

3/6/2015



TWENTE
UNIVERSITY

CLOTHES MAKE THE MAN:
THE EFFECT OF CONGRUENCY BETWEEN
PHYSIQUE, CLOTHING AND GLASSES ON
PERSUASIVENESS AND OTHER DESIRABLE
CHARACTERISTICS



Master Thesis Research | Alina Hendryka van der Meulen

Clothes Make the Man

“The effect of congruency between physique, clothing and glasses on persuasiveness and other desirable characteristics”

Master Thesis

Alina Hendryka van der Meulen | s1003070

Twente University

3 June 2015

Supervisors:

First supervisor: Prof. Dr. A. T. H. Pruyn

Second supervisor: Dr. M. Galetzka

Preface

This paper is the reporting of my master thesis for the college education Communication Science at Twente University and forms the end and the most difficult, yet most fulfilling part of almost six years of college. When I started Communication Science in September 2009, I had just turned eighteen and was as green as my gloves and did not know what I wanted in life. A couple of days ago, I celebrated my 24th birthday and I can truly say I feel ready now and am prepared to join the labor market.

This thesis about the effects of congruency between shapes in physique, clothing and glasses, can maybe be best described as a process of trial and error. Because of this, I was able to learn so much and I found the way to do the study exactly how I wanted to. I chose a research method I was not familiar with and I knew from the beginning of the process that I needed to work hard for this thesis and I knew needed to push myself to the limits of my abilities, but in the end *I did it*, which allows me now to say that I'm truly satisfied with the results and that I am proud of myself.

Even though this thesis is my work, there are a couple of people I'd like to thank for their advice, feedback and support. I'd like to thank my first supervisor Prof. Dr. A. T. H. Pruyn who introduced me to the subject of congruency and who I truly consider an expert and an inspiration in the field of behavioral communication, persuasive communication and behavioral science overall. Without his help, patience and critical view, I would not been able to finish this thesis in the way I did now. The second person I'd like to thank is my second supervisor Dr. M. Galetzka who was – especially for a second supervisor – highly involved in this research. She provided some very valuable feedback and new insights, yet always with a positive approach.

I would like to thank Mr. A. van der Graaf, who helped me out by reading this thesis over and over again to find language- and spelling errors. He provided useful feedback and – when necessary – also chocolate in order to support me. Furthermore, I want to thank my parents who have been nothing but supportive throughout my entire study and motivated me when I needed it.

Special thanks go out to Mr. L. Nissen and Mr. R. Veldhuis from Mobiel Centre in Almere, who collected the data for me through their online respondents panel and provided me with a fully functional almost ready-to-go SPSS dataset.

Lastly I'd like to thank everyone else who supported me or helped me in any possible way in order to finish this master thesis and thereby ending my days as a student, making me look back at a wonderful time!

Alina Hendryka van der Meulen
3 June 2015

Abstract

Van Doorn (2009) states that congruency between a person's physique and their clothing has a positive effect on that person's perceived persuasiveness and other positive characteristics. This statement was used as a starting point to find out whether congruency between physique and clothing indeed affects how someone gets evaluated on various characteristics. The characteristics that have been included in this research are extraversion, agreeableness, conscientiousness, emotional stability, openness to new experiences (together the Big Five of Personality), persuasiveness, attractiveness, intelligence, leadership, business-mindedness and balancedness. Furthermore was looked on how someone's personal "preference for consistency" was related to (preference for) congruency and how this affected the evaluation of people on the various characteristics. This was realized by manipulating one picture into twelve variations, all varying in shape of physique, shape of clothing and shape of glasses. The shapes that were used are rectangular versus round and for glasses was also the option "no glasses" resulting in the condition with rectangular glasses, round glasses and no glasses. This resulted into two groups of pictures: congruent pictures, which are pictures where all the shapes are the same (e.g. rectangular physique, rectangular clothing and rectangular glasses) and incongruent pictures, pictures where not all the shapes are alike. In this study, any possible effects of gender differences were ruled out by including only male subjects to evaluate male target stimuli. By means of an online questionnaire, subjects were randomly assigned one of the pictures and were asked questions about the personality of the person in the picture. It appeared that congruency between a person's physique, clothing and glasses enhances someone's perceived agreeableness, persuasiveness and attractiveness. Preference for consistency however did not seem to be related to a preference for congruent pictures in any way and did not cause the higher scores on the congruent pictures or lower scores for the incongruent pictures. However, the significant effects were only found for the pictures with a rectangular physique: therefore the recommendation to dress congruent with one's physique to come across as more agreeable, more persuasive and more attractive, can only be said with certainty for men with a rectangular physique.

Table of contents

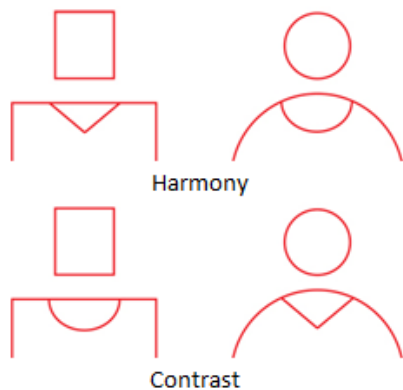
1. Introduction.....	7
1.1 Research problem	7
1.2 Purpose of the study	8
1.3 Research questions.....	9
2. Literature review	10
2.1 Congruency.....	10
2.2 Processing Fluency	11
2.3 Measurements of characteristics	12
2.4 Explication of the research questions	13
2.5 Conceptual model	15
3. Pre-test	16
3.1 The manipulated picture	16
3.2 Design of the questionnaire	20
3.3 The questionnaire.....	22
4. Methodology	23
4.1 Research design.....	23
4.2 Data collection.....	23
4.3 Validity	24
4.4 Reliability	24
4.5 Normality Testing	246
5. Results	28
5.1 Effects on physique	29
5.2 Effects on clothing.....	35
5.3 Effects on glasses.....	35
5.4 The impact of preference for consistency.....	37
6. Conclusion	38
6.1 Research questions.....	38
6.2 Research question 1 and belonging hypotheses.....	38
6.3 Exploration of RQ2	41
6.4 Answer to the main research question	41
6.5 Additional findings.....	41
6.6 Retrospect of the conceptual model.....	42
7. Discussion	43

7.1 Thoughts about the results	43
7.2 Practical implications.....	43
7.3 Limitations	44
7.4 Recommendations for future research	47
Literature	48
List of appendices	56
Appendix 1 – Table of faces.....	57
Appendix 2 – Questionnaire (Dutch).....	59
Appendix 3 – Explanation character traits	65
Appendix 4 – Outcome of the interviews.....	69
Appendix 5 – Invite to the respondents (Dutch).....	73
Appendix 6 – Characteristics of the respondents	74
Appendix 7 – Validity tests	78
Appendix 8 – Tests of normality, histograms and Q-Q plots of the variables.....	81
Appendix 9 – Comments by the respondents (Dutch)	85

1. Introduction

In her book “Overtuigen door uitstraling” (Persuasion through appearance), Van Doorn (2009) argues that people can present a better version of themselves by dressing *congruently*. She claims that one can be seen as more persuasive, but also as more interesting, more attractive and more authentic, by the way he dresses himself. Van Doorn’s main statement is that if someone is dressed harmoniously, he or she will be more persuasive, more interesting, etcetera.

Congruency – or harmony – means that the components of the whole are somehow similar. In this case, this means that if someone possesses more round characteristics in their face and body form (together called physique), he or she should adjust his or her clothing by wearing more round-shaped items and someone who has a more rectangular physique, that person would be advised to wear more rectangular shaped clothing because it would benefit the overall appearance. The base of this assumption is that similar shapes reinforce each other and create a harmonious overall impression whereas divergent shapes provide a certain contrast which can weaken or dominate the overall impression. The portrayal of the harmonious and contrasting overall impressions is shown in Picture 1.



Picture 1 - Harmony and contrast between clothing and physique (van Doorn, 2009)

1.1 Research problem

Although the courses by Van Doorn, in which she teaches people what (not) to wear, are successful according to her course participants, the reason *why* congruency works does not have any scientific foundation yet. It has yet to be proven academically whether the persuasiveness of an individual, or other “*desirable characteristics*” for that matter, could in fact be influenced by the harmony or contrast between an individual’s physique and his or her choice of clothing. It is assumed that people whom are congruent between physique and clothing are perceived “better” and therefore score higher on desirable characteristics than people that are incongruent between their physique and clothing, since it has been proven that people have a strong preference for products that are congruent (Pruyn & Van Rompay, 2011) and people that are congruent (Krueger, Heckhausen & Reed, 1994).

Besides the effect of congruency on perceived persuasiveness, Van Doorn also mentions higher perceived interestingness, attractiveness and genuineness of an individual, as an effect of congruency between physique and clothing. In this study it is also explored whether persuasiveness, attractiveness and other desirable characteristics can be influenced by manipulating the congruency of physique and clothing.

1.2 Purpose of the study

The purpose of this study is to research whether individuals are indeed considered to be more ***persuasive*** if there is harmony between the shapes of clothing and one's body shape. In the extent of this, it will also be investigated whether this so called *harmony between shapes* will also enhance an individual's level of perceived ***extraversion, agreeableness, conscientiousness, emotional stability, openness, attractiveness, intelligence, quality of leadership, business-mindedness*** and ***balancedness*** and to what extent these characteristics vary from each other in terms of matching body- and clothing shapes.

It is interesting to find out if someone in fact is evaluated more positive on certain characteristics (more persuasive, more attractive, etcetera) when there is harmony between the shape of one's physique and the shape of his clothing, instead of disharmony between one's physique and his shape of clothing. If it turns out that there is a positive correlation between how someone gets evaluated in terms of congruency between physique and clothing, this could eventually change the way people are advised to dress themselves.

1.2.1 Clothing

Most people are already aware of the importance of and the impact of their clothing in both the workplace (Margulis, 2002) and in their social life (Tsujita et al., 2010). However, it appears that people often still experience difficulties when they have to determine what cloths meet their *needs* and *desires* (Shen, Lieberman & Lam, 2007). When knowing that they should look for clothes that are congruent with their physique, it would be less difficult for people to find something that suits them best. It would be like a scientifically proven mnemonic for looking good and presenting the best version of oneself.

1.2.2 Glasses

In 2012, a whopping 57% of the Dutch population wore eyeglasses; in the meantime, the number of these wearers is growing every year (CBS, 2013). Since more than half of the population wears glasses, it makes sense to include glasses in this survey. Van Doorn (2009) mentions glasses briefly in her book and her rule for glasses is the same as for clothes: round fits round and rectangular fits rectangular; congruency is key again.

1.2.3 Preference for consistency

Preference for consistency refers to someone's personal preference or desire to be consistent, to appear consistent to others and the desire for other people to be consistent (Cialdini, Trost & Newsom, 1995). This preference for consistency applies to consistency within people – for instance in their thoughts and behavior, but not necessarily to their *exterior*: their physique. Since people often form opinions about someone else's character and characteristics, solely based on that person's (physical) appearance (Olivola & Todorov, 2013), it can be argued that people who have a relatively high preference for consistency would probably also evaluate other people with a consistent (or congruent) physical appearance "better" than someone with an inconsistent (incongruent) physical appearance.

1.3 Research questions

The main research question of this research is:

“What are the effects of congruency between physique, clothing and glasses on the perceived level of personal characteristics and to what extent are these effects related to preference for consistency?”

This research question is split into two separate research questions, identified by RQ1 and RQ2:

RQ1: *“What are the effects of congruency between physique, clothing and glasses to the perceived level of extraversion, agreeableness, conscientiousness, emotional stability, openness to new experiences, persuasiveness, attractiveness, intelligence, quality of leadership, business-mindedness and balancedness?”*

RQ2: *“What role does preference for consistency play on evaluating congruent and incongruent pictures?”*

2. Literature review

The main topic of this paper is congruency and the effects of external congruency, someone's appearance, on someone's personality traits. It is investigated whether there is a positive correlation between a consistent appearance and higher scores on perceived personality. Previous research showed already that personality is manifested through (various channels of) appearance and that observers use that information to form more or less (accurate) judgments for a variety of personality traits (Naumann, Vazire, Rentfrow & Gosling, 2009). However, the role of congruency and incongruency within someone's physical appearance on his perceived personality has not been researched yet. In this case, it is not about what characteristics someone possesses or is attributed, but the difference between congruent and incongruent outer appearance to the extent to which various personality traits seem applicable.

2.1 Congruency

Congruency refers to the harmony between two things, for example a person and his message. When these two things appear to be *well matched*, it creates a congruent overall image. It appears that people have a certain preference for congruent (or harmonic) stimuli (Van Rompay, Pruyn & Tieke, 2009). An example of preference for congruency is an experiment by Van Rompay and Pruyn (2011) in which people were asked about their preference for water bottles which varied in shape (feminine versus masculine) and typeface (feminine versus masculine). Bottles that were congruent, for example a feminine shape in combination with a feminine typeface, were perceived as more attractive and had higher (brand) credibility. Even though people are not bottles, it makes one wonder if a person – who is basically his own brand – would also be perceived as more attractive and more credible when congruent.

2.1.1 Congruency in marketing

In marketing and advertising, congruency is used to indicate consumer perceptions of *similarity* (Rifon, et al., 2004). In terms of sponsoring, congruency refers to the *relatedness* and *relevance* (John & Pham, 1991) and *compatibility* with the company (Ruth & Simonin, 2003). There is often spoken in terms of the right *fit* between the brand and the one selling or promoting the brand (Bainbridge, 2001). For companies it is important to have a spokesperson or figurehead that is congruent with the company's image, since congruency can create increased market share (Chandon, Wansink & Laurent, 2000) and product differentiation (Amis, Slack & Berret, 1991), whereas incongruency can slow down image transfer (Meenaghan, 2001) which means it takes longer for the receiver to understand and process the core message from the sender and the values of the organization. Sending congruent information to a target group, can cause people to form intentions to perform actual behavior as stated in that information (Sherman, Mann & Updegraff, 2006) for example enhance the intention of buying a certain product.

2.1.2 Congruency in people

Research shows that people have a preference for other people that appear to be congruent rather than incongruent (Krueger, Heckhausen & Hundertmark, 1995) and also want to be perceived as congruent towards other people (Derryberry & Reed, 1994). If an individual wants to come across as congruent, it is important, for example, that the hand gestures match the message (Mortensen, 2011). If a person is perceived as congruent, it has a positive effect on his persuasiveness (Lee & Higgins, 2009). This matches the assumptions of Van Doorn who states that congruency has a positive effect on persuasiveness (Van Doorn, 2009). However, Van Doorn talks about congruency

between a person's physique and clothing and Lee and Higgins speak of congruency between a sender and his message (Lee & Higgins, 2009). Congruency usually has a positive influence on the processing fluency of a message (Braun-LaTour, Puccinelli & Mast, 2007), while incongruency often stands out and attracts the attention from the message (Lee, 2000). This assumption lines up with the assumptions of Van Doorn who claims that incongruency between physique and clothing may distract the attention away from the person in the clothes (Van Doorn, 2009).

2.2 Processing Fluency

Processing fluency is the ease in which a person processes and understands a message. It is *"the speed in which targets are categorized"* (Lick & Johnson, 2013, p.419). High fluency and fast processing, is often associated with positive effects and more favorable evaluations (Winkielman et al., 2003). Fluent information is more often evaluated as more *true* (Koch & Forgas, 2012). Research shows that information that is congruent when entering the brain, is more automatically understood and also more often believed to be relevant and true (Kamins & Gupta, 1994). That fluent information is associated with positive effects, favorable evaluations and is considered more true, is also shown in Figure 1 (Morewedge & Kahneman, 2010). Good processing fluency leads to positive effects.

Figure 1 shows that processing fluency can be enhanced by several characteristics of a message (Morewedge & Kahneman, 2010). This can be for instance through message *priming*: showing a certain stimulus to the audience multiple times (Unkelbach et al., 2011); this is also known as the mere-exposure effect (Zajonc, 1968), but it can also be enhanced if the message is *coherent*, using congruency which has a positive effect on processing fluency (Ludwig, 2009). A *clear, easy to understand and/or pleasant* message can also enhance processing fluency: *"the internal consistency of the information available for a judgment is an important determinant of cognitive fluency, which, in turn, determines subjective confidence in judgments"* (Morewedge & Kahneman, 2010, p.438).

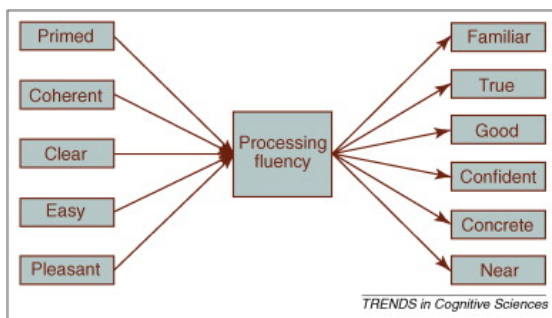


Figure 1 - Causes and judgmental consequences of processing fluency, a model by Morewedge and Kahneman (2010)

Congruency and processing fluency in people

Coherence, or congruency, of a message has a positive effect on processing fluency, leading to better evaluations of a message (Figure 1). It is interesting to find out whether the same rule applies to people who are congruent. A *person* is considered to be more persuasive when he appears to be congruent (McKay-Nesbitt, Bhatnagar & Smith, 2013) and it seems like the congruency within that person enhances the processing fluency, resulting in a better *overall perceived image* of that person's *character*, so he appears more persuasive when congruent than if incongruent (McKay-Nesbitt, Bhatnagar & Smith, 2013). However, as discussed in Chapter 2.1.2, congruency within a person is considered the fit between someone's message and for instance his hand gestures, so-called *internal*

congruency. The effect of *external congruency* of the messenger, so for example the fit between someone's physique and clothing, on *the character* of this messenger, has not been studied yet.

2.3 Measurements of characteristics

A good way to measure someone's character, is by using the characteristics of the Big Five of Personality (Costa & McCrae, 1992). The Big Five of Personality - consisting of the traits **extraversion**, **agreeableness**, **conscientiousness**, **neuroticism** and **openness to new experiences** – is considered to provide a fairly comprehensive description of variation of people's behavioral tendencies (Briley, Domiteux & Tucker-Drob, 2014; John, Naumann & Soto, 2008). The Big Five of personality have been proven to be extremely productive to measure personality (Briley, Domiteux & Tucker-Drob, 2014) and the Big Five also enjoys a lot of support and has become the most widely used and extensively researched model of personality (Gosling, Rentfrow & Swann Jr., 2003).

Other scales that are used to measure someone's personality are *Achievement-relevant Personality Measures* (APM). However, these APM's are very limited in measuring the entire personality, since it only focusses on a few single aspects (Briley, Domiteux & Tucker-Drob, 2014). A better and more detailed way to measure personality and characteristics than APM, would be with the *General Factor of Personality* (GFP) that measures more specific personality traits, both positive and negative character traits (Van der Linden, Tsaousis & Petrides, 2012), but the GFP is extracted from the traits of the Big Five of Personality (Rushton & Irwing, 2011), just like the *Eysenck Personality Inventory* that is very similar to the Big Five of Personality and exists of the dimensions *Neuroticism*, *Extraversion*, *Social desirability* and *Psychoticism* (Sanderman et al., 2012). Even though the Big Five has not been universally accepted (Block, 1995), and there are a lot of other ways to measure personality, it seems like the Big Five of Personality is the most stable way to measure someone's personality (Milojev et al., 2013).

Van Doorn (2009) assumes that congruency between physique and clothing contributes to a higher level of perceived desirable characteristics. To find out if someone is evaluated better on certain characteristics if congruent, could be measured by using the characteristics of the Big Five. However, since Van Doorn speaks mostly about appearing more persuasive through congruency, it is interesting to take also perceived persuasiveness into account. Persuasiveness is the ability to convince others of one's opinion and is defined by the The Free Dictionary (2015) as: "*the power to induce the taking of a course of action or the embracing of a point of view by means of argument or entreaty*". It is true that some people are more persuasive than others, because of for example one's personal characteristics (Carvent, Miles & Cervin, 1965) or the quality of arguments (Petty & Cacioppo, 1984). There are numerous of studies on what people can do to be more persuasive, e.g.: "Be More Persuasive" (Hoar, 2005). This study however, doesn't focus on becoming more persuasive by practicing some techniques, but this study tries to find out if someone can increase their persuasiveness by simply changing his or her wardrobe.

2.3.1 Characteristics related to persuasiveness

Van Doorn (2009) claims that the congruency can benefit more perceived characteristics than persuasiveness only, but she is not clear about what these characteristics exactly are. When looked at the literature, several characteristics seem related to **persuasiveness**: there is evidence that there is a positive correlation between one's **attractiveness** and one's persuasiveness (Pallak, Murroni & Koch, 1983) and also **intelligence** has been proven to be positively correlated with persuasiveness: "*Results indicated that more intelligent (...) subjects are more persuasive and less perusable*"

(Carver, Miles & Cervin, 1965, p1). **Leadership** is often considered to be closely related to intelligence. Since leaders ought to be intelligent, there has been done a lot of research about the relationship between leadership and intelligence, for instance Zaccaro, Gilbert, Thor & Mumford (1991) and Dulewicz & Higgs (2003). However, according to Judge, Colbert and Ilies (2004), the link between intelligence and leadership is lower than previously expected. This link is not strong enough to assume that leadership and intelligence are more or the less the same thing, but since leadership itself is also linked to persuasiveness (Tourish, Collinson & Barker. 2009), it is interesting to take also leadership into account. Also **business-mindedness** is linked to persuasion. Persuasion is often used in the “*business community*” (Burch, 1994). When selling something, one needs to possess a certain amount of persuasiveness: a good salesman is both business-minded (Peterson & Lucas, 2001) and persuasive (Noel, 1975).

2.3.2 Preference for consistency

The strength of an individuals’ motivation to seek congruency and the extent to which he finds congruency important, depends of that individual’s **preference for consistency (PFC)**: congruency is often more important for individuals with a high preference for consistency, rather than for individuals with a low preference for consistency (Thrash, Elliot & Schultheiss, 2007). Preference for consistency is the extent to which someone desires to be consistent within his own responses, the desire to appear consistent to others and the desire that others are consistent (Cialdini, Trost & Newsom, 1995).

It is known that people often have a preference for consistency: according to Swan, Stein-Serouss and Giesler (1992), this stems from an “*inborn preference*” for things that are predictable, stable, familiar and overall uncertainty reducing. It appears that congruency goes hand in hand with greater job satisfaction, career commitment, and *personal well-being*: if a person is congruent, he is **more balanced** than people that are incongruent (Litman-Ovadia & Davidovitch, 2010).

2.4 Explication of the research questions

By means of the characteristics that can be used to measure someone’s personality, various hypotheses were formulated. By examining the correctness of these statements, the research questions can be answered.

