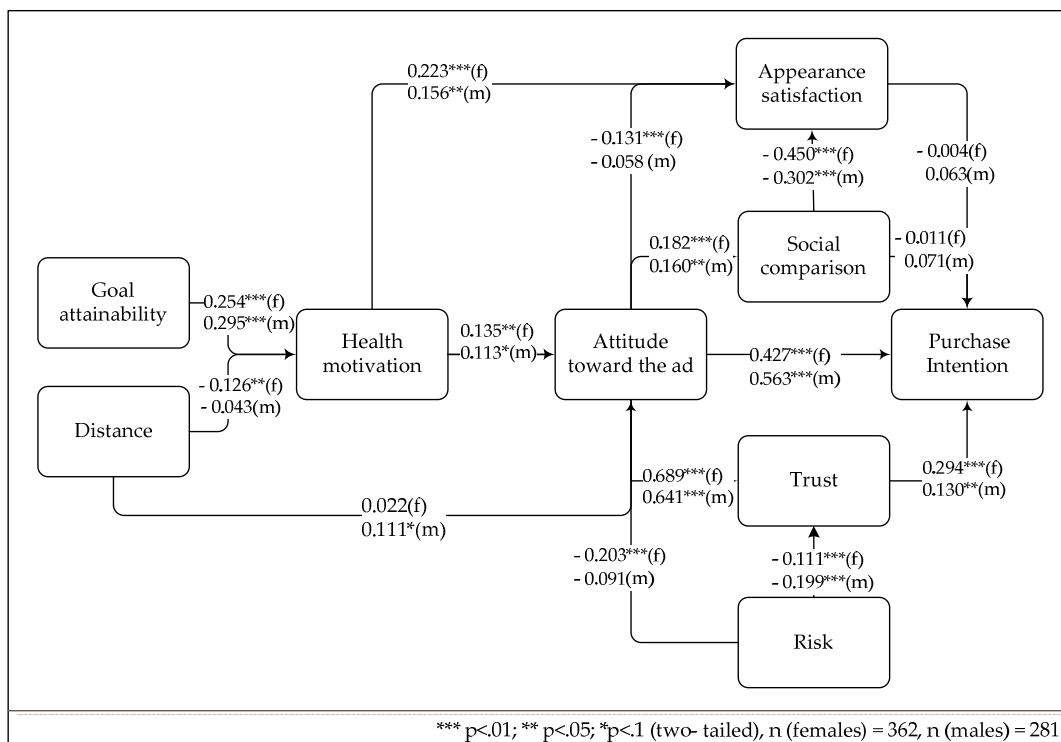


Figure 47. Heterogeneity in PLS path models – path coefficients of males and females.

It is visible that the attitude toward the ad has a higher influence on purchase intention for men ($\beta = 0.563$) than for women ($\beta = 0.427$). Furthermore

the distance is influencing the judgement of the attitude toward the ad to a higher degree for women ($\gamma = - 0.126$) than for men ($\gamma = - 0.048$). Next to that, the influence of the distance on the health motivation is quite high and significant for women ($\gamma = - 0.126$) as well as the influence of attitude toward the ad on the appearance satisfaction ($\beta = - 0.131$). For men both relationships are low and not significant. The same counts for the influence of risk on the attitude toward the ad. For women this relationship is significant ($\gamma = - 0.203$) whereas it is not significant for men ($\gamma = - 0.091$).

The question is whether these differences are statistically significant. In the second step, the MGA will be conducted in order to answer this question.

During the MGA the null hypothesis H_0 is tested which assumes that the path coefficients are not significantly different (Hair et al., 2017, p. 293). H_1 is the alternative hypothesis that says that the path coefficients are different. The PLS-MGA uses bootstrapping and compares each bootstrapping result of one group with the one of the other group. The probability value (p value) is calculated by counting when one group's bootstrapping result is higher than the one of the other group (one-tailed test) (Hair et al., 2017, p. 294).

Table 64 shows the results of the MGA. The first column shows the absolute differences in the path coefficients between the groups, the second the corresponding p- values. All p values which are 0.05 and below represent a significant difference between the groups. Furthermore, all p values of 0.95 and higher are showing a significance in the difference. Significant values are highlighted.

Table 64

Multigroup analysis for female vs. male participants.

	Path coefficient difference (men vs. women)	p- value (men vs. women)	Significant
Attitude toward the ad → Purchase intention	0.136	0.951	Yes
Attitude toward the ad → Social comparison	0.022	0.414	No
Attitude toward the ad → Trust	0.048	0.169	No
Attitude toward the ad → Appearance satisfaction	0.072	0.829	No
Distance → Attitude toward the ad	0.088	0.858	No
Distance → Health motivation	0.082	0.844	No
Goal attainability → Health motivation	0.041	0.679	No
Health motivation → Attitude toward the ad	0.022	0.398	No
Health motivation → Appearance satisfaction	0.067	0.216	No
Risk → Attitude toward the ad	0.112	0.888	No
Risk → Trust	0.088	0.083	No
Social comparison → Purchase intention	0.081	0.867	No
Social comparison → Appearance satisfaction	0.149	0.975	Yes
Trust → Purchase intention	0.163	0.017	Yes
Appearance satisfaction → Purchase intention	0.066	0.849	No

There are three path coefficients which are significantly different between the two groups: The relationship between *attitude toward the ad* and *purchase intention*, the effect of *social comparison* on *appearance satisfaction* and the influence of *trust* on *purchase intention*.

On the one hand, it can be stated that the effect of attitude toward the ad on purchase intention is significantly higher for men than for women. This is shown by the path coefficient for men of $\beta = 0.563^{***}$ compared to the one for women of $\beta = 0.427^{***}$ and the significant difference ($p = 0.951$). On the other hand, trust is having a significantly higher influence on purchase intention for women than for men. The path coefficient difference between women and men

is 0.163 ($p = 0.017$). Last, the influence of attitude toward the ad on appearance satisfaction is significantly higher for women than for man. The path coefficient for women is $\beta = 0.294^{***}$, and for men $\beta = 0.130^{**}$.

In the main study three different advertising designs have been used for the female participants and three different ones for the male participants. The images of models used have been categorized as normal, heavy or muscular. The analysis of the distance showed that female and male participants rated their BMI compared to the muscular or normal model as higher. The distance is nearly the same for the muscular and normal model (12.610 vs. 13.164 for women; 8.52 vs. 9.3 for men). Therefore, the muscular and normal model will be defined as the ideal or goal which the consumer wants to reach. On the other hand, all participants rated their BMI much lower than the one of the heavy model. The distance was -22.185 for men and -14.855 for women. Therefore, the heavy model didn't represent a goal that the consumers want to reach but a comparison standard status or appearance which the participant want to avoid.

The exposure to an idealized goal (muscular or normal model) or to an undesired end state (heavy model) used in the questionnaire can be described as the moderator variable. In the following it should be tested if the type of exposure (desired vs. undesired end state) is influencing the relationships in the SEM. The differentiation between desired and undesired end state is important, as goals are defined as *desired outcomes* (Pervin, 1989, p. 474). On the one hand, it is desired to be muscular or look normal. That is something the participants want to reach. The participants need to take actions to move from their initial state to their desired end state (Bettman, 1979, p. 45). On the other hand, an undesired end state is something that should be avoided. This goal can be classified as a goal for elimination of an undesirable status (Soman & Cheema, 2004, p. 54).

This differentiation in goals for the elimination of something undesirable and goals for attaining something desirable are consistent with prior research (Cochran & Tesser, 1996; Heath et al., 1999; Soman & Cheema, 2004, p. 54).

Figure 48 shows the path coefficients for the two experimental groups: the participants exposed to a desired end state are shown first and below the ones for the participants who have been exposed to an undesired end state (cursive).

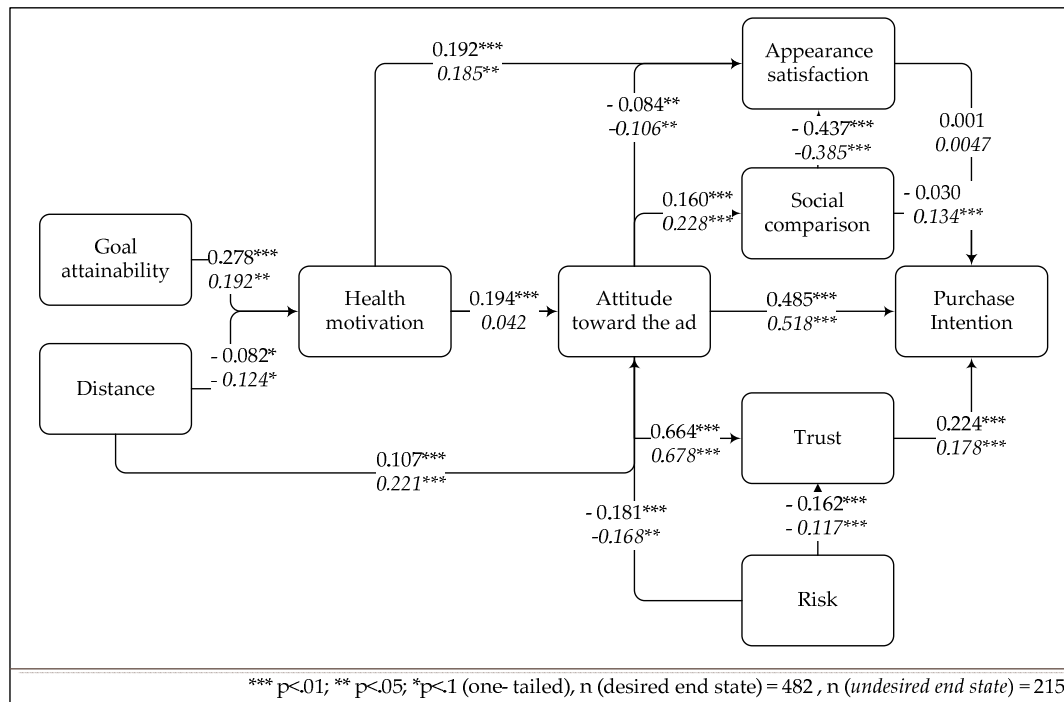


Figure 48. Heterogeneity in PLS path models – path coefficients between exposure to images that show desired vs. undesired end state.

It can be stated that the attitude toward the ad has a higher influence on purchase intention for participants who are exposed to an undesired end state (a heavy model) ($\beta = 0.518$) than for participants who are exposed to a desired end state (a normal or muscular model) ($\beta = 0.485$). Next to that, the influence of social comparison on purchase intention is significant for participants exposed to an undesired end state ($\beta = 0.134$) whereas the influence is small and not significant for the other experimental group ($\beta = -0.030$). It is noticeable that there is a significant influence of the distance on health motivation for the undesired end state condition group ($\gamma = 0.124$) which is quite weak in the other group ($\gamma = 0.082$).

In order to test if the differences are significant, the MGA will be conducted. Table 65 shows the results.

Table 65

Multi-group analysis for participants exposed to a desired vs. undesired end state.

	Path coefficient difference (desired vs. undesired end state)	p- value (desired vs. undesired end state)	Significant
Attitude toward the ad → Purchase intention	0.033	0.637	No
Attitude toward the ad → Social comparison	0.027	0.629	No
Attitude toward the ad → Trust	0.013	0.616	No
Attitude toward the ad → Appearance satisfaction	0.022	0.386	No
Distance → Attitude toward the ad	0.114	0.909	No
Distance → Health motivation	0.042	0.319	No
Goal attainability → Health motivation	0.086	0.175	No
Health motivation → Attitude toward the ad	0.152	0.040	Yes
Health motivation → Appearance satisfaction	0.007	0.504	No
Risk → Attitude toward the ad	0.013	0.568	No
Risk → Trust	0.045	0.786	
Social comparison → Purchase intention	0.164	0.987	Yes
Social comparison → Appearance satisfaction	0.052	0.756	No
Trust → Purchase intention	0.066	0.226	No
Appearance satisfaction → Purchase intention	0.046	0.753	No

There are two significant differences in the relationships between the two groups: On the one hand there is a significant and quite large effect of the *health motivation* on the *attitude toward the ad* for participants who are exposed to a desired end state. Men and women who have seen a normal or muscular model have rated their health motivation in a positive way and have rated their attitude toward the ad positive as well.

