

ORIGINAL ARTICLE

Concept of indecisiveness within the HEXACO personality framework

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BACKGROUND

Decision making is one of the basic human activities. Indecisiveness, i.e. the stable tendency towards not making decisions in a timely manner, may influence the quality and speed in decision making and have long-term consequences for our professional and personal life. The goal of this research was to examine the position of indecisiveness within the HEXACO model of personality, at both the broad domains and narrow facets level. A secondary goal was to translate the Frost & Shows Indecisiveness Scale (IS) into the Croatian language and examine its validity and reliability.

PARTICIPANTS AND PROCEDURE

An internet-based sample size of 296 participants filled in both short and long version of Indecisiveness Scale and the HEXACO-PI-R.

RESULTS

The results show that the IS retains the original one-factor structure as proposed by the original authors and has

a high reliability. The shortened version shows properties very similar to the longer version and is deemed an appropriate replacement. Extraversion showed the highest positive correlation with indecisiveness, followed by negative correlations with conscientiousness, emotionality and agreeableness.

CONCLUSIONS

The Croatian translation of the IS is a valid and reliable measure. The results also confirm that the shortened 11-item version can be used as a replacement for the full 15-item version. Since there was no measure of indecisiveness in Croatian before, this instrument could be used in the future by researchers interested in this construct. It was shown that extraversion has the strongest relationship with indecisiveness, followed by conscientiousness, emotionality and agreeableness.

KEY WORDS

personality; decision making; HEXACO; indecisiveness

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BACKGROUND

INDECISIVENESS

Decision making is one of the basic human activities. Every day we are faced with a multitude of decisions, ranging from trivial ones such as what clothes to wear today or what to eat for lunch to more serious and complex ones such as choosing long-term partners, picking an educational or career path to pursue or buying real estate. Some of these decisions have long-term consequences and they can steer the direction of our professional and personal life, which means that a lack of quality and speed in decision making can bring unnecessary suffering. Despite the significant consequences indecisiveness can have on our everyday lives, this phenomenon and its mechanisms are still not well understood and definitions of the construct across psychological literature differ. One definition of indecisiveness is that it is a stable tendency towards not making decisions in a timely manner (Frost & Shows, 1993), which accentuates the time component, i.e. the fact that the main difference between decisive and indecisive individuals is in the speed of decision making. While it is undoubtedly true that people differ in the quickness of their decision making, it is questionable whether the whole construct can be boiled down to just that. For example, Elaydi (2006) states that indecisiveness constitutes being stuck in the process of decision making, which is accompanied by unpleasant emotional states. Ferrari and Dovidio (2001) also acknowledge that there is a difference in the quickness of decision making but stress that indecisiveness is more than just that and describe it as a chronic tendency to delay decision making when faced with a conflict of choice, putting forth a definition that is more closely related to procrastination. Germeijs and De Boeck (2002) have noted that there are two distinctive sets of questions regarding indecisiveness: questions that address the process of decision making (e.g. postponing decisions or the passage of time) and questions that address correlates or causal factors of indecisiveness (such as low self-esteem or the feeling of helplessness).

It is important to distinguish between the concepts *indecisiveness* and *indecision*. While both concepts pertain to the fact that some people have more problems with decision making than others, there are some clear differences. *Indecision* refers to decision making difficulties in a particular area or situation, such as *career indecision*, even if a person has no problems making decisions in other areas of their life. *Indecisiveness* on the other hand refers to a state of chronic, general indecisiveness across different situations and areas of decision making. Therefore, indecisiveness, which is the focus of this paper, is more of a trait-like concept.

HOW TO MEASURE INDECISIVENESS?

Indecisiveness can be measured both with the experimental and/or questionnaire paradigm. The most frequently used experimental method is a choice task where the participant has to select one of the multiple possible options, for example, college courses or meals on a restaurant menu. While varying the number of options (3 or 5 college courses) and pieces of information in each (more or less categories, for example, lecturer quality, time of day, relevance to degree etc.), one can observe the time it takes to reach a decision or the amount of information an individual takes into consideration. The real strength of this approach lies in the fact that we can directly observe the whole process of decision making and individual differences in the strategies. As far as questionnaires go, the most frequently used is the Indecisiveness Scale (IS) by Frost and Shows (1993). There are also other, less often used scales such as the one from Germeijs and De Boeck (22-item Indecisiveness Scale, 2002) and Elaydi (13-item Indecisiveness Scale, 2006), which, given their slightly different initial definition of the construct of indecisiveness, differ in content. For a more complete list of existing measures and definitions, see Potworowski (2010).