2.4.1 Hypotheses RQ1

Research question 1 (RQ1) can be answered by means of various hypotheses (H) about personal characteristics:

- H1 In case of congruency between shapes of clothing and physical appearance and – if present – glasses, an individual is perceived to be **more extravert** whereas in case of incongruency between shapes of clothing or glasses and physical appearance, an individual is perceived to be less extravert.

- H2 In case of congruency between shapes of clothing and physical appearance and – if present – glasses, an individual is perceived to be **more agreeable** whereas in case of incongruency between shapes of clothing or glasses and physical appearance, an individual is perceived to be less agreeable.

- H3 In case of congruency between shapes of clothing and physical appearance and – if present – glasses, an individual is perceived to be **more conscientious** whereas in case of incongruency between shapes of clothing or glasses and physical appearance, an individual is perceived to be less conscientious.
- H4 In case of congruency between shapes of clothing and physical appearance and – if present – glasses, an individual is perceived to be **more emotionally stable** whereas in case of incongruency between shapes of clothing or glasses and physical appearance, an individual is perceived to be less emotional stable (more neurotic¹).
- H5 In case of congruency between shapes of clothing and physical appearance and – if present – glasses, an individual is perceived to be **more open** to new experiences whereas in case of incongruency between shapes of clothing or glasses and physical appearance, an individual is perceived to be less open to new experiences.
- H6 In case of congruency between shapes of clothing and physical appearance and – if present – glasses, an individual is perceived to be **more persuasive** whereas in case of incongruency between shapes of clothing or glasses and physical appearance, an individual is perceived to be less persuasive.
- H7 In case of congruency between shapes of clothing and physical appearance and – if present – glasses, an individual is perceived to be **more attractive** whereas in case of incongruency between shapes of clothing or glasses and physical appearance, an individual is perceived to be less attractive.
- H8 In case of congruency between shapes of clothing and physical appearance and – if present – glasses, an individual is perceived to be **more intelligent** whereas in case of incongruency between shapes of clothing or glasses and physical appearance, an individual is perceived to be less intelligent.
- H9 In case of congruency between shapes of clothing and physical appearance and – if present – glasses, an individual is perceived to be **a good leader** whereas in case of incongruency between shapes of clothing or glasses and physical appearance, an individual is perceived to be less good of a leader.
- H10 In case of congruency between shapes of clothing and physical appearance and – if present – glasses, an individual is perceived to be **more business-minded** whereas in case of incongruency between shapes of clothing or glasses and physical appearance, an individual is perceived to be less business-minded.
- H11 In case of congruency between shapes of clothing and physical appearance and – if present – glasses, an individual is perceived to be **more well-balanced** whereas in case of incongruency

¹ Neuroticism is also known as “emotional unstable” (Vollrath & Torgersen, 2002). In this study there was chosen to work with the positively framed antonym “emotionally stable”.

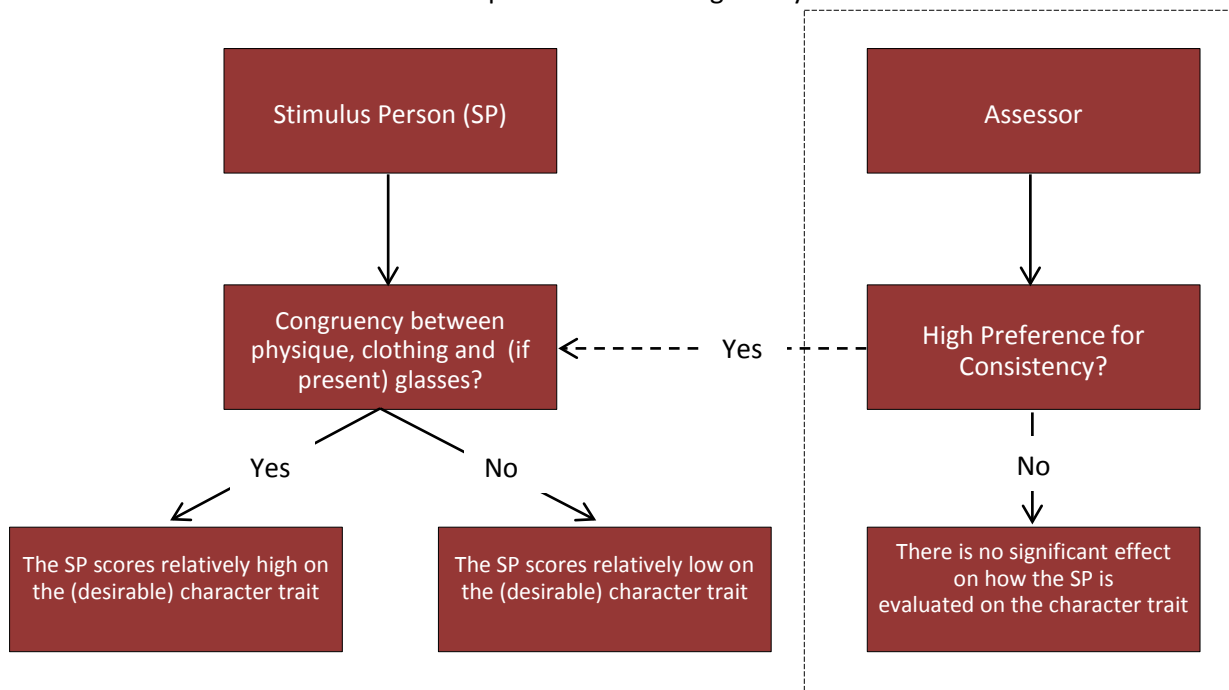
between shapes of clothing or glasses and physical appearance, an individual is perceived to be less well-balanced.

2.4.2 Exploring RQ2

Research question 2 (RQ2) can be answered by the exploration of the effects from “*preference for consistency*” on the different characteristics. Although preference for consistency applies to someone’s character and characteristics, it is well-known that people form opinions about other people’s personalities by the way these people look and people often judge others without simply speaking to them or sometimes having even met that other person (Olivora & Todolov, 2013). It may be assumed that people are evaluated based on the way they look: therefore it is also possible that one is evaluated in terms of consistency. If a person looks consistent (i.e. congruent) on the outside, people might consider that person to also be consistent or congruent on the inside. The ***preference for consistency*** scale (Cialdini, Tros & Newsom, 1995) can help to find out whether PFC plays a role in the evaluation of the various characteristics, if there is found a significant difference between the evaluations of congruent people and incongruent people.

2.5 Conceptual model

The conceptual model (Object 1) describes the hypotheses from RQ1 and the expectation from RQ2. If a person, the “*Stimulus Person*” (SP), has congruency between his physique, clothing and if present also glasses, he scores relatively high on perceived desirable characteristics (e.g. in case of congruency, someone is perceived as more persuasive than in case of incongruency). There is also expected that the extent to which the Assessor has a high “*Preference for Consistency*”, contributes to how important congruency is for him. A high preference for consistency was expected to have a high preference for congruency, while a low preference for consistency has no impact on how someone is evaluated since there is little preference for congruency.



Object 1 – Conceptual model on how the stimulus person is evaluated on a positive (desirable) characteristic due to external congruency of the stimulus person.

3. Pre-test

Before it could be tested whether congruency between physique, clothing and (if present) glasses causes an effect on how someone was evaluated, the right stimulus material had to be designed.

3.1 The manipulated picture

Although there was chosen to work with a “male” picture, it was not sure yet which picture should be used, because different people have different prejudices and (sexual) preferences. A lot of pictures were reviewed, but it was difficult to find a proper one due to personal appearance and charisma: what one person might consider positive another one can evaluate the same personal appearance as negative. Because of this, there was searched for a “neutral” picture. In the search for this neutral picture, there was stumbled upon “*the average face*”: a face that was derived from the merging of 32 different male faces, created by the University of Regensburg, Germany by Braun et al. (2001). This picture, Picture 2, was reviewed and considered to be the best fit for this study.



Picture 2 - The average face (Braun, Gruendl, Marberger & Scherber, 2001)

The person portrayed in Picture 3 shows very little emotion and because it is a mixture from various faces, everyone can find something in it he likes. Because of the merging of the faces, this face probably has something familiar, but will not be recognized by the target group, like in case of – for instance – celebrities. For this research, this picture was reshaped into one rectangular-shaped version and one round-shaped picture, as shown in Picture 3.

3.1.1 Shape physique

As shown in Picture 3, both the facial contouring and the shoulder area have been molded into an entire rectangular or entire round physique. This has been done to emphasize the body form and to match the body forms as described by Van Doorn (2009).



Picture 3 - Rectangular and round shaped faces

3.1.2 Clothing

Well-known writer Mark Twain once said: “Clothes make the man. Naked people have little or no influence in society”². Even though there are differences between people in fashion involvement and fashion sensibility, clothing is nonetheless a big part of everyday life (Cass, 2001). Clothing is a way of expression oneself: it can describe to what group or what culture someone belongs (Ryder, 2015). “Fashion clothing is an important and meaningful object for many consumers” (Hourigan & Bougoure, 2012, p127.). Whether we like it or not, we often make assumptions about people based on their appearance, based on their clothes (Bertrand & Davidovitsch, 2008).

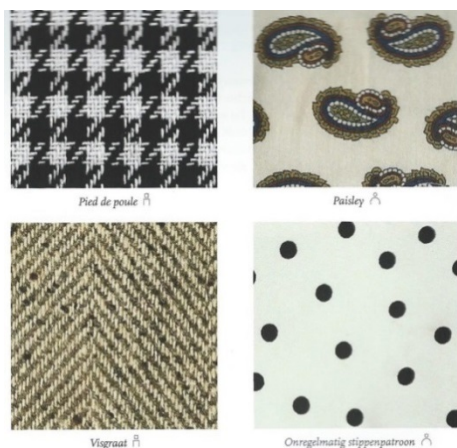
“*Clothes make the man. Naked people have little or no influence in society*”

There has been done a lot of research about fashion and fashion involvement and about what people should wear in a certain situation or in a certain profession, but these researches are not as detailed as Van Doorn describes the importance of clothing in her book. As far as known, there has not been done any research about the congruency of clothing, so this could form a nice addition to the existing literature about what one should wear.

Rectangular versus round t-shirts

Since this research focusses on the effects of congruency on how someone gets evaluated, there also needed to be t-shirts that were clearly angular or clearly round. For the round t-shirt a (regular) round neckline was chosen. For the angular t-shirt, there was chosen for a so called v-neck³.

Lida van Doorn also discusses various fabrics and patterns that flatter rectangular shaped people or round shaped people, for example the fabrics and patterns in Picture 4.



Picture 4 - Fabrics and patterns and the matching body form (Van Doorn, 2009)

Consistently with Van Doorn’s advice, there was chosen for fine, straight lines at the angular t-shirt and for dots at the round t-shirt. However, two problems were faced:

- » A dotted t-shirt as described by Van Doorn (an irregular dotting pattern) was often evaluated as *too feminine* by various people who were asked their opinion about the t-shirts and paisley-patterned t-shirts were considered to be even more feminine;
- » The rectangular and the round t-shirt needed to be comparable somehow.

² In: More Maxims of Mark (1927)

³ V-neck: at a piece of clothing, two diagonal lines from the shoulders form a V shape on the chest.

The first problem was tackled by choosing a t-shirt with smaller dots into a more regular pattern, which was considered *manlier* than the “bigger irregular dots”.

The second issue was a little more difficult because of the color ratio within the t-shirts. There was a preference for timeless colors, like for instance black and white (Chrzan & Rein, 2007). But when the men with the black-and-white t-shirts were compared (Picture 5), it showed that in the round t-shirt, the black color was very dominant over the white one, while the black and white in the rectangular shirt was more balanced between black and white.



Picture 5 – Black-and-white t-shirts

Because it was not possible to create the same black and white ratio between the two t-shirts, there was chosen for a medium: various shades of grey (Picture 6).

By reducing the size of the dots in the round t-shirt and applying a fish bone pattern (Van Doorn, 2009) onto the rectangular t-shirt, it was possible to vary in types of grey to the level that both of the shirts were well-balanced. The rectangular t-shirt is very angular and the round t-shirt has a very round character because of the small dots. The grey is well-spread and the t-shirts have the same look and vibe.



Picture 6 - Grey t-shirts

3.1.3 Glasses

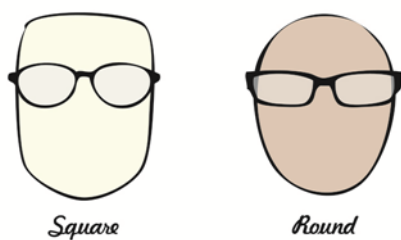
Since the number of people who wear eyeglasses is growing every year (CBS, 2013), glasses are nowadays considered a part of someone’s daily outfit. Even though hardly any scientific research has been done about what the optimal match between the shape of a face and the shape of the glasses, both opticians and fashion stylists agree: a face with mostly round features matches best with a set of rectangular shaped glasses and a face with rectangular features best fits eyeglasses that have round forms (Picture 7). This is diametrically opposed to what Van Doorn (2009) says, since she states that congruency is the optimal match for both shapes.

Congruency between glasses and facial shape

It appears that almost every optician discourages congruency between facial shape and the shape of glasses, which conflicts with Van Doorn’s beliefs about the combination between faces and eyewear. According to the opticians, incongruency would be more *flattering*, *more balanced* out and *softer*

(Glasses Direct, 2015). This lines up respectively with the variables *attractiveness*, *well-balancedness* and *agreeableness*. It would be plausible with the opticians' opinion if the incongruent faces (e.g. round physique, round shirt, rectangular glasses) would score better/higher on attractiveness, well-balancedness and/or agreeableness compared to the congruent faces (e.g. round physique, round glasses, round shirt).

Specsavers Optometrists⁴ states: "A round face is fairly short with a wide forehead, full cheeks and a round chin. If you have a round shaped face you should consider angular or geometric styles as they draw attention to the top half of the face. You should avoid oval or round shaped frames (...) A square face shape is defined by a broad, deep forehead, a wide jaw and a square chin. For this face shape, consider oval frames as they soften the jaw line. Avoid angular frames as these will emphasize the angular facial features."



Picture 7 - Opticians around the world agree: someone with an angular face should wear round glasses and someone with a round face should wear rectangular shaped glasses.

Glasses Direct⁵ recommends the same: "If you have a round face, softer angles in the brow and jaw lines, rectangular frame styles are definitely for you. They will flatter your face, making it appear slimmer and longer. The narrow style of rectangular frames will create balance with softer, rounder facial features. Choosing frames that are narrow and rectangular, with brow bars, will pull the eye upward, giving the illusion of a longer face rather than just a round one, and a more defined shape overall (...) If you have a square-shaped face, your best bet is to consider oval frames that are narrow in width, which will make a square face look longer and soften the angles. Frames of this style can soften the jaw line, place emphasis on the eyes and lengthen the nose. Square framed styles will achieve the opposite effect, and look out of balance with the rest of the face".

Rectangular versus round glasses

When the quest for finding the right t-shirts was over, it was time to focus on glasses. There are a lot of different glasses, both in frame and in lens size. Since the glasses should be strongly present, there was chosen for a relatively thick frame as shown in Picture 8.



Picture 8 - Glasses with thick frames

⁴ Specsavers is the third largest supplier of eye care in the world. For the past twelve years, Specsavers has been voted Britain's 'most-trusted' brand of optometrists by Reader's Digest. Specsavers is considered an expert in their field.

⁵ Glasses Direct is Europe's largest online prescription eyewear store

To emphasize extra on the differences between rectangular and round shapes that underlie in this research there was chosen for very obvious rectangular and very obvious round glasses as shown in Picture 9. Besides this it was made sure that the lenses of the glasses were comparable in size.



Picture 9 - Rectangular and round glasses

Objectives

To investigate whether there really is a desire in people for congruency, various photos were modified in a particular way to reduce bias as much as possible. The gray shirted pictures were changed in such a way that there were twelve comparable pictures:

- » Rectangular shaped physique, rectangular shaped clothing and no glasses (congruent).
- » Rectangular shaped physique, rectangular shaped clothing and rectangular shaped glasses (congruent);
- » Rectangular shaped physique, rectangular shaped clothing and round glasses (incongruent);
- » Rectangular shaped physique, round shaped clothing and no glasses (incongruent);
- » Rectangular shaped physique, round shaped clothing and rectangular shaped glasses (incongruent);
- » Rectangular shaped physique, round shaped clothing and round shaped glasses (incongruent);
- » Round shaped physique, rectangular shaped clothing and no glasses (incongruent);
- » Round shaped physique, rectangular shaped clothing and rectangular shaped glasses (incongruent);
- » Round shaped physique, rectangular shaped clothing and round glasses (incongruent);
- » Round shaped physique, round shaped clothing and no glasses (congruent).
- » Round shaped physique, round shaped clothing and rectangular shaped glasses (incongruent);
- » Round shaped physique, round shaped clothing and round shaped glasses (congruent);

The twelve pictures as described above can be found in Appendix 1.

3.2 Design of the questionnaire

To find out whether there is a difference on how someone's is evaluated on perceived characteristics between cases of congruency and incongruency, different variables that measure personality are incorporated into a questionnaire. In Chapter 2, the variables that can help to measure someone's personality were already mentioned briefly. The variables consist of a couple of questions (items).

3.2.1 Desirable characteristics

Van Doorn mainly discusses that congruency between physique and clothing enhances someone's persuasiveness, but can also lead to a strong, authentic, self-conscious and interesting portrayal of an individual. The proper clothing will not only help one to become more persuasive, but can contribute

to an improved image about a lot of desirable characteristics. This study discovers whether multiple positive characteristics are attributed to someone in a greater extent when there is congruency between physique and clothing than if there is incongruency between physique and clothing. The characteristics that were used to measure the personality of the person in the pictures are in this study defined as “*desirable characteristics*”: the characteristics from the Big Five of Personality, plus positive characteristics that are linked to persuasiveness.

3.2.2 The Big Five

The first characteristics that were added to measure personality, are the characteristics of the well-known Big Five of Personality. To determine the five traits of the Big Five, the definition from Costa and McCrae (1992) is used, since they found a way to combine all the former well-accepted prior explanations such as “*Tupes and Christal (1961), Norman (1963), Digman and Inouye (1986), Goldberg (1990) Hogan (1986) Wiggins (Trapnell & Wiggins, 1990), and Costa and McCrae (1985)*” (Costa & McCrae, 1992 p.653). The Big Five contains: ***extraversion, agreeableness, conscientiousness, emotional stability*** and ***openness to new experiences*** (Costa and McCrae, 1992). For determining the components of the five characteristics, the scale of Gosling, Rentfrow and Swann Jr. (2003) was used, since this is an already validated scale. The explanation about all character traits, the antonym of these traits, the Dutch translations of the character traits and the antonyms can be found in Appendix 3.

3.2.3 Persuasiveness and characteristics linked to persuasiveness

Since the starting point of this research was based on the assumption by Van Doorn (2009) about the effects of congruency on several characteristics, but mainly on persuasiveness, the characteristics besides the Big Five that were added to measure personality in this study are in a way related to persuasiveness. These characteristics are: ***persuasiveness, attractiveness, intelligence, quality of leadership, business-mindedness and balancedness***.

For persuasiveness and the variables linked to persuasiveness, except for intelligence, there has not been made a reliable scale yet. To come up with five items per variable, there was looked at synonyms and antonyms of the variables. The items that formed the variables were discussed with two *experts*⁶. Together with the experts, the list of items was reviewed, changed and completed. Originally, the variables and items were created in the Dutch language, since the questionnaire and participants were Dutch too, to avoid translation bias as much as possible. More about the character traits, how they all relate to persuasiveness, the antonym of these traits, the Dutch translations of the character traits and the antonyms can be found in Appendix 3.

3.2.4 Preference for consistency as covariate

Even though this research focusses on the effects of external congruency, it is interesting to include internal congruency into the questionnaire with a pre-existing validated scale about “***preference for consistency***”. The five questions which were most clear and unambiguous when translated into Dutch questions were picked from the “Preference for Consistency Scale” by Cialdini, Tros and Newsom (1995). It was assumed that people with high preference for consistency would evaluate a congruent picture better in general than an incongruent picture. Therefore, preference for consistency is a trait that was added to check whether there is a correlation between the given answers on the perceived characteristics by the respondents and their personal preference for

⁶ Experts are defined by Baarda, de Goede and Theunissen (2009). For this study, the experts are the two supervisors of this master thesis.

consistency. The questions as created by Cialdini, Tros and Newsom, and added to the questionnaire, can be found in Appendix 3.

3.3 The questionnaire

Before the questionnaires could be conducted; by means of interviews, it was ensured that the questionnaire was understandable and did not contain abnormalities of any kind. The main reason for this qualitative pre-research was to enable confirmation or corroboration and to make sure the questionnaire would be understood by the target group (Rossman & Wilson, 1984). Any flaws would be discovered early in the process, allowing to adjust the questionnaire in time before the main research (Parasuraman, Grewal & Krishnan, 2006). According to Burns and Bush (2006), a pretest usually contains five to ten respondents in total. Since this research contains twelve conditions, there has been chosen to interview twelve respondents: one for every picture.

Interviews

The pretest revealed that all the items of the questionnaire were clear and unambiguous, even to the respondents that did not have Dutch as their native language. The written interviews can be found in Appendix 4. The main outcome of the pretest was that the questionnaire was unambiguous and accessible to all the respondents. Every question was clear and was interpreted as it was supposed to be interpreted. As hoped-for, the assumed purpose of the study was not related to congruency whatsoever.

4. Methodology

This is an experimental research with a 2x2x3 design in which participants were exposed to one of twelve manipulated pictures that were congruent or incongruent and randomly divided among the subjects. The 2x2x3 design refers to the different shapes in physique, clothing and glasses. The physique can be rectangular or round, the clothing can be rectangular or round and the glasses can be rectangular, round or absent. Participants evaluated a picture of a person about the perceived level of extraversion, agreeableness, conscientiousness, emotional stability, openness to new experiences, persuasiveness, attractiveness, intelligence, quality of leadership, business-mindedness and balancedness. To rate these dimensions, a questionnaire was created which was applied to the twelve different photographs. The manipulated pictures can be found in Appendix 1; the questionnaire can be found in Appendix 2.

4.1 Research design

The twelve conditions of the 2x2x3 experimental design are displayed in Table 1: physique (rectangular versus round); clothing (rectangular versus round) and glasses (rectangular versus round versus none).

		Rectangular physique			Round physique	
		No glasses	Rectangular glasses	Round glasses	No glasses	Rectangular glasses
Rectangular clothing	Congruency	Congruency	Incongruency	Incongruency	Incongruency	Incongruency
Round clothing	Incongruency	Incongruency	Incongruency	Congruency	Incongruency	Congruency

Table 1 - Design

The table shows that there are four congruent conditions and eight conditions are incongruent due to an incongruent mix between physique, shape of clothing and (optionally) shape of glasses.