On the other hand, for participants who have been exposed to a heavy model the influence of *social comparison* resulted in an significant positive influence on the *purchase intention* ($\beta = 0.134$). This is in accordance with goals

defined for the elimination of an undesired status and the social comparison theory: When somebody is exposed to a heavy model in an advertising for a fitness center, this person is comparing herself/ himself to the displayed testimonial. She/ he wants to avoid looking like this comparison standard which represents the goal to eliminate looking like the model. Therefore the person is more motivated to join this fitness center (his/ her purchase intention is higher) to reach the goal.

When comparing just men exposed to a desired end state vs. an undesired end state another relationship shows differences: The effect of *attitude toward the ad* on *social comparison* for male participants exposed to a muscular or normal model (desired end state) have been significant and high ($\beta = 0.270^{***}$) compared to men who have been exposed to a heavy model (undesired end state) ($\beta = -0.069$). The difference between these two groups have been significant in the MGA ($p = 0.020$). This underlines the results of the study of Richins that people tend to compare themselves with idealized images in advertising or in other words idealized images of models in advertising are leading to social comparison (Richins, 1991). No such effect was found in the experimental groups of women who have been exposed to a desired end state though.

4.4.5.4 Unobserved heterogeneity

In order to ensure the validity of the PLS-SEM results the heterogeneity needs to be assessed. Variables causing heterogeneous data structures can be differentiated into observed (known) and into unobserved ones (Hair et al., 2012, p. 332). There are a couple of techniques for response-based segmentation which are called latent class techniques which help identifying the unobserved variables (Sarstedt et al., 2017, p. 197). Table 66 gives an overview of the different techniques, their advantages and disadvantages as well as the recommendation (Hair et al., 2017, p. 296).

Table 66

Different latent class techniques, their advantages, disadvantages and recommendation; source: Hair et al., 2017, p. 296.

Latent class technique	Advantages	Disadvantages	Recommendation
FIMIX-PLS (finite mixture model)	implemented in SmartPLS3 software	Just for the structural model	Step 1 as starting partition to determine the number of segments in the data
PLS-TPM (distance based)		<i>Advanced by REBUS-PLS</i>	
REBUS-PLS (distance based)	Takes also measurement model into account	Restricted to reflective measurement models	Not applicable as formative measurements as well in the model
PLS-GAS (distance based)	heterogeneity in measurement and structural models can be uncovered	computationally very demanding not very fast	Too slow; not in SmartPLS
PLS-POS (distance based)	implemented in SmartPLS3 software applicable to all types of PLS path models		Step 2
PLS-IRRS (robust regression)	applicable to all kinds of PLS path models speed (500 times faster than PLS-GAS)	Not in SmartPLS implemented	

Note. Finite mixture partial least squares (FIMIX-PLS); Response-based procedure for detecting unit segments (REBUS); Genetic algorithm segmentation (GAS); Prediction-oriented segmentation (POS); iterative reweighted regressions segmentation (IRRS)

As Hahn et al's finite mixture PLS (FIMIX-PLS) procedure is considered as a primary approach (Hair et al., 2012, p. 332), this will be used in the following to identify the unobserved heterogeneity in the inner (structural) model estimates. As a second step the PLS-POS will be applied as it can uncover heterogeneity in the structural and the measurement (outer) model.

FIMIX-PLS consists of the following four steps which will be performed in the following (Hair et al., 2016, p. 67):

- run the FIMIX-PLS procedure,
- determine the number of segments,
- explanation of the latent segment structure and
- estimation of segment specific models.

To start with the first step the FIMIX-PLS will be run with a number of segments of one and the default settings will be used for the stop criterion ($10 \rightarrow 1.0E-10$), maximum number of iterations (5.000) and the number of repetitions (10) (Matthews et al., 2016, p. 211). Afterwards the FIMIX-PLS will be run again for higher-segment solutions. In order to determine the upper bound of the range of segment solutions the sample size is divided by the minimum sample size.

With a maximum number of six arrows pointing at any construct in the model (indicators of Attitude towards the ad (AtAd)), assuming a five per cent significance level and a minimum R^2 of 0.25, 48 observations are needed at least to estimate the model in a reliable way (Hair et al., 2017, p. 26). The greatest integer is 13, when the sample size ($n = 643$) is divided by the minimum sample size of 48. However, as the model is quite complex the segments are too small when the FIMIX-PLS is run with 13 segments. This error message also occurs when the FIMIX-PLS is run with 13 segments. Therefore, like suggested by Matthews a smaller number of segments will be used: A one-to six-segment solution (Matthews et al., 2016, p. 211). It doesn't make sense to check higher number segment solutions as the relative segment size will be too small to perform a segment specific PLS-SEM analysis. The relative segment sizes will be considered after analyzing the information criteria (or fit indices).

Table 67 shows the fit indices for the one-to six-segment solution.

Table 67

Fit indices for one-to six-segment solution; source: Hair et al., 2016, p. 70.

Criteria	Number of segments					
	1	2	3	4	5	6
LnL	-4,921.723	-4,844.236	-4,778,538	-4,739.580	-4,717.281	-4,685.375
AIC	9,885.445	9,774.471	9,687.075	9,653.161	9,652.562	9,632.751
AIC3	9,906.445	9,817.471	9,752.075	9,740.161	9,761.562	9,763.751
AIC4	9,927.445	9,860.471	9,817.075	9,827.161	9,870.562	9,894.751
BIC	9,979.234	9,966.515	9,977.375	10,041.715	10,139.372	10,217.816
CAIC	10,000.234	10,078.692	10,042.375	10,128.715	10,248.372	10,348.816
MDL5	10,522.390	11,078.692	11,658.572	12,291.934	12,958.611	13,606.075
EN	n/a	0.428	0.593	0.541	0.548	0.619

Note. Log Likelihood (LnL); Akaike information criterion (AIC); modified Akaike information criterion with factor 3 (AIC3); modified Akaike information criterion with factor 4; Bayesian information criterion (BIC); consistent Akaike information criterion (CAIC); minimum description length with factor 5 (MDL5); normed entropy statistic (EN).

The number of segments with the lowest value (see highlighted numbers in the table above) is the optimal solution. However, in terms of the normed entropy statistic (EN) higher values indicate a better separation of the segments (Matthews et al., 2016, p. 212; Hair et al., 2016, p. 69). The normed entropy statistic ranges between 0 and 1. Evidence by prior research is provided that EN values above 0.50 permit a clear-cut classification of data into the pre-determined number of segments (Hair et al., 2016, p. 69; Ringle et al., 2005). Table 66 shows that neither the AIC3 and the CAIC nor the AIC3 and BIC indicate the same number of segments. Hair et al. claim that the AIC overestimates the correct number of segments, whereas the MDL5 underestimates it (Hair et al., 2016, p. 69). AIC is assuming six segments, MDL5 and CAIC just one. Therefore it can be suggested that the correct number is clearly lower than six, but higher than one. Based on Sarstedt, the two best performing criteria are AIC4 and BIC (Sarstedt, 2011, p. 44). AIC4 indicate three, BIC two segments. However, the two-segment solution has an EN value of 0.428 which is below the threshold value of 0.50. This suggests that the two segments are not well separated.

Table 68 shows the relative segment sizes. If three segments are selected the first one would be 53.5% (of 643 = 344 observations), the second one 34.4% (of 643 = 221) and the third one 12% (of 643 = 77 observations). The segment sizes are large enough to perform the segment specific PLS-SEM analysis. The same counts for the four and five segment solution. However, when the six segment solution is selected the minimum sample size for the fifth segment is not met. The smallest segment

would be 5.7% (of 643 = 37 observations). Therefore the six segment solution is dropped as the segment is too small to warrant a valid analysis.

Table 68

Relative segment sizes (n= 643).

No of segments	Relative segment sizes					
	1	2	3	4	5	6
2	0.606	0.394				
3	0.535	0.344	0.120			
4	0.426	0.226	0.226	0.122		
5	0.419	0.177	0.164	0.121	0.119	
6	0.387	0.179	0.166	0.123	0.088	0.057

Table 69 summarizes the reasons why a specific segment solution will not be analyzed further.

Table 69

Determination of the number of segments.

Criteria	Segment solution					
	One	Two	Three	Four	Five	Six
Information criteria with highest value	CAIC MDL5	BIC	AIC4	AIC3	none	AIC EN
Rules of thumb*	More segments than indicated by MDL5	EN smaller than threshold of 0.5			No information criteria is suggesting five segments	Fewer segments than indicated by AIC
Relative segment size	OK	OK	OK	OK	OK	Last segment to small
Decision: for further analysis?	No	No	No**	Yes	No	No

Note. ** based on pragmatic grounds/ practical considerations

*based on Hair et al. 2016, p. 72

The focus in the third step of the FIMIX-PLS will be on the four segment solution. As shown in Table 68 AIC3 and CAIC don't indicate the same number of segments, so these information criteria don't help to determine the number of segments (Hair et al., 2016, p. 72). BIC indicate two segments, but the entropy

criterion is below the threshold of 0.5. Therefore the two segment solution can't be used. Although the EN value for the three segment solution is above the threshold value and the AIC4 is suggesting it, it won't be analyzed further. This decision is based on practical considerations and pragmatic grounds (Sarstedt et al., 2009, p. 204). It was demonstrated in the MGA that there is a difference between males and females and between the exposure to a desired and undesired end-state. Therefore four different groups are anticipated. As the AIC3 indicates four segments and the entropy criterion is above 0.5 this segment number will be used for further analysis (Hair et al., 2016, p. 72). None of the information criteria indicate a five segment solution. Therefore it won't be analyzed further neither.

The third step in FIMIX-PLS is the ex post analysis. Hereby, each observation is assigned to a single segment by using the maximum segment membership probabilities (Hair et al., 2016, p. 72). This procedure, in which each observation is assigned to exactly one segment, is defined as *hard clustering*, (Hair et al., 2016, p. 71).

Table 70 gives an overview of the FIMIX probability of segment membership for the four segment solution (just for the first eight of the total of 643 observations). The highest probability shows to which segment the observation or respondent can be assigned to.

Table 70

Assignment of respondents to groups (example of 8 out of 643).

Observation	Segment 1	Segment 2	Segment 3	Segment 4	Assignment
1	0.224	0.720	0.056	0.000	Segment 2
2	0.980	0.000	0.020	0.000	Segment 1
3	0.132	0.105	0.763	0.000	Segment 3
4	0.334	0.402	0.264	0.000	Segment 2
5	0.807	0.001	0.193	0.000	Segment 1
6	0.133	0.024	0.842	0.000	Segment 3
7	0.565	0.010	0.425	0.000	Segment 1
8	0.423	0.471	0.106	0.000	Segment 2

Observation 1 will be assigned to segment 2, observation 2 to segment 3, observation 3 to segment 3 and so on.

Afterwards an explanatory variable needs to be selected which results in the same grouping of data that is done by FIMIX-PLS. Hereby a 60% overlap need to be reached to get a satisfactory result (Hair et al., 2016, p. 72). The explanatory variable needs to be observable. It was decided to combine two variables: the gender

(male and female) and the image to which the participants have been exposed to (an undesired and desired end-state).

Table 71 shows the inserted grouping variables gender and image into the data set for an example of eight participants.

Table 71

Insertion of the new grouping variables gender and image into the data set.

Participant	FIMIX-PLS group	Gender	Image (desired or undesired)
1	2	1	2
2	1	1	2
3	3	2	2
4	2	1	2
5	1	1	1
6	3	1	1
7	1	1	2
8	2	2	1

Undesired= 1; desired= 2; male= 2; female= 1

When considering the total sample of 643 the following numbers of participants in each group can be observed:

Table 72

Distribution of participants to each FIMIX-PLS group in totals and percentage.

FIMIX-PLS group	Number of participant	Percentage
1	278	43.30
2	165	25.70
3	101	15.58
4	99	15.42
Sum	643	100

Table 73 shows the cross tab of FIMIX-PLS partition and the gender.

Table 73

Absolute number and percentage of female and male participants per FIMIX-PLS group.

