ORIGINAL ARTICLE

# Self-satisfaction described by Zuckerman's alternative five factors of personality

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#### BACKGROUND

This study investigates the relationships between an individual's self-satisfaction within different life areas, which correspond to Bracken's self-concept primary domains (competence, family, social, physical, emotional, and academic domains), and Zuckerman's Alternative Five-Factor Model of Personality (AFFM). It is supposed that the AFFM, as a psychobiological personality model which allows causal explanations, could provide a comprehensive insight into the nature of satisfaction with self.

#### PARTICIPANTS AND PROCEDURE

The study included 489 adults (64% women), between 18 and 60 years old, who completed the short Self-Satisfaction Scale (SC-6) and the Zuckerman-Kuhlman-Aluja Personality Questionnaire (ZKA-PQ). Relations between personality factors and facets from the ZKA-PQ and selfsatisfaction measures were analyzed using correlational and multiple regression analysis. The relationship of selfsatisfaction with gender and age was also analyzed.

#### RESULTS

Based on responses to scales, 11% to 43% of the variance in self-satisfaction responses was predicted by personality,

age, and sex. Extraversion had positive predictive weights for each self-satisfaction dimension. Neuroticism had negative predictive weights which were significant except for satisfaction with family. Sensation seeking negatively predicted satisfaction with competencies, family, academic aspects, emotions, and overall satisfaction. Aggression had small negative predictor weights for satisfaction with social and academic aspects. Activity had significant positive predictor weights for competencies, academic aspects, emotions, and overall satisfaction.

#### CONCLUSIONS

The findings suggest that personality predicts satisfaction with aspects of the self, and that the AFFM provides an adequate theoretical framework, which includes a lower level of personality traits in the explanation of the nature of a person's satisfaction, in general or related to specific life contexts.

#### **KEY WORDS**

alternative five-factor model of personality; self-satisfaction; relations

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#### BACKGROUND

Conceptualizations of self-concept, such as self-esteem, self-efficacy, or self-image, are developed based on evaluation processes of self-perceived characteristics and behaviors. Emotional valence, or positive or negative self-image, is an important part of overall self-evaluation, while an emotional evaluation component is included in all theoretical models of self-concept. For example, emotional evaluation is an important aspect of Rosenberg's (1965) concept of self-esteem, the self-concept domains proposed by Bracken (1996), and self-efficacy beliefs (Caprara & Steca, 2005). Although the emotional evaluation component clearly represents an important dimension, there is a lack of studies which directly focus on a person's self-satisfaction specifically as opposed to examining overall satisfaction with life or satisfaction with some life contexts. Furthermore, if self-satisfaction is included, rarely is the dimension examined with respect to how self-satisfaction is predicted by personality.

Therefore, the purpose of the present study is to analyze self-satisfaction as an aspect of self-concept and examine its nature through relations with the personality traits from Zuckerman's Alternative Five-Factor Model (AFFM; Zuckerman et al., 1993). Because Zuckerman's AFFM provides a more causal explanation of the nature of personality based on the cortical, neural, and hormonal processes, the present study expands our understanding of the relationship between self-satisfaction and personality beyond the lexical models of personality.

## SELF-SATISFACTION

Self-satisfaction refers to satisfaction with personal characteristics, competencies, achievements, physical characteristics, and relations with others (Čekrlija et al., 2015). Self-satisfaction is related to the constructs of happiness and well-being, but satisfaction with self does not include the happiness dimensions such as certain life circumstances or other people (Diener, 2000), or well-being aspects such as relations with complex environments. The model of self-satisfaction in this study is based on Bracken's (1996) hierarchical multidimensional model of selfconcept, which comprises a general dimension and six lower sub-dimensions (competence, family, social, physical, emotional, and academic) labeled as primary domains. Following Bracken's (1996) model, Čekrlija et al. (2015) created the short Self-Satisfaction Scale (SC-6), with individual items asking about satisfaction with each of the six primary domains, which, when aggregated, reflect general or overall self-satisfaction. The scale has been reported to have good reliability with a robust unidimensional structure (Čekrlija et al., 2015). Mrđa et al. (2018) reported self-satisfaction's moderate positive correlations with self-esteem measured using the Rosenberg Self-Esteem Scale (Rosenberg, 1965) and general self-efficacy, measured using the General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995), positive correlations with consciousness, extraversion, and agreeableness, and a negative correlation with neuroticism. Weber and Huebner (2015) also reported similar results in their investigation about the importance of neuroticism in understanding early global life satisfaction and found negative correlations with neuroticism and positive correlations with conscientiousness with satisfaction in all five domains.