4.2 Data collection and participants

Mobiel Centre in Almere helped conducting the questionnaires for this study. Mobiel Centre is a Dutch commercial research organization has approximately 1000 male subjects in their respondents panel. For this research there was chosen to only include male participants, to avoid that the research would become too complex. These men all received an e-mail in which they were asked to participate in an online study about personal perceptions about a person for the purpose of a graduation study. The invitation e-mail can be found in Appendix 5.

According to the AOM Sample Calculator⁷, the sample size of a coincidence interval of 95% should hold at least 318 participants, considering there was assumed that at least 30% of the 1.000 approached respondents would provide a useful response (e.g. without missing items or partially filled out questionnaires), which would be around 300 respondents; 25 respondents per condition. In approximately two weeks, 351 respondents provided a fully filled out questionnaire. The distribution of the respondents between the conditions varied from 27 to 31 per condition. When reviewing the data, it appeared that some people answered (almost) every question the same. There was chosen to exclude people who gave in 98% of the questions the same answer (this adds up to one question

⁷ AOM Sample Calculator: this is the online sample calculator from the online platform "Alles Over Marktonderzoek" (everything about marketing research), a tool to quickly calculate how many respondents are needed in a (quantitative) research.

answered differently from the other questions), because it is safe to assume that when people always give the same answer to every question, they probably did not read all the questions. In the end eight people were excluded before starting to analyze the results, leaving 343 respondents to work with.

Participants

At the end of the questionnaire, the subjects were asked their age, postal code, level of education and occupation. Based on the answers to these questions, it was concluded that the respondents group was a fair representation of the Dutch male population. The full analysis about the distribution of the respondents can be found in Appendix 6.

4.3 Validity

To determine the degree to which the measuring instrument measures what it is supposed to measure (Anastasi & Urbina, 1997), use has been made of face, content, construct and criterion-related validity as defined by Oluwatayo (2012) and internal and external validity as defined by Cook and Campbell (1979). All the results from the validity tests combined, it was concluded that the instrument was valid. The full validity test can be found in Appendix 7.

4.4 Reliability

Before any assumptions or statements could be evaluated about the eleven characteristics: extraversion, agreeableness, conscientiousness, emotional stability, openness to new experiences, persuasiveness, attractiveness, intelligence, quality of leadership, business-mindedness and balancedness, and the covariate PFC, the Cronbach's Alpha for these constructs has to be tested to find out whether these are reliable.

Internal consistency with Cronbach's Alpha

Generally spoken, a Cronbach's Alpha from 0.7 or higher is considered reliable (Nunally, 1978). However, according to many other researchers (e.g. Nagpal et al., 2010; Hair, 2006 & Moss et al., 1998) discuss that a Cronbach's Alpha upward from 0.6 is also acceptable. Generally, a Cronbach's Alpha from 0.65 and above is considered acceptable (Gliem & Gliem, 2003).

On the next page are the calculated Alpha's for the various character traits and the covariate PFC, which are given in Table 2 and Table 3. As shown in these tables, not all the traits appear to reach an Alpha of at least 0.65. Just like conscientiousness, are extraversion, agreeableness, emotional stability and openness to new experiences all retrieved from pre-existing scales. However, it is often discussed that *"an Extraversion (E) scale that includes items assessing Neuroticism (N) and Conscientiousness (C) as well as E is unlikely to be internally consistent, because these three factors are largely unrelated. It is because of potential item irrelevance that internal consistency analyses are routinely used to eliminate "bad" (i.e., invalid) items in scale development"* (McCrae et al., 2011).

Other possibilities for the low Cronbach's Alphas are further discussed in the discussion section of this paper. When looked at the other variables, it appears that business-mindedness and leadership are below 0.65 too.

Personality traits	Cronbach's Alpha	Cronbach's Alpha if item deleted	Number of items
Extraversion	0.315	0.392	5
Agreeableness	0.618	0.695	5
Conscientiousness	0.682	0.667	5
Emotional stability	0.446	0.534	5
Openness to new experiences	0.495	0.557	5
Persuasiveness	0.695	0.738	5
Attractiveness	0.821	0.795	5
Intelligence	0.790	0.798	5
Leadership	0.394	n.a.	2
Business-mindedness	0.268	0.306	5
Balancedness	0.669	0.691	5

Table 2 – Cronbach's Alpha for all variables

Covariate	Cronbach's Alpha	Cronbach's Alpha if item deleted	Number of items
Preference for consistency	0.608	0.623	5

Table 3 – Cronbach's Alpha for the covariate Preference for consistency

It appears that Cronbach's Alpha often can be increased by deleting certain items (Table 4 and Table 5). However, the characteristics extraversion, emotional stability, openness, leadership and business-mindedness all fail to reach a Cronbach's Alpha of a 0.65 value. In the case of extraversion, openness and business-mindedness, it was possible to remove even more items, but in that case would the Cronbach's Alpha decrease again. Despite the fact that the Cronbach's Alpha's for extraversion, emotional stability and openness are not high enough, one has to work with what they have.

Cronbach's Alpha of the traits agreeableness, persuasiveness, intelligence and balancedness could be enhanced by removing another item. However, the differences between the current Alpha's and the possible new Alpha's when another item would be removed, were very small for agreeableness, intelligence and balancedness. According to Raykov (2008), enhancing a Cronbach's Alpha - that is already sufficient - a little by removing an item *"in fact leads to a substantial decrement in criterion validity"* (Raykov, 2008, p.13). McCrae et al. (2010) discuss that removing items from a personality scale should be as minimized as possible, even if that means limiting the enhancement of Cronbach's Alpha. Therefore, there was chosen to remove items from the variables until the point of a 0.65 α was reached, to ensure the quality of the internal consistency. After that transition point, no more items were deleted, to ensure the criterion validity; since it has been proven (among in behavioral research), that the deletion of such instrument components whose removal leads to maximal increment in Cronbach's Alpha, but entails considerable loss in composite reliability (Raykov, 2007).

Personality traits	New Cronbach's Alpha	Number of items remaining
Extraversion	0.520	3
Agreeableness	0.695	4
Conscientiousness	0.682	5
Emotional stability	0.643	2
Openness to new experiences	0.557	4
Persuasiveness	0.695	5
Attractiveness	0.821	5
Intelligence	0.790	5
Leadership	n.a.	1
Business-mindedness	n.a.	1
Balancedness	0.669	5

Table 4 – New Cronbach's Alpha for all variables

Covariate	New Cronbach's Alpha	Number of items remaining
Preference for consistency	0.660	3

Table 5 – New Cronbach's Alpha for Preference for consistency

In the extent of this, there are also voices that proclaim that a high Cronbach's Alpha is not that important and because all shortcoming variables fail to reach an Alpha of 0.65, there has been chosen to work with the highest possible Cronbach's Alpha (so for instance: 0.52 for extraversion). The personality traits leadership and business-mindedness are not even close to an Alpha of 0.65 and were left with one item remaining, there was chosen to exclude these traits from this research, since *"it is very unlikely that a single item can fully represent a complex theoretical concept"* (McIver & Carmines, 1981, p.15).

4.5 Normality testing

To make validated statements about the correctness of the hypotheses, it is important that the data is normally distributed, since most tests that will be used to test these hypotheses assume a normal data distribution (Park, 2008). Testing the normality of the data was visualized by the Normal Q-Q plots and histograms, since this is considered a reliable tool to test normality (Razali & Wah, 2011). The normality test showed that all the significance levels of the variables all were under the preferred 0.05⁸ and both the Q-Q plots and the histograms confirm that the data is normally distributed. The table of the normality tests and the accompanying Q-Q plots and histograms can be found in Appendix 8.

Preference for Consistency

When looked at the normality tests, it appears that Preference for Consistency is not distributed normally (Figure 2). This is not unexpected, considering the natural inborn preference for consistency as mentioned in Chapter 2: individuals usually score higher on the PFC-related questions than the other ones. The non-normal distribution of PFC, implicates that instead of analyzing the data by mean, a median-split was to divide the respondents in two equal groups: high and low scores (MacCallum et al., 2002), since the median and the mean of PFC are not as close to one another as would be the case if PFC was normally distributed.

⁸ A significance level of 0.05 is commonly used in reliability. To a significance of 0.05, belongs a 95% confidence level, which means that there is a chance of 5% that the statistical significant effect was wrongfully accepted.

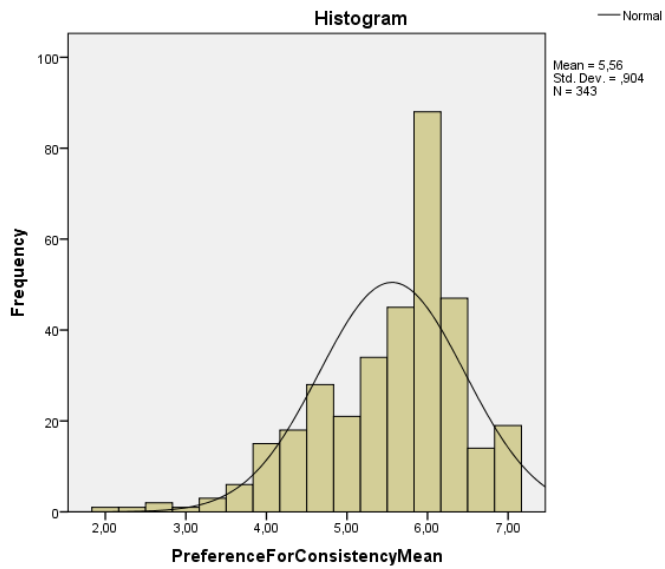


Figure 2 – Histogram of the normality test for Preference for Consistency

5. Results

This research focused on the effect of congruency within physical appearance on various *desirable* character traits. Possible effects can be found on solely *physique*, *clothing* or *glasses* (main effects), but it is also possible that there are significant effects in a two-way interaction between factors, for instance “*physique x clothing*” or even a three-way interaction: “*physique x clothing x glasses*”. With RQ2 in mind, Preference for Consistency was included in the analysis as a covariate on the effects. Four methods to measure significance levels were used (Pillai’s Trace, Wilks’ Lambda and Hotelling’s Trace and Roy’s Largest Root). All four methods showed clear significant effects within the main effects physique and glasses, however Pillai’s Trace, Wilks’ Lambda and Hotelling’s Trace did not show significance within the effect between physique and glasses, but Roy’s Largest Root shows a .024 significance level here (Table 6). A similar situation was found in the effect between physique, clothing and glasses where Pillai’s Trace, Wilks’ Lambda and Hotelling’s Trace were non-significant, but Roy’s Largest Root has a significance level of .049 and is significant.

Effect	Value	F	Sig.
Intercept	5.621	201.121	.000
Preference for Consistency	.027	.959	.474
Physique	.091	3.240	.001
Clothing	.042	1.496	.148
Glasses	.074	2.645	.006
Physique x Clothing	.027	.971	.464
Physique x Glasses	.060	2.162	.024
Clothing x Glasses	.050	1.777	.072
Physique x Clothing x Glasses	.053	1.915	.049

Table 6 – The effects of Roy’s Largest Root on the multivariate effects between physique, clothing and glasses.

Roy’s Largest Root is considered the most powerful approach to calculate the level of significances, but it is also the most susceptible for deviations in covariance matrices. Only in case of a perfectly normal distribution and perfect covariance that should be almost exactly the same, Roy’s Largest Root could be used to interpret the outcomes but it is highly discouraged. (How2Stats, 2011). According to Carey (1998), “*Roy’s Largest root is an upper bound on F, it will give a lower bound estimate of the probability of F. Thus, Roy’s largest root is generally disregarded when it is significant but the others are not significant*” (Carey, 1998, p13-14). However, since the data is normally distributed and the covariance is next to perfect (See Appendix 8), there was chosen to work with the effects found within Roy’s Largest Root.

Even though there are no significant main effects found in “clothing” and no significant interaction effects found within the combination of “physique x clothing” (Table 6), there was chosen to look past this and find the significances on a more detailed level, in the “*tests of between subjects effects*”.

5.1 Effects on physique

First the main effects of the dependent variables – the characteristics – on physique were noted, after that the two-way interactions and finally the three-way interactions.

5.1.1 Main effects on physique

There were two types of physique: rectangular and round. When looked at the multivariate tests effects in Table 6, it appears that there is a difference between how the rectangular faces were evaluated compared to the round faces ($p < .001$). The significant⁹ effects were found on the characteristics:

- » Extraversion ($F = 5.84$; $p = .016$);
- » Agreeableness ($F = 7.94$; $p = .005$);
- » Conscientiousness ($F = 4.23$; $p = .041$);
- » Emotional stability ($F = 7.25$; $p = .007$);
- » Attractiveness ($F = 14.56$; $p < .001$);
- » Intelligence ($F = 6.36$; $p = .012$);
- » Balancedness ($F = 8.28$; $p = .004$).

Table 7 shows the means (M) and standard deviations (SD) of the characteristics with significant effects on physique.

	Rectangular physique		Round physique	
	M	SD	M	SD
Extraversion	3.63	0.99	3.37	0.93
Agreeableness	4.37	1.01	4.09	0.99
Conscientiousness	4.86	0.86	4.68	0.81
Emotional stability	3.86	1.11	3.52	1.17
Attractiveness	4.08	1.19	3.60	1.09
Intelligence	4.91	0.91	4.68	0.87
Balancedness	4.56	0.90	4.28	0.88

Table 7 – Means and standard deviations of the characteristics that showed a significant effect on physique

On all these characteristics, the pictures with the person with the **rectangular physique**, scored significantly higher than the person in the picture with the round physique.

5.1.2 Two-way interaction between physique and clothing

On the two-way interaction between physique and clothing, significant effects were found on two characteristics:

- » Persuasiveness ($F = 4.12$; $p = .043$);
- » Attractiveness ($F = 4.88$; $p = .028$).

Persuasiveness

Table 8 shows the means (M) and standard deviations (SD) of the scores on the rectangular and round physique, combined with the rectangular and round t-shirts on persuasiveness ($F = 4.12$; $p = .043$). It is noted that the highest score is on the rectangular physique with the rectangular clothing,

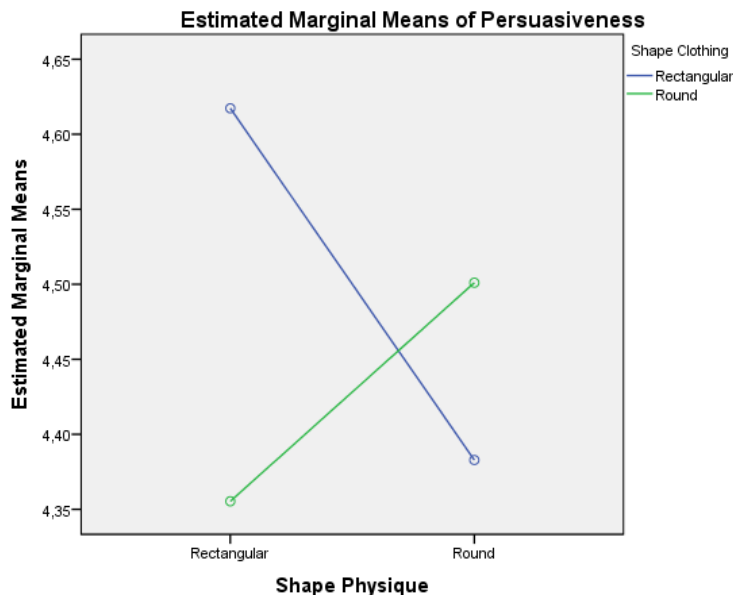
⁹ The significant level that was used is 0,05. This significance level is most commonly used in behavioral science (Faul et al., 2007)

thus a congruent picture. For the round physique, the highest score is the round t-shirt, thus also the congruent picture.

	Rectangular Physique		Round Physique	
	M	SD	M	SD
Rectangular Clothing	4.61	0.87	4.38	0.78
Round Clothing	4.37	0.95	4.50	0.87

Table 8 – Means and standard deviations of the interaction effect between physique and clothing on persuasiveness

The different means between the two types of physique and two types of clothing was plotted in Figure 3. It shows that the difference between the scores on rectangular clothing and round clothing is much greater for the rectangular physique than for the round physique. Even though both congruent pictures score better than the incongruent pictures, only the difference between the types of clothing for the rectangular physique is significant ($p = .048$); the difference between the types of clothing for the round physique is not significant ($p = .375$).



Covariates appearing in the model are evaluated at the following values: Percentile Group of PreferenceForConsistencyMean = 1.49

Figure 3 – Plot of the interaction between physique and clothing on persuasiveness

Attractiveness

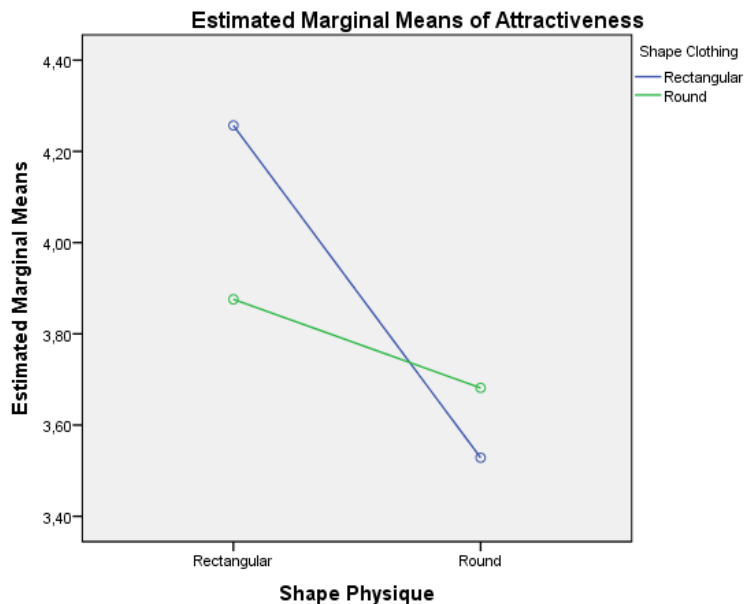
Table 9 shows the means (M) and the standard deviation (SD) of the scores on the rectangular and round physique, combined with the rectangular and round t-shirts on the characteristic attractiveness ($F = 4.88$; $p = .028$). It is noted that again the highest score is on the rectangular physique with the rectangular clothing, thus a congruent picture. For the round physique, the highest score is the round t-shirt, thus also the congruent picture.

	Rectangular Physique		Round Physique	
	M	SD	M	SD
Rectangular Clothing	4.26	1.08	3.53	0.93
Round Clothing	3.90	1.27	3.68	1.22

Table 9 – Means and standard deviations of the interaction effect between physique and clothing on attractiveness

The different means of the two types of physique and two types of clothing were plotted in Figure 4. It shows that the difference between the scores on rectangular clothing and round clothing is much

greater for the rectangular physique than for the round physique. Even though both congruent pictures score better than the incongruent pictures, only the difference between the types of clothing for the rectangular physique is significant ($p = .026$); the difference between the types of clothing for the round physique is not significant ($p = .373$). The plot in Figure 4 also reads that no matter whether the person wears rectangular or round clothing, the rectangular physique scores always higher than the round physique, which was also shown in the main effects on physique.



Covariates appearing in the model are evaluated at the following values: Percentile Group of PreferenceForConsistencyMean = 1.49

Figure 4 – Plot of the interaction between physique and clothing on attractiveness

5.1.3 Two-way interaction between physique and glasses

On the two-way interaction between physique and glasses, on one characteristic a significant effect was found:

- » Agreeableness ($F = 2.98$; $p = .052$).

Agreeableness

Table 10 shows the means of the scores on the rectangular and round physique, combined with rectangular glasses, round glasses and no glasses on the characteristic agreeableness. It is noted that again the highest score is on the rectangular physique with the rectangular glasses, followed closely by the condition without glasses. Both conditions (rectangular and no glasses) are congruent. The incongruent condition, rectangular physique and round glasses, is far below. Even though the round glasses have the highest score on the round physique, closely followed by no glasses and the rectangular glasses have the lowest scores, the differences for the glasses on the round physique are not significant. The significant difference is on the rectangular physique between the round glasses and rectangular glasses or no glasses.

	Rectangular Physique		Round Physique	
	M	SD	M	SD
No Glasses	4.50	1.04	4.09	0.92
Rectangular Glasses	4.58	0.92	4.04	1.15
Round Glasses	4.07	1.01	4.13	0.89

Table 10 – Crosstab of the interaction between physique and glasses on agreeableness

To visualize the means from Table 8, the two types of physique and three conditions of glasses were plotted in Figure 5. Within the rectangular physique, two significant effects were found: the difference between no glasses and round glasses ($p = .015$) and the difference between rectangular glasses and round glasses ($p = .006$). The difference between no glasses and rectangular glasses for the rectangular physique was not significant ($p = .730$).

Within the round physique, all scores are clustered and no significant effects were found there: The difference between no glasses and rectangular glasses was not significant ($p = .830$); the difference between no glasses and round glasses was not significant ($p = .785$) and the difference between rectangular glasses and round glasses was neither significant ($p = .627$).

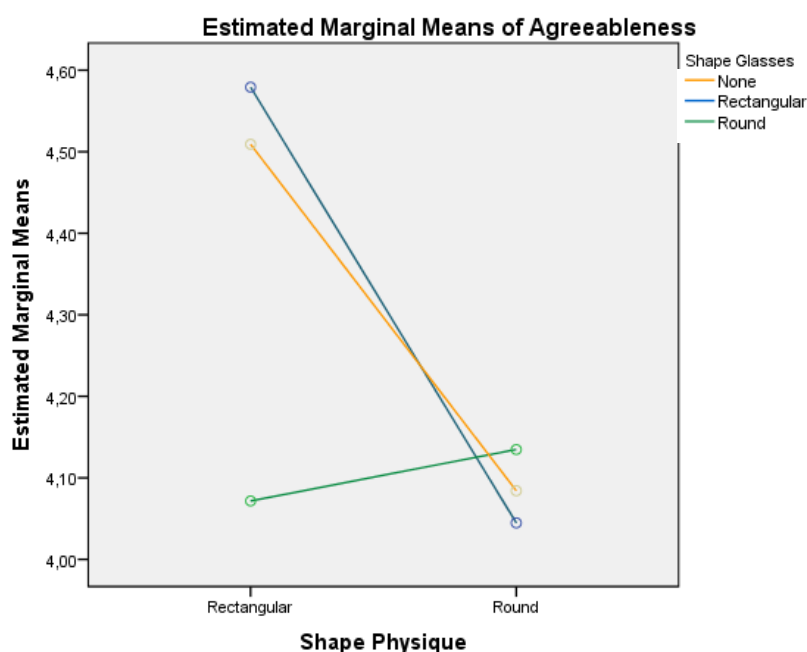


Figure 5 – Plot of the interaction between physique and glasses on agreeableness

5.1.4 Three-way interaction between physique, clothing and glasses

Within the three-way interaction, on two characteristics were significant effects found:

- » Agreeableness ($F = 4.35$; $p = .014$);
- » Persuasiveness ($F = 4.04$; $p = .019$).

