

# Association Between Self-Perceived Facial Attractiveness, Personality Traits, Self-Esteem, And Anxiety in Female University Students

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**Abstract** The study examines possible associations between self-perceived facial attractiveness, personality traits, self-esteem, body image, and anxiety. The research sample consists of 181 female undergraduate students. The following questionnaire methods were used to assess personality traits: NEO-FFI, self-esteem: Rosenberg Self Esteem Scale, body image: The Body Image States Scale, and appearance anxiety: Appearance Anxiety Questionnaire. Statistically significant associations in the positive direction between self-perceived facial attractiveness and conscientiousness, extraversion, self-esteem, and body image are present. We found negative associations between self-perceived facial attractiveness, neuroticism, and anxiety. The results support the assumption of a connection between the evaluation of one's own attractiveness and the selected factors.

**Keywords** self-perceived facial attractiveness, personality traits, self-esteem, body image, appearance anxiety, female university students

## 1. INTRODUCTION

Human beauty has been, is and will be the subject of many conversations, research, and art, which in itself shows its importance. The word "attractiveness" comes from the Latin word "atrare" and means attractive, alluring, interesting (Kábrt, Kábrt, 2001; Hewstone, Stroebe, 2006). Fitness, Fletcher and Overall (2007) situate the term at the intersection of individual human preferences and culturally socially shared norms. The idea of what is attractive about a person varies not only depending on geographical and cultural conditions, but also in relation to time, age, fashion trends and many individual characteristics and preferences of a person. Facial attractiveness is one of the key determinants of overall attractiveness ratings (Pansu, Dubois, 2002, Rodhes, 2006, Luxen et al, 2006).

Is the assessment of one's own attractiveness influenced by certain personality traits? If this is the case, why should persons who rate themselves as attractive be different from persons who have a modest opinion of their appearance?

Much research (Borráz-León, Cerda-Molina 2015; Holtzman et al, 2011, Munoz, Reyes et al, 2012; Švegar, 2016) have verified the associations between facial attractiveness and personality traits of individuals. A study by Meier et al. (2010) confirmed the positive correlation of facial attractiveness with agreeableness and extraversion. Positive social traits are related to attractiveness, which has already been found by Langlois et al. (2000). Differential inference on personality traits depending on facial attractiveness has also been provided by the study of Cross et al. (2017). Statistically significant differences in attributions of positive personality traits in favour of attractive individuals were also found for diligence, honesty, friendliness, likeability, intelligence and success, among others.

The basis for connecting the assessment of one's own attractiveness and personality traits can be found in the concept of the kernel of truth hypothesis, which postulates that the face provides some reasonable information about a person's personality traits (Berry & Finch Wero, 1993; Masip & Garrido, 2001). It has been found that personality traits such as extraversion, conscientiousness (Borkenau & Liebler, 1993a, Penton-Voak, Pound, Little, & Perrett, 2006), emotional stability, dominance, and agreeableness can be relatively reliably identified in a person's face (Berry, 1990; Borkenau & Liebler, 1993b; Kenny, Albright, Malloy, & Kashy, 1994; Zebrowitz, 1997). The ecological theory postulates that facial perception guides the behaviour of other people, and the assumed personality characteristics of the other person allow them to predict their behaviour (Zebrowitz & Montepare, 2008). It follows that it is reasonable to assume that the repeated reactions of other people to one's own appearance can influence a person's expressions. And thus, based on the assumption of his own behaviour from other people, he adapts his behaviour.

We tend to be influenced by several stereotypes that may not be based on the truth, it is to some extent an unreasonable generalization, e.g. through the self-fulfilling prophecy effect. The physical appearance of the face can influence personality traits. This issue is connected to two main phenomena, which are self-fulfilling prophecies and self-defeating prophecies. Society's expectation, which is based on the characteristics of a person's face, can create such environmental conditions that a person either fulfils his behaviour (self-fulfilling prophecy) or leads to exactly the opposite

behaviour (self-refuting prophecy, Snyder, 1992). For example, if an attractive person is considered sociable, or extraverted, the behaviour of others towards this person can influence him to such an extent that he becomes sociable by gradually internalizing sociability into his self-concept and behaviour that is consistent with his self-image (Feingold, 1992).