However, the IS is widely recognized as a “gold standard” in measuring indecisiveness. The intentional measurement content of the IS is general indecisiveness. Frost and Shows (1993) did a series of studies in order to inspect its construct and criterion validity. They correlated the indecisiveness questionnaire with psychopathological measures which were theoretically related to indecisiveness such as obsessive-compulsive symptoms, hoarding and perfectionism, and demonstrated its predictive validity (see also Patalano & Wengrovitz, 2006; Rassin et al., 2007; Spunt et al., 2009).

The IS has several adaptations that have all gone through some form of validation, e.g., there is an Italian (Di Fabio et al., 2011), Slovak (Bavolar, 2018), Japanese and Chinese (Yates et al., 2010) version. It is important to note that results on the questionnaire vary slightly across cultures. For example, in a study comparing North American, Chinese and Japanese participants (Yates et al., 2010) it was found that Japanese participants had significantly higher levels of indecisiveness, most likely a consequence of cultural differences and social pressures. Ng and Hynie (2014) found differences in levels of indecisiveness between European and East Asian participants, which is another warning sign that cultural differences across and inside populations should be taken into consideration when interpreting the results. Patalano and Wengrovitz (2006) did not find any differences in the averages between Chinese and North American participants, but they found a slight difference in the internal structure of the questionnaire

between these two populations. To be more specific, two general factors emerged in both samples, called general indecisiveness and planning indecisiveness. General indecisiveness (GI) is then further split down to GI-Anxiety and GI-Confidence only in the Chinese sample. Bavolar (2018) proposed an alternative short version to that of Rassin et al. (2007) by removing all items that concerned emotional states connected with indecisiveness and its consequences, in order to achieve a “purer” version of the intended measure (which is inability to make *timely* decisions). This version showed high internal consistency reliability ($\alpha = .87$) and good test-retest reliability ($r = .76$).

CORRELATES OF INDECISIVENESS

Indecisiveness has a wide correlational network including the concepts related to the decision making process, psychopathological symptoms and ill-being, and personality.

Indecisive people doubt that they will have enough information to reach a quality decision (Germeijs et al., 2006) and therefore take a longer time to reach one (Ferrari & Dovidio, 2000; Frost & Shows, 1993; Rassin et al., 2008), regardless of the decision-making domain. Although some research, e.g. by Ferrari and Dovidio (2000), indicates that there are no differences in the amount of information gathered between decisive and indecisive individuals, the authors also acknowledged that indecisive individuals take into consideration more information regarding the option they subsequently choose. Thus, a larger percentage of the total information gathered is information on the option that is chosen, meaning that indecisive individuals are more selective and less exhaustive in their information search (Ferrari & Dovidio, 2001). This strategy is akin to confirmation bias (Nickerson, 1998) and an effect of the informational tunnel vision (Rassin et al., 2008) reported in psychological research. Jackson et al. (1999) found that indecisive participants selected more “I cannot decide” answers on the Eysenck Personality Profiler (EPP; Eysenck & Wilson, 1991) and Deng and Chan (2017) found that indecisive participants had a greater tendency towards “I don’t know” answers in attitude scales, indicating that they not only take a longer time to make a decision, but also avoid it altogether if given the opportunity.

Indecisive individuals have low self-esteem, high levels of helplessness, ambivalence and frustration, and an external locus of control (Germeijs & De Boeck, 2002). Most of these are basically depressive symptomatology, which makes sense given that indecisiveness is mentioned as one of the criteria for major depressive disorder (APA, 2013). Frost and Shows (1993) also detected relationships with obsessive-compulsive actions such as rumination and