Self-satisfaction has also been reported to be associated with positive affect. For example, Moroń (2018) found positive correlations between satisfaction with life scores and a "positivity ratio", representing a ratio between positive and negative emotions. Furthermore, Pandey et al. (2021) reported that self-affirmation helps to restore well-being and to enhance satisfaction with self in depressive patients. In general, the results suggest that greater self-satisfaction is associated with better mental health variables.

# ALTERNATIVE FIVE-FACTOR MODEL (AFFM)

Zuckerman's AFFM (Zuckerman et al., 1993) conceptualizes personality as a dynamic system of five basic personality traits (neuroticism, extraversion, sensation seeking, aggression, and activity) which are physiologically based and hierarchically organized (Aluja et al., 2010). Each personality trait includes different facets, contributing to the manifestation of more than one trait by its different neuro-psychological systems. The AFFM, unlike taxonomic models of personality such as the Five Factor Model (FFM), provides potential causal explanations of behavior, providing a deeper insight into the relationships between different levels of personality and specific behaviors.

The AFFM has been shown to be an adequate theoretical framework for constructs from the domain of positive psychology. Jovanović (2011) found that traits of neuroticism and activity had direct effects on the affective component, while Kovi et al. (2017) reported that a sense of coherence is negatively related to neuroticism, sensation seeking, and aggressiveness, and positively to extraversion and activity. In addition, Čekrlija et al. (2022) found that sensation seeking and extraversion determine the frequency of using humor in everyday life, while aggressiveness and neuroticism determine whether the used humor will be benign or detrimental.

The relationships between AFFM traits and aspects of self-concept have been under-studied so far. It is important to emphasize that low self-esteem represents a facet of neuroticism within the AFFM, which is negatively related to extraversion facets (Rossier et al., 2016), which include some indicators of self-satisfaction. Although the AFFM has not been investigated as often as lexical personality models in positive psychology studies, based on findings obtained and its meaningful interpretations, the AFFM can provide a comprehensive theoretical background for the investigation of constructs from positive psychology.

## THE PRESENT STUDY

The aim of the present study is to analyze the relationships between self-satisfaction, both overall and in specific life contexts, and Zuckerman's AFFM personality traits, allowing for a better understanding of how satisfaction with personal characteristics, competencies, behavior, and achievements are correlated with personality traits due to base arousal or learning and conditioning processes. Specifically, this study focuses on self-satisfaction dimensions that correspond to Bracken's (1996) model of self-concept.

In an effort to shed light on the relationship between basic personality traits and self-satisfaction, the current study synthetizes both the 'bottom-up' and 'top-down' perspectives. The 'bottom-up' perspective is used when considering self-satisfaction, as postulated to be a culmination (aggregation) of satisfaction with self in six life domains. Using the 'top-down' perspective, personality is considered to be the primary determinant of one's perception of self-satisfaction, in general, and with specific life domains. On the basis of the 'top-down' perspective, it was expected that overall self-satisfaction would be associated negatively with neuroticism and aggressiveness, and positively with extraversion, in line with studies using the FFM personality measures. It is also expected that general self-satisfaction will be positively associated with activity. Regarding the specific domains of self-satisfaction, it is expected that emotional satisfaction will be negatively associated with neuroticism, social satisfaction will be positively associated with extraversion and sensation seeking, and satisfaction with one's competence, academic performance, and physical characteristics will be associated positively with activity.

# PARTICIPANTS AND PROCEDURE

#### SAMPLE AND PROCEDURE

The sample included 489 (313 female) adult participants from Bosnia and Herzegovina who completed questionnaires online. The age of the respondents was between 18 and 60 years (M = 25.35, SD = 8.11). In order to examine the relationship between respondents' age and self-satisfaction, respondents were

categorized into four categories, as follows: between 15 and 25 years (356), between 26 and 35 years (72), between 36 and 45 years (40) and between 45 and 60 years (21). Since most of the respondents were students, group size was significantly different among groups. The sample was collected by bachelor students from the University of Banja Luka, who distributed an online questionnaire using their mailing lists and social networks. Participation in the study was voluntary and anonymous and all participants provided informed consent.