Explanatory variable	FIMIX-PLS group				Sum
	1	2	3	4	
Female (1)	168 (46.41%)	83 (22.93%)	59 (16.3%)	52 (14.36%)	362
Male (2)	110 (39.15%)	82 (29.18%)	42 (14.95%)	47 (16.73%)	281
Sum	278 (43.23%)	165 (25.67%)	101 (15.71%)	99 (15.4%)	643

Using this grouping both genders match to FIMIX-PLS group 1, resulting in a match of $(168+110)/643 = 43.23\%$. This overlap is below the cut-off value of 60% (Matthews et al., 2016, p. 215).

In Table 74 both explanatory variables, the gender and the image (desired versus undesired end state), are taken into account.

Table 74

Cross tab of FIMIX-PLS partition and gender/ image.

Explanatory variable	FIMIX-PLS group				Sum
	1	2	3	4	
Female (1) – undesired (1)	2	1	0	0	3
Female (1) – desired (2)	166	82	59	52	359
Male (2) – undesired (1)	2	1	0	0	3
Male (2) – desired (2)	108	81	42	47	278
Sum	278	165	101	99	643

Using this grouping, the highest number is assigned to group 1 for all combinations of gender and image. This is resulting in a match of $(2+166+2+108)/643 = 43.23\%$. This is the same percentage than before and the overlap is also below the cut-off value of 60% (Matthews et al., 2016, p. 215).

Ringle et al. uses a segmentation tree to identify the explanatory variables which match the uncovered segments (Ringle et al., 2010, p. 41). Figure 49 shows the segmentation tree for the explanatory variables gender and image.

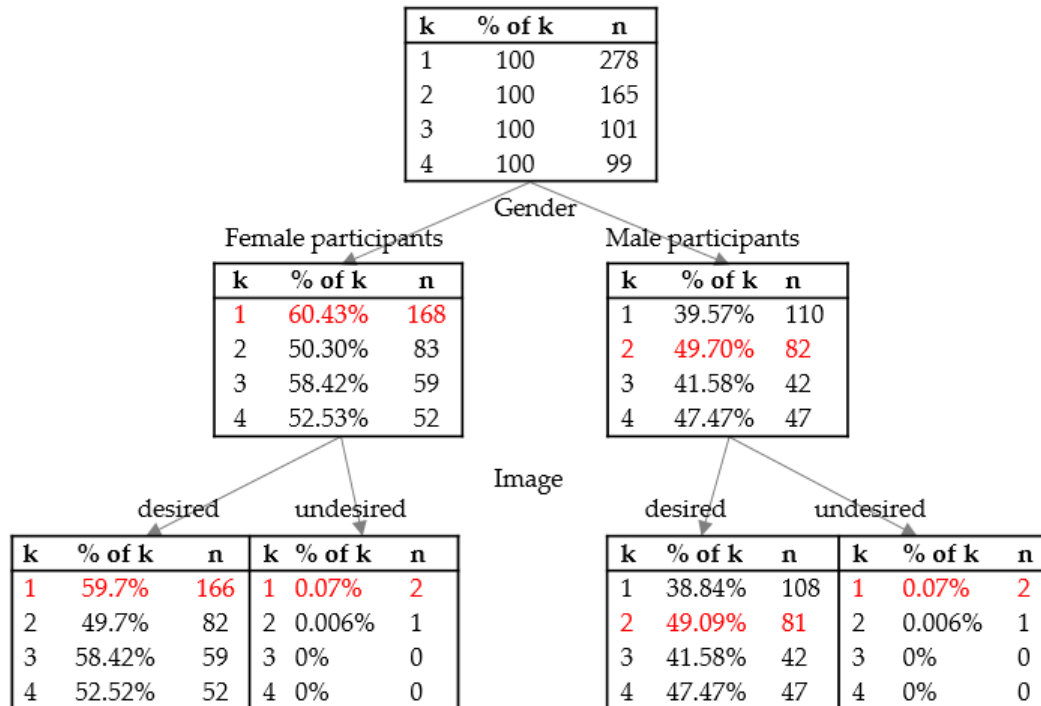


Figure 49. Segmentation tree results.

Segment 1 ($n_{k1}=364$) comprises female participants who are exposed to a desired and undesired end state and male participants who are exposed to an undesired one. Segment 2 ($n_{k2}=278$) consist of male participants who are exposed to a desired end state. The resulting classification based on Ringle et al.'s segmentation tree approach match to 39% the FIMIX-PLS segmentation ($((166+2+81+2)/643=0.39)$). This is also below the cut-off value of 60%. Therefore the last step of the FIMIX-PLS, the estimation of segment specific models, will not be performed.

To sum up, the FIMIX-PLS showed no unobserved heterogeneity in the inner (structural) model estimates. Based on the FIMIX-PLS results the analysis can be limited to the aggregate data set (Matthews, 2016, p. 213).

In the following the prediction-oriented segmentation (PLS-POS) will be applied, as it can uncover heterogeneity in the structural and measurement model (Becker et al., 2013, p. 675). PLS-POS can be described as a clustering

approach, which assigns each observation to a group. This is done by the use of a distance measure. In contrast to FIMIX-PLS, which assumes a multi-normal distribution, PLS-POS has no assumption about the distribution (Mourad & Valette-Florence, 2016, p. 4678). The objective of the segmentation is to form homogenous groups “with increased predictive power (R^2 of the endogenous latent variables) of the group-specific path model estimates” (Becker et al., 2013, p. 676) in comparison to the overall model.

When PLS-POS is calculated in SmartPLS with four segments, like it was assumed by FIMIS-PLS, an error message occurs that the segment sizes are too small. The same error message occurs when it is calculated with three segments. However, when selecting two segments the POS methodology can be applied. The two groups are not balanced in terms of size: Segment 1 contains just 125 participants, which represent 19.44% of the total sample, and segment 2 consists of 518 participants (80.56% of the total sample).

Figure 50 shows the path coefficients of both segments as well as the pool sample.

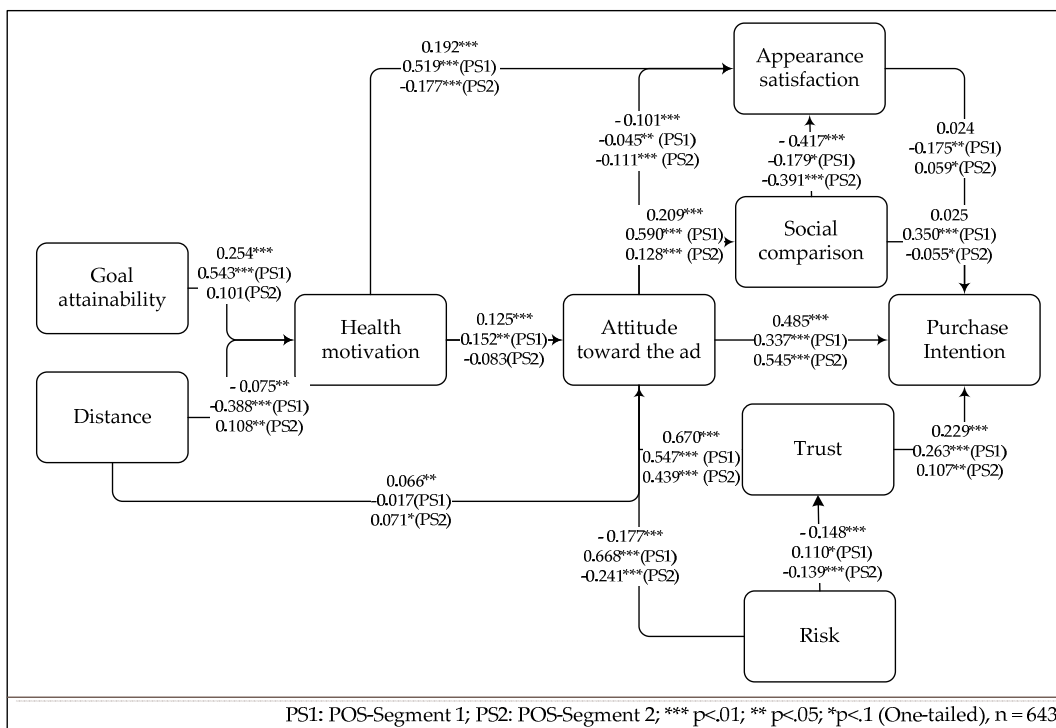


Figure 50. Segment specific coefficients after PLS-POS.

Differences in the path coefficients between the two POS segments can be observed. However, it needs to be tested if the differences are significant, which will be done by the bootstrapping procedure in the following.

Table 75 shows the differences between POS segment 1 and POS segment 2 in term of path coefficients as well as the corresponding p value, which allows a judgment of the significance.

Table 75

Differences in path coefficients between the two segments, the corresponding p value and the result of the significance analysis.

	Path coefficient difference (POS segment 1 vs. 2)	p- value (POS segment 1 vs. 2)	Significant
Attitude toward the ad → Purchase intention	0.208	0.983	Yes
Attitude toward the ad → Social comparison	0.462	n/a	No
Attitude toward the ad → Trust	0.109	0.111	No
Attitude toward the ad → Appearance satisfaction	0.065	0.207	No
Distance → Attitude toward the ad	0.088	0.870	No
Distance → Health motivation	0.495	1.000	Yes
Goal attainability → Health motivation	0.442	n/a	No
Health motivation → Attitude toward the ad	0.168	0.046	Yes
Health motivation → Appearance satisfaction	0.696	n/a	No
Risk → Attitude toward the ad	0.909	0.010	Yes
Risk → Trust	0.249	0.010	Yes
Social comparison → Purchase intention	0.405	n/a	No
Social comparison → Appearance satisfaction	0.212	0.058	No
Trust → Purchase intention	0.156	0.034	Yes
Appearance satisfaction → Purchase intention	0.234	0.996	Yes

More than half of all differences between the path coefficients between the POS segment 1 and 2 are not significant. Less than half (seven relationships) are

significant different like e.g. the relationships attitude toward the ad on purchase intention, distance on the health motivation and appearance satisfaction on the purchase intention.

Table 76 shows the R^2 values of the two segments, compared to the pooled complete sample. It is shown that the R^2 values improved in segment 1 compared to the pooled sample, but is worse for most dependent variables for segment 2. Therefore it can be stated, that R^2 values doesn't increase across segments. However, it needs to be taken into account that the POS segment 1, which has better R^2 for nearly all constructs just consists of 125 participants. This is quite small compared to POS segment 2, which consists of 518 participants. POS segment 2 is more than four times larger than POS segment 1. The segment size is not really similar (Money et al., 2012, p. 410). Therefore the average weighted R^2 needs to be analyzed compared to the pooled sample R^2 . The average weighted R^2 can be calculated by multiplying the R^2 of each segment by its relative size and summing it up for all segments. For example for AtAd it is $0.437 \times 0.194 + 0.064 \times 0.806 = 0.136$. As 125 out of 643 participants are in segment 1 the relative segment size is 19.44%. The other 518 participants built 80.56% of the total sample.

Table 76

R² for the two segment solution.

	R Square			
	Original pooled sample	Average weighted	POS Segment 1	POS Segment 2
Attitude toward the ad	0.047	0.136	0.437	0.064
Health motivation	0.072	0.074	0.473	0.022
Purchase intention	0.446	0.418	0.690	0.352
Product trust	0.504	0.089	0.390	0.016
Social comparison	0.044	0.240	0.349	0.214
Appearance satisfaction	0.228	0.225	0.303	0.207

On the one hand the average weighted R^2 value is higher for the attitude toward the ad, the health motivation and the social comparison compared to the one of the original pooled sample. On the other hand the R^2 value is higher for the purchase intention, product trust and appearance satisfaction for the original pooled sample. As the purchase intention is the main construct and the higher R^2 value can be reached by the original sample, it is better to stay with

the original pooled sample than with the two segment solution. Next to that the normed entropy statistic is below the threshold value of 0.5 and two segments are therefore not good separated.

To sum up, the results suggest no substantial level of heterogeneity in the data and allow the analysis on an aggregate level of the data.