controlling behavior (washing and checking), while Rassin et al. (2007) found correlations with trait anxiety, depression and worry. In this whole cluster, obsessive-compulsive symptoms have been shown as the strongest predictor of indecisiveness. It has also been shown that indecisive individuals had a greater tendency towards procrastination in the form of decision avoidance, higher levels of maladaptive perfectionism (Frost & Shows, 1993; Gayton et al., 1994), and a tendency towards hoarding (Frost & Gross, 1993). Indecisive individuals are less satisfied and they usually feel ambivalent towards their decisions (Van Matre & Cooper, 1984); hence they are more likely to change them given the opportunity (Germeijs & Verschuere, 2011b). They are bothered by their indecisiveness and it limits their everyday functioning since they report more problems with decision making in an academic, social, family and everyday setting (Frost & Shows, 1993). Another interesting result is that indecisive individuals tend to interpret ambiguous statements as threatening (Rassin & Muris, 2005b). When given ambiguous statements (such as “I was surprised when I heard the results of last week’s check-up”) they are more likely to perceive them as negative, suggesting a threat-oriented decision making style. These behavioral patterns are reflected on their environment, as family, friends and work colleagues find such behaviors tiring and frustrating (Ferrari, 1994; Ferrari et al., 1999). When all of this is taken into consideration it is no surprise that indecisive individuals report lower levels of general life satisfaction (Rassin & Muris, 2005a).

Concerning the relationship between indecisiveness and personality dimensions, a number of studies that investigated the relationship between indecisiveness and the various operationalizations of the five-factor model have been conducted, e.g. Big Five Questionnaire (BFQ) by Caprara et al. (1993) and the Interpersonal Adjectives Scale: Big Five (IASR-B5) by Trapnell and Wiggins (1990) or the Revised NEO Personality Inventory (NEO-PI-R) by Costa and McCrae (1992). One agreement that can be reached across all the research is that neuroticism/emotional stability has the highest correlation with indecisiveness. Besides that, substantial correlations were found for conscientiousness, and intellect or openness domains (see Di Fabio et al., 2013; Bavolar, 2018; Germeijs & Verschuere, 2011a).

The focus of this study is the relationship of indecisiveness with the HEXACO model domains and facets. HEXACO is a hierarchically organized model where 25 facets are organized into six domains: honesty-humility (H), emotionality (E), extraversion (X), agreeableness (A), conscientiousness (C), and openness (O). It was created as a response to the fact that an increasing amount of lexical research found a sixth factor (Ashton & Lee, 2007). The new model has some similarities with its five-factor cousin but

also has some notable differences. The dimensions of extraversion, conscientiousness and openness are mostly the same, except for the deliberate exclusion of intellectual capacity from openness (Ashton et al., 2014). On the other hand, the new factor honesty-humility, emotionality and agreeableness split their variance between five-factor agreeableness and neuroticism/emotional stability. To be more specific, Ashton et al. (2014) mention that the variance of emotionality comes partly from neuroticism/emotional stability (for example, it contains anxiousness but not anger). It also shares part of its variance with five-factor agreeableness since it contains items concerning sentimentality. The HEXACO agreeableness factor shares variance with the five-factor agreeableness. However it doesn't contain sentimentality but instead it contains items that capture anger from the five-factor dimension of neuroticism/emotional stability. The new dimension honesty-humility shares almost no variance with the five-factor model except for a small part of shared variance with agreeableness (Ashton & Lee, 2019, 2020). Honesty-humility therefore also has its own unique variance that cannot be attributed to any of the five-factor model dimensions.

THE PRESENT STUDY

The primary goal of this study is to explore the position of indecisiveness within the HEXACO six-factor model, both at the broad domains and at the facets level. It seems that only one previous research paper (Potworowski, 2010) explored the personality correlates of indecisiveness using the HEXACO framework. However, a different measure of indecisiveness was used, so this is the first study to compare the HEXACO framework to the IS. Also, other than Potworowski's paper (2010), no other research has used the facet level of analysis in exploring these relationships. Our hypotheses are that emotionality will have a significant positive correlation, while extraversion and conscientiousness will have a significant negative relationship with the IS. At the facet level, it is expected that all the facets of these three factors will also have statistically significant correlations with the IS.

The secondary goal of this study is to develop a Croatian translation of the indecisiveness measure in order to facilitate future research on this topic. Therefore, we compare factor structure and the reliability of both the long and short version of the indecisiveness questionnaire. We expect one-factor structure of the IS measure, as well as satisfactory (we set the criterion to α above .70) reliability. Also, we expect a similar correlation of the short and long IS measure with the HEXACO traits.