Agreeableness

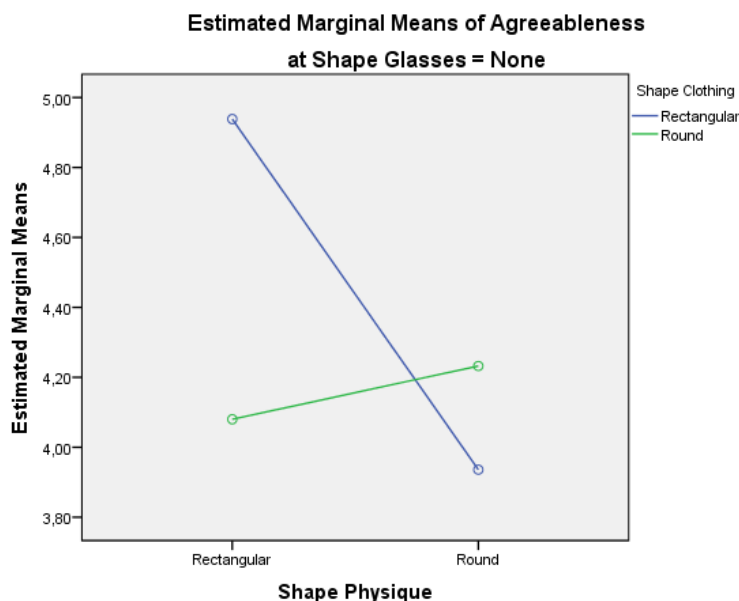
Table 11 shows the means (M) and the standard deviations (SD) of the three-way interaction between physique, clothing and glasses on the characteristic agreeableness ($F = 4.35$; $p = .014$). In both the rectangular and the round physique, it appears that for the rectangular physique, the highest score was on the congruent condition of a rectangular physique, rectangular clothing and no glasses. The second highest score for the rectangular physique was on the other congruent condition: rectangular physique, rectangular clothing and rectangular glasses. For the round physique, when looked at the highest score, it appears that this is not for a congruent condition, but for the incongruent condition: round physique, rectangular clothing and rectangular glasses. However, the scores on the conditions with a round physique seem to be clustered and the effects that were found on the round physique are not significant. The significant effect that was found on agreeableness in the three-way interaction was based on the conditions with a rectangular physique.

		Rectangular Physique		Round Physique	
		M	SD	M	SD
Rectangular Clothing	No Glasses	4.94	1.01	3.94	0.73
	Rectangular Glasses	4.71	0.67	4.28	0.96
	Round Glasses	4.09	1.12	4.21	0.80
Round Clothing	No Glasses	4.08	0.90	4.23	1.06
	Rectangular Glasses	4.44	1.11	3.81	1.28
	Round Glasses	4.05	0.90	4.05	0.98

Table 11 – Table of the interaction between physique, clothing and glasses on agreeableness

The plotting of the results from Table 11 has been divided into three separate plots: the condition with no glasses, the condition with rectangular glasses and the condition with round glasses. Only in the condition “no glasses” a significant effect was found for the rectangular physique. For the round physique in the condition “no glasses” the effect was not significant, as were both the rectangular and round physique in the condition “rectangular glasses” as well as both physiques were in the condition “round glasses”.

The plot in Figure 6 shows a significant effect for the rectangular physique in combination with “no glasses” ($p = .001$). The rectangular has a significant higher score when it was combined with a rectangular t-shirt then when it was combined with a round t-shirt. A round physique with a round t-shirt also has a higher score than a round physique with a rectangular t-shirt, but this difference is not significant ($p = .250$).



Covariates appearing in the model are evaluated at the following values: Percentile Group of PreferenceForConsistencyMean = 1,49

Figure 6 – Interaction plot between physique, clothing and glasses on agreeableness for the condition “no glasses”

Table 11 shows higher scores on agreeableness for rectangular glasses when combined with rectangular t-shirts than combined with a round t-shirts and higher scores for round glasses when combined with round t-shirts than when combined with rectangular t-shirts: so both in favor of congruency between clothing and glasses – regardless of the shape of the physique. The differences between the scores in the conditions round glasses and rectangular glasses however, are not significant and are therefore not further discussed.

Persuasiveness

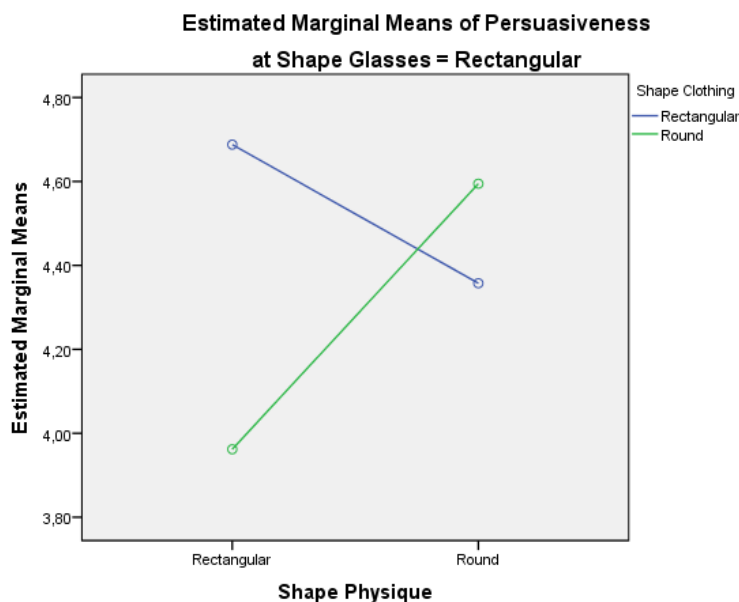
The three-way interaction between physique, clothing and glasses on persuasiveness ($F = 4.04$; $p = .019$) can be found in Table 12.

		Rectangular Physique		Round Physique	
		M	SD	M	SD
Rectangular Clothing	No Glasses	4.72	0.78	4.24	0.91
	Rectangular Glasses	4.69	0.83	4.36	0.62
	Round Glasses	4.44	1.00	4.56	0.78
Round Clothing	No Glasses	4.54	0.93	4.57	0.83
	Rectangular Glasses	3.96	0.95	4.59	0.83
	Round Glasses	4.56	0.88	4.34	0.97

Table 12 – Table of the interaction between physique, clothing and glasses on agreeableness

In the three-way interaction on persuasiveness, congruent conditions for both the rectangular and the round physique in combination with “no glasses” had the highest scores. However the effects in the condition “no glasses” between the rectangular physique and round physique are not significant: respectively ($p = .430$) and ($p = .148$). Even though these results are not significant, they line up with the significant effect that was found within the two-way interaction between physique and clothing.

For the condition “rectangular glasses”, a significant effect was found for the rectangular physique ($p = .002$). Figure 7 shows that for both the rectangular and the round physique, the highest score was found for the conditions with congruency. The difference however for the round physique between the scores with a rectangular t-shirt and a round t-shirt is very small and not significant ($p = .304$). The difference between the scores within the rectangular physique is significant and is in favor of the congruent condition with rectangular physique, rectangular clothing and rectangular glasses.



Covariates appearing in the model are evaluated at the following values: Percentile Group of PreferenceForConsistencyMean = 1.49

Figure 7 - Interaction plot between physique, clothing and glasses on persuasiveness for the condition “rectangular glasses”

No significant effects were found within the conditions “round glasses”; therefore these are not further discussed.

5.2 Effects on clothing

First the main effects of clothing are looked at, after that the two-way interaction between clothing and glasses. The three-way interaction between clothing, physique and glasses is already addressed in Chapter 5.1.4.

5.2.1 Main effects on clothing

Three significant effects were found on clothing within the characteristics:

- » Agreeableness ($F = 5,609$; $p = .018$);
- » Conscientiousness ($F = 5,001$; $p = .026$);
- » Emotional stability ($F = 6,981$; $p = .009$).

Table 13 shows the means (M) and standard deviations (SD) of the characteristics with significant effects on clothing.

	Rectangular clothing		Round clothing	
	M	SD	M	SD
Agreeableness	4.36	0.96	4.11	1.05
Conscientiousness	4.87	0.85	4.67	0.81
Emotional stability	3.85	1.19	3.54	1.09

Table 13 - Means and standard deviations of the characteristics with a significant effect on clothing

On all these three characteristics, the **rectangular t-shirt** scored significantly higher than the round t-shirt.

5.2.2 Two-way interaction between clothing and glasses

The only interaction that has not been addressed yet, is the interaction between clothing and glasses. However, the results showed no significant interaction effect between these two factors. The effects between the interaction between clothing and physique can be found in Chapter 5.1.2.

5.3 Effects on glasses

Within the last factor, the factor glasses, only the main effects are addressed, considering the possible two- and three-way interactions containing glasses have already been explored in Chapter 5.1 and 5.2.

Main effects on glasses

Within glasses, two significant effects have been found on the characteristics, namely on:

- » Extraversion ($F = 4.64$; $p = .010$);
- » Attractiveness ($F = 5.25$; $p = .006$).

Table 14 shows the means (M) and standard deviations (SD) of the characteristics with significant effects on glasses.

	No glasses		Rectangular glasses		Round physique	
	M	SD	M	SD	M	SD
Extraversion	3.73	0.90	3.35	1.02	3.41	0.96
Attractiveness	4.08	1.16	3.58	1.18	3.86	1.11

Table 14 - Means and standard deviations of the characteristics with a significant effect on glasses

When looked at the data, it appears that the highest scores for both the characteristic extraversion and for attractiveness were for the condition “no glasses”. The lowest scores were for the rectangular glasses. The plots in Figure 8 and 9 demonstrate how the different types of glasses were evaluated.

Figure 8 shows that the difference between rectangular glasses and round glasses is not very large and not significant, but when these conditions are compared to conditions without glasses, it appears that the people in the pictures who did not wear glasses, were perceived significantly more extravert than someone who does wear glasses:

- » No glasses versus rectangular glasses has a significant effect ($p = .005$);
- » No glasses versus round glasses has significant effect ($p = .016$);
- » Rectangular glasses versus round glasses has no significant effect ($p = .701$).

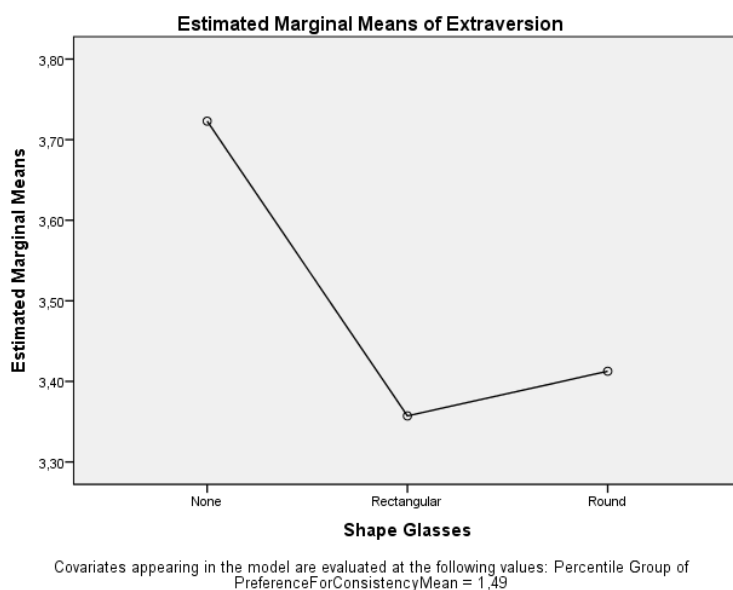


Figure 8 – Plot of the different glasses on extraversion

Figure 9 demonstrates that in terms of attractiveness, the difference in scores between rectangular glasses and round glasses is similar to the difference in scores between no glasses and round glasses. The difference between the scores on rectangular glasses and no glasses however is very large, which explains why there was a significant effect found:

- » No glasses versus rectangular glasses has a significant effect ($p = .001$);
- » No glasses versus round glasses has no significant effect ($p = .145$);
- » Rectangular glasses versus round glasses has no significant effect ($p = .076$).

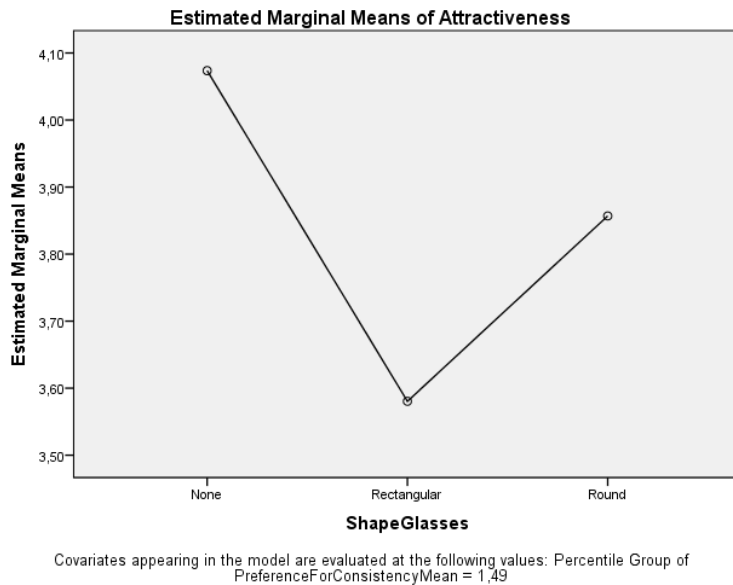


Figure 9 – Plot of the different glasses on attractiveness

5.4 The impact of preference for consistency

Preference for consistency was added as a covariate in this research, since it was assumed that this would impact the relation between the factors physique, clothing and/or glasses and de desirable characteristics. However, PFC did not have a significant effect in the multivariate test ($F = 0.96$; $p = .474$). Also in the test of between-subjects effects, Preference for Consistency was not significant for any of the characteristics.

Correlation between PFC and perceived similarity

One of the last questions in the questionnaire that the respondents had to answer, was to what extent they believed that the person in the picture looked like them. This question was to find out whether there was a correlation between a high preference for consistency and the extent to which a person considers himself to be like the person in the picture between congruent and incongruent pictures. The expectation was that people with a high preference for consistency feel like the person on the picture looks more like them when the person in the picture is congruent than when the person in the picture is incongruent.

It has already been proven that we like people better who are similar to us, who look like us (Fowler, Settle & Christakis, 2011). This was also reflected in the results of this research: people who felt like they looked alike the person in the picture, rated the person in the picture significantly more extraverted ($F = 4,57$; $p = .027$), more emotional stable ($F = 13,04$; $p < .001$), and more attractive ($F = 13,67$; $p < .001$) than the people who did not feel like the person in the picture looked like them. The results indicate however that there was no significant correlation on any of the variables between a high preference for consistency and the extent to how much the respondent felt like the person in the picture looked like him, nor is there a correlation between a high preference for consistency and the feeling that the congruent persons look more like them than the incongruent persons.

6. Conclusion

The starting point of this research is finding out whether congruency has an effect on how someone is evaluated by others solely based on physical appearance. Reason for this research is based on the propositions by Van Doorn in her book “Overtuigen door Uitstraling” (2009) on how congruency between physique and clothing can contribute to an overall more persuasive image of someone. This research finds out whether there is a correlation between someone’s perceived persuasiveness and other perceived characteristics and congruency between physique and clothing. In the extent of the effects of congruency on the included characteristics¹⁰, also a foray into “preference for consistency” has been made to see to what extent this is linked to congruency. All of this created the central research question:

“What are the effects of congruency between physique, clothing and glasses on the perceived level of personal characteristics and to what extent are these effects related to preference for consistency?”

This was split into two research questions, each containing respectively eleven and two hypotheses. These hypotheses will be discussed first to help answering the research questions.

6.1 Research questions

The hypotheses are divided between two research questions:

RQ1 *“What are the effects of congruency between physique, clothing and glasses to the perceived level of extraversion, agreeableness, conscientiousness, emotional stability, openness to new experiences, persuasiveness, attractiveness, intelligence, quality of leadership, business-mindedness and balancedness?”*

RQ1 *“What role does preference for consistency play on evaluating congruent and incongruent pictures?”*

6.2 Research question 1 and belonging hypotheses

In Table 15 are the hypotheses written down and behind them it shows whether the hypothesis was proven to be correct or not. Below Table 15, is further elaborated on the hypotheses that were proven correctly.

No	Hypothesis	Supported
H1	In case of congruency between shapes of clothing and physical appearance and – if present – glasses, an individual is perceived to be more extravert whereas in case of incongruency between shapes of clothing or glasses and physical appearance, an individual is perceived to be less extravert.	No
H2	In case of congruency between shapes of clothing and physical appearance and – if present – glasses, an individual is perceived to be more agreeable whereas in case of incongruency between shapes of clothing or glasses and physical appearance, an individual is perceived to be less agreeable.	Yes
H3	In case of congruency between shapes of clothing and physical appearance and –	

¹⁰ The included characteristics of this research are: extraversion, agreeableness, conscientiousness, emotional stability, openness to new experiences, business-mindedness, intelligence, balancedness, persuasiveness, attractiveness and leadership.

	if present – glasses, an individual is perceived to be more conscientious whereas in case of incongruency between shapes of clothing or glasses and physical appearance, an individual is perceived to be less conscientious.	No
H4	In case of congruency between shapes of clothing and physical appearance and – if present – glasses, an individual is perceived to be more emotionally stable whereas in case of incongruency between shapes of clothing or glasses and physical appearance, an individual is perceived to be less emotional stable (thus: more neurotic).	No
H5	In case of congruency between shapes of clothing and physical appearance and – if present – glasses, an individual is perceived to be more open to new experiences whereas in case of incongruency between shapes of clothing or glasses and physical appearance, an individual is perceived to be less open to new experiences.	No
H6	In case of congruency between shapes of clothing and physical appearance and – if present – glasses, an individual is perceived to be more persuasive whereas in case of incongruency between shapes of clothing or glasses and physical appearance, an individual is perceived to be less persuasive.	Yes
H7	In case of congruency between shapes of clothing and physical appearance and – if present – glasses, an individual is perceived to be more attractive whereas in case of incongruency between shapes of clothing or glasses and physical appearance, an individual is perceived to be less attractive.	Yes
H8	In case of congruency between shapes of clothing and physical appearance and – if present – glasses, an individual is perceived to be more intelligent whereas in case of incongruency between shapes of clothing or glasses and physical appearance, an individual is perceived to be less intelligent.	No
H9	In case of congruency between shapes of clothing and physical appearance and – if present – glasses, an individual is perceived to be a good leader whereas in case of incongruency between shapes of clothing or glasses and physical appearance, an individual is perceived to be less of a good leader.	No
H10	In case of congruency between shapes of clothing and physical appearance and – if present – glasses, an individual is perceived to be more business-minded whereas in case of incongruency between shapes of clothing or glasses and physical appearance, an individual is perceived to be less business-minded.	Yes
H11	In case of congruency between shapes of clothing and physical appearance and – if present – glasses, an individual is perceived to be more well-balanced whereas in case of incongruency between shapes of clothing or glasses and physical appearance, an individual is perceived to be less well-balanced.	No

Table 15 – Review of the hypotheses from research question one

Hypotheses number 1, 3, 4, 5, 8, 9, 10 and 11 are rejected since these since they were not significantly proven correct. Hypotheses number 2, 6 and 7 are accepted and are respectively explained below.

H2: More agreeable

In the two-way interaction between physique and glasses, a significant effect was found on agreeableness, but only for the rectangular physique. It appears that the scores for a rectangular

physique with “no glasses” and with rectangular glasses are very close together, but that a rectangular physique with round glasses has a significantly lower score. This confirms Hypothesis 2 that if there is congruency between components – in this case physique and glasses – that someone is perceived as more agreeable, considering the fact that both rectangular glasses and “no glasses” is both congruent with a rectangular physique. The fact that the same goes for congruency between physique and clothing, was proven in the three-way interaction between physique, clothing and glasses. In the condition with “no glasses” the rectangular physique with the rectangular clothing scored significantly higher than the rectangular physique with round clothing. Even though the data suggests that round physiques score higher when it is combined with round clothing instead of rectangular clothing, the difference between these scores was not significant and therefore has not been proven.

H6: More persuasive

In the two-way interaction between physique and clothing, a significant effect was found on persuasiveness. A rectangular physique combined with rectangular clothing scored significantly higher than a rectangular physique combined with round clothing, which confirms Hypotheses 6 that if there is congruency between components – in this case physique and clothing – that someone is perceived as more persuasive. For the round physique was also found that there are higher scores for the round physique, combined with the round clothing instead of the round physique, combined with rectangular clothing, but this difference in scores was not significant and therefore cannot be proven by the two-way interaction between physique and clothing. When looked at the three-way interaction between physique, clothing and glasses, it appears that for the condition with “no glasses” the round physique combined with round clothing again scored higher than the round physique with rectangular clothing, even though this effect was not significant. However, at least for the rectangular physique, it has been proven that congruency between physique and clothing leads to a higher perceived persuasiveness.

In the three-way interaction that focused on the rectangular glasses, a significant effect was found for the rectangular physique with rectangular clothing: a rectangular physique with rectangular clothing and rectangular glasses was evaluated significantly more persuasive than the incongruent version of rectangular physique with round clothing and rectangular glasses. This also matches Hypothesis 6: congruency between the components leads to a higher perceived persuasiveness. However, for the round glasses, no significant effect was found.

H7: More attractive

In the two-way interaction between physique and clothing, a significant effect was found on attractiveness. Someone with a rectangular physique and rectangular clothing was considered significantly more attractive than someone with a rectangular physique and round clothing. This confirms Hypothesis 7: if there is congruency between physique and clothing, someone is perceived as more attractive. The data also suggest that someone with a round physique and round is evaluated to be more attractive than someone with a round physique and rectangular clothing, but the difference between these scores are not significant and therefore not proven.

The answer to research question 1

Research question one reads:

“To what extent contributes congruency between physique, clothing and glasses to the perceived level of extraversion, agreeableness, conscientiousness, emotional stability, openness to new experiences, persuasiveness, attractiveness, intelligence, quality of leadership, business-mindedness and balancedness?”

The answer to research question one is: “if there is congruency between someone’s physique, clothing and glasses, he is perceived as **more agreeable, more persuasive and more attractive**, but only if he has a rectangular physique”. Congruency between someone’s physique, clothing and glasses does not cause that person to be perceived as more extravert, conscientious, emotionally stable, open to new experiences, intelligent, a good leader, business-minded or balanced.

6.3 Exploration of RQ2

Research question two focused on whether “preference for consistency” did influence on how people evaluate congruent pictures versus incongruent pictures. It was expected that people with a relatively high PFC would prefer congruent pictures over incongruent pictures. PFC was included as a covariate and there was also checked whether this could cause the significant higher scores on agreeableness, persuasiveness and attractiveness for the congruent pictures, but this was not the case.

The answer to research question 2

Research question two reads:

“What role does preference for consistency play on evaluating congruent and incongruent pictures?”

The answer to this question is:

Preference for consistency has not proven to have any effect on how people evaluate congruent and incongruent pictures differently.

6.4 Answer to the main research question

The answer to the main research question of this study is: congruency between physique, clothing and glasses has positive effects on someone’s perceived agreeableness, persuasiveness and attractiveness but no effects were found on perceived extraversion, conscientiousness, emotional stability, openness, intelligence, quality of leadership, business-mindedness and balancedness. However, it should be noted that the significant effects were only found for the rectangular physiques. Preference for consistency did not seem to affect the preference for congruency.

6.5 Additional findings

Even though this research focused on the effects of congruency in terms of two-way interactions and three-way interactions, there were also found a couple of significant single effects on physique, clothing and glasses, that are worth mentioning briefly.

6.5.1 Physique

The findings on the factor physique might from an individual’s point of view be considered the most useless of the three factors (physique, clothing and glasses), since physique is very hard to change if not impossible to change, but from a scientific point of view it can be very interesting to see why

someone with a rectangular physique was evaluated significantly more extraverted, agreeable, conscientious, emotional stable, attractive, intelligent, business-minded and well-balanced than someone with a round physique.

6.5.2 Clothing

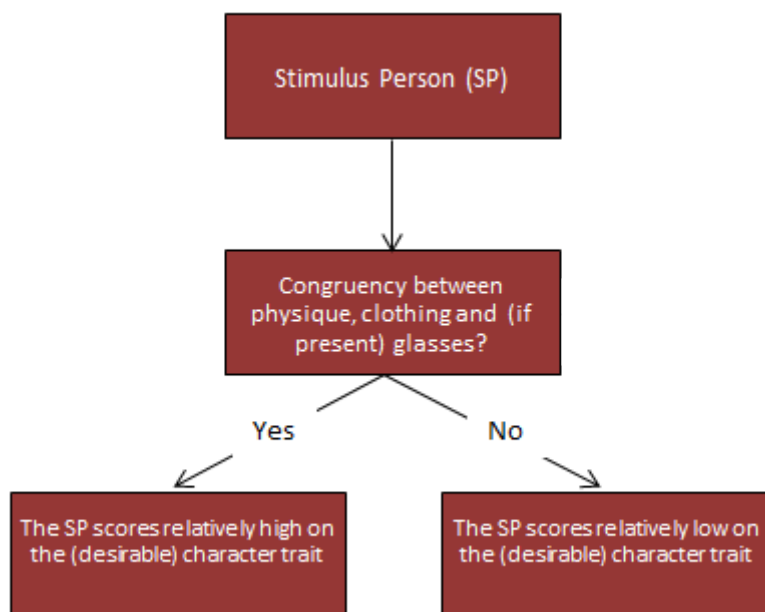
Clothing is remotely easy to change so it's no wonder that Van Doorn (2009) underlines the importance of clothing. However, this research showed that people wearing rectangular clothing were evaluated more agreeable, more conscientious and more emotional stable than people wearing round clothing, regardless whether the entire picture was congruent or not.

6.5.3 Glasses

As mentioned in the beginning of this document, there are a lot of eyeglass wearers in the Netherlands and so glasses have become a part of one's physical appearance, it is only logical to include the effect of glasses in this research. Even though, about half of the population in the Netherlands wears glasses, people who do not wear glasses are still considered more extravert and more attractive.

6.6 Retrospect of the conceptual model

When looked back to the conceptual model as introduced in Chapter 2, a few adjustments were made to complete the model:



Object 2 – Model about the effects of congruency between physique, clothing and (if present) glasses on several characteristics

As shown in Object 2, the right part about the assessor has been removed, considering that the personal *preference for consistency* of that person did not play a part in how he perceived other people's characteristics. It has to be noted that for the adjusted model is that it only goes for the characteristics agreeableness, persuasiveness and attractiveness and for agreeableness and attractiveness only if the SP has a rectangular physique.

7. Discussion

The purpose of this research was to find out whether congruency between a person's physique and clothing can contribute to an overall more positive image of that person. This was realized by letting people evaluate a person on eleven different characteristics. The picture of the person that was evaluated, was manipulated twelve times. The manipulated pictures varied on shape of physique, shape of clothing and shape of glasses. The twelve pictures could be divided into two groups: congruent pictures, where all parts are the same shape, and incongruent pictures, where one of the parts is different in shape.

The characteristics that the person in the picture was judged upon were: extraversion, agreeableness, conscientiousness, emotional stability, openness to new experiences, persuasiveness, attractiveness, intelligence, quality of leadership, business-mindedness and balancedness. An additional characteristic that was included in the research was about the participant's preference for consistency, to check if that was somehow related to how the respondents answered the questions and reviewed the picture.

In the end was concluded that congruency has a positive effect on agreeableness, persuasiveness and attractiveness, but only for the pictures with a rectangular physique was this effect significant. Personal preference for consistency did not play a role in how people evaluated congruent pictures different from incongruent pictures.

7.1 Thoughts about the results

When looked at the results of this study, it was noted that many significant effect were only found for the males with the rectangular physique when looked at congruency between the different components. It makes one wonder why significant effect were only found on rectangular congruent pictures, but not for round congruent pictures. It is possible that rectangular shapes unconsciously are associated with masculinity and manliness and therefore with males, while round shapes could be very well associated with curves and femininity and therefore with females. After all, Van Rompay, Pruyn and Tieke (2009) also describe angular bottles as muscular and round bottles as feminine. If it indeed turns out to be true that round shapes are indeed associated with femininity and are considered womanly, it could be possible that males with a round physique are in general considered to be incongruent. Regardless of the shape of clothing or glasses these men wear, being a male with female features (i.e. the round shapes) causes incongruency within that person's physique and can therefore never be completely congruent, which would explain why certain effects were only found on the rectangular congruent pictures, but not on the round congruent pictures. If the study would be executed again, but this time with female pictures, it is very well possible that the effects are only found on the round congruent pictures and not on the rectangular congruent pictures, considering angularity is not associated with females.

7.2 Practical implications

When looked at the results, it could be concluded that dressing congruently between physique, clothing and (optionally) glasses will enhance one's perceived agreeableness, persuasiveness and attractiveness when he has a rectangular physique. However, even though for the other desirable characteristics and for the round physique, the effects that were found were not significant, both physiques scored better on all of the characteristics when there was congruency between physique, clothing and (if present) glasses. Therefore it would be advised to all males to dress congruently to make a better impression. Though this research did not include female respondents or female stimuli

material, it is expected that the effects of congruency on perceived desirable characteristics for women will not differ that much from the effects for men, except for the possibility that for women the round physique could score significantly higher than the rectangular physique, since rectangular shapes are associated with masculinity and males and round shapes are associated with femininity and females. Therefore, also for women it would be advised to wear clothing and (optionally) glasses that are congruent with their physique.

7.3 Limitations

There are a couple of elements in this research that could question the correctness of this research. These elements are:

- » The manipulated picture;
- » Reliability of the variables;
- » Validity of the variables;
- » Characteristics of the respondents.

7.3.1 The manipulated picture

Even though for this study, it was not considered a problem that the picture that was used was not a real person but an animated picture, it is always possible that this could have influenced the answers of the respondents when they filled out the questionnaire, even though the respondents of the pretest argued that they evaluated the picture as if it were a real person. On top of that, this research focusses on the differences between how someone is evaluated when his physical appearance is congruent versus when it is not congruent not on whether someone's picture is considered real or not. Therefore if both pictures are considered animated or fake, it does not influence the differences between the scores on the variables. At best it has influenced the absolute scores: it is possible for instance that if the person on the picture was in fact a real person, that he was evaluated better in general (so more extravert, more agreeable, etcetera) regardless the shape of his physique and/or clothing.

For the t-shirts, an effort was made to create two comparable t-shirts. However, it is impossible to create two t-shirts that differ from each other in shape and pattern from each other, but are simultaneously also the same. There was made an effort to make the t-shirt look as comparable as possible in color and color tones, but exactly the same is just not possible. The same applies for the glasses, which needed to vary in shape and therefore could not be exactly the same.

7.3.2 Reliability of the variables

Every variable of the characteristics originally consisted out of five items. For the variables of the Big Five of Personality and intelligence and for Preference for Consistency, pre-existing and validated scales were used. The items for the other variables were created in collaboration with the supervisors who are considered experts. After the conducting of the surveys it appeared that some of the reliabilities on the variables were too low. Especially for the variables that were derived from a validated scale this came as a surprise. That the Cronbach's Alpha was too low for these characteristics could have been due to the fact that the pre-existing scales were originally written in English and a one-on-one translation is not flawless. It is not always possible to translate words one-on-one, since a word can be translated literally, but can have another pragmatic, semantic or syntactic meaning in the original language (Carlile, 2004). So even though it was tried to work with the best translatable items, it could have been inadequate.

Critique on Cronbach's Alpha

Since a Cronbach's Alpha of at least 0.65 was considered reliable enough (see Chapter 4); for a couple of variables some items were removed to ensure the reliability. Since there were a couple of variables that still failed to reach that desired 0.65, the reliability of these variables could be questioned. However, there are voices that doubt the importance and validity of Cronbach's Alpha: *"Alpha cannot be an indication of unidimensionality (...) higher values of alpha do not necessarily mean higher reliability and better quality scales or tests"* (Panayides, 2013, p687). Slijtsma (2009) goes even further and states that Alpha does not say anything about a test's internal consistency and recommends other tests to investigate internal consistency, such as *"Guttman's lambda2 and the greatest lower bound instead of alpha"* (Slijtsma, 2009, p567). With these critiques in mind, maybe the importance of Cronbach's Alpha should be taken with a grain of salt even though in the absence of anything better, Cronbach's Alpha remains the most frequently used measure of scale reliability (Peterson, 1994). It can be concluded that an Alpha below 0.65 is undesired but not a disaster and therefore no reason to throw away both the test and the results.

7.3.3 Validity of the characteristics

The factor analysis that was used to analyze the data, appeared to divide the items belonging to the Big Five of Personality into five factors, but these factors did not appear to all be related to the pre-existing factors. This came as a surprise considering the fact that a validated scale was used for the different factors. As discussed before, it happens often that SPSS does not recognize the same factors as the researcher expects in behavioral scales; therefore there was chosen to continue to work with the pre-existing scales as such, regardless the outcome of the factor analysis. However, this could have influenced the validity of this research. When various items were deleted to enhance the Cronbach's Alpha's of the various characteristics and again a factor analysis was executed, the outcome matched more or less the characteristics of the Big Five of Personality.

7.3.4 Characteristics of the respondents

All research that focusses on human behavior, needs a certain amount of respondents to make justified statements. However, dealing with humans also means dealing with human errors. For instance, someone could have filled out the questionnaire contradictory to his actual beliefs, accidentally or on purpose, due to for example laziness or socially desirable responding¹¹. Therefore it is important to have enough respondents, to compensate for the outliers in the dataset. There are a few external factors that could possibly influence the respondent's answers:

- » The number of respondents per condition;
- » The gender of the respondents;
- » The individual respondents.

The number of respondents per condition

In Chapter 4.2 was explained that 318 respondents would be enough to make founded statements about the entire male Dutch population and that there was aimed to have at least 300 participants for this research. Three hundred respondents was a doable amount of respondents to reach and include in this thesis and exceeding the desired 318 respondents (343 participants were included), it seemed like this research meets the requirements to make valid statements. However, this number of 318 respondents is not based on the expectation that a research design consist out of multiple – in

¹¹ "Socially desirable responding refers to respondents presenting themselves favorably regarding current social norms and standards" (Zerbe & Paulhus, 1987).

this case twelve – conditions. Dividing 318 respondents over twelve conditions would mean every condition consists about and around 26,5 respondents; unfortunately 26 or 27 respondents per condition is in general not enough to make substantiated statements about a population. Even though for a master student it would not be doable to obtain 318 respondents per condition and 343 respondents for a total research and over 25 per condition is considered (more than) sufficient, it is still something that has to be kept in mind when conclusions are drawn based on the results of this research.

The gender of the respondents

As discussed previously in this thesis, both the respondents and the person on the evaluated picture are males. Women were excluded from this research as respondents and as stimulus material. The reason for this design, was because including women as respondents would mean that the desired sample population should have to be doubled when only the male pictures were evaluated. If the stimulus material had contained female variations of all the pictures evaluate, the sample population even had to be quadrupled to keep the number of respondents around and above 25 for every condition. Respectively 600 or 1200 respondents for a thesis research was considered “*just not doable*”.

The reason that there was chosen to let male participants evaluate a same-sex picture, was to exclude external factors such as sexual attractiveness. There was chosen to work with males since there is no reason to assume that the results found on congruency between physique and clothing for men would not apply to women, but since women tend to be harsher critics of their own gender compared to men (2013), this could be a confounding (external) factor.

The individual respondents

Since there are relatively few people within the conditions, individual respondents could cause a disturbance in the results by answering the questionnaire in a (for example) very extreme or another considered unusual way. That this was indeed the case, was not only shown in the results but also through the comments that people could leave at the end of the online questionnaire. People stated for instance: “*I try not to judge people solely on a first impression and physical appearance. Therefore I filled out 4 everywhere (neither positive nor negative).*” Others respondents were cheekier, for instance: “*I cannot possibly by means of a picture pass a judgement about someone’s characteristics. Moreover, people who think they can are living dangerously because experience teaches that nothing is what it seems! Nothing is as stupid as to judge someone based on his physical appearance*”. Even though it is very socially desired that people do not judge others based on physical appearance, it is not realistic, since it is only human to do so (Bertrand & Davidovitsch, 2008). When people write down comments like the ones above and fill out everywhere “neither agree, nor disagree”, it is assumed that these people did not base their answers to the questions on the accompanying picture, but on their personal (mis)beliefs about judging someone and the need to socially desired answering. Therefore, the respondents that ticked bullet number 4 for over 95% of the questions in the questionnaire, were excluded from the results. It goes without saying that it is not possible to exclude all the biased respondents and there always will remain a few eccentrics or oddballs. An example is the comment of this person: “*Some questions could not be answered by everyone. In some cases it will do to answer neither disagree nor agree (number 4) only this does not always apply. For example: I find this person... sexy. There are people for whom this does not apply (many asexuals for example) because it does not mean anything to them (...). Men and women are not the only sexes someone can be born into (look at intersex for example).*” Hopefully a person like this could

understand that the points he makes are valid but are not doable or relevant to include in a research like this one. The entire list of the comments from the respondents can be found in Appendix 9.

7.4 Recommendations for future research

This thesis sets the first step into the direction of finding out what are the effects of congruency between a person's physical shape and shape of clothing on how someone is perceived in terms of various characteristics. Since this research contains relatively few respondents per condition, in future research would be advised to work with – if possible – 318 respondents per condition. Besides that it would be advised in future research to take a closer look into the benefits of using a real person to create the manipulated pictures; since a couple of respondents indicated that the person in the picture was not real. Other future research could focus on women instead of men, or could focus on both men and woman evaluating men and women and the differences between them. The main recommendation for any further research in this area would be to increase the sample size of the respondent groups and use for Dutch-speaking participants also the official Dutch Big five of Personality to avoid any translation implications.

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List of appendices

Appendix 1 – Table of faces

Appendix 2 – Questionnaire (Dutch)

Appendix 3 – Explanation character traits

Appendix 4 – Outcome of the interviews

Appendix 5 – Invite to the respondents (Dutch)

Appendix 6 – Characteristics of the respondents

Appendix 7 – Validity tests

Appendix 8 – Tests of normality, histograms and Q-Q plots of the variables

Appendix 9 - Comments by the respondents (Dutch)

Appendix 1 – Table of faces

Number	Shape face	Shape shirt	Glasses	Picture
1	Round	Round	Rectangular	
2	Round	Rectangular	None	
3	Round	Rectangular	Round	
4	Round	Rectangular	Rectangular	
5	Rectangular	Round	None	
6	Rectangular	Round	Round	

Number	Shape face	Shape shirt	Glasses	Picture
7	Rectangular	Round	Rectangular	
8	Rectangular	Rectangular	Round	
9	Round	Round	None	
10	Round	Round	Round	
11	Rectangular	Rectangular	None	
12	Rectangular	Rectangular	Rectangular	

Table 16 – Table of faces

Appendix 2 – Questionnaire (Dutch)

Vragenlijst

Deze vragenlijst bevat 57 vragen over een persoon. Het is de bedoeling dat u aangeeft in hoeverre u het eens bent met onderstaande stellingen door middel van het aankruisen van één cirkel per stelling.

		Helemaal mee oneens	Mee oneens	Een beetje mee oneens	Niet mee oneens/ niet mee eens	Een beetje mee eens	Mee eens	Helemaal mee eens
Vragen		1	2	3	4	5	6	7
Deze persoon komt op mij over als...								
1	angstig	0	0	0	0	0	0	0
2	gespannen	0	0	0	0	0	0	0
3	harmonieus	0	0	0	0	0	0	0
4	zakelijk	0	0	0	0	0	0	0
5	onbezonnen	0	0	0	0	0	0	0
6	koel	0	0	0	0	0	0	0
7	fantasieloos	0	0	0	0	0	0	0
8	volgzaam	0	0	0	0	0	0	0
9	afstandelijk	0	0	0	0	0	0	0
10	rechtdoorzee	0	0	0	0	0	0	0
11	rustig	0	0	0	0	0	0	0

12	traditioneel	0	0	0	0	0	0	0
13	onbekwaam	0	0	0	0	0	0	0
14	egoïstisch	0	0	0	0	0	0	0
15	ordelijk	0	0	0	0	0	0	0
16	slap	0	0	0	0	0	0	0
17	vriendelijk	0	0	0	0	0	0	0
18	creatief	0	0	0	0	0	0	0
19	een gezelschapsmens	0	0	0	0	0	0	0
20	intelligent	0	0	0	0	0	0	0
21	koppig	0	0	0	0	0	0	0
22	onevenwichtig	0	0	0	0	0	0	0
23	dromerig	0	0	0	0	0	0	0
24	verstandig	0	0	0	0	0	0	0
25	avontuurlijk	0	0	0	0	0	0	0
26	bescheiden	0	0	0	0	0	0	0
27	onbetrouwbaar	0	0	0	0	0	0	0
28	een goede leider	0	0	0	0	0	0	0

		Helemaal mee oneens	Mee oneens	Een beetje mee oneens	Niet mee oneens/ niet mee eens	Een beetje mee eens	Mee eens	Helemaal mee eens
	Deze persoon lijkt mij iemand die...							
29	een goed gevoel voor schoonheid heeft	0	0	0	0	0	0	0
30	dom is	0	0	0	0	0	0	0
31	niet praktisch ingesteld is	0	0	0	0	0	0	0
32	impulsief handelt	0	0	0	0	0	0	0
33	objectief naar zaken kijkt	0	0	0	0	0	0	0
34	vooruit denkt	0	0	0	0	0	0	0
35	zich moeilijk kan beheersen	0	0	0	0	0	0	0
36	ik niet snel zou geloven	0	0	0	0	0	0	0
37	goed op de hoogte is van verschillende zaken	0	0	0	0	0	0	0
38	ongelukkig is met zichzelf	0	0	0	0	0	0	0
39	zelfbeheersing heeft	0	0	0	0	0	0	0

40	overtuigingskracht heeft	0	0	0	0	0	0	0
41	aantrekkelijk is voor het andere geslacht	0	0	0	0	0	0	0
42	verantwoordelijkheids- gevoel heeft	0	0	0	0	0	0	0
43	op zijn gevoel afgaat	0	0	0	0	0	0	0
44	zeker van zijn zaak is	0	0	0	0	0	0	0
45	stevig in zijn schoenen staat	0	0	0	0	0	0	0
46	goed is in samenwerken	0	0	0	0	0	0	0

		Helemaal mee oneens	Mee oneens	Een beetje mee oneens	Niet mee oneens/ niet mee eens	Een beetje mee eens	Mee eens	Helemaal mee eens
	Ik vind deze persoon...							
47	overtuigend	0	0	0	0	0	0	0
48	sexy	0	0	0	0	0	0	0
49	een mooi gezicht hebben	0	0	0	0	0	0	0
50	onaantrekkelijk	0	0	0	0	0	0	0
51	niet charmant	0	0	0	0	0	0	0
52	vrolijk	0	0	0	0	0	0	0
53	op mij lijken	0	0	0	0	0	0	0

De volgende vragen gaan over jou. Geef aan in hoeverre je het met de stelling eens bent:

		Helemaal mee oneens	Mee oneens	Een beetje mee oneens	Niet mee oneens/ niet mee eens	Een beetje mee eens	Mee eens	Helemaal mee eens
	Ik...							
53	vind het belangrijk dat mijn handelen, overeenkomt met mijn overtuigingen	0	0	0	0	0	0	0
54	vind het onprettig als ik overkom als inconsistent	0	0	0	0	0	0	0
55	doe mijn best om coherent over te komen op anderen	0	0	0	0	0	0	0
56	vind het vervelend om twee tegenstrijdige ideeën te hebben, waar ik allebei achter sta	0	0	0	0	0	0	0
57	vind het niet zo erg als mijn acties niet op één lijn zitten	0	0	0	0	0	0	0

Appendix 3 – Explanation character traits

Below are the tables about the items of the character traits as mentioned briefly in Chapter 2. The table includes the characteristics as found in the literature, as well as the antonyms and the Dutch translation of both the trait and the antonym and the corresponding number from the questionnaire.

Extraversion

The level of extraversion indicates to the extent of which one cares about other people. This trait includes the characteristics: warmth, gregariousness, assertiveness, activity and excitement seeking (Gosling, Rentfrow & Swann Jr., 2003).

Trait	Antonym	Trait Dutch	Antonym Dutch	Question number
Warmth	Distant	Warmte	Afstandelijk	9
Gregariousness	Loner	Gezelschapsmens	Eenling	19
Assertiveness	Diffident	Assertief	Volgzaam	8
Activity	Quiet	Actief	Rustig	11
Excitement seeking	Excitement avoidance	Avontuurlijk	Opwinding vermijgend	25

Table 17 - Traits extraversion (Costa & McCrae, 1992)

Agreeableness

The level of agreeableness indicates to the extent of which one is pleasant, unselfish, and reliable and puts others in front of himself. This trait includes the characteristics: trust, straightforwardness, altruism, compliance and modesty (Gosling, Rentfrow & Swann Jr., 2003).

Trait	Antonym	Trait Dutch	Antonym Dutch	Question number
Trust	Distrust	Betrouwbaar	Onbetrouwbaar	27
Straightforwardness	Backhanded	Rechtdoorzee	Dubbelzinnig	10
Altruism	Selfish	Onzelfzuchtig	Egoïstisch	14
Compliance	Stubborn	Meegaand	Koppig	21
Modesty	Arrogant	Bescheiden	Arrogant	26

Table 18 – Traits agreeableness (Costa & McCrae, 1992)

Conscientiousness

The level of conscientiousness indicates how accurate and dutiful someone is. This trait includes the characteristics: competence, order, dutifulness, self-discipline and deliberation (Gosling, Rentfrow & Swann Jr., 2003).

Trait	Antonym	Trait Dutch	Antonym Dutch	Question number
Competence	Incapability	Bekwaam	Onbekwaam	13
Order	Disorganized	Ordelijk	Ongeorganiseerd	15
Dutifulness	Irrisponsible	Verantwoordelijk	Onverantwoordelijk	42
Self-discipline	Licentious	Zelfdiscipline	Losbandig	39
Deliberation	Careless	Zelfbeheersing	Onbezonnen	5

Table 19 – Traits conscientiousness (Costa & McCrae, 1992)

Emotional Stability

Emotional stability is commonly known within the Big Five of Personality as *neuroticism* (emotional instability). Since neuroticism is the only variable that is framed negatively - the other traits are all desirable characteristics whereas neuroticism is not to be described as something positive - it would

make sense to use the antonym *emotional stability* since this too can be called a desirable characteristic. Neuroticism includes the characteristics: anxiety, angry hostility, depression, impulsiveness and vulnerability (Gosling, Rentfrow & Swann Jr., 2003). Because there has been worked with the antonym of neuroticism (emotional stability), the used characteristics are also opposites, namely: calmness, friendly, cheerful, thoughtful and strong.

Trait	Antonym	Trait Dutch	Antonym Dutch	Question number
Calmness	Anxiety	Rustig	Angstig	1
Friendly	Angry hostility	Vriendelijk	Vijandig	17
Cheerful	Depression	Vrolijk	Ongelukkig	52
Thoughtful	Impulsiveness	Bedachtzaam	Impulsief	32
Strong	Vulnerability	Sterk in zijn schoenen staand	Kwetsbaar	45

Table 20 – Traits emotional stability (Costa & McCrae, 1992)

Openness to new Experience

The level of openness indicates how open-faced and outspoken someone is. This trait includes the characteristics: fantasy, aesthetics, feelings, creativeness and conventionalism (Gosling, Rentfrow & Swann Jr., 2003).

Trait	Antonym	Trait Dutch	Antonym Dutch	Question number
Fantasy	Unimaginative	Fantasie	Fantasieloos	7
Aesthetics	Unattractive	Gevoel voor schoonheid	Lelijk	29
Feelings	Ratio	Op zijn gevoel afgaand	Rationeel	43
Creativeness	Uncreative	Creatief	Oncreatief	18
Unconventionalism	Traditional	Onconventioneel	Traditioneel	12

Table 21 – Traits openness to new experiences (Costa & McCrae, 1992)

Persuasiveness

Persuasiveness is the ability to convince others of one's opinion and is defined by the The Free Dictionary (2015) as: *"the power to induce the taking of a course of action or the embracing of a point of view by means of argument or entreaty"*. It is true that some people are more persuasive than others, because of for example one's personal characteristics (Carvent, Miles & Cervin, 1965) or the quality of arguments (Petty & Cacioppo, 1984). There have been done numerous of studies about what people can do to be more persuasive: e.g. "Be More Persuasive" (Hoar, 2005). This study however, doesn't focus on becoming more persuasive by practicing some techniques, but this study tries to find out if someone can become more persuasive by solely changing his or her wardrobe. This trait includes characteristics such as: strong, secure, convincing, credible and persuasiveness.

Trait	Antonym	Trait Dutch	Antonym Dutch	Question number
Strong	Weak	Krachtig	Slap	16
Secure	Insecure	Zeker	Onzeker	44
Convincing	Doubtful	Overtuigend	Twijfelachtig	47
Credible	Incredible	Geloofwaardig	Ongeloofwaardig	36
Persuasive	Not persuasive	Overtuigingskracht	Weinig overtuigingskracht	40

Table 22 – Traits persuasiveness

Attractiveness

There is evidence that there is a positive correlation between one's *attractiveness* and persuasiveness (Pallak, Murrone & Koch, 1983), attractiveness was therefore also included in this research. This trait contains characteristics such as: attractiveness, handsomeness, loveliness, sympatheticness and a pretty face.

Trait	Antonym	Trait Dutch	Antonym Dutch	Question number
Attractiveness	Unattractiveness	Aantrekkelijk	Onaantrekkelijk	50
Attractive for the opposite sex	Unattractive for the opposite sex	Aantrekkelijk voor het andere geslacht	On aantrekkelijk voor het andere geslacht	41
Sexy	Ugly	Sexy	Lelijk	48
Charming	Irritating	Charmant	Irritant	51
Pretty face	Unpretty face	Mooi gezicht	Lelijk gezicht	49

Table 23 – Traits attractiveness

Intelligence

Just like attractiveness, also *intelligence* has been proven to be positively correlated with persuasiveness: “Results indicated that more intelligent (...) subjects are more persuasive and less perusable” (Carver, Miles & Cervin, 1965, p1). This trait includes characteristics such as: competence, knowledge, responsibility, intelligence and sensibleness (Warner and Sugarman, 1996).

Trait	Antonym	Trait Dutch	Antonym Dutch	Question number
Knowledgeable	Ignorant	Goed op de hoogte	Onwetend	37
Responsible	Irrisponsible	Verantwoordelijk	Onverantwoordelijk	34
Intelligent	Unintelligent	Intelligent	Onintelligent	20
Sensible	Foolish	Verstandig	Dom	30 and 24 ¹²

Table 24 – Traits intelligence (Carver, Miles & Cervin, 1961)

Leadership

Leadership is often considered to be closely related to intelligence. Since leaders ought to be intelligent, there has been done a lot of research about the relationship between leadership and intelligence, for instance Zaccaro, Gilbert, Thor & Mumford (1991) and Dulewicz & Higgs (2003). However, according to Judge, Colbert and Ilies (2004), the link between intelligence and leadership is lower than previously expected. This link is not strong enough to assume that leadership and intelligence are more or the less the same thing, but since leadership itself is also linked to persuasiveness (Tourish, Collinson & Barker. 2009), there was decided to also include two questions to the questionnaire regarding the quality of leadership and the perceived capability of cooperating.

Trait	Trait Dutch	Question number
I think this person is a capable leader	Ik denk dat deze persoon een geode leider is	28
I think this person can cooperate very well	Ik denk dat deze persoon goed kan samenwerken	46

Table 25 – Traits leadership

Business-minded

Also *business-mindedness* is linked to persuasion. Persuasion is often used in the “*business community*” (Burch, 1994). When selling something, one needs to possess a certain amount of persuasiveness: a good salesman is both business-minded (Peterson & Lucas, 2001) and persuasive

¹² Both the trait and the antonym were used in the questionnaire.

(Noel, 1975). This trait contains characteristics such as: rationality, no-nonsense, practicality, objectivity and coldness.

Trait	Antonym	Trait Dutch	Antonym Dutch	Question number
Businesslike	Emotional	Zakelijk	Emotioneel	4
No-nonsense	Nonsense	Nuchter	Dromerig	23
Practical	Impractical	Praktisch ingesteld	Niet praktisch ingesteld	31
Objective	Subjective	Objectief	Subjectief	33
Coldly	Warm	Koel	Warm	6

Table 26 – Traits business-minded

Well-balanced

Well-balancedness refers to one's emotional or mental stability, but it is also about being well-proportioned, harmonious and symmetrical. It is assumed that if someone is perceived as congruent - or harmonious - in physique and clothing, he would also appear to be emotionally stable, more content and more relaxed. This trait contains the characteristics such as: balancedness, harmonious, relaxed, self-content and being in control.

Trait	Antonym	Trait Dutch	Antonym Dutch	Question number
Balanced	Unbalanced	Evenwichtig	Onevenwichtig	22
Harmonious	Disharmonious	Harmonieus	Disharmonieus	3
Relaxed	Tensed	Relaxed	Gespannen	2
Self-content	Unhappy with himself	Tevreden met zichzelf	Ongelukkig met zichzelf	38
In control	Outrageous	Zelfbeheersd	Weinig zelfbeheersing	35

Table 27 – Traits well-balancedness

Preference for consistency as covariate

Trait	Trait Dutch	Question number
It is important to me that my actions are consistent with my beliefs	Ik vind het belangrijk dat mijn handelen, overeenkomt met mijn overtuigingen	54
I don't like to appear as if I am inconsistent	Ik vind het onprettig als ik overkom als inconsistent	55
I make an effort to appear consistent to others	Ik doe mijn best om coherent over te komen op anderen	56
I'm uncomfortable holding two beliefs that are inconsistent	Ik vind het vervelend om twee tegenstrijdige ideeën te hebben, waar ik allebei achter sta	57
It doesn't bother me much if my actions are inconsistent	Ik vind het niet zo erg als mijn acties niet op één lijn zitten	58

Table 28 – Traits Preference for Consistency (Chialdini, Tros & Newsom, 1995)

Appendix 4 – Outcome of the interviews

4.1 Concise outcome of the interviews

Process

The respondents received one of the twelve pictures and a questionnaire and were asked to fill out the questionnaire, based on the picture. After they were done, the respondents were asked the question:

1. “What do you think this research is about?”

Despite the fact that the pictures were manipulated in such a way that they were congruent or incongruent, it was not desirable that the respondents would notice this, based on one picture, since that could endanger the internal validity of the research. Fortunately, none of the respondents noticed anything between the congruency between the shape of the body, shape of the clothing and, if present, shape of the glasses. Almost all of the respondents thought the research focused on first impressions. A few respondents mentioned alongside first impressions also prejudices and racism and one individual thought the research might be about facial recognition and the video tracking of people.

Following the general question about what the participants thought the research was about, they were asked:

2. “Is there something that stands out on this picture?”

When asked this question, the picture was thoroughly examined. Almost every respondent saw that the man in the picture was not a real person, but they also said that they filled out the questionnaire as if the person in the picture were real. Besides this, the respondents also mentioned that the man in the picture was extremely neutral, with a straight face and that it was quite difficult to assign emotions to him.

After the first two questions, whereby the respondents only knew about one picture, the other eleven pictures were spread out over the table. Some participants of the pre-test started to smile a little: it became them clear that the research probably focused on something different then what they initially thought. The respondents were asked:

3. “Now when you also see these other pictures and you compare it to the one you used to fill out the questionnaire, what do you think the research is about?”

All of the respondents noticed differences between the pictures. Most of them mentioned the differences between the facial shapes, the different t-shirts and the presence or absence of glasses. Not everyone saw the differences between the glasses and only one individual notices the difference in shoulder lines. Some people thought it were two different men, based on the facial structure (round versus rectangular), while other said that it was very clear that it was all the same man, based on the eyes, the nose and the mouth. Even though every respondent noticed a certain amount of differences between the pictures, none of them adjusted their previous assumption about the subject of the research.

Thereafter, the respondents were asked:

4. “Were there any ambiguities in the questionnaire or any questions you did not understand?”

It turned out that all the questions were clear and well-understood. According to a few respondents it was sometimes difficult to assign certain traits to the portrayed person because it was not a real person, even when they evaluated the man in the picture as “real”. Furthermore, a respondent stated that attractiveness probably should be described differently, because he was personally not attracted to men and therefore reviewed the man from a more objective point of view (attractive in general, instead of on an interpersonal level). Even though the respondents did not feel (sexually) attracted to the man in the picture, they were all capable to review someone as attractive in general.

In the end, the purpose of the study was explained and the respondents were asked:

5. “Do you have any questions, comments or suggestions?”

One participant said that in his opinion the angular shirt looked better on all of the males in the pictures and another participant suggested that the lenses of the eyeglasses should be made lighter. One of the respondents stated that it might be a better idea to show the participants all the twelve pictures and then ask questions like: “who do you think is the most persuasive”.

Conclusion of the pretest

The main outcome of the pretest was that the questionnaire was unambiguously and accessible to all the respondents. Every question was clear and was interpreted as they were supposed to be interpreted. As hoped-for, the assumed purpose of the study was not related to congruency whatsoever. The suggestion of the participant about the glasses however was not included in the research, because it was not supported by the other interviewees, nor the experts who it was discussed with later. The suggestion about showing all the twelve pictures was not a bad idea, but it would enhance the probability that subjects would find out the actual purpose of the study, which could bias the research due to the possibility of social desirability answering. Besides, this would require a total redesign of the study and this design would also include a few snags, so there was chosen to stick with the original research method.

Appendix 4.2– Extensive output of the interviews (Dutch)

Waar denk je dat het onderzoek over gaat?

Vanuit managers perspectief over hoe je jezelf kunt profileren en of iemand (zelfverzekerd) overkomt. Bijvoorbeeld voor solliciteren hoe iemand overkomt (Alexander, 21 jaar)

Persoonlijke eigenschappen: wie is de persoon? Misschien voor gezichtsherkenning, en in wat voor stemming hij is? (Abdul, 28 jaar)

Vertrouwen, de eerste indruk die je hebt van iemand (Chi-Kit, 26 jaar)

Uiterlijk in combinatie met persoonseigenschappen (Kevin, 27 jaar)

Je eerste indruk van iemand. Of iemand betrouwbaar of onbetrouwbaar is (Steef, 63 jaar)

Vooroordelen, de eerste indruk die je van iemand hebt (Gabi, 22 jaar)

De eerste indruk, hoe je iemand meteen ziet (Koen, 27 jaar)

Wat ik uit uiterlijk kan halen; vooroordelen. Sommige dingen kan je gewoon niet weten, (ik weet even geen voorbeeld) maar andere, zoals onbezonnenheid, die wel (Freark, 27 jaar).

Ik zou het niet weten (Weijdijs, 59 jaar)

Persoonsherkenning, automatisch volgen van mensen, iets voor videovolging en gedragsherkenning (Job, 56 jaar)

Racisme of iets dergelijks, over hoe iemand overkomt (Alexander, 32 jaar)

Beoordeling zonder dat je iemand gesproken hebt (Michiel, 20 jaar)

Valt je iets op?

Het haar lijkt niet echt? En de bril lijkt niet echt. Lijkt überhaupt geen echt persoon (de vragen zijn ingevuld met het idee dat het wel een echt persoon was) (Gabi, 22 jaar)

Het is een geanimeerd persoon, lijkt een beetje raar. Te symmetrisch, onnatuurlijk (Kevin, 27 jaar)

Hij kijkt heel erg neutraal (Koen, 27 jaar)

Hij komt over als iemand die stevig in zijn schoenen staat; geen emotie en een strak gezicht. Dat shirt (rond) haalt het wel onderuit, maar ik heb niet echt op de kleding gelet (Freark, 27 jaar)

Gewoon een nette, verzorgde jongeman (Weijdijs, 59 jaar)

Hij heeft niks, zo dood als een makreel, geen persoonlijkheidskenmerken. Moeilijk in te vullen want persoonlijkheidskenmerken ontbreken; alles is symmetrisch (Job, 56 jaar)

Niet echt. Getinte glazen, kijkt nogal kil; geen emotie (Michiel, 20 jaar)

→ The other cards were put on the table

Als je nu deze foto's ziet en ze vergelijkt met de foto die je hebt gebruikt om de vragenlijst in te vullen, waar denk je dan dat het onderzoek over gaat?

Ik zie verschillen tussen de gezichten: kleding, bril, maar wel veel overeenkomsten. Als ik zelf iemand zou aannemen zou ik gaan voor iemand met een hoekig gezicht of voor iemand met een rond gezicht met een hoekig shirt (Alexander, 21 jaar)

Eén persoon met verschillende gezichten: bril, gezichtsvorm, haar, kleding. Toch een ander persoon?

Het zijn twee personen. (Abdul, 28 jaar)

Volgens mij gaat het nog steeds over de eerste indruk: vertrouwen. Ook welke invloed kleding heeft daarop. Ik zie verschillen in kleding, bril en dik-dun. (Chi-Kit, 26 jaar)

Verschillende brillen, truien, gezichtsvormen, verhoudingen in het gezicht. Wel nog steeds denkt dat het gaat over wat je associaties bij een foto zijn (Kevin, 27 jaar).

Sommige hebben een bril en een ander truitje en een andere coupe. Volgens mij zijn het twee personen (Steef, 63 jaar)

Verschil in trui, verschil in bril/geen bril, neus en haar. Ze lijken allemaal op elkaar, maar hebben één ding verschillend (Gabi, 22 jaar)

Het zijn dezelfde gezichten: het voorhoofd is uitgerekt. Wat doet een bril? Doet wel iets, maakt het gezicht vriendelijker (de kleding was niet opgevallen) (Koen, 27 jaar)

De andere (rond gezicht) is wat dikker. Deze (recht) is wel een beter shirt, maar weegt voor mij niet significant mee. Misschien gaat het om de invloed van brillen... Deze (congruent) is beter dan deze (incongruent). Helemaal rond vind ik vreselijk, maar als je het vergelijkt met de rest... dan valt het wel mee. Die vierkante bril is raar. Kleding helpt toch wel (Freark, 27 jaar)

Het is dezelfde persoon, dat zie je aan de mond, neus en oren (Weijdijk, 59 jaar)

De kaaklijn is veranderd, de haarlijn, kleding, schouderlijn, brillen en mond (Job, 59)

“Ik zie wel de verschillen, de t-shirts en brillen versus geen-brillen” (Alexander, 32 jaar)

Die heeft een ronder hoofd, bril, streepjestrui, kort haar. De vorm van het gezicht valt vooral op (Michiel, 20 jaar)

Zijn er vragen die je niet begrijpt of moeilijk vindt?

Harmonieus is moeilijk en fantasieloos ook omdat het niet een echt persoon is. Het is moeilijk af te lezen. Wel gedaan alsof het een echt persoon was, maar bij sommige wist ik het echt niet, en daarom maar niet mee eens/niet mee oneens ingevuld (Kevin, 27 jaar)

Vind je die aantrekkelijk misschien anders formuleren. (Heeft wel gekeken vanuit het idee of iemand globaal aantrekkelijk zou worden gevonden) (Koen, 27 jaar)

Slap. Is dat fysiek of mentaal (ik heb voor mentaal gekozen) (Freark, 27 jaar).

Nee, de vraagstelling is duidelijk (Weijdijk, 59 jaar)

Af en toe dezelfde vragen, maar dat moet ook volgens mij om te kijken of je hetzelfde toetst (Job, 59 jaar)

→ The study and the subject of the study was explained

Heb je verder nog vragen, opmerkingen of suggesties?

Je zou ook gewoon alle foto's naast elkaar kunnen leggen in het begin en gewoon vragen: “wie is het meest overtuigend?” (Alexander, 21 jaar)

Het glas van de brillen misschien wat lichter (Kevin, 27 jaar).

Het hoekige shirt staat ze allemaal beter (Freark, 27 jaar).

Appendix 5 – Invite to the respondents (Dutch)

Geachte <naam respondent>,

Voor een afstudeeronderzoek zijn wij op zoek naar uw persoonlijke indruk van een persoon. Aan de hand van een foto willen we u vragen om in te vullen in hoeverre u het eens of oneens bent met de stellingen over deze persoon.

De vragen zullen zo'n 10 minuten van uw tijd vragen. Klik [hier](#) om het onderzoek te starten.

Uw gegevens zullen enkel gebruikt worden ten behoeve van dit afstudeeronderzoek en niet voor promotionele doeleinden.

Mochten er problemen zijn met de link of heeft u nog verdere vragen dan kunt u contact opnemen via zeyio@mobielfcentre.nl.

Onder de deelnemers aan dit onderzoek, worden enkele waardebonnen verloot. De resultaten van het onderzoek kunt u binnenkort op www.zeyio.nl verwachten.

Wij bedanken u alvast voor uw medewerking.

Met vriendelijke groet,
Zeyio & Alina van der Meulen

Appendix 6 – Characteristics of the respondents

After the respondents filled out the online questionnaire, they were asked about several personal characteristics, which could be used to get a picture about the respondents and whether they were represented equally within this research. The characteristics that were asked were: age, postal code, level of education and type of occupation, to check whether the respondents group was a fair representation of the population.

Distribution by age

The age of the respondents can be seen in Figure 10. As the chart shows, no respondents under the age of eighteen were included in this research. This was because of ethical considerations, since people that are below the age of eighteen years old cannot legally give their *informed consent* and need parental approval to participate in a research (Farrell, 2005). To avoid any legal troubles, there was chosen to only include adults. In the boxes below, in the colored pieces, are the number of respondents and the percentage of the entire sample group.

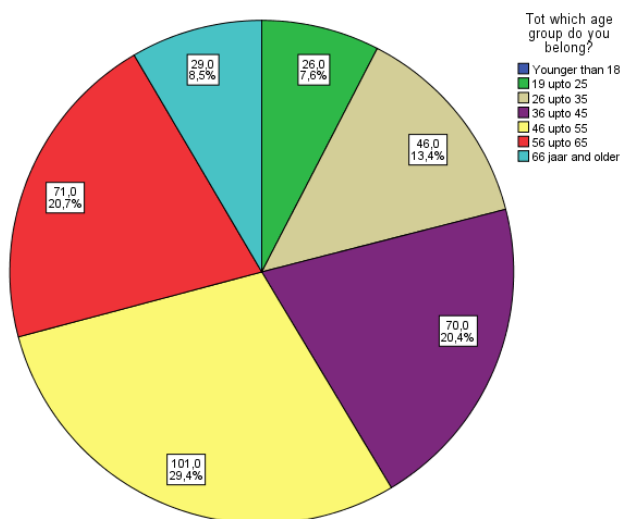


Figure 10 - Age of the respondents in pie chart

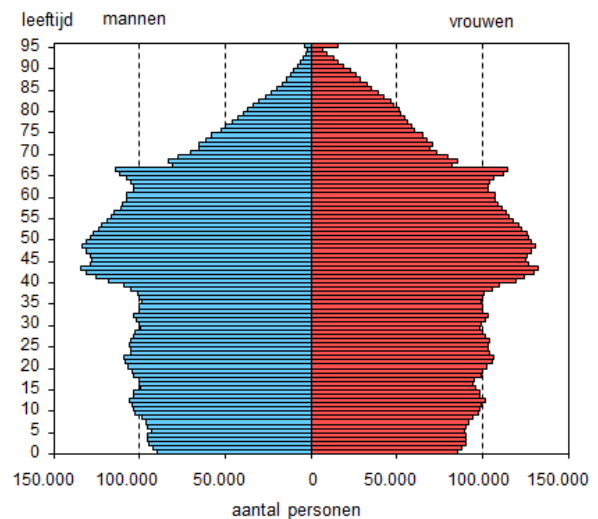


Figure 11 – Population of the Netherlands to age and gender (Giesbers, Verweij & De Beer, 2013).

When looked at Figure 10, it can be read that the group of participants between the age of 46 and 55 is relatively overrepresented compared to the other age groups, but also the age groups 36 to 45 and 56 to 65 are also relatively large compared to the other groups. From Figure 11 can be read that in 2013, the largest age group is males between the ages of 40 and 65, which would explain why the group of males between the ages of 46 and 55 is so large. Alltogether, it seems like the age distribution in this research is quite close to the real age distribution in the Netherlands.

When looked at the distribution of the respondents by age on the twelve different photo's, Figure 12 shows that almost all the different age groups have been represented in every picture with two exceptions.

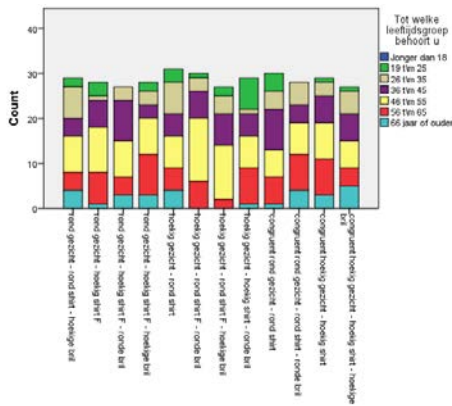


Figure 12 – The distribution of the respondents by age on the different pictures

Distribution by occupation

The respondents were also asked to give their current occupation/work, to see whether this was a fair representation of the entire population. The distribution can be found in Figure 13. It is difficult to say whether Figure 13 shows a fair representation of the Dutch labor market, since the exact numbers cannot be found. However, it seems like the group “unemployment” is overrepresented, since just 8,1% of the Dutch population is unemployed (CBS, 2015) in contrast to the 15,7% as shown in Figure 13, while the group “(Early) retirement” is underrepresented. Figure 13 shows that 13,7% of the participants to this research is on (early) retirement, but according to the CBS, as many as 22,7% is retired (CBS, 2015b). This could be explained through the fact that unemployed people probably have more time to participate in a research, while the retired elderly people often don’t have a computer with access to the internet (CBS, 2013b), which was necessary to participate in this research. The group of “students” however, was quite close to the actual percentage of students in the Netherlands: 6,4% in this research compared to the actual 7,0% of students in the Netherlands (CBS, 2013c). Although it is not possible to make solid statements about the comparability about the numbers in Figure 13 and the actual numbers of the Dutch labor market, Figure 13 does show a lot of diversity between the respondents’ employment.

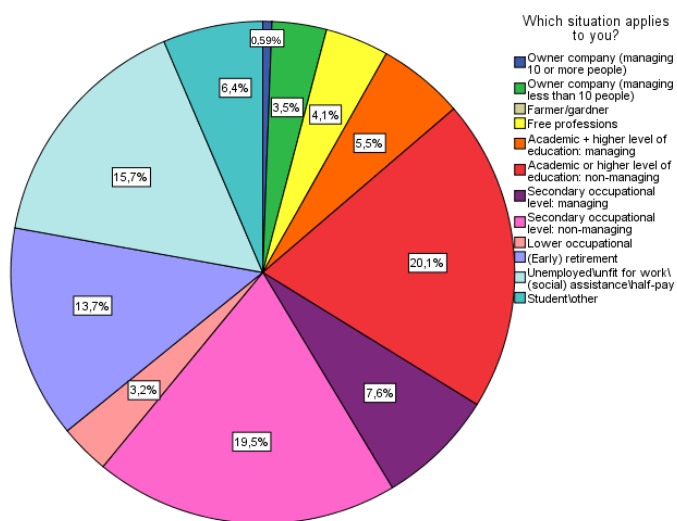


Figure 13 - Distribution of respondents by occupation

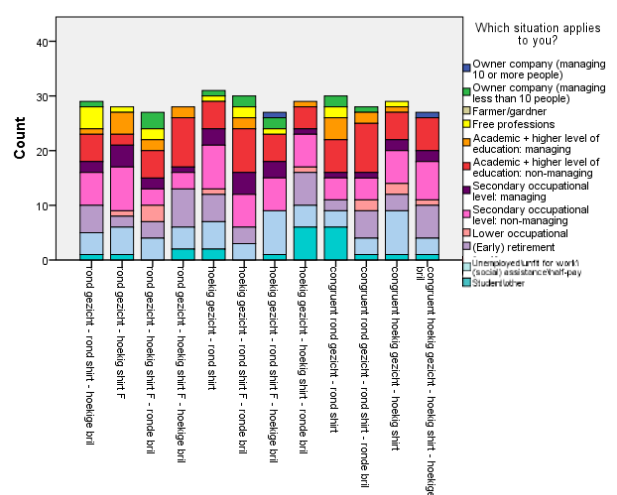


Figure 14 – Distribution of the respondents by occupation on the different pictures

Figure 14 shows the distribution of the respondents by occupation on the different pictures. Even though it is not possible to get all the distributions on every picture the same, every picture has at least seven different respondents' groups occupational wise, which in a research as this is probably more than one could wish for.

Distribution by level of education

The distribution of the respondents by education can be found in Figure 15. The various levels of educations are shown in a pie chart with the various specific Dutch types of education behind the general forms of education. As Figure 15 shows, people with a high level of education are overrepresented: in the chart, the percentage of people with a high educational level¹³ are together 51% of the sample group, while the actual percentage of higher educated is 28% (CBS, 2013d). However, the group of people who are middle educated (see footnote) is according to the CBS (2013d) 40% and in the pie chart in Figure 15, this is 37,6%, so this is a fair representation of the actual situation. Only low educated people are underrated: according to the CBS (2013d), this group counts 30% of the people (the missing 2 percent does not have an education at all), while in this research only 11,3% was poorly educated.

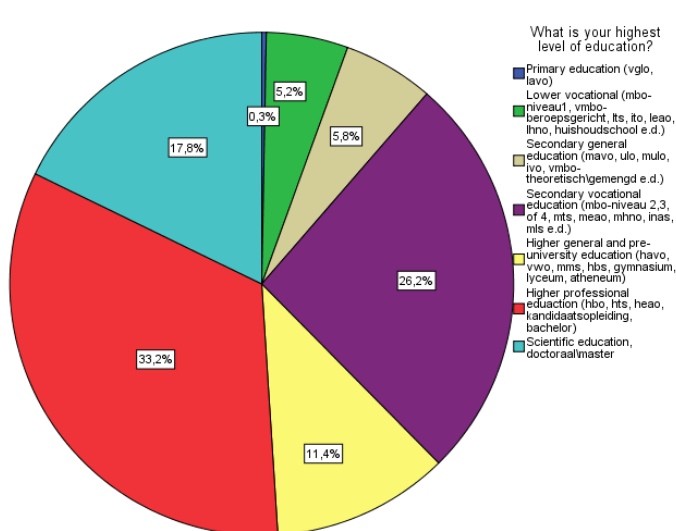


Figure 15 - Distribution of the respondents by level of education by

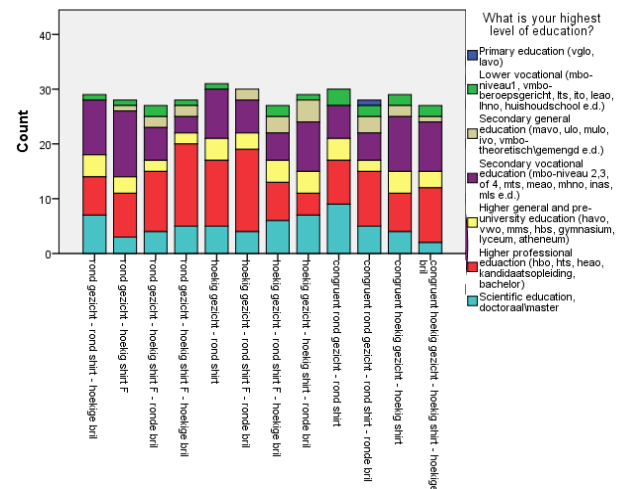


Figure 16 – Distribution of the respondents level of education on the different pictures

Figure 16 shows that at least almost all of the different “level of education”-groups are represented in all of the pictures.

Distribution by postal code

The distribution of the respondents by living area can be found in Figure 17. Next to the pie chart is a map of the Netherlands with corresponding colors between the areas in the Netherlands (Figure 18). As shown in Figure 17, the west of the Netherlands was more represented in this research than east or the north of the Netherlands. However, in the west of the Netherlands live also people than the north, east or south (CBS, 2015d): over 40% of the Dutch population lives in the Randstad (NBTC

¹³ According to the CBS (2015c): someone is low educated when he has primary education, vmbo or mbo 1 as highest education (in the chart these are the colors kobalt blue, green and kaki). Someone is middle educated when he has havo, vwo (higher general and pre-university) or mbo 2, 3 or 4 as their highest education (In the chart these are the colors purple and yellow). Someone is high educated when he has hbo (higher professional education) wo (university) or scientific education completed successfully (in the chart these are the colors purple and light blue).

Holland Marketing, 2015). The population density is shown in Figure 19: this figure shows a high population density in the west of the Netherlands (the colors deep yellow, green and pink in the chart in Figure 17); in the areas of the other colors (purple, red, orange, etcetera) live far less people, so that would explain

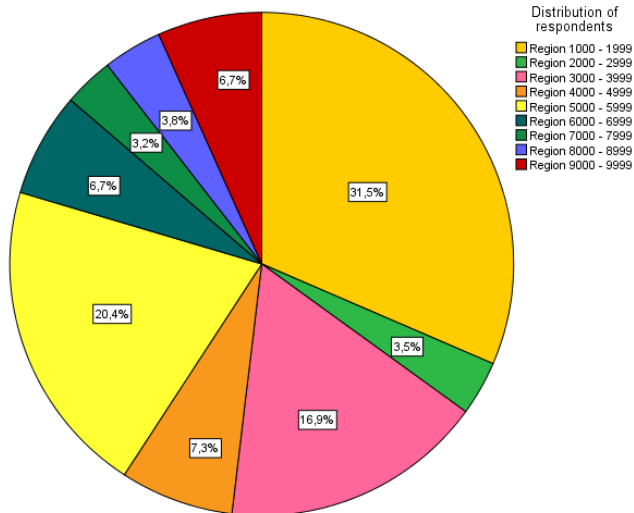


Figure 17 – Distribution of the respondents by postal code

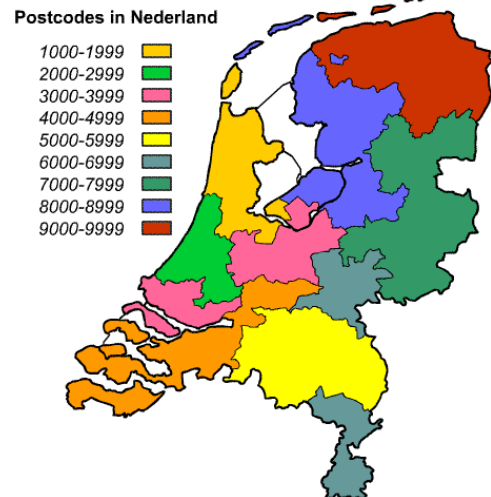


Figure 18 - Distribution of the respondents by postal code in the Netherlands

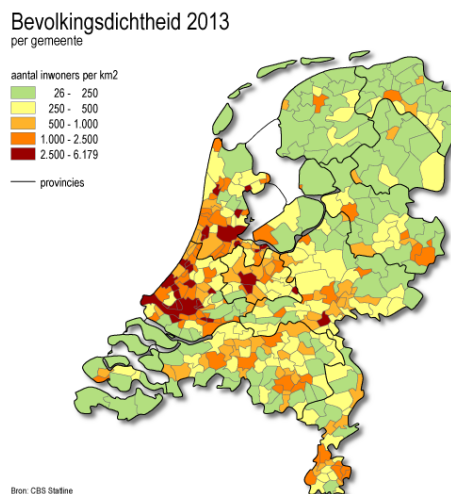


Figure 19 – Population density in the Netherlands in 2013 (CBS, 2014)

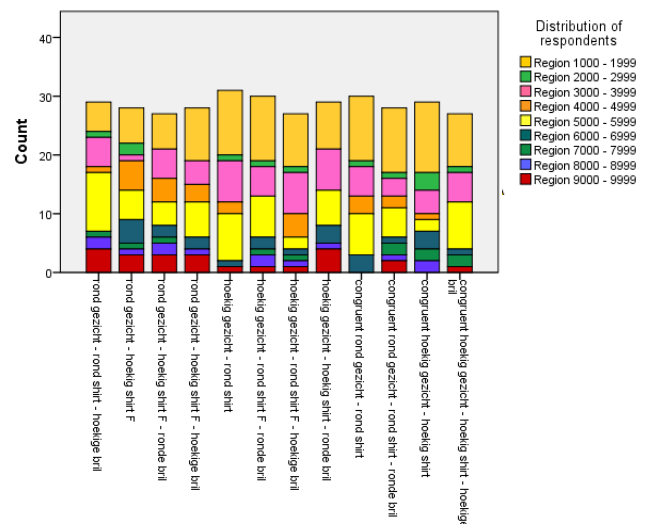


Figure 20 – Distribution of the respondents by postal code on the different pictures

When looked at all the figures about the distribution of the respondents, it can be stated that the group of respondents was a fair composition of the population. Figure 20 shows that the distribution of the respondents by postal code between the different picture, is in general corresponding to the distribution in Figure 17.

Appendix 7 – Validity tests

The validity of this research was already mentioned briefly in Chapter 4. In personality scales, various items from different factors can be often be highly related to one another. Therefore, the validity testing in this research has been done extensively, from various angles to ensure the validity of this study.

Face validity

“Face validity refers to researchers’ subjective assessments of the presentation and relevance of the measuring instrument as to whether the items in the instrument appear to be relevant, reasonable, unambiguous and clear” (Oluwatayo, 2012, p.392). To guarantee the validity of this research as much as possible, the constructs (the characteristics) were composed by means of pre-existing scales, such as the Big Five of Personality and the scale for intelligence. The constructs for which haven’t been made validated scales yet, were composed by the researcher and cross-checked at the previously mentioned supervisors who are considered experts in the field of behavioral science. Each construct consisted of five items to preserve the equal distribution of the items among the constructs, except for the construct leadership, since this was considered to be linked to intelligence as mentioned in the previous chapter. After designing the questionnaire, the usability and comprehensibility of the questionnaire was tested among twelve respondents in the form of a pre-test. The conclusion of the pre-test was that the measuring instrument was considered intelligible with unambiguous items; even though the questionnaire was considered a bit long, it was well-doable. The questionnaire was filled out with reference to a picture (out of the twelve manipulated pictures) and even though it was clear to the respondents in the pre-test that it was not a real person, they filled out the questionnaire as if it were, so the fact that the person in the picture was animated, should not have hurt the validity of the research.

Content validity

“Content validity is a theoretical concept which focuses on the extent to which the instrument of measurement shows evidence of fairly and comprehensive coverage of the domain of items that it purports to cover” (Oluwatayo, 2012, p.392). As explained in 3.5.1, the constructs were composed by means of pre-existing, already validated scales and when these scales were not available yet, experts helped composing scales. According to Sireci (1998), a factor analyses can help to determine whether the items in the instrument fit into the conceptual domain.

Factor analysis

A factor analysis can help to classify various variables into different factors or constructs, and it is hoped, that the constructs will explain a good portion of the variance in the original matrix of associations so that the constructs, or factors, can then be used to represent the observed variables (Henson & Roberts, 2006). However, when a factor analysis was executed for the items of the Big Five of Personality, even though the outcome suggests five factors (Figure 21), the distribution of the items over the factors did not seem to be all clearly related to the pre-established factors of the Big Five. According to Borkenau and Ostendorf (1990), it is often the case in personality scales and tests, among which also the Big Five of Personality: *“a well-established factor model with highly replicable factors and a high convergent and discriminant validity was not supported by a confirmatory factor analysis”* (Borkenau & Ostendorf, 1990, p.523). They argue that a factor analysis often fails to categorize the items into factors the same way as the researcher did, since the traits in personality tests are too much alike. Borkenau and Ostendorf (1990) recommend dropping the factor analysis

when the results do not seem to fit the pre-established factors and that one should continue to work with the pre-existing factors, so that is what has been done in this research. However, when reflected to the importance of a factor analysis for content validity, it seems that this type of validity can be considered low and the item distribution over the variables (or constructs) is probably inadequate.

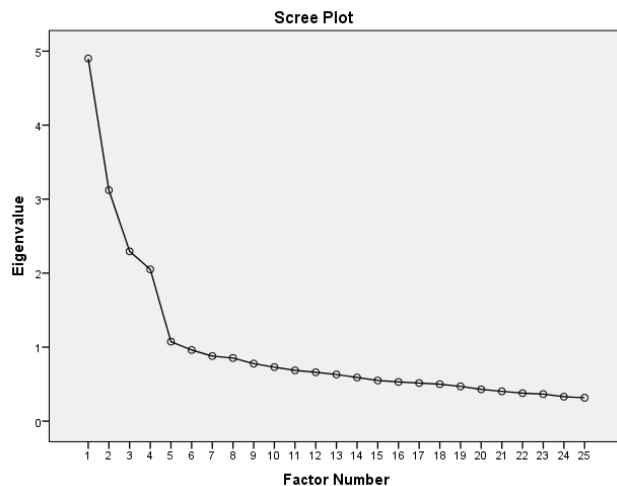


Figure 21 – Scree Plot of the factor analysis on the traits of the Big Five of Personality

Construct validity

“Construct validity (...) is based on the logical relationships among variables” (Oluwatayo, 2012, p.393). Construct validity can be divided between “convergent validity” and “discriminant validity”. Since this research has not been done with another measuring instrument, the only construct validity that is relevant for this study, is the discriminant validity. To check the relationship between the variables on a statistical level, a between-variables correlation was performed. This between-variables correlation contained all the items and showed that almost all the variables were highly correlated.

Considering the discriminant validity aims at low correlations, meaning there are statistically speaking perceptible differences between the constructs, the construct validity of this research is very low. However, high correlations between the variables do not always mean that they measure the same thing. Just like the outcome of the factor analysis, the constructs of a personality study are often highly related to each other, not necessarily being a bad thing (Conte, 2005).

Criterion-related validity

“Criterion-related validity is where a high correlation coefficient exists between the scores on a measuring instrument and the scores on other existing instrument which is accepted as valid” (Oluwatayo, 2012, p.394). So far known, there is no other existing instrument that can be compared to the questionnaire as used in this research. The only criterion-related validity that can be given is that the questionnaire is compiled of items from various scales, some which are pre-existing and validated ones, others that are new and uniquely designed for this research.

Internal validity

“Internal validity (...) refers to the approximate validity with which we infer that a relationship between two variables is causal or that the absence of a relationship implies the absence of cause”

(Cook & Campbell, 1979, p. 37). To protect the internal validity of this research, possible external factors that could impact the results were reduced as much as possible. As discussed in Chapter 4, the participants were from a respondents panel, and appear to be a remotely fair representation of the Dutch male population. All the respondents received the same e-mail with the same description to invite them to participate in the research. Mobiel Centre randomized the order of the questions to reduce bias and since these were all members of an official panel, it is assumed that at least the most of them took their task to fill out the questionnaire seriously. The setting of the respondents is in the safety and privacy of their own home or another place where they had time and motivation to participate. Even though the environment of the respondents could not be controlled, due to the fact that these are professional participants and that they are in their own controlled setting (e.g. their home), the setting comes close to a laboratory setting one might say. To conclude, it is quite safe to say that the internal validity is good.

External validity

“External validity (...) refers to the approximate validity with which we can infer that the presumed causal relationship can be generalized to and across alternate measures of the cause and effect and across different types of persons, settings, and times” (Cook and Campbell, 1979, p. 37). Even though the entire group of respondents is considered relatively large, the amount of respondents per individual picture is only 25 up to 30 participants and makes it risky to make statements about the generalizability of results of this study. However, since the distribution of the respondents seems to be a fair representation of the Dutch male population, it might as well be possible that the results are generalizable for the other Dutch males. Even though there is no reason to assume that the results of this research do not apply to woman, the study would have to be redone and actually include women to make valid statements about the generalizability of the first study for women. To conclude: the results of this research are generalizable, but it has to be taken lightly, considering the small amount of participants per picture.

Appendix 8 – Tests of normality, histograms and Q-Q plots of the variables

SPSS offers for normality tests the significance levels in Kolmogorov-Smirnov and in Shapiro-Wilk and even though Kolmogorov-Smirnov's significances level are even lower than Shapiro-Wilk's, this last one was chosen to work with, since Shapiro-Wilk is considered the most powerful normality test (Razali & Wah, 2011).

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Extraversion	,092	343	,000	,985	343	,001
Agreeableness	,069	343	,000	,990	343	,018
Conscientiousness	,067	343	,001	,985	343	,001
Emotional Stability	,098	343	,000	,980	343	,000
Openness	,092	343	,000	,989	343	,009
Persuasiveness	,061	343	,004	,991	343	,042
Attractiveness	,083	343	,000	,987	343	,004
Intelligence	,061	343	,003	,990	343	,020
Balancedness	,074	343	,000	,991	343	,032
Preference for Consistency	,177	343	,000	,930	343	,000

Table 29 – Tests of Normality

Normality distribution Extraversion

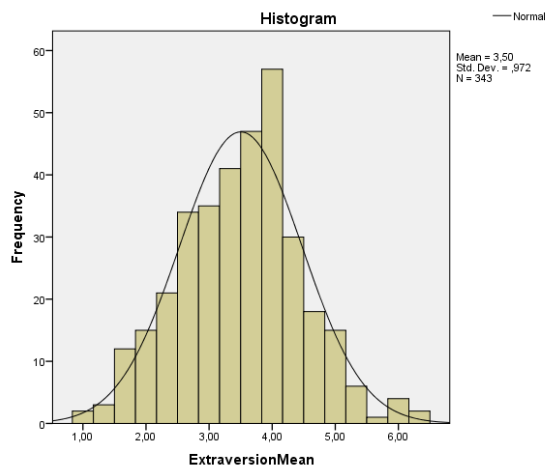


Figure 22 – Histogram of Extraversion

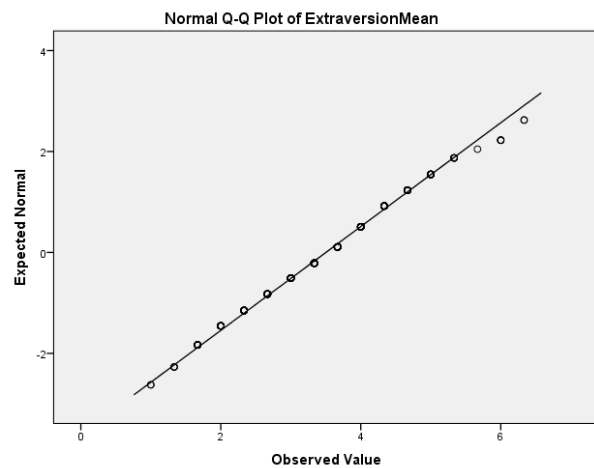


Figure 23 – Q-Q Plot of Extraversion

Normality distribution Agreeableness

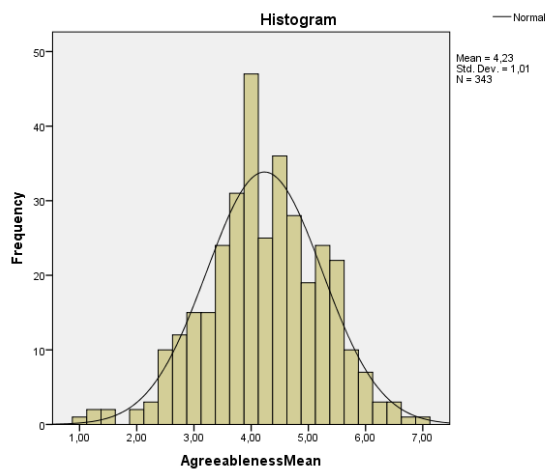


Figure 24 – Histogram of Agreeableness

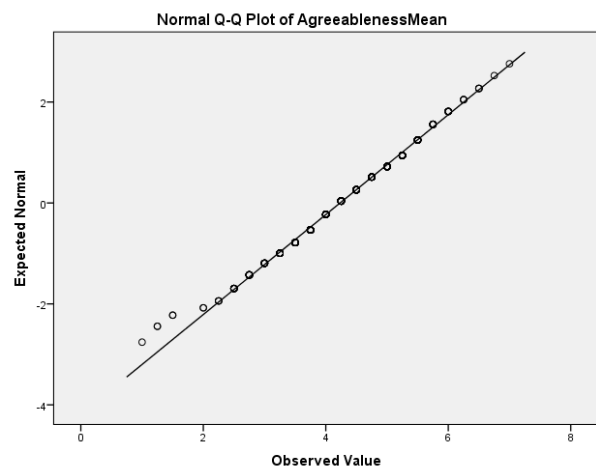


Figure 25 – Q-Q Plot of Agreeableness

Normality distribution Conscientiousness

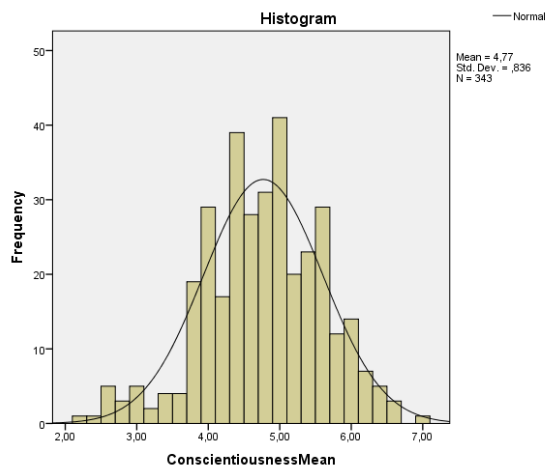


Figure 26 – Histogram of Conscientiousness

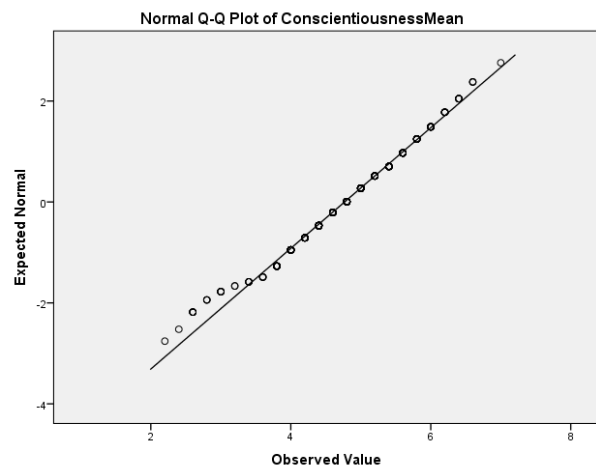


Figure 27 – Q-Q Plot of Conscientiousness

Normality distribution Emotional Stability

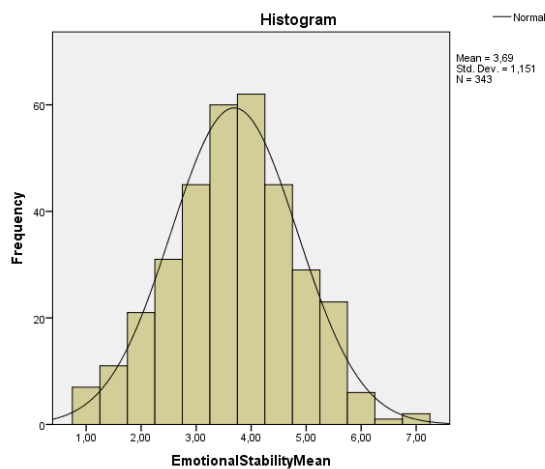


Figure 28 – Histogram of Emotional stability

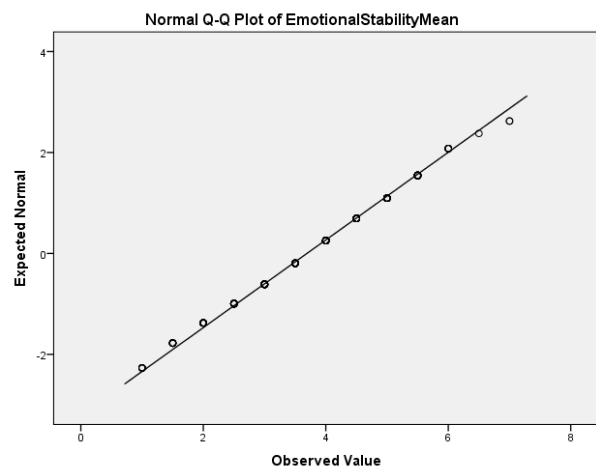


Figure 29 – Q-Q Plot of Emotional stability

Normality distribution Openness

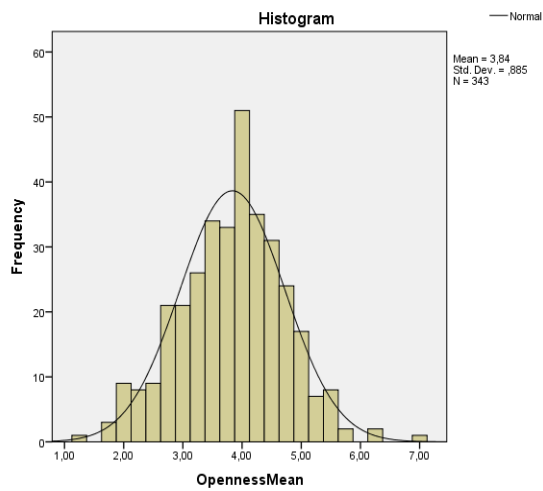


Figure 30 – Histogram of Openness

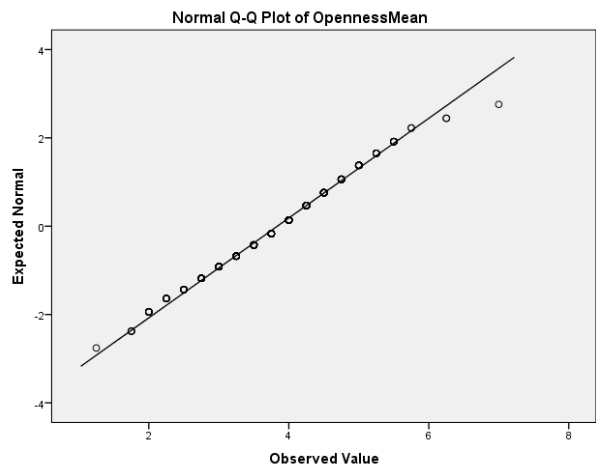


Figure 31 – Q-Q Plot of Openness

Normality distribution Persuasiveness

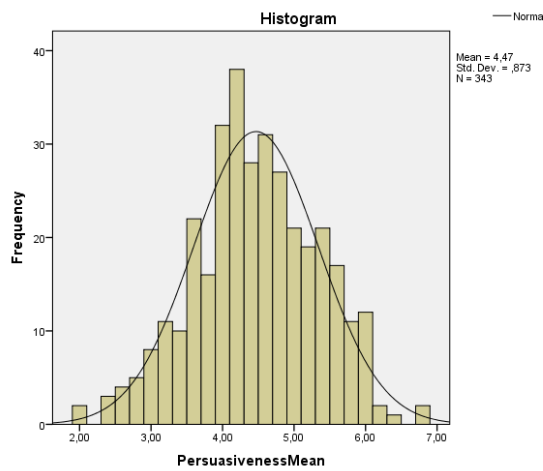


Figure 32 – Histogram of Persuasiveness

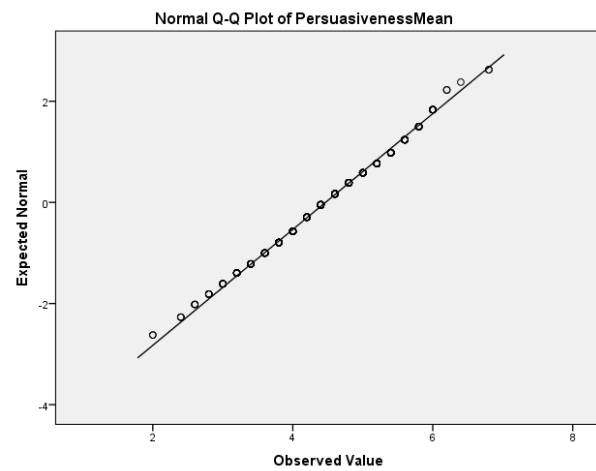


Figure 33 – Q-Q Plot of Persuasiveness

Normality distribution Attractiveness

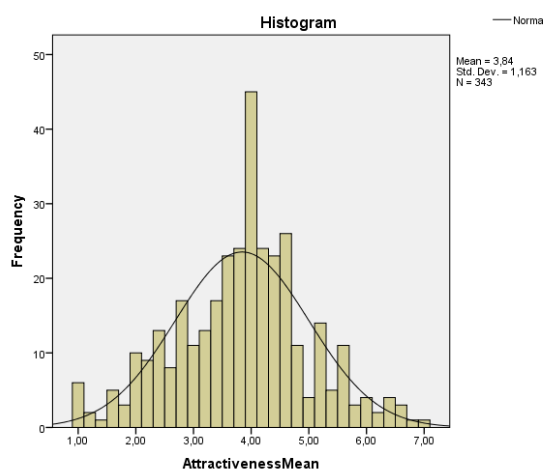


Figure 34 – Histogram of Attractiveness

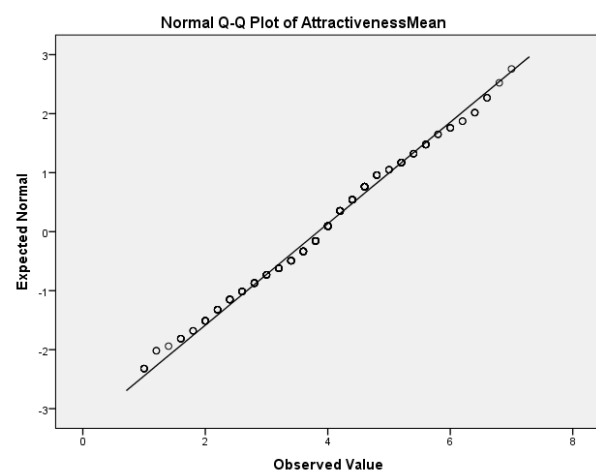


Figure 35 – Q-Q Plot of Attractiveness

Normality distribution Intelligence

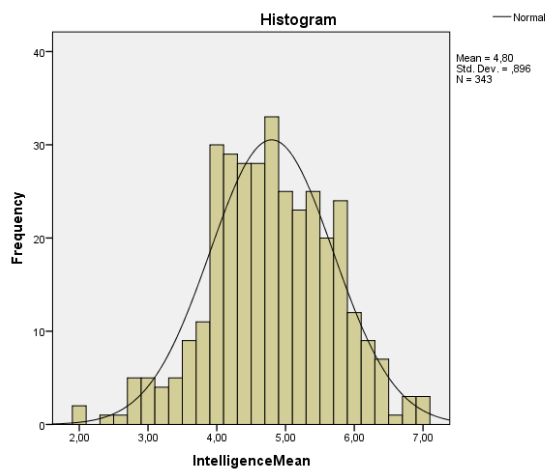


Figure 36 – Histogram of Intelligence

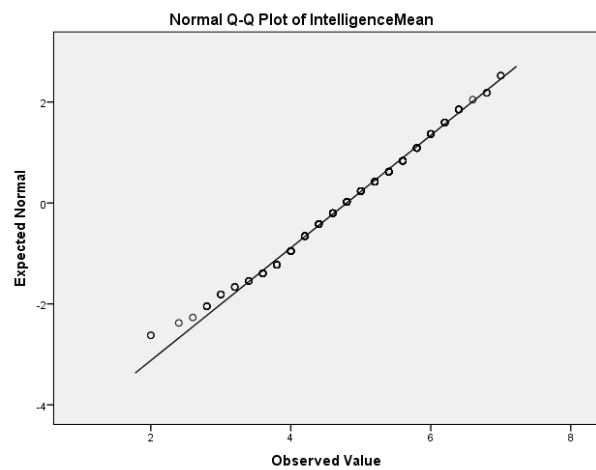


Figure 37 – Q-Q Plot of Intelligence

Normality distribution Balancedness

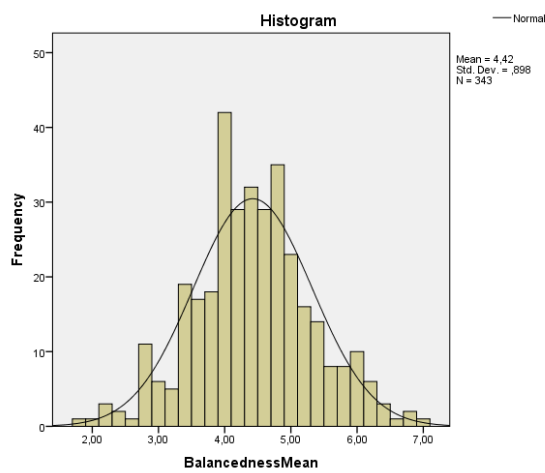


Figure 38 – Histogram of Balancedness

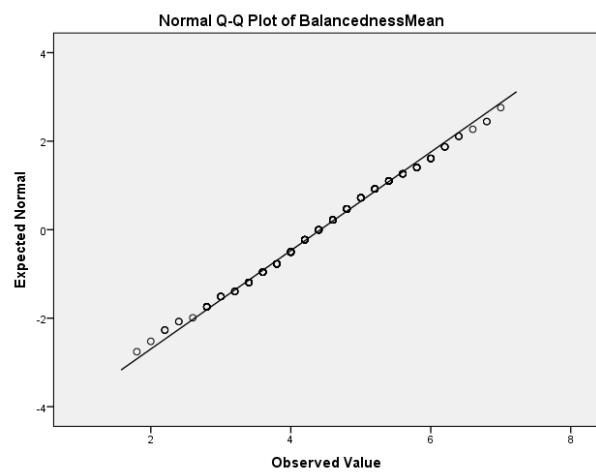


Figure 39– Q-Q Plot of Balancedness

Normality distribution Preference for Consistency

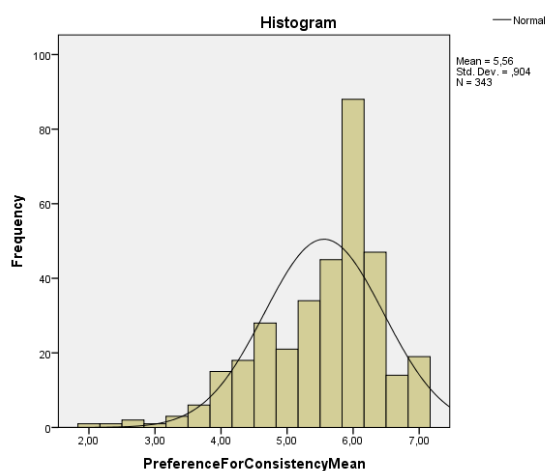


Figure 40 – Histogram of Preference for Consistency

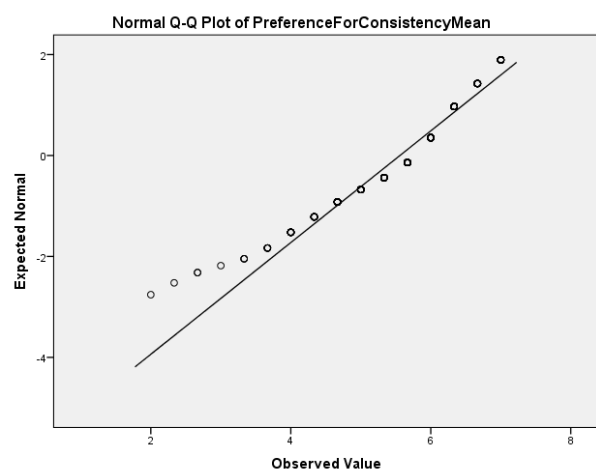


Figure 41 – Q-Q Plot of Preference for Consistency

Appendix 9 – Comments by the respondents (Dutch)

Slot :	Dit waren de vragen. Heeft u nog opmerkingen over de vragenlijst, dan kunt u deze hieronder kwijt.
1260	Ik probeer nooit te oordelen op mensen louter op basis van een 1e indruk en uiterlijk. Vandaar dat ik overal 4 heb ingevuld (niet positief noch negatief).
1467	Het valt me op dat je door de vraag stelling vaak anders om moet reageren. Eens zijn met een negatieve stelling.....
1633	Benieuwd naar de effecten van het onderzoek
3067	Ik vind deze vragen lijst ongepast en degenererend. Ik ben al helemaal niet van de hokjes dus daarom is deze lijst over de persoon neutraal ingevuld.
4167	veel vragen weer
4298	Ik kan onmogelijk aan de hand van een foto een oordeel vellen over iemands karaktereigenschappen. Sterker nog, mensen die dat wel denken te kunnen en ook doen zijn gevaarlijk bezig want de ervaring leert dat niets is wat het lijkt! Niets is zo dom als een oordeel vellen over iemand op basis van zijn uiterlijk.
4383	nee
4497	Lastige vragenlijst. Ik (doe mijn best) om mensen niet te beoordelen op hun uiterlijk. Deze vragenlijst staat in schril contrast met dat voornemen.
4992	ik vind het lastig om een fictief persoon te beoordelen op uiterlijk. Ik heb wel mijn best gedaan om een zo eerlijk mogelijk antwoorden te geven.
5028	Doe de volgende keer een vrouw als onderwerp van de vragen. Ab
5249	Zo een persoon kan inderdaad een terrorist zijn; alleen zou dan de vragen erbij horen te staan of hij bijvoorbeeld een SCHULD zou hebben openstaan of ergens anders gefinancierd wordt
6145	De meeste vragen kun je alleen beantwoorden als je de persoon kent in zijn doen en laten! De antwoorden die ik gegeven heb zeggen puur iets over de eerste indruk.
6784	nee
7061	Om alleen op de uitstraling van de jongeman af te gaan is een bijzondere moeilijke. Het zegt voor veel van de gestelde vragen helemaal niets en kan voor mij vaak de tegenstrijdige kanten opgaan.
7258	Wat doet de postcode ertoe.
7279	die gast is nep
7336	Succes met de opdracht!
7451	Er zaten bij de persoonlijkheidskenmerken bij de foto een paar vragen bij waarvoor ik toch echt iemand een beetje voor moet kennen, of op zijn minst gezien moet hebben. Deze vragen heb ik allemaal met neutraal geantwoord (daarnaast nog een of twee met neutraal geantwoord omdat ik het niet kon bedenken).
7706	De vragenlijst is onoverzichtelijk, het is lastig om de juiste lijn te houden bij de gevraagde kenmerken. Zo heb ik een paar keer een antwoord op de verkeerde verticale hoogte ingevuld. Dat is irritant.
8249	een eens/oneens schaal is lastig bij negatieve vragen in de trant van: ik vind niet dat...
8561	geen
8777	Ik vroeg me af wat het doel was, want ik vond het vreemd dat er zoveel zaken aan de hand van een foto beoordeeld moesten worden. Naarmate het einde van de vragenlijst dichterbij kwam vond ik het steeds meer vervelend dat ik een waardeoordeel aan de persoon moest geven terwijl ik die niet eens ken of in actie heb gezien. En dan is het nog eens een computer geanimeerde foto ook. :-)

- 9048 Je kunt een persoon niet beoordelen op alleen uiterlijk.
- 9646 Van een foto kun je niet opmaken hoe iemand is!
- 9667 Sommige vragen kunnen niet door iedereen beantwoord worden. In sommige gevallen volstaat het antwoord zowel niet als wel mee eens (nummer 4) alleen dit gaat niet altijd op. Voorbeeld: Ik vind deze persoon.... sexy. Er zijn mensen voor wie dit woord geen raakvlakken heeft (veel asexuelen bijvoorbeeld) omdat het hun niets zegt, dan is het er wel en niet mee eens zijn alsnog niet het antwoord wat hun mening reflecteert (maar wel wat het dichtstbij komt). Dit geldt ook voor de andere punten. Zo zijn er mensen die geen esthetische aantrekkingskracht ervaren en is de vraag of iemand mooi is een vraag waar geen antwoord op gegeven kan worden. Een optie zoals geen mening zou passender zijn. Ik weet niet of dit voor het onderzoek een verschil uitmaakt, maar aangezien ik denk dat er onjuiste antwoorden worden ingevuld omdat niet iedereen het antwoord kan kiezen dat hij/zij/x bedoelt, vertroebelt dat de resultaten. Bent u man/vrouw is er ook een. Mannen en vrouwen zijn niet de enige geslachten waarmee iemand geboren kan worden (kijk eens naar intersex). Ik realiseer me dat dit voor zo'n onderzoek vaak onnodig lijkt, maar ik wou het toch eens aangeven omdat men het vaak simpelweg niet weet. Het hangt er natuurlijk ook volledig vanaf hoe relevant het is voor het onderzoek (maar als het niet relevant zou zijn werd het niet gevraagd denk ik). Ik hoop dat deze kritiek onderbouwend genoeg is om iets mee te doen. :) Succes nog met het onderzoek!
- 9774 Ik werk regelmatig, zo weet ik dat ik vanaf week 4 weer een aantal weken werk heb. Maar ben op dit moment werkeloos.
- 10292 Ik beoordeel mensen niet op hun uiterlijk.
- 10399 door de aangepaste haardracht komt de persoon onpersoonlijk/onecht over. Dat kan de score beïnvloeden.
- 10430 n.v.t
- 10729 Ik wil geen oordelen geven over een persoon die ik nog nooit heb gezien en ook niet ken.
- 10881 Moeilijke zin ergens in deze vragenlijst: "Ik vind het niet zo erg als ik soms niet consistent handel." Graag zou ik willen weten in hoeverre ik deze persoon, alleen maar afgaande op zijn foto, verkeerd heb beoordeeld.