4.4.5.5 *Application problems of SEM and mastering strategies*

In order to answer the research questions the structural equation modelling (SEM) will be used as the methodical approach. The SEM as a causal analysis can result in a couple of problems. One of them is the so called common method variance (CMV). The CMV is describing the part of the variance that is not caused by the different parameter values of the constructs but by the application of the methods of collecting data (Weiber & Mühlhaus, 2014, p. 355). The result of the CMV is the common method bias (CMB), which stands for a distortion of the correlation between the constructs which in turn causes a distortion of the results. There are four different types of reasons for the CMV (Weiber & Mühlhaus, 2014, p. 356; Podsakoff et al., 2003, p. 881ff.):

1. Common rater effects, which are caused e.g. by the fact that all constructs are rated by the same respondent who has the tendency to answer in a consistent way,
2. Item characteristic effects, which are caused e.g. by different rating scales or inverse questions,
3. Item context effects, which are caused by the structure of the questionnaire e.g. if there are only short sentences or if all questions are about negative aspects or problems, and
4. Measurement context effects, which are caused e.g. by answers from which the respondent thinks that these are socially desirable.

Common rater effects can be solved by using a *multi-informant design* (Homburg & Klarmann, 2009). By using this design questions to different constructs are answered by different participants (Weiber & Mühlhaus, 2014, p. 359). This design is in contrast to the approach that participants are answering questions to all constructs. However, as the multi-informant design isn't applicable in all causal relationships there are other alternatives like an artificial separation by

using different scenarios or descriptions within a questionnaire (Weiber & Mühlhaus, 2014, p. 359). In the main study it was tried to create an artificial separation by the first sentence of a construct. The following sentence was used for example: "The advertising message of the fitness center ad says „Get a strong back – do something against or avoid issues with the back“. How much did you agree to the following statements about your health motivation?". The focus should be directed toward the health and away from the appearance of the displayed model, which was in the focus before.

An attempt was made to reduce item characteristic effects and item context effects by the use of a different order for all items of each construct. However, the order of the constructs was the same for all participants, just the items have been rotated. The order of the constructs stayed the same in order to start with the easier ones and move on to the more difficult ones (Schnell et al., 2011, p. 361ff.). Furthermore, the preliminary study 1 tested the questions whether these are easy to understand and clearly formulated. If the preliminary study 1 would show that some questions haven't been answered by a high number of participants, these would have been removed. However, this wasn't the case. Therefore, it can be assumed that the questions for the construct that have been used in the preliminary study 1 are short and easy to understand. Precise questions are also reducing the negative effects of CMV (Podsakoff et al., 2003, p. 888).

Measurement context effects can be eliminated if it is guaranteed that the answers of the questionnaire will be kept anonymous (Weiber & Mühlhaus, 2014, p. 359). Therefore, it was pointed out in the introduction part of the questionnaire that all results will be kept anonymous and that no name needs to be entered. This was done in the pre-studies and main study. Furthermore, the participants didn't have to enter their names in the questionnaire. This assures the anonymity as well.

Another problem of the causal analysis next to the CMV is the multi-collinearity. Multi-collinearity in this context means that the constructs are dependent from each other or in other words that there is a correlation between them (Weiber & Mühlhaus, 2014, p. 363). The multi-collinearity can be measured by the Inner VIF values. This was done in the main study, when the measurement model was evaluated. No multi-collinearity was detected.

Last, indicators can be removed by using the principal component analysis (PCA) in order to neutralize the multi-collinearity (Weiber & Mühlhaus, 2014, p.

367). The PCA is an exploratory way to consider all constructs simultaneously and to check if all indicators will be grouped to the assumed constructs (Weiber & Mühlhaus, 2014, p. 144). The PCA was done as the first step in the analysis of the data in the main study, but also in the first preliminary study in order to eliminate items from the constructs.

5 CONCLUSION AND RECOMMENDATIONS

5.1 RESULTS OF THE STUDIES

The goal of the research was to figure out what effect different product or advertising designs have on the consumers' purchase intention. Furthermore it was assumed that closer goals which are reflected in the ad by means of a testimonial will lead to a higher buying intention. Therefore – based on the theoretical framework and former empirical studies - relevant constructs and their relationship have been derived. The SEM was used as a second generation technique to show all relationships between the constructs and to conduct a multivariate analysis of those. SmartPLS was used to make an estimation of the SEM. It was possible to use PLS as a variance orientated estimation method as the sample size per group was quite small and because of the purpose of the study which was the prediction/ forecasting (Weiber & Mühlhaus, 2014, p. 74). All constructs of the model have been reflective, except three second order constructs which have been formative. Three studies have been conducted: Two pre-studies and the main study. In the first preliminary study just one part of the SEM has been tested. The reason behind this procedure was to limit the amount of items per construct in order to avoid an interruption of the participants when they are answering the questionnaire. Next to that the measurement of the reference point/ distance was tested. In the second preliminary study the best advertising images should be selected. Different images of women and men have been rated by the participants in order to categorize them as *normal*, *muscular* or *heavy*. Afterwards the ones that differentiate between each other the most have been chosen.

Last the main study took place. For all constructs the Cronbach's alpha, the Composite Reliability as well as the AVE value have been above the threshold. Furthermore, all indicator reliability values have been above 0.6. Next to that the Fornell- Larcker Criterion, the cross loadings and the HTMT showed that the discriminant validity is existent. Therefore it can be stated, that the analysis of the measurement model demonstrated adequate reliability, convergence and discriminate validity.

It can be stated that the purchase intention ($R^2 = 44.6\%$), the product trust ($R^2 = 50.4\%$) and the appearance satisfaction ($R^2 = 22.8\%$) can be explained to a medium to high degree (based on the threshold values used for categorization). Furthermore the Stone- Geisser- Criterion confirms that the model has predictive power for purchase intention ($Q^2 = 0.322$). Purchase intention was the main focus of the research as recommendations for marketers should be given to increase the consumers buying intention by advertising. The attitude toward the ad has with a value of 0.485 (path coefficient) and with an effect size f^2 of 0.216 the highest influence on the purchase intention. This underlines the importance of the attitude toward the ad on the purchase intention.

Table 77 gives an overview of all hypothesis and path coefficients. Next to that, it is listed whether the hypothesis was confirmed or rejected based on the path coefficient.

Table 77

Overview of the confirmed or rejected hypothesis, dependent on the path coefficient.

Hypothesis	Path coefficient	Hypothesis confirmed/rejected
H1: The better the goal attainability is rated, the higher is the health motivation.	Goal attainability → Health motivation (+) 0.254***	Confirmed
H2: The better a consumer is rating the attitude toward the advertisement, the more she/ he trusts the producer.	Attitude toward the advertisement → Trust (+) 0.670***	Confirmed
H3: A positive rating of the attitude toward the advertisement will result in a higher tendency for social comparison.	Attitude toward the advertisement → Social comparison (+) 0.209***	Confirmed
H4: The better a consumer is judging about the attitude toward the advertisement, the lower is his own satisfaction with his/hers appearance.	Attitude toward the advertisement → Appearance satisfaction (-) -0.101***	Confirmed

H5: The more a consumer is engaged in social comparison, the lower is his satisfaction level.	Social comparison → Appearance satisfaction (-) -0.417***	Confirmed
H6: The higher the health motivation, the higher the appearance satisfaction.	Health motivation → Appearance satisfaction (+) 0.192***	Confirmed
H7: The higher the health motivation, the better the attitude toward the ad.	Health motivation → Attitude toward ad (+) 0.125***	Confirmed
H8: The smaller the distance is rated, the higher is the health motivation.	Distance → Health motivation (-) -0.075**	Confirmed
H9: The smaller the distance between the consumer and the shown image in the ad, the better is the attitude toward the advertisement.	Distance → Attitude toward the advertisement (-) 0.066**	Confirmed
H10: The better a consumer is judging about the attitude toward the advertisement, the higher is the purchase intention.	Attitude toward the advertisement → Purchase intention (+) 0.485***	Confirmed
H11: A higher appearance satisfaction is resulting in a higher buying intention.	Appearance satisfaction → Purchase intention (+) 0.024	Rejected
H12: A higher level of trust is resulting in a higher willingness to buy a product.	Trust → Purchase intention (+) 0.229***	Confirmed
H13: The higher the tendency for social comparison is, the higher is the purchase intention.	Social comparison → Purchase intention (+) 0.025	Rejected
H14: The lower the risk, the better the attitude toward the ad.	Risk → Attitude toward the ad (-) -0.177***	Confirmed
H15: The higher the risk, the lower the trust.	Risk → Trust (-) -0.148***	Confirmed

Note. *** p<.01; ** p<.05; *p<.1 (One-tailed), n = 643

Furthermore, it needs to be emphasized that the significance level in most relationships is just 1%. Therefore the testing of the hypothesis can be characterized as quite strict and the probability of erroneously rejecting a true null hypothesis is very small (Hair et al., 2017, p. 196).

There have been 16 hypothesis in total, from which 14 can be confirmed and just two have been rejected. However it needs to be pointed out that the decision was based on the analysis of the full data set (not separated by gender nor different advertising group).

When analyzing the path coefficients and the p- values for all the groups (females vs. males; exposure to a desired vs. undesired end state) the following hypothesis, which are shown in Table 78, can be confirmed as well (H13) or result in a higher path coefficient (H8 and H9).

Table 78

Confirmed hypothesis for specific experimental groups.

Hypothesis	Significant relationship for the following groups (path coefficient)
<p>H8: The smaller the distance is rated, the higher is the health motivation.</p> <p>Distance → Health motivation (-)</p>	<ul style="list-style-type: none"> • Female participants: -0.126** • Participants exposed to an undesired end state (heavy model): -0.124*
<p>H9: The smaller the distance between the consumer and the shown image in the ad, the better is the attitude toward the advertisement.</p> <p>Distance → Attitude toward the ad (-)</p>	<p><i>Positive relationships:</i></p> <ul style="list-style-type: none"> • Male participants: 0.111* • Participants exposed to an undesired end state (heavy model): 0.221*** • Participants exposed to an desired end state (normal or muscular model): 0.107**
<p>H13: The higher the tendency for social comparison is, the higher is the purchase intention.</p> <p>Social comparison → Purchase intention (+)</p>	<ul style="list-style-type: none"> • Participants exposed to an undesired end state (heavy model): 0.134***

Note. *** p<.01; ** p<.05; *p<.1 (one tailed)

It seems to be important to analyze the influence of the *distance* on the *health motivation* and on the *attitude toward the ad* for each experimental group.

On the one hand the study of McDonald and Thompsen has shown that there are differences between the genders e.g. in the body image satisfaction (McDonald & Thompsen, 1992). Other studies also separated the participants in two experimental groups (women and men) in order to analyze gender specific effects on relationships like Mittal and Kamakura in the satisfaction – purchase intention - relationship (Mittal & Kamakura, 2001). Therefore, gender specific relationships needs to be taken into account.

On the other hand, the distance between the participants and the testimonial represents the attainability of the goal to look like the model. If the distance is high when somebody is exposed to a desired end state (muscular or normal model) this means that she/ he needs a lot of effort to reach his goal. The goal can be rated as difficult to attain. If the distance is high when somebody is exposed to an undesired end state like a heavy model, this means he doesn't need a lot of effort as it is not his goal to be heavy.

The distance – health motivation – relationship was significant for women and for participants who have been exposed to a heavy model. For both groups it can be stated that a smaller distance to the displayed testimonial resulted in a higher health motivation. For the participants who have been exposed to the heavy model this can be interpreted in the following way: If the distance is small to the heavy model, the participant is heavy as well. The participant sees that the heavy model is exercising which motivates the participant to take care of her/ his own health as well. This seems to be in accordance with the concept of goal feasibility and desirability, the goals gradient hypothesis and the goals loom larger effect. A smaller distance represents a goal that is more attainable, which increases the health motivation (goals loom larger effect and goal gradient hypothesis). The feasible goal (small distance) influences the goal setting, which is the motivation to be healthy (concept of goal feasibility and desirability).

The results for female participants who have been exposed to a desired or undesired end state are also in accordance with the concept of goal feasibility and desirability, the goals gradient hypothesis and the goals loom larger effect. It doesn't matter if women are exposed to a heavy or normal/ muscular model, the smaller the distance, the higher the health motivation. This can be interpreted in

the following way for an exposure to a desired end state: If females are exposed to a desired end state like being muscular or normal which is attainable, their motivation to reach it by health activities increases.