PARTICIPANTS AND PROCEDURE

PARTICIPANTS

A total of 296 participants (77% female) agreed to participate in the study without monetary compensation. Mean age of participants was $M = 26.27$ ($SD = 6.72$, range 18-59). The vast majority of them were students (44.3%) or employed (45.3%), while a smaller number of participants were unemployed (10.1%). 36% of participants had a high-school education while the rest had bachelor's or higher education.

MEASURES

Indecisiveness Scale (IS; Frost & Shows, 1993). The IS is a 15-item scale that measures general indecisiveness. The task of each participant is to read the items which are presented in the form of statements and indicate their level of agreement or disagreement with the statement on a 5-point Likert scale. The original questionnaire has a proposed one-factor structure and a high internal consistency ($\alpha = .90$). The theoretical scores range from 15 to 75, with a higher score indicating a higher degree of indecisiveness. A shortened version exists (IS-11; Rassin et al., 2007) which omitted 4 items that were considered too situationally specific when compared to the other statements. The shortened version also has a high internal consistency ($\alpha = .88$). Both forms of the measure also display good test-retest reliability ($r = .88$ for the IS-11, Rassin et al., 2007; $r = .75$ for the IS, Bavolar, 2018).

HEXACO-PI-R. The HEXACO-PI-R (see Lee & Ashton, 2018) measures six broad personality dimensions: honesty, emotionality, extraversion, agreeableness, conscientiousness, and openness. The model is hierarchically organized, with each domain being represented by 4 facets and one interstitial facet (altruism) which loads on several domains. The task of the participants is to give an answer on a 5-point Likert scale which quantifies the level of agreement with each statement. The HEXACO-PI-R has been adapted and proved to be a valid and reliable instrument in many cultures, including Polish (Skimina et al., 2020) and Croatian (Babarović & Šverko, 2013). Validation of the Croatian translation showed reliability coefficients in the range $\alpha = .78$ to $.85$ at the domain level. Our study shows similar figures. Cronbach's α values were in the range $\alpha = .79$ to $.87$. There was a wider range at the facet level ($\alpha = .56$ to $.85$), which is expected given the small number of items per facet (see also Table 2).

PROCEDURE

Since a Croatian translation of the IS did not exist before this study, the first step was to translate that in-

strument. The translation and back-translation were done separately by the first author of this study and a professor of English, respectively. After that, an online form of the questionnaire was constructed using the Google Forms platform. The study was conducted following the ethical standards and was approved by the Department of Psychology, University of Zagreb. Prior to the data gathering the participant gave written consent that collected data could be used for the purposes of this research. The second page contained items related to some socio-demographic variables (gender, age, work status and highest degree of education finished). The following pages contained items from the HEXACO-PI-R and lastly from the IS. The questionnaire was shared over Facebook contacts and groups and using the snowball sampling method. After the data collection period had finished, the data were analyzed using statistical software (IBM SPSS and Python data science libraries numpy, scikit-learn, scipy, matplotlib, pandas). There were no missing data in the sample because it was not possible to progress through the questionnaires without answering all of the items.

RESULTS

PSYCHOMETRIC PROPERTIES OF THE IS

The reliability coefficient of the IS measured with McDonald's ω is very high ($\omega = .91$). The reason behind using McDonald's ω instead of the much more prevalent Cronbach's α coefficient of reliability is that it seems that with unidimensional constructs, which is what we expect the IS to be, McDonald's ω is a more precise measure and closer to the theoretical definition of reliability (Deng & Chan, 2017), given that it does not depend on the intercorrelations of items in a scale but rather their saturations with a common factor. Item variability, expressed as standard deviations, ranged from 1.05 to 1.30. The average mean is 2.69, with a range across all items from 2.06 to 3.12.

To examine the internal structure of the IS an exploratory factor analysis was conducted. The correlation matrix was shown to be a good fit for factor analysis according to the Kaiser-Meyer-Olkin coefficient value of 0.914 and Bartlett test of sphericity ($\chi^2(105, N = 296) = 2175.60, p < .01$). Fabrigar et al. (1999) argue that in case of a normal distribution of the data all methods of extraction are quite similar but recommend the use of maximum likelihood estimation, given that it is