On the other hand, it appears that personality traits can influence the physical appearance of the face. Through personality traits, people tend to experience certain emotional states more often than others. It is a well-known fact that the frequent repetition of certain emotions accompanied by facial expressions will manifest in specific facial features during life. As was found out (Malatesta, Fiore & Messina, 1987) neutral expressions of older women tend to be positively associated with having an emotional expression. For example, women whose neutral faces looked angry scored higher on the hostile personality dimension.

Among the personality traits, openness, extraversion and self-confidence are mainly mentioned (Benesch, 2001; Fink, Penton-Voak, 2002). Feldman (1985, in Šmahel, Veselá, 2006) states that we are influenced by multiple information from different sources, from which a person creates combinations and on the basis of which he or she makes judgments. Nevertheless, it is possible to trace some factors that condition or influence attractiveness. Within this domain, personal attractiveness must be emphasized: above all, the cheerfulness of the recognition of others is valued (Benesch, 2001). On the one hand, appearance is a clue to a lot of information about a person, such as their age, gender, status and role, or other individual personality traits, but on the other hand, a person can purposely use appearance for self-presentation; they can modify their appearance as well as their facial expression itself. Many features of attractiveness that are desirable in each case can be controlled by will (Fialová, 2006).

On the other hand, if self-evaluation of facial attractiveness is not based on the prophecy coming from the assumption "what is beautiful is good", on what basis should it be rooted? The idea of one's own attractiveness (or, on the contrary, unattractiveness) is thus part of the formation of self-concept, and self-esteem and as such modifies personality and self-esteem from childhood (Stephan, Langlois, 1984, Seitzl, 2012). The self-perceived physical attractiveness is sometimes also called the self-concept of physical attractiveness (Feingold, 1992) or subjective physical attractiveness' and it represents the second view of the evaluation of one's own attractiveness, in which there is an assumption that this evaluation is based on the overall degree of self-esteem. Rosenberg (1965) defines self-esteem as a positive or negative attitude towards oneself that gives a person a sense of self-worth. Self-esteem is a mental representation of an emotional relationship with oneself, and cognitive, emotional, and volitional psychological processes are involved in its formation. Self-esteem changes during adolescence and may fluctuate (Schauder, 1991; Krch et al., 2005). The influence of culture is also important (Farková, 2009) and there is a common notion of what is attractive, regardless of the ethnic or cultural background in which one lives (Rubenstein, Langlois, & Roggman, 2002).

The self-esteem model posits that self-perceptions of physical attractiveness are largely determined by global self-esteem, that people who have high self-regard in general also feel physically attractive, and that the correlations of self-rated attractiveness with other variables are best explained by the shared variance between self-judgments of physical attractiveness and other variables (e.g., mental health) with general self-esteem (Feingold, 1992).

Some personality traits are associated with self-perceived facial attractiveness, at the same time, the evaluation of one's own

attractiveness can represent a self-concept, in the sense of a person's self-evaluation. On the other hand, what characteristics could be negatively related to the evaluation of the attractiveness of one's own face? Preoccupation about one's own attractiveness often leaves women feeling negative about themselves as societal beauty ideals and standards of attractiveness are typically unattainable or unsustainable (Vendemia, DeAndrea, 2021). For this reason, we also focus on the role that the appearance anxiety, that negatively influence individuals' body image and self-esteem as such they can influence the self-perceived attractiveness evaluation.

In this spirit, the aim of the research is to find out if there are interconnections between self-perceived facial attractiveness, personality traits, self-esteem, body image, and appearance anxiety. Research questions

1. Is there a statistically significant association between self-perceived facial attractiveness and personality traits?
2. Is there a statistically significant relationship between self-perceived facial attractiveness and self-esteem?
3. Is there a statistically significant relationship between self-perceived facial attractiveness, body image, and appearance anxiety?

## 2. METHODS

*Self-Perceived Facial Attractiveness Evaluation:* The participants were asked to judge their perceived facial attractiveness by the question: "Rate how attractive your face is compared to the average face". The respondent expresses herself on a scale from -4 (much less), through 0 (average), to +4 (much more).

*Personality traits:* NEO-FFI (Costa, McCrae; Slovak version: Ruisel, Halama, 2007) is a personality inventory evaluating five personality traits, specifically: neuroticism, extraversion, openness to experience, conscientiousness, and agreeableness. Each factor consists of 12 items. The respondent comments on a 5-point scale from 0 (does not apply to me at all) to 4 (applies to me completely).

*Self-esteem:* Rosenberg Self Esteem Scale (Rosenberg, 1965; Slovak version: Halama, Bieščad, 2006) is a 10-item scale that measures global self-worth by measuring both positive and negative feelings about the self. The scale is one-dimensional. All items are answered using a 4-point Likert scale format ranging from strongly agree to strongly disagree.

*Body image:* The Body Image States Scale (Cash, et al, 2002) is a six-item measure of individuals' evaluation and affect on their physical appearance (e.g., dissatisfaction-satisfaction with one's overall physical appearance). Responses to each item were based on 9-point, bipolar, Likert-type scales, semantically anchored at each point.

*Appearance anxiety:* Appearance Anxiety questionnaire (Dion et al., 1990) is a 14-item brief version of the Appearance Anxiety Scale. The questionnaire was used to assess the degree to which participants report incidents of anxiety about their bodies. Items (e.g., "I wish I were better looking") are rated along a 5-point scale ranging from 1 (never) to 5 (almost always).

*Research sample:* The research is specified to self-evaluate facial attractiveness, personality traits, self-esteem, body image, appearance anxiety, and body objectification. We have set the age group to 18-25 years; the advantage is a more valid representation of the selected age group. The research sample is female students of humanities, studying at the University of St. Cyril and Methodius in

Trnava. The female students were comparable in terms of socio-economic status, level of study, age, and academic achievement. A total of 181 female students participated in the research ( $M=20,96$ ;  $SD=1,24$ ).

Respondents were informed about the conditions of participation before the questionnaire was launched, and they agreed to the conditions by completing and submitting the questionnaire. They were also instructed about the possibility of terminating their participation in the research at any time without giving any reason by stopping the questionnaire or not sending it.

### 3. RESULTS

With the aim to explore the relationship between personality traits, self-esteem, appearance anxiety, body image, body objectification and self-assessed facial attractiveness, we chose bivariate correlations to observe the tightness of the relationship.

Research question no. 1.: Is there a statistically significant association between self-perceived facial attractiveness and personality traits?

Tab. 1: Correlations between Self-Perceived Facial Attractiveness and personality traits

	Openness to experience	Conscientiousness	Extraversion	Agreeableness	Neuroticism
r	-,086	,158*	,220**	-,017	-,233**
p	,252	,033	,003	,819	,002

Given the linear relationship between the examined variables, to answer research question no. 1, Pearson's correlation coefficient was used to examine their relationship. Based on the detected statistical significance of  $Sig. < 0,05$ , it can be concluded that the correlation coefficient between self-perceived facial attractiveness and conscientiousness and extraversion is significant in a positive direction. There is a statistically significant negative relationship between the perception of the attractiveness of one's own face and neuroticism. All reported associations have a small effect size. We did not observe a statistically significant connection between friendliness, openness to experience and perception of one's own facial attractiveness. The results are shown in Table no 1.

Research question no. 2.: Is there a statistically significant relationship between self-perceived facial attractiveness and self-esteem?

Tab. 2: Correlations between Self-Perceived Facial Attractiveness and Self-Esteem.

Self-Perceived Facial Attractiveness	Self Esteem	
	r	,321**
p	,000	

Given the linear relationship between the variables, to answer the research question no. 2, Pearson's correlation coefficient was used. Based on the detected statistical significance of  $Sig. < 0,001$ , it can be concluded that the correlation between the perception of the attractiveness of one's own face and self-esteem is a statistically significant relationship in a positive direction. The given value represents the moderate effect size. The results are shown in Table no 2.

Research question no. 3.: Is there a statistically significant relationship between self-perceived facial attractiveness, body image, and appearance anxiety?

Tab. 3: Correlations between Self-Perceived Facial Attractiveness and Body image, and Appearance anxiety

Self-Perceived Facial Attractiveness	Body image		Appearance Anxiety	
	r	,414**	-	-,454**
p	,000		,000	

Given the linear relationship between the variables, to answer research question no. 3, Pearson's correlation coefficient was used. Based on the detected statistical significance of  $Sig. < 0,001$  and the values of the correlation coefficient, it can be concluded that the association between the perception of the attractiveness of one's own face and body image represents a statistically moderately strong relationship in a positive direction. The value of the Pearson correlation coefficient is  $r = 0,414$ . On the contrary, the relationship between the perception of the attractiveness of one's own face and appearance anxiety is a statistically moderately strong relationship in the negative direction. The value of the Pearson correlation coefficient is  $r = 0,454$ . We did not observe a statistically significant relationship between the perception of self-observed facial attractiveness and surveillance of one's own body. The results are shown in Table no 3.

### 4. DISCUSSION

The research focused on the association between self-perceptions of facial attractiveness, personality characteristics, self-esteem, body image, appearance anxiety, and objectification in perceiving one's own body. Facial appearance can reveal information about intrinsic personality characteristics (Hassin, Trope, 2000; Engell, Haxby, & Todorov, 2007).

In our research, the first research question focused on verifying the association between personality characteristics and perceptions of one's own facial attractiveness. Our findings are in line with those of experts (Borráz-León, Cerda-Molina 2015; Holtzman et al. 2011; Munoz, Reyes et al. 2012; Švegar, 2016; Meier et al. 2010), who confirmed the positive correlation of facial attractiveness with extraversion. Positive social traits are related to attractiveness, which has already been found by Langlois et al. (2000). Differential inference on personality traits depending on facial attractiveness has also been reported by other studies (Cross et al., 2017; Curkovic, Franc, & Franc, 2010). Neuroticism represents a factor where high scores are indicative of multiple negative traits. Those with high scores in this category are generally considered to be self-critical, anxious, pessimistic, and low in self-esteem, which is negatively reflected in their perception of their own face (Soto, 2018, Cross et al. (2017). Conscientiousness is about impulse control. These individuals strive to act in a socially recognized and acceptable behaviour. Lebowitz (2016) also states that conscientiousness depicts a person's reliability, which determines their goal orientation. They tend to control impulses and are usually very organized, which is reflected in their more positive perception of their own facial attractiveness (Holtzman et al., 2011). Extraversion represents eloquence, sociability, and assertiveness. A tendency to derive energy from social situations can be observed in these individuals. They feel more satisfied when they are surrounded by people. Individuals who score high in the extraversion tend to be confident, friendly, and sociable, they like other people, and they literally seek out contact with others and are satisfied with their faces (Soto, 2018). Openness to experience is another category