The distance – attitude toward the ad- relationship was significant for an exposure to a desired and undesired end state as well as for the experimental group of men. For all experimental groups it can be stated that a higher distance is resulting in a better attitude toward the ad. This result seems surprising as the self-congruity theory assumes that high actual self-congruity is resulting in a positive evaluation. A matching between the product personality image and the image the participant has of her/ his own is represented by a small distance. However, a small distance is resulting in a worse attitude toward the ad.

This can be explained by the result of the study done by Chandran and Menon in the area of goal framing (Chandran & Menon, 2004). Chandran and Menon figured out that the attitude toward the health hazard and the attitude toward the message is higher, when the temporal dimension “a year from now” is used for a positive outcome like averting a disease. “A year from now” seems to be far away, therefore the distance is high. As the advertising message was formulated positive (“Get a strong back – do something against or avoid issues with the back”) it can be stated that the positive outcome was addressed in the main study. Therefore a higher distance resulted in a better attitude toward the ad. If the message would have been formulated in a negative way, than the opposite effect should occur (Chandran & Menon, 2004, p. 378), which was hypothesized.

The analysis didn't show any significant effect of appearance satisfaction on purchase intention (H11), neither in the complete data set, nor in any of the experimental subgroups (women vs. men; undesired end state vs. desired end state). The test of this relationship was left as one research gap by Richins. This result is in line with the findings of Eisend and Möller, who figured out that reduced body satisfaction because of the exposure to ideal beauty images in TV doesn't have behavioral consequences on related consumption behavior (Eisend & Möller, 2007, p. 111).

On the other hand, there is a significant influence of the social comparison tendency on the purchase intention when the participants are exposed to an undesired end state (H13). If the consumer is exposed to a heavy model in an ad, the willingness to join the fitness center was influenced in a positive way. This is in

accordance with the social comparison theory which claims that the evaluation which takes place in the social comparison process is influencing and causing behavior (Festinger, 1954, p. 117). In this case the behavior is represented by the positive effect on the purchase intention. The consumer is willing to join the fitness club in order to avoid being heavy (avoidance goal).

5.2 IMPLICATIONS FOR THE MARKETING PRACTICE AND RESEARCH

First, the following research questions will be answered and implications for marketers that advertise fitness product should be drawn.

Is there a difference in the relationship between:

- (I) attitude toward an ad and purchase intention,
- (II) social comparison and purchase intention and
- (III) distance (BMI of participants vs. BMI of the testimonial) and attitude toward the ad

in the following cases:

1. Consumers are exposed to a fitness center advertising with a testimonial, which:
 - (a)...represents a desired end state (a goal in which a ideal end state should be attained)
 - (b)...represents an undesired end state (a goal which should be eliminated/ avoided)
2. Between female and male participants

Second, limitations of the studies and research gaps should be pointed out.

In order to answer the research questions related to the cases (1a) and (1b) different adverting testimonials (images of models) have been used. The second preliminary study was done in order to select the most appropriate image for the advertising for the main study. Different weights (heavy, muscular and normal) of women and men have been used to show models that are similar or different to the participant. The difference was measured by the distance (difference between the BMI of the participant and the BMI of the displayed model).

The analysis of the BMI (calculated by using the height and weight which the participants answered) compared to the distance confirmed the approach to group

participants who have been exposed to a normal or muscular model to one experimental group. This group has the goal toward a desired end state. Whereas the heavy image represents a goal toward an undesired end state that should be avoided.

Both female and male participants' rate their BMI much lower compared to the heavy woman/ man (represented by negative distance in Figure 51). Compared to the normal or muscular image, the participant are rating their BMI as higher than the BMI of the displayed image (represented by positive values for the distance).

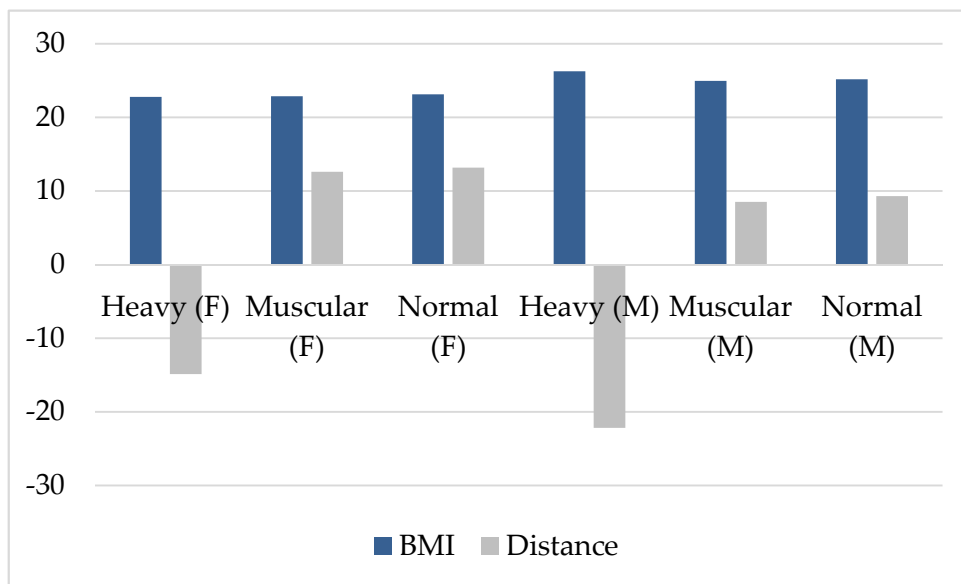


Figure 51. Comparison of the BMI and perceived distance of each experimental group.

To sum up, the heavy model (male and female) is building the experimental group (1b) whereas the muscular and normal model (male and female) is creating the experimental group (1a).

The first research question is considering the difference in the attitude toward the ad - purchase intention – relationship. The analysis of the complete data set shows a significant influence of the *attitude toward the ad* on the *purchase intention*. The path coefficient/ direct effect is 0.485*** and the total effect is 0.639***. On the one hand, the direct effect of the attitude toward the ad on the purchase intention for consumers who have been exposed to an ideal end state is 0.485***, whereas it is 0.518*** for the participants who have been exposed to a heavy image. However, the difference between the two groups is not significant. On the other hand the

direct effect of the attitude toward the ad on the purchase intention for male participants is 0.563***, whereas it is 0.427*** for female participants. The difference between the genders is significant

Therefore, it can be summed up for the first research question: The results show a significant influence of the attitude toward the ad on purchase intention. The difference between the participants who have been exposed to a desired vs. an undesired end state is not significant, whereas the difference between men and women is. For men a better attitude toward the ad is resulting in a higher purchase intention than for women.

This result shows that it is important for marketers to design advertisements that result in a positive attitude toward the ad as the attitude is influencing to a high degree the purchase intention. This relationship was theoretically based in the theory of reasoned action which stated that attitude toward behavior (in the current research attitude toward the ad) results in an intention and was supported by the current findings. Even if the effect was higher for males, the effect for females can still be considered as high (with a path coefficient of 0.427***). Therefore marketers need to invest time into figuring out how a positive attitude toward the ad can be formed. In the current research risk, distance and health motivation have been analyzed as influences on the attitude toward the ad. The analysis shows that risk is having a significant influence on the attitude toward the ad (path coefficient: -0.177***, effect size $f^2 = 0.033$). Therefore companies should invest in strategies to reduce the perceived risk of the consumer. By looking at the outer loadings of risk both risk types, the performance and social risk seem to have similar influence. However, after the repeated indicator approach it is visible that performance risk is having a higher weight than social risk (0.999 compared to 0.321). Therefore it is advisable that marketers focus on reducing the perceived performance risk of the consumers. Perceived risk consists of the items RI01_03 and RI01_04. The item RI01_03 has the item wording "What is the probability that this product (this fitness club) will fail to function?". The item RI01_04 has the wording "What is the probability that this fitness club will malfunction or damage your body?". Therefore, it is advisable to focus on information on advertisements which highlight the quality of the equipment of the fitness center, which is e.g. certified by a health authority in order to reduce the consumers fear to damage his/ her

body. Risk or uncertainty is judged to be a state that is aversive, which results in information seeking in order to feel certain again (Brown et al., 2007, p. 61).

For the complete data set the influence of the health motivation of the attitude toward the ad is also significant (path coefficient 0.125***) whereas the effect size is very low with a value of $f^2 = 0.016$. When comparing the different experimental groups the MGA shows a significant difference between the participants who have been exposed to a desired vs. undesired end state in the health motivation – attitude toward the ad – relationship. There was a significant effect of the health motivation on the attitude only the participants exposed to a desired end state ($\beta = 0.194^{***}$), whereas there was a small not significant one for the participants exposed to the undesired end state.

The second research question is considering the difference in the social comparison - purchase intention – relationship. Neither the analysis of the complete data set, nor the analysis of the experimental groups (women, men and participants exposed to a desired end state) show a significant effect of the social comparison tendency on the purchase intention. However, there is a significant positive effect of social comparison on purchase intention for the participants who have been exposed to an undesired end state ($p = 0.134$). The exposure to the heavy model resulted in a goal to eliminate or avoid to look like the testimonial by joining the fitness club. This seems to be in accordance with the results in the area of goal framing: If a consumer is buying something to avoid negative consequences the negative goal framing seems to be more effective (Gierl et al., 2002, p. 147; Smith, 1996, p. 52). In the current research the participant wants to avoid negative consequences (being unhealthy) and is therefore willing to join the fitness club. Hereby, the exposure to a heavy model can be interpreted as showing the negative consequences (negative goal frame) to motivate the consumer to join the fitness center.

The third and last research question is considering the difference in the distance – attitude toward the ad – relationship. Neither the analysis of the complete data set, nor the analysis of the experimental female group show a significant effect of the distance on the attitude toward the ad. However, there is a significant positive effect of the distance on the attitude toward the ad for the participants who have been exposed to an undesired end state ($\gamma = 0.221$), a desired end state ($\gamma = 0.107$) and for the experimental male group ($\gamma = 0.111$).

Surprisingly, the results show a positive effect of the distance on the attitude toward the ad for these groups. Based on the self-congruity theory a negative effect was assumed: The smaller the distance between the participant and the displayed testimonial, the better the attitude toward the ad.

The positive effect of the distance on the attitude toward the ad can be explained by the results of the study done by Chandran and Menon (2004). Chandran and Menon figured out that the relationship between distance and attitude is dependent on the formulation of the outcome. A positive framing has another effect on the distance – attitude- relationship than a negative one. Further research should focus on this relationship and use a negative outcome frame to support the assumption about a reversed effect in the distance- attitude relationship.

Furthermore, the result for the participants who are exposed to the undesired and undesired end state seems to be in accordance with the different effects of social comparison. Social comparison can result in a contrast effect (“this person is not me”) or an assimilation effect (“I could be this person”) (Collins, 1996; Collins, 2000; Pelham & Wachsmuth, 1995; Smith, 2000). In the case of upward comparison (comparison to someone better off) a contrast effect can result in demotivation whereas an assimilation effect can be inspiring (Brown et al., 2007, p. 62). On the one hand the exposure to a desired end state can be categorized as upward comparison. The results indicated that an assimilation effect occurred, as the participant focused on the similarity between the self and the target and have been maybe inspired by the image of the model (Lockwood & Kunda, 1997). Therefore the attitude toward the ad was positive, even if the distance to the desired end state was large. On the other hand the exposure to an undesired end state can be categorized as downward comparison. Here a contrast effect occurred. The participants have positive feelings after the exposure as the model is not like them and they will not end up like the target. Therefore, a higher distance results in a positive attitude toward the ad in the case of downward comparison to the undesired end state. The results are in accordance with the findings of Collins, who stated that contrast effects occur most of the time in downward comparisons whereas assimilation effect occur in upward comparison (Collins, 1996). On the contrary studies like the one of Buunk et al. show the inverse effect: Contrast effects in upward comparison and assimilation effects in downward comparison (Buunk

et al., 2005). These conflictive results show that further research is needed in order to figure out which circumstances are resulting in a contrast or assimilation effect during up- and downward comparison.