#### **INSTRUMENTS**

In addition to completing demographic items (age and self-report biological sex), participants completed self-satisfaction and Zuckerman's personality factors scales.

Self-Satisfaction Scale (SC-6; Čekrlija et al., 2015) represents a short measure of self-satisfaction which includes six items that correspond to six primary domains from Bracken's (1996) multidimensional hierarchical model of self-concept (CSS-Competence, FSS-Family, SSS-Social, PSS-Physical, ESS-Emotional, and ASS-Academic). Each primary domain is represented by a single item. Respondents estimated selfsatisfaction within the self in six specific life contexts on the five-point Likert scale from 1 (not satisfied at all) to 5 (completely satisfied). The answer to items represents six measures of self-satisfaction related to corresponding primary domain, while the composite score of the six items represents general selfsatisfaction. Reliability coefficients for the SC-6 scale were satisfactory (see Table 1). The SC-6 items are provided in the Appendix.

The Zuckerman-Kuhlman-Aluja Personality Questionnaire-Short Form (ZKA-PQ-SF; Aluja et al., 2020) is an 80-item questionnaire assessing AFFM traits (extraversion, neuroticism, sensation seeking, aggressiveness, and activity; for facets, see Table S1 in Supplementary materials). Each of the five ZKA-PQ SF scales also includes four subscales which represent measures of lower personality structures labeled as facets. Participants answer the items on a 4-point Likert scale ranging from 1 (completely disagree) to 4 (completely agree). All five scales showed satisfactory internal consistency, while the facets SS2 (experience seeking), SS4 (boredom susceptibility), and AG4 (hostility) showed lower values of Cronbach's  $\alpha$ coefficient, indicating poor internal consistency. The scale descriptives are listed in Table 1.

#### STATISTICAL ANALYSIS

First the descriptive parameters, reliability coefficients, and Pearson's correlations were calculated. Relations between AFFM factors and self-satisfaction were first analyzed using Pearson's correlation, while regression analyses with the direct entry method were used to examine the predictive power of the alternative five personality traits, as well as sex and age, for each self-satisfaction dimension. The adjusted  $R^2$  and the *F*-test were used to evaluate the regression model fit. Scale mean differences between men and women were examined using the *t*-test with Cohen's *d*, while the differences among age groups were examined using ANOVA.

## RESULTS

Table 1 lists the means, standard deviations, skewness, kurtosis, and Cronbach's  $\alpha$  reliability coefficients for the scale totals. Obtained values for the SC-6 were similar to previously reported values (Čekrlija et al., 2015; Mrđa et al., 2018). All self-satisfaction items had normal and symmetrical distributions except self-satisfaction related to the family, which showed the highest average score of all primary domains. Descriptive parameters for ZKA-PQ-SF were similar to those reported by Aluja et al. (2020). In addition, men had lower academic self-satisfaction and neuroticism scores and higher sensation seeking scores compared to women, but the differences had small effect sizes.

Regarding the facets of the ZKA-PQ, women had higher anger (AG3), and lower exhibitionism (EX3), physical aggression (AG1), and restlessness (AC3) scores compared to men (see Table S1 in Supplementary materials).

Table 2 lists the correlations between the variables. To control for Type I error, only those correlations with an alpha less than .001 were deemed to be significant. All self-satisfaction scores correlated negatively with neuroticism and positively with extraversion. Weaker positive associations were found between activity and competence, emotional, academic, and physical self-satisfaction. Weak negative correlations were found between aggressiveness and academic, social, and emotional self-satisfaction. In addition, the correlations calculated separately for men and women showed that there were no differences in the direction of the correlations, but that the obtained values were slightly higher for men (see Table S2 in Supplementary materials). In addition, when different age groups were compared, the results indicated no differences in self-satisfaction scores between respondents of different age groups (see Table S3 in Supplementary materials).