within the Big Five model, sometimes referred to as imagination or intellect. Individuals who score high on openness seek out new experiences have the ability to use untried and untested methods to achieve their goals "think out-of-the-box, which may be related to a disconfirmed attraction to the attractiveness of one's own face (Ruisel, Halama, 2007). Agreeableness represents the factor responsible for how an individual gets along with other people. In comparison with extraversion, we can say that extraverted people get energy from the company of people who they seek interaction with. Agreeableness, however, is more about the way agreeable people interact with others. Often, individuals who score high on agreeableness tend to be more liked and respected by society and are more sensitive to the needs of others, which also affects their perception of themselves (Soto, 2018). Results support the hypothesized association between some personality traits and self-ratings of attractiveness. They may represent a confirmation of ecological theory (Zebrowitz & Montepare, 2008), as women who feel physically attractive may also attempt to conform to the behaviours expected of attractive people (as manifested in the physical attractiveness stereotype) and ultimately become the kind of people the stereotype predicts. The stereotype perceives attractive women as extraverted (or social), emotionally stable, and aware. And, as Feingold (1992) has argued, if self-generated expectations cause covariation between one's own physical attractiveness and other personality traits, one's own attractiveness should be correlated with the traits that make up the stereotype of physical attractiveness, and the greatest correlations should be for the traits that are central to the stereotype.

The self-concept of physical facial attractiveness represents a second perspective on the evaluation of one's own attractiveness, in which there is an assumption that this evaluation is based on an overall measure of self-evaluation. Self-esteem involves much more than a sense of self-worth, which seems to be given to a person from birth, as opposed to self-worth that is acquired (Branden, 1992). Self-esteem changes and can fluctuate during adolescence, with appearance being one of the core components of body image (Fialová, 2006). Gilbert and Thompson (2014) point out that it is shame during childhood and adolescence that can negatively affect the perception of one's attractiveness. Several studies have pointed to a negative relationship between body shame, which determines anxiety, and self-esteem in the female gender (Mustapic et al., 2015; Sanftner, Barlow, Marschall, & Tangney, 1995). Tangney (1996) reported that shame per se can have a negative impact on a person's self-esteem. Research results from Jankauskiene and Pajaujiene (2012) showed that female students who reported higher levels of body shame had lower self-esteem. The negative correlation between body shame and self-esteem has been confirmed by several studies (Choma et al., 2010; Markham, Thompson, & Bowling, 2005; Mercurio & Landry, 2008).

Like body shame, body image is also related to self-esteem. According to Fialová (2006), overall self-esteem is related to body self-concept and attractiveness. Harter (1999) stated that body image perception and self-evaluation are inextricably linked such that appearance. Several research has been conducted on self-evaluation in relation to body image. Van L. Penzesová, L. Martinec, (2018) found that negative body image and self-esteem are closely linked to perceptions of one's own attractiveness. Several research show a relationship between negative body image and low self-esteem and perceptions of self-perceived attractiveness (Grossbard, Lee, Neighbors, & Larimer, 2009; Masheb, Grilo, Burke-Martindale, & Rothschild, 2006; Mellor, Fuller-Tyszkiewicz, McCabe, Ricciardelli, & 2010). It is possible that it is the higher experience of body shame that negatively affects body image, which in turn negatively affects an individual's self-esteem and perceptions of attractiveness. Previous research has consistently shown that the

amount of self-esteem in adolescence is also dependent on gender, with males showing higher self-esteem than females (Frost & McKelvie, 2004; Kožuchová & Bašková, 2014). One reason for this may be that women rate appearance as a significantly more important personal value compared to men (Pliner, Chaiken, & Flett, 1987), which may just be related to lower self-esteem.

Women are especially vulnerable towards judgement of their facial attractiveness since they rate appearance as an important personal value. Our results have shown the importance of examining associations between self-perceived facial attractiveness, personality traits, self-esteem, body image, and appearance anxiety in women. In accordance with our results, we can hypothesise, that extraversion, consciousness, higher body image, and self-esteem play a protective role in higher self-perceived facial attractiveness. On the other hand, neuroticism, and appearance anxiety may lead to lower ratings of self-perceived facial attractiveness.

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