Furthermore, for further research it would make sense to focus even more on the differences between male and female participants: The analysis of social comparison e.g. already shows that social comparison behavior of men is influencing the purchase intention whereas there haven't been any significant influence of the social comparison behavior of women on the purchase intention.

Next to that, other possibilities of showing closeness in advertising could be analyzed. The current research used images to show closeness but there are also other ways like the advertising message. Like mentioned in the current research part advertising slogans with words like "soon", "fast" or "as soon as possible" are rated as more effective (Chae et al., 2013, p. 217). Maybe there are other key words in ads that can be used to show closeness.

Besides focusing on fitness products (or the advertisement for a gym) it might be interesting for further research to extend the research into other areas like tangible products. Are the results also applicable for products that are not related to health/ sport? It might be a research possibility to review and compare the results in other lines of business like clothes, cars or food.

Next to that, for questionnaires it would make sense to limit the number of questions per construct even further to avoid interruptions during the participation. During the main study 938 participants started to answer the questions, but just 644 completed it. That means, that 294 (around 31 %) decided to terminate it uncompleted. It was attempted to limit the number of interruptions with the first pretest, where the number of items per constructs was already diminished. This should be done in an extended way.

6 ATTACHMENTS

6.1 QUESTIONNAIRE OF THE PRELIMINARY STUDY

First of all one of four advertisement has been shown. The ads are displayed and explained in chapter 4.5.1. One example is shown below (first question of the questionnaire). *The translation into English can be found below each Figure.*

11% ausgefüllt



1. Bitte vergleichen Sie Ihre Figur mit der der dargestellten Frau in der Werbeanzeige.

Die Figur der Frau ähnelt meiner sehr.	weder - noch	Ich hätte gerne die Figur der dargestellten Frau.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

ZurückWeiter

Befragung unterbrechen

- (1) "Please compare your figure with the portrayed woman in the ad." Answer: "The figure is very similar to mine", "nor", "I would like to have the figure of the portrayed woman."

Next page – second, third and fourth question

22% ausgefüllt

2. Im Vergleich zur in der Anzeige dargestellten Frau schätze ich meinen eigenen BMI (bitte bewegen Sie dazu das X an die zutreffende Stelle):

0

niedriger -10 ————— X ————— +10 höher

Definition und Berechnung des BMI (Body Mass Index): <http://www.bmi-rechner.net/>

3. Bitte beurteilen Sie Ihr eigenes Aussehen.

Ich wünschte,
ich könnte
mein
Aussehen
verändern.

Ich bin mit
meinem
Aussehen
sehr
zufrieden.

4. Ich finde, in Werbeanzeigen dargestellte Frauen sind im Allgemeinen...

stark
unter-
gewichtig

leicht
unter-
gewichtig

normal-
gewichtig

leicht
über-
gewichtig

stark
über-
gewichtig

Zurück
Weiter

Befragung unterbrechen

- (2) "Please rate your own BMI compared to the BMI of the displayed model in the advertisement (please move the x to the appropriate position)". Answer: "Lower -10" to "higher +10". Definition and calculation of the BMI (Body Mass Index) can be accessed via a link.
- (3) "Please rate your own appearance". Answer: "I wish I could change the way I look" to "I'm pretty satisfied with my level of physical attractiveness"
- (4) "I think women in ads are in general...". Answer: strongly underweight, slightly underweight, normal weighted, slightly overweight, strongly overweight

Next page - fifth question

Image is visible again

5. Oben sehen Sie nochmal die Werbeanzeige. Inwiefern stimmen Sie den folgenden Aussagen in Bezug auf die Werbeanzeige zu?

	stimme überhaupt nicht zu						stimme voll und ganz zu
	1	2	3	4	5	6	7
Die Werbeanzeige dieses Produkts gefällt mir sehr gut.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Werbeanzeige dieses Produkts stimmt mich sehr positiv.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Werbeanzeige dieses Produkts finde ich sehr ansprechend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Werbeanzeige dieses Produkts stimmt mich glücklich.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Diese Werbeanzeige ist für mich wichtig.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Diese Werbeanzeige ist gut gemacht.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Diese Werbeanzeige ist interessant.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Zurück Weiter

Befragung unterbrechen

- (5) "Above you see the ad again. How much do you agree to the following statements concerning the advertisement?" Answer: "I totally disagree" to "I totally agree"
- I react favorably to the advertising and promotions of this product.
 - I feel positive towards the advertising and promotions of this product.
 - The advertising and promotions of this product are good.
 - I am happy with the advertising and promotions of this product.
 - This advertising is good.
 - This advertising is interesting.

Next page - sixth question

44% ausgefüllt							
6. Inwiefern stimmen Sie den folgenden Aussagen zu?							
	Stimme überhaupt nicht zu						Stimme voll und ganz zu
	1	2	3	4	5	6	7
Wenn ich Frauen in der Werbung sehe, denke ich fast immer darüber nach, wie gut oder schlecht ich im Vergleich zu ihnen aussehe.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich wünsche mir oft, dass ich aussehe wie Frauen in der Werbung.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich vergleiche mich sehr häufig mit Frauen, die eine bessere Figur haben als ich.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich vergleiche mich sehr häufig mit Frauen, die schlechter aussehen als ich.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich bin nicht der Typ, der sich sehr häufig mit anderen vergleicht.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wenn ich wissen will, wie gut ich etwas gemacht habe, vergleiche ich mein Ergebnis mit dem der anderen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich lege immer großen Wert darauf, wie ich Aufgaben im Vergleich zu anderen bewältige.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich vergleiche meine Lebenslage nie mit der von anderen Menschen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<div style="display: flex; justify-content: space-between; margin-top: 10px;"> Zurück Weiter </div> <div style="margin-top: 5px;"> Befragung unterbrechen </div>							

- (6) "How much did you agree to the following statements?" Answers "I totally disagree" to "I totally agree"
- When I see models in ads, I think about how well or how badly I look compared to the models.
 - I have wished I looked more like the models in personal care/cosmetics advertisements.
 - I compare myself to others who are better off than me in terms of physical attractiveness.
 - I often compare myself to others who are performing worse than me.
 - I am not the type of person who compares often with others.
 - If I want to find out how well I have done something, I compare what I have done with how others have done.
 - I always pay a lot of attention to how I do things compared with how others do things.
 - I never consider my situation in life relative to that of other people.

Next page - seventh question

55% ausgefüllt							
7. Inwiefern stimmen Sie den folgenden Aussagen in Bezug auf das in der Werbung dargestellte Produkt zu?							
	Stimme überhaupt nicht zu						Stimme voll und ganz zu
	1	2	3	4	5	6	7
Das beworbene Produkt hält vermutlich was es verspricht.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Das beworbene Produkt wirkt vertrauenswürdig.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Das beworbene Produkt erfüllt vermutlich seinen Zweck.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Das beworbene Produkt wird vermutlich allen Nutzerinnen gefallen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Das beworbene Produkt wird meinen Bedürfnissen vermutlich nicht entsprechen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Es ist wohl unkompliziert das beworbene Produkt anzuwenden.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Das beworbene Produkt erfüllt wohl genau meine Erwartungen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<div style="display: flex; justify-content: space-between;"> Zurück Weiter </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> Befragung unterbrechen </div>							

- (7) "How much do you agree to the following statements concerning the advertised product?" Answer: "I totally disagree" to "I totally agree"
- This product keeps its promises and commitments.
 - This product is trustworthy.
 - This product fulfills its job.
 - This product will please all who use it.
 - This product will not unreservedly meet my needs.
 - This product will give me little trouble in using it.
 - This product will do everything I want it to do.

Next page - eighth question

66% ausgefüllt								
8. Inwiefern stimmen Sie den folgenden Aussagen in Bezug auf den Hersteller des in der Werbung dargestellten Produkts zu?								
	Stimme überhaupt nicht zu						Stimme voll und ganz zu	
	1	2	3	4	5	6	7	
Der Hersteller bietet mir ein Produkt mit konstanter Qualität an.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Der Hersteller würde mir vermutlich weiterhelfen, wenn es Probleme mit seinem Produkt gibt (z. B. bei Reklamationen).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Der Hersteller bietet mir ein brauchbares neues Produkt an.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Der Hersteller sorgt für meine Zufriedenheit.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Der Hersteller schätzt mich als Käuferin seines Produkts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Der Hersteller kümmert sich um seine Kundinnen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Ich vertraue der Information, die der Hersteller zur Verfügung stellt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Der Hersteller ist bei der Darstellung der Schönheit der Frauen in seiner Kampagne aufrichtig.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Zurück								Weiter
Befragung unterbrechen								

- (8) How much did you agree to the following statements concerning the producer of the product displayed in the ad (Answer: "I totally disagree" to "I totally agree"):
- The producer will open me a product with constant quality level.
 - The producer will help me to solve any problem I could have with the product.
 - The producer will offer me a new product I may need.
 - The producer will be interested in my satisfaction.
 - The producer will value me as a customer of its product.
 - The producer of this product cares about its customers.
 - I believe in the information that the supplier provided to me.
 - The producer is honest with the portrayal of women in his campaign.

Next page – ninth question

77% ausgefüllt									
9. Inwiefern stimmen Sie folgenden Aussagen in Bezug auf Ihre Kaufbereitschaft zu?									
	Stimme überhaupt nicht zu	1	2	3	4	5	6	Stimme voll und ganz zu	
	1	2	3	4	5	6	7		
Die Wahrscheinlichkeit, dass dieses Produkt bei einem Kauf für mich in Frage kommt, ist sehr hoch.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Wenn ich Produkte dieser Warengruppe kaufen würde, entscheide ich mich für das in der Werbeanzeige dargestellte Produkt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Die Wahrscheinlichkeit, dass ich dieses Produkt kaufe, ist hoch.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Meine Bereitschaft, dieses Produkt zu kaufen, ist hoch.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Ich werde dieses Produkt in Zukunft verwenden.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Zurück								Weiter	
Befragung unterbrechen									

- (9) How much did you agree to the following statements concerning your purchase intention (Answer: "I totally disagree" to "I totally agree"):
- The probability that I would consider buying this product is very high.
 - If I were to buy this type of product, I would consider buying this one.
 - The likelihood of my purchasing this product is high.
 - My willingness to buy this product is high.
 - I will use this product in the future.

Next page - questions 10- 14

89% ausgefüllt

10. Zur statistischen Auswertung bitte ich Sie, abschließend einige Daten zu Ihrer Person anzugeben.

Geschlecht:

[Bitte auswählen]

11. Wie alt sind Sie?

Jahre

12. Wie ist Ihr Status?

[Bitte auswählen]

13. Wie groß sind Sie?

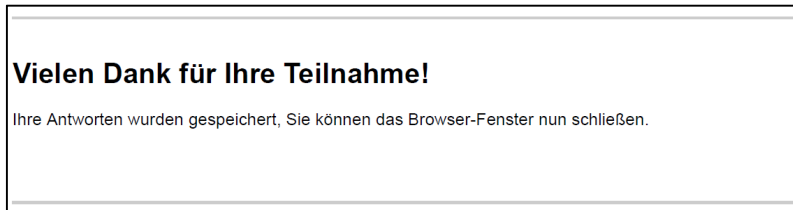
m

14. Wie viel wiegen Sie?

kg

- (10) For statistical reason, please answer the following personal questions
Gender: Please select (woman/ man)
- (11) How old are you? ...years old.
- (12) What is your status? Please select (schoolboy, student, working, seeking work, parental leave, housewife/ househusband)
- (13) How tall are you? ...m
- (14) How much did you weight? ...kg

Last page



Thanks a lot for your participation!

Your answers have been saved. You can close the browser now.

6.2 QUESTIONNAIRE OF THE AD SELECTION PRELIMINARY STUDY (PRELIMINARY STUDY 2)

The translation into English can be found below each Figure.

PAGE 1

0% ausgefüllt

Sehr geehrte Damen und Herren,

im Rahmen meiner Doktorarbeit an der UCAM / FOM führe ich eine Vorstudie durch, die untersuchen soll, wie unterschiedliche Personen in Werbeanzeigen wahrgenommen werden.

Für die Beantwortung der Fragen werden Sie nur ca. 2-3 Minuten benötigen. Die Auswertung der Daten erfolgt absolut anonym. Darüber hinaus werden die Daten absolut vertraulich behandelt und nur zu wissenschaftlichen Forschungszwecken verwendet.

Bitte antworten Sie jeweils entsprechend Ihrer persönlichen Meinung – es gibt keine richtigen oder falschen Antworten.

Herzlichen Dank für Ihre Unterstützung!

Agnes Michniuk

1. Bitte geben Sie zunächst ihr Geschlecht an.

Männlich

Weiblich

Als nächstes sehen Sie nacheinander zwei unterschiedliche Werbeanzeige, auf die sich die nachfolgenden Fragen beziehen.

Weiter

[M.Sc. Agnes Michniuk](#)

Dear Sir or Madame,

In the context of my Ph.D. thesis at the UCAM/ FOM I am conducting a preliminary test, in which the exposure to different type of persons in ads should be analyze. For answering the questions you will just need 2-3 minutes. The analysis of the data will be anonymous. Next to that, all data will be threatened confidential and will be used just for the scientific research object. Please answer like your personal opinion is, there are no correct or wrong answers.

Thanks a lot for your help!

Agnes Michniuk

- (1) Please select your gender first.
Male or Female (*Female is selected*)

PAGE 2

Image is shown, for example



2. Wie beurteilen Sie die dargestellte Person?
 Die dargestellte Person ist...

	Stimme überhaupt nicht zu	1	2	3	4	5	6	Stimme voll und ganz zu
dick	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
sportlich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
attraktiv	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
muskulös	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
dünn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
mollig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
unsportlich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. Bitte ergänzen Sie folgende Aussage: Ich empfinde die dargestellte Person als...

viel zu dünn
 zu dünn
 etwas zu dünn
 genau richtig
 etwas zu dick
 zu dick

[M.Sc. Agnes Michniuk](#)

(2) How do you evaluate the displayed person?

The displayed person is (answer: "I totally agree" to "I totally disagree")

- Heavy
- Athletic
- Attractive
- Muscular
- Slim
- Chubby
- Unathletic

(3) Please complement the following sentence: The displayed person is

- A lot too slim
- Too slim
- A little bit too slim
- Just correct
- A little bit too heavy
- Too heavy

PAGE 3

Another image is shown, for example



4. Wie beurteilen Sie die dargestellte Person?
Die dargestellte Person ist...

	Stimme überhaupt nicht zu	1	2	3	4	5	6	Stimme voll und ganz zu
dick	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
sportlich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
attraktiv	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
muskulös	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
dünn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
mollig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
unsportlich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. Bitte ergänzen Sie folgende Aussage: Ich empfinde die dargestellte Person als...

viel zu dünn
 zu dünn
 etwas zu dünn
 genau richtig
 etwas zu dick
 zu dick
 viel zu dick

[M.Sc. Agnes Michniuk](#)

- (4) How do you evaluate the displayed person?
The displayed person is (answer: "I totally agree" to "I totally disagree")
- Heavy
 - Athletic
 - Attractive
 - Muscular
 - Slim
 - Chubby
 - Unathletic
- (5) Please complement the following sentence: The displayed person is
- A lot too slim
 - Too slim
 - A little bit too slim
 - Just correct
 - A little bit too heavy
 - Too heavy

PAGE 4



6. Wie beurteilen Sie die dargestellte Person?
Die dargestellte Person ist...

	Stimme überhaupt nicht zu						Stimme voll und ganz zu
	1	2	3	4	5	6	7
dick	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
sportlich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
attraktiv	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
muskulös	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
dünn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
mollig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
unsportlich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Bitte ergänzen Sie folgende Aussage: Ich empfinde die dargestellte Person als...

viel zu dünn
 zu dünn
 etwas zu dünn
 genau richtig
 etwas zu dick
 zu dick
 viel zu dick

(6) How do you evaluate the displayed person?

The displayed person is (answer: "I totally agree" to "I totally disagree")

- Heavy
- Athletic
- Attractive
- Muscular
- Slim
- Chubby
- Unathletic

(7) Please complement the following sentence: The displayed person is

- A lot too slim
- Too slim
- A little bit too slim
- Just correct
- A little bit too heavy
- Too heavy

PAGE 5



8. Wie beurteilen Sie die dargestellte Person?
Die dargestellte Person ist...

	Stimme überhaupt nicht zu 1	2	3	4	5	6	Stimme voll und ganz zu 7
dick	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
sportlich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
attraktiv	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
muskulös	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
dünn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
mollig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
unsportlich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Bitte ergänzen Sie folgende Aussage: Ich empfinde die dargestellte Person als...

viel zu dünn
 zu dünn
 etwas zu dünn
 genau richtig
 etwas zu dick
 zu dick

- (8) How do you evaluate the displayed person?
The displayed person is (answer: "I totally agree" to "I totally disagree")
- Heavy
 - Athletic
 - Attractive
 - Muscular
 - Slim
 - Chubby
 - Unathletic
- (9) Please complement the following sentence: The displayed person is
- A lot too slim
 - Too slim
 - A little bit too slim
 - Just correct
 - A little bit too heavy
 - Too heavy

PAGE 6



10. Wie beurteilen Sie die dargestellte Person?
Die dargestellte Person ist..

	Stimme überhaupt nicht zu						Stimme voll und ganz zu
	1	2	3	4	5	6	7
dick	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
sportlich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
attraktiv	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
muskulös	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
dünn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
mollig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
unsportlich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. Bitte ergänzen Sie folgende Aussage: Ich empfinde die dargestellte Person als...

viel zu dünn
 zu dünn
 etwas zu dünn
 genau richtig
 etwas zu dick
 zu dick
 viel zu dick

- (10) How do you evaluate the displayed person?
The displayed person is (answer: "I totally agree" to "I totally disagree")
- Heavy
 - Athletic
 - Attractive
 - Muscular

- Slim
- Chubby
- Unathletic

(11) Please complement the following sentence: The displayed person is

- A lot too slim
- Too slim
- A little bit too slim
- Just correct
- A little bit too heavy
- Too heavy

PAGE 7



12. Wie beurteilen Sie die dargestellte Person?
Die dargestellte Person ist...

	Stimme überhaupt nicht zu 1	2	3	4	5	6	Stimme voll und ganz zu 7
dick	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
sportlich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
attraktiv	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
muskulös	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
dünn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
mollig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
unsportlich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. Bitte ergänzen Sie folgende Aussage: Ich empfinde die dargestellte Person als...

viel zu dünn
 zu dünn
 etwas zu dünn
 genau richtig
 etwas zu dick
 zu dick
 viel zu dick

(12) How do you evaluate the displayed person?

The displayed person is (answer: "I totally agree" to "I totally disagree")

- Heavy
- Athletic
- Attractive
- Muscular
- Slim
- Chubby
- Unathletic

(13) Please complement the following sentence: The displayed person is

- A lot too slim
- Too slim
- A little bit too slim
- Just correct
- A little bit too heavy
- Too heavy

PAGE 8


14. Wie beurteilen Sie die dargestellte Person?

Die dargestellte Person ist...

	Stimme überhaupt nicht zu 1	2	3	4	5	6	Stimme voll und ganz zu 7
dick	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
sportlich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
attraktiv	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
muskulös	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
dünn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
mollig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
unsportlich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. Bitte ergänzen Sie folgende Aussage: Ich empfinde die dargestellte Person als...

viel zu dünn
 zu dünn
 etwas zu dünn
 genau richtig
 etwas zu dick
 zu dick
 viel zu dick

Weiter

- (14) How do you evaluate the displayed person?
The displayed person is (answer: "I totally agree" to "I totally disagree")
- Heavy
 - Athletic
 - Attractive
 - Muscular
 - Slim
 - Chubby
 - Unathletic
- (15) Please complement the following sentence: The displayed person is
- A lot too slim
 - Too slim
 - A little bit too slim
 - Just correct
 - A little bit too heavy
 - Too heavy

PAGE 9

89% ausgefüllt

16. Wie alt sind Sie?

Jahre

17. Wie groß sind Sie?
Bitte geben Sie ihre Größe in cm an.

cm

18. Wie viel wiegen Sie?
Bitte geben Sie ihr Gewicht in kg an.

kg

[M.Sc. Agnes Michniuk](#)

- (16) How old are you? ...years old.
- (17) How tall are you? ...m
- (18) How much did you weight? ...kg

PAGE 10

Vielen Dank für Ihre Teilnahme!

Ich möchte mich ganz herzlich für Ihre Mithilfe bedanken.

Ihre Antworten wurden gespeichert, Sie können das Browser-Fenster nun schließen.

[M.Sc. Agnes Michniuk](#)

Thanks a lot for your participation!

Your answers have been saved. You can close the browser now.

Same questions and pages for male participants. Just different pictures are used.
These are the following ones.

Image No. 1



Image No. 2



Image No. 3



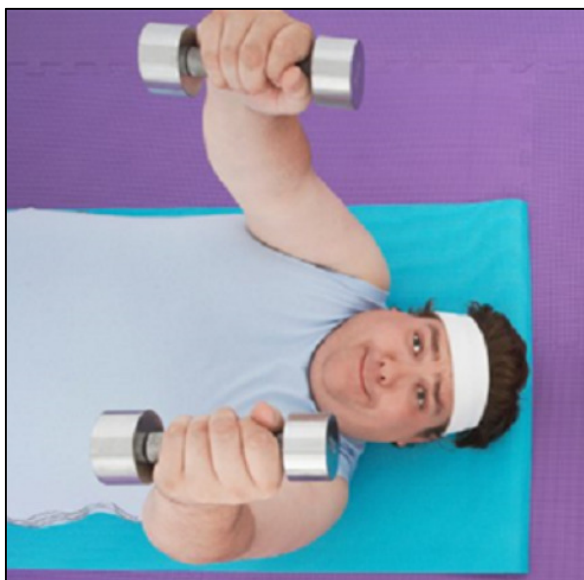
Image No. 4



Image No. 5



Image No. 6



6.3 QUESTIONNAIRE OF THE MAIN STUDY

The translation into English can be found below each Figure.

PAGE 1

0% ausgefüllt

Sehr geehrte Damen und Herren,
im Rahmen meiner Doktorarbeit führe ich eine Studie zur Wirkung von Werbeanzeigen durch.
Für die Beantwortung der Fragen werden Sie ca. 5 Minuten benötigen. Bitte geben Sie immer nur Ihre eigene Meinung an, nicht das, was andere denken oder sagen. Die Auswertung Ihrer Daten erfolgt anonym. Darüber hinaus werden die Daten absolut vertraulich behandelt und nur zu wissenschaftlichen Forschungszwecken verwendet.
Wenn Sie eine Frage nicht beantworten können oder wollen, dann lassen Sie die entsprechenden Felder leer. Die Fragen können überwiegend auf einer Antwortskala von 1 bis 7 beantwortet werden. Mit den Werten dazwischen können Sie Ihr Urteil entsprechend abstimmen.
Bedingt durch die Auswertungsmethode klingen Fragestellungen teilweise ähnlich. Dies ist beabsichtigt, um die Antworten statistisch validieren zu können. Bitte lassen Sie sich davon nicht irritieren.
Herzlichen Dank für Ihre Unterstützung!
Agnes Michniuk

1. Zur statistischen Auswertung bitte ich Sie zunächst ihr Geschlecht anzugeben.
Geschlecht:

[Bitte auswählen] ▼

Weiter

Befragung unterbrechen

Agnes Michniuk

Dear Sir or Madame,

In the context of my Ph.D. thesis I am conducting a study in the area of advertising effects. For answering the questions you will just need around 5 minutes. Please answer like your personal opinion is, not what other people think or say. The analysis of the data will be anonymous. Next to that, all data will be treated confidential and will be used just for the scientific research object. If you don't want or can't answer a question, please leave it empty. Most questions can be answered on a scale which ranges from 1 to 7. With the values in between you can grade your opinion. Conditioned by the evaluation method some questions sound partially similar. This is done on purpose in order to validate the answers statistically. Please don't be irritated because of that.

Thanks a lot for your help!

Agnes Michniuk

(1) Please select your gender first.

Male or Female (*female is selected*)

PAGE 2 (for female participants)

9% ausgefüllt

2. Inwiefern stimmen Sie den folgenden Aussagen zu Ihrer Person zu?

	stimme überhaupt nicht zu 1	2	3	4	5	6	stimme voll und ganz zu 7
Ich vergleiche mich sehr häufig mit Frauen, die eine bessere Figur haben als ich.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wenn ich Frauen in der Werbung sehe, denke ich fast immer darüber nach, wie gut oder schlecht ich im Vergleich zu diesen aussehe.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich wünsche mir oft, dass ich aussehe wie Frauen in der Werbung.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Zurück Weiter

Befragung unterbrechen

[Agnes Michniuk](#)

(2) How much did you agree to the following statements about yourself?

Answers “I totally disagree” to “I totally agree”

- I compare myself often to women who are better off than me in terms of physical attractiveness.
- When I see women in ads, I think about how well or how badly I look compared to the models.
- I have wished I looked more like the women in advertisements.

PAGE2 (for male participants)

9% ausgefüllt

2. Inwiefern stimmen Sie den folgenden Aussagen zu Ihrer Person zu?

	stimme überhaupt nicht zu 1	2	3	4	5	6	stimme voll und ganz zu 7
Wenn ich Männer in der Werbung sehe, denke ich fast immer darüber nach, wie gut oder schlecht ich im Vergleich zu diesen aussehe.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich wünsche mir oft, dass ich aussehe wie Männer in der Werbung.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich vergleiche mich sehr häufig mit Männern, die eine bessere Figur haben als ich.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Zurück Weiter

Befragung unterbrechen

[Agnes Michniuk](#)

Same questions like for female participants above but just the word „men“ is used instead of „women“

PAGE 3

18% ausgefüllt

3. In wie weit stimmen Sie folgenden Aussagen in Bezug zu Ihrer Person zu?

	stimme überhaupt nicht zu 1	2	3	4	5	6	stimme voll und ganz zu 7
Mit meinem äußeren Erscheinungsbild bin ich vollkommen zufrieden.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich wünschte ich könnte mein Aussehen ändern.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich bin sehr zufrieden mit meinem Aussehen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Auf der nächsten Seite sehen Sie eine Werbeanzeige eines Fitnessstudios. Bitte sehen Sie sich diese Anzeige genau an. Alle folgenden Fragen beziehen sich nur auf diese Anzeige.

Zurück Weiter

Befragung unterbrechen

[Agnes Michniuk](#)

(3) How much did you agree to the following statements about yourself?

Answers "I totally disagree" to "I totally agree"

- I'm pretty satisfied with my level of physical attractiveness.
- I wish I could change the way I look.
- I am very satisfied with my physical appearance.

PAGE 4

Advertising with one of the images is visible, e.g. heavy model for females

27% ausgefüllt



4. Inwiefern stimmen Sie den folgenden Aussagen in Bezug auf die Werbeanzeige zu?
Die Werbeanzeige dieses Fitnessstudios...

	stimme überhaupt nicht zu 1	2	3	4	5	6	stimme voll und ganz zu 7
... ist gut gemacht.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... gefällt mir sehr gut.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... ist interessant.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... stimmt mich glücklich.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... finde ich sehr ansprechend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... stimmt mich sehr positiv.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(4) How much did you agree to the following statements about the advertising? Answers "I totally disagree" to "I totally agree"

The advertising for the fitness center is...

- ...designed in a good way.
- ...I react favorable toward it.
- ...interesting.
- ...makes me happy.
- ...is good.
- ...is causing positive feelings.

PAGE 5

Advertising with one of the images is visible (same like before)

5. Inwiefern stimmen Sie den folgenden Aussagen in Bezug auf das in der Werbung dargestellte Fitnessstudio zu?
Das beworbene Fitnessstudio...

	stimme überhaupt nicht zu 1	2	3	4	5	6	stimme voll und ganz zu 7
... erfüllt genau meine Erwartungen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... erfüllt vermutlich seinen Zweck.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... hält vermutlich was es verspricht.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... wirkt vertrauenswürdig.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... wird vermutlich allen Nutzern und Nutzerinnen gefallen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Zurück Weiter

(5) How much did you agree to the following statements about the fitness center for which the advertising is designed? Answers “I totally disagree” to “I totally agree”

The fitness center in the advertising...

- This product will do everything I want it to do.
- This product fulfills its job.
- This product keeps its promises and commitments.
- This product is trustworthy.
- This product will please all who use it.

PAGE 6

Advertising with one of the images is visible (same like before)

6. In der Werbeanzeige des Fitnessstudios heißt es „Stärken Sie Ihren Rücken – Gezielt Rückenprobleme angehen oder präventiv vorbeugen“.
In wie weit stimmen Sie den folgenden Aussagen zu Ihrer gesundheitlichen Motivation zu?

	stimme überhaupt nicht zu 1	2	3	4	5	6	stimme voll und ganz zu 7
Es gibt so viele Dinge heutzutage, welche einem schaden können. Ich mache mir darüber keine Sorgen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mich beunruhigen Gesundheitsrisiken und daher versuche ich Maßnahmen zu treffen, um diese zu verhindern.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich mache mir keine Sorgen um Gesundheitsrisiken solange diese weder mich noch jemanden in meinem engen Bekanntenkreis betreffen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich genieße lieber das Leben als sicherzustellen, dass ich keinem Gesundheitsrisiko ausgesetzt bin.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich versuche mich vor Gesundheitsrisiken zu schützen von denen ich höre.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich versuche Gesundheitsprobleme zu verhindern bevor ich irgendwelche Symptome merke.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich mache mir zwar oft Sorgen um Gesundheitsrisiken, mache jedoch nichts dagegen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich unternehme nichts gegen Gesundheitsrisiken von denen ich höre bis ich ein tatsächliches Problem habe.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Zurück Weiter

Befragung unterbrechen

[Agnes Michniuk](#)

(6) The advertising message of the fitness center ad says „Get a strong back – do something against or avoid issues with your back“.

How much did you agree to the following statements about your health motivation? Answers “I totally disagree” to “I totally agree”.

- There are so many things that can hurt you these days. I'm not going to worry about them.
- I am concerned about health hazards and try to take action to prevent them.
- I don't worry about health hazards until they become a problem for me or someone close to me.
- I'd rather enjoy life than try to make sure I'm not exposing myself to a health hazard.
- I try to protect myself against health hazards I hear about.
- I try to prevent health problems before I feel any symptoms.
- I often worry about the health hazards I hear about, but don't do anything about them.
- I don't take any action against health hazards I hear about until I know I have a problem.

PAGE 7

Advertising with one of the images is visible (same like before)

7. Inwiefern stimmen Sie folgenden Aussagen in Bezug auf Ihre Bereitschaft dem beworbenen Fitnessstudio beizutreten zu?	stimme überhaupt nicht zu 1	2	3	4	5	6	stimme voll und ganz zu 7
Meine Bereitschaft, diesem Fitnessstudio beizutreten, ist hoch.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Wahrscheinlichkeit, dass ich diesem Fitnessstudio beitrete ist hoch.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wenn ich nach einem Fitnessstudio suchen würde, entscheide ich mich für das in der Werbeanzeige dargestellte Studio.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Wahrscheinlichkeit, dass dieses Fitnessstudio bei einer angestrebten Mitgliedschaft für mich in Frage kommt, ist sehr hoch.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich werde in Zukunft zu diesem Fitnessstudio gehen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Zurück Weiter

(7) How much did you agree to the following statements concerning your willingness to join the fitness club? Answer: "I totally disagree" to "I totally agree".

- My willingness to join this fitness club is high.
- The likelihood that I join this fitness club is high.
- If I were to join a fitness club, I would consider joining this one that is advertised here.
- The probability that I would join this fitness club is very high if I would consider a membership.
- I will go to this fitness club in the future.

PAGE 8

64% ausgefüllt

8. Wie wichtig ist es für Sie grundsätzlich die beste Entscheidung zu treffen?

überhaupt nicht wichtig 1 2 3 4 5 6 7 sehr wichtig

9. Wie sicher sind Sie sich, dass ein neues Fitnessstudio in der selben Preiskategorie, welches zuvor nicht auf dem Markt war, genauso gut ist wie das Fitnessstudio, für welches Sie sich entschieden haben?

sehr unsicher 1 2 3 4 5 6 7 sehr sicher

10. Wie beurteilen Sie die folgenden Wahrscheinlichkeiten?

	sehr unwahrscheinlich 1	2	3	4	5	6	sehr wahrscheinlich 7
Wenn Ihre Freunde, Verwandte oder Kollegen erfahren, dass Sie zu diesem Fitnessstudio gehen, wie hoch ist die Wahrscheinlichkeit, dass Sie deren Respekt verlieren?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Das beworbene Fitnessstudio ist schlecht und schadet meinem Körper.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wenn Ihre Freunde, Verwandte oder Kollegen erfahren, dass Sie zu diesem Fitnessstudio gehen, wie hoch ist die Wahrscheinlichkeit, dass Sie auf Sie herabsehen werden?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Das beworbene Fitnessstudio erbringt nicht die erwarteten Leistungen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(8) How important is it for you to make the best choice?

Answer: "Not important at all" to "Very important"

(9) How sure are you that a new fitness center in the same prize class, which has previously not been on the market, would be just as good as the one you chose?

Answer: "very unsure" to "very sure"

(10) How did you judge the following probabilities?" Answer: "Totally impossible" to "Totally possible"

- If your friends, relatives or associates are aware that you joined the fitness club, what is the probability that you will lose their respect?
- What is the probability that this fitness center will malfunction or damage your body?
- If your friends, relatives or associates are aware that you joined the fitness club, what is the probability that they will look down on you?
- What is the probability that this fitness club will fail to work like it should?

PAGE 9

73% ausgefüllt

11. In wie weit stimmen Sie den folgenden Aussagen zu Ihren gesundheitlichen Zielen zu.
 Meine Ziele, die ich mir setze, sind grundsätzlich...

	1	2	3	4	5	6	7
...schwierig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...herausfordernd	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...realistisch	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...erreichbar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Wie wahrscheinlich ist es, dass Sie Ihre gesundheitlichen Ziele erreichen?
 Die Erreichung meiner gesundheitlichen Ziele halte ich für...

1	2	3	4	5	6	7
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- (11) How much did you agree to the following statements concerning your health goals (Answer: "I totally disagree" to "I totally agree").
 My health goals are ... in general.
- Difficult.
 - Challenging.
 - Realistic.
 - Attainable.
- (12) How likely is it that you reach your health goals?
 The attainment of my health goals is...
 Answer: "Very unlikely" to "Very likely"

PAGE 10

Advertising with one of the images is visible (same like before)

13. Im Vergleich zu der in der Anzeige dargestellten Person schätze ich meinen eigenen BMI (bitte bewegen Sie dazu das X an die zutreffende Stelle):

0
niedriger -10 ————— X ————— +10 höher

Definition und Berechnung des BMI (Body Mass Index): <http://www.bmi-rechner.net/>

Zurück Weiter

Befragung unterbrechen

[Agnes Michniuk](#)

- (13) “Please rate your own BMI compared to the BMI of the displayed model in the advertisement (please move the x to the appropriate position)”. Answer: “Lower -10” to “higher +10”. Definition and calculation of the BMI (Body Mass Index) can be accessed via a link.

PAGE 11

91% ausgefüllt

Zum Abschluss noch einige allgemeine Fragen zu Ihrer Person.

14. Wie alt sind Sie?

Jahre

15. Wie groß sind Sie (in cm)?

cm

16. Wie viel wiegen Sie?

kg

17. Wie ist Ihr Status?

[Bitte auswählen] ▼

[Agnes Michniuk](#)

- (14) How old are you? ...years old.
- (15) How tall are you? ...m
- (16) How much did you weight? ...kg
- (17) What is your status? Please select (schoolboy, student, working, seeking work, parental leave, housewife/ househusband)

PAGE12

Vielen Dank für Ihre Teilnahme!

Ihre Antworten wurden gespeichert, Sie können das Browser-Fenster nun schließen.

[Agnes Michniuk](#)

Thanks a lot for your participation!

Your answers have been saved. You can close the browser now.

7 LITERATURE

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