Multiple regression analyses are presented in Table 3 and indicate that the AFFM personality traits predict overall self-satisfaction. Self-satisfaction was predicted by higher extraversion, activity, and sensa-

## Table 1

	М	SD	Men		Wor	Women		К	α	<i>t</i> (417)	р	Cohen's
			М	SD	М	SD						d
CSS	3.93	0.77	3.94	0.87	3.93	0.71	-0.59	0.73	-	0.23	.818	.02
FSS	4.17	0.96	4.28	0.94	4.12	0.97	-1.05	0.38	-	1.81	.071	.17
SSS	3.95	0.79	3.92	0.88	3.97	0.74	-0.58	0.24	-	-0.68	.498	06
PSS	3.71	0.90	3.74	0.93	3.69	0.88	-0.64	0.23	-	0.61	.540	.06
ESS	3.88	0.95	3.83	0.97	3.90	0.94	-0.75	0.36	-	-0.80	.426	08
ASS	3.87	0.95	3.74	1.01	3.94	0.90	-0.59	-0.12	-	-2.22	.027	21
SC6	23.51	3.48	23.45	3.87	23.54	3.25	-0.57	0.35	.73	-0.27	.789	03
EX	47.58	6.54	48.28	6.85	47.18	6.33	-0.07	-0.28	.77	1.80	.073	.17
NE	35.14	9.76	33.11	9.22	36.28	9.88	0.43	-0.48	.91	-3.49	< .001	33
SS	41.32	7.52	42.97	7.13	40.40	7.59	0.14	-0.46	.72	3.67	< .001	.35
AG	33.83	6.59	34.11	7.16	33.67	6.25	0.56	0.26	.79	0.71	.479	.07
AC	41.61	8.14	41.37	8.07	41.75	8.18	0.07	0.09	.85	-0.49	.622	05

Descriptive statistics, sex differences, and reliability estimates of the SC-6 and ZKA-PQ measures

*Note.* SC-6 – Self-Satisfaction Scale; ZKA-PQ – Zuckerman-Kuhlman-Aluja Personality Questionnaire; S – skewness; K – kurtosis; CSS – competence self-satisfaction; FSS – family self-satisfaction; SSS – social self-satisfaction; PSS – physical self-satisfaction; ESS – emotional self-satisfaction; ASS – academic self-satisfaction; SC6 – overall self-satisfaction; EX – extraversion; NE – neuroticism; SS – sensation seeking; AG – aggressiveness; AC – activity; sex is self-report biological sex was coded as 1 – men and 2 – women. Significant values of *t*-test and Cohen's *d* are boldfaced.

# Table 2

		-									
	CSS	FSS	SSS	PSS	ESS	ASS	SC6	EX	NE	SS	AG
FSS	.21*										
SSS	.31*	.30*									
PSS	.44*	.19*	.26*								
ESS	.45*	.27*	.39*	.47*							
ASS	.42*	.16*	.25*	.27*	.34*						
SC6	.70*	.56*	.62*	.67*	.75*	.63*					
EX	.37*	.26*	.35*	.33*	.39*	.23*	.49*				
NE	45*	19*	31*	43*	43*	26*	52*	34*			
SS	.08	05	.02	.10	.02	03	.03	.33*	04		
AG	08	07	18*	04	14	20*	18*	03	.31*	.20*	
AC	.28*	.07	.10	.14	.24*	.18*	.26*	.34*	03	.35*	.05

Intercorrelations of SC-6 and ZKA-PQ measures

Note. SC-6 – Self-Satisfaction Scale; ZKA-PQ Zuckerman-Kuhlman-Aluja Personality Questionnaire; CSS – competence self-satisfaction; FSS – family self-satisfaction; SSS – social self-satisfaction; PSS – physical self-satisfaction; ESS – emotional self-satisfaction; ASS – academic self-satisfaction; SC6 – overall self-satisfaction; EX – extraversion; NE – neuroticism; SS – sensation seeking; AG – aggressiveness; AC – activity. \*p < .001.

#### Table 3

Multiple regression analysis predicting self-satisfaction measures with the AFFM personality traits

	SC6	CSS	FSS	SSS	PSS	ESS	ASS
EX	.34**	.19**	.27**	.31**	.18**	.25**	.14*
NE	40**	39**	11*	17**	39**	35**	17**
SS	16**	09	16**	07	02	15*	13*
AG	03	.06	.00	10*	.08	01	12*
AC	.19**	.23**	.03	.02	.07	.20**	.18**
$R^2$	.55	.32	.43	.49	.54	.38	.64
adjusted R <sup>2</sup>	.30	.09	.18	.23	.29	.13	.42
<i>F</i> (5, 485)	42.08	11.11	21.43	29.67	40.19	15.79	71.74
р	< .001	< .001	< .001	< .001	< .001	< .001	< .001

Note. AFFM – Alternative Five-Factor Model of Personality; SC6 – overall self-satisfaction; CSS – competence self-satisfaction; FSS – family self-satisfaction; SSS – social self-satisfaction; PSS – physical self-satisfaction; ESS – emotional self-satisfaction; ASS – academic self-satisfaction; EX – extraversion; NE – neuroticism; SS – sensation seeking; AG – aggressiveness; AC – activity. \*p < .01, \*\*p < .001.

tion seeking, and lower neuroticism scores. Neuroticism and extraversion explained most of the variance for overall self-satisfaction and for each satisfaction area. Activity predicted the competence, emotional, and academic self-satisfaction items, sensation seeking weakly contributed to explaining the variance of academic, competence, emotional, and family selfsatisfaction, and aggressiveness weakly contributed to explaining the variance of academic and social self-satisfaction items.

# DISCUSSION

The results confirmed our expectation that neuroticism would be negatively, and extraversion positively, correlated with a person's overall self-satisfaction. Self-satisfaction was also associated with higher activity and lower aggressiveness, meaning that selfsatisfaction is related to a willingness to use personal potential and better ability to control aggressive impulses. Such findings directly suggest that more relaxed, cheerful, optimistic, self-confident, sociable, and warm individuals with less anxiety and fearfulness have higher general satisfaction with personal characteristics and support the presumptions that base arousal might be the lower level of personality that determines a person's self-satisfaction.

Bearing in mind that aggressiveness is described as the opposite of agreeableness (Garcia et al., 2012), the low correlations and almost no predictive power of aggressiveness in predicting self-satisfaction suggests that the hypothesis of a negative relationship is just partly met. The small negative correlations between aggressiveness and academic, emotional, and social self-satisfaction indicate that polite, patient people with calm temper and better control of personal impulses show higher self-satisfaction, although these results require replication as the predictive power for aggressiveness, in predicting self-satisfaction, was nonsignificant. The expectations regarding activity were mostly confirmed. Positive associations between activity and self-satisfaction indicate that a readiness to accept challenges and work hard is related to higher self-satisfaction, in general, as well as for satisfaction with competence, academic, and emotional primary domains. The expectation of a positive relationship between activity and satisfaction with the physical primary domain was not supported. The correlations between self-satisfaction primary domains and the personality factors of activity and aggressiveness suggest that learning and conditioning could be related to self-satisfaction. For example, the results suggest that good control of aggressive impulses and a proactive orientation may determine certain patterns of behavior which enable successful use of personal competencies, resulting in greater self-satisfaction.

Sensation seeking had a small, yet significant, negative correlation only with the emotion selfsatisfaction primary domain. The sensation seeking scale was found to have significant predictive power in predicting global self-satisfaction, and satisfaction with the competence, family, emotional, and academic primary domains, suggesting that needing intense sensations and novel experiences may reduce satisfaction in these life contexts. These results are compatible with those provided by Celik and Kocak (2018), who found that sensation seeking did not correlate significantly with but did predict life satisfaction. The negative nature of associations between self-satisfaction and sensation seeking is probably linked to the fact that individuals with higher sensation seeking need intense sensations or experiences which cannot always be satisfied and therefore cannot provide complete satisfaction, unlike those with lower sensation seeking, whose optimal cortical arousal level does not require intense stimulation to achieve self-satisfaction. For example, Oishi et al. (2003) observed that people with a higher optimal level of cortical arousal assessed life satisfaction based on the frequency of excitement more than those with low sensation seeking.

Regarding deeper levels of personality traits, selfsatisfaction might be related to conditioning and learning processes, as well as to individual differences in cortical physiology. It can be hypothesized that neuroticism and extraversion, which are directly associated with optimal cortical arousal (Zuckerman, 2005), suggest that under-aroused individuals (higher extraversion and lower neuroticism) have higher self-satisfaction. Nevertheless, such findings and presumptions are in line with reported correlations between extraversion and cortical volume in the ventromedial prefrontal cortex (DeYoung et al., 2010), which may be related to one's tendencies to positively interpret the environment (Roy et al., 2012) and provide motivation to obtain things attractive to the individual (Nakao et al., 2012). On the other hand, the associations of self-satisfaction with aggressiveness and activity point to conditioning and learning processes which determine patterns of achieving, maintaining or decreasing base arousal, as well as satisfaction with certain personal characteristics. In general, the results here suggest that Zuckerman's AFFM can be used as an adequate/relevant model in understanding the nature of self-satisfaction.

In addition to examining the correlations between the measured variables, sex differences were examined for the self-satisfaction items. Although previous studies have reported sex differences in various areas, such as the finding that women are less happy about their physical appearance (Halliwell & Dittmar, 2006) and women score higher than men on measures of self-concept and life satisfaction (Morganti et al., 1988), the present study only found that women scored slightly, yet significantly, higher on the academic self-satisfaction measure. Possibly these results were due to the sample, as most of the participants were students. How men and women from a community sample might differ in their responses to the SC-6 items is an area requiring future research.

## CONCLUSIONS

The findings suggest that neuroticism and extraversion represent the main personality traits that determine an individual's satisfaction with personal characteristics, competencies, and achievements. At the behavioral level, the results suggest that satisfied individuals are also cheerful, sociable, optimistic, emotionally stable, and self-confident. At the lower level of personality traits, the results suggest that self-satisfaction might be related to conditioning and learning processes, as well as to individual differences in cortical physiology. As neuroticism and extraversion are described as being associated with optimal cortical arousal (Zuckerman, 2005), the present results suggest that under-aroused individuals (higher extraversion and lower neuroticism) have higher self-satisfaction scores. Furthermore, the results also suggest that a proactive orientation and good control of personal impulses are related to higher selfsatisfaction. The associations with self-satisfaction and aggressiveness and activity point to conditioning and learning processes, although the relationships are weaker than those with extraversion and neuroticism.

The findings also support the use of the AFFM in examining relationships between personality and selfsatisfaction. As stated above, the AFFM has the advantage, compared to taxonomic models, in providing possible causal explanations of how personality traits and self-satisfaction may be associated. However, additional studies with the AFFM are required, examining specific facets of self-satisfaction in greater depth as well as examining the possible roles of biological indicators such as hormones and neural processes.

#### LIMITATIONS

As the current study is probably the first to examine self-satisfaction and the AFFM personality traits, the results require replication. A weakness in the present study is the use of single items in the SC-6. Further refinement of the domains may be required. For example, the first item asking about satisfaction with "achievements, competencies, abilities" may require separation into at least two items, as "achievements" may be perceived as different from "abilities". Satisfaction with "social" and "family" domains may also require refinement, and as stated above, "physical strength" may need to be separated from "health" and "appearance" and presented as separate items. Further limitations involve the use of self-report and the fact that more women completed the measures compared to men, possibly decreasing the generalizability of the results. In addition, although the analysis showed no significant relationship between age and self-satisfaction, the fact that most of the respondents were between 18 and 25 years old is a limitation of the study. Therefore, repeating the study in other samples, as well as including other measures of self-satisfaction, in addition to peer reports, would enable more robust conclusions on the nature of selfsatisfaction and personality.

Supplementary materials are available on the journal's website.

#### DISCLOSURES

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# Appendix

# Short Self-Satisfaction Scale (SC-6)

- 1 completely unsatisfied
- 2 mostly unsatisfied
- 3 neither unsatisfied nor satisfied
- 4 mostly satisfied
- 5 completely satisfied

Please estimate how much you are satisfied with your own...

Achievements, competencies, abilities					
Family					
Social life and relations with social environment					
Physical strength, health and appearance					
Personal emotions					
Academic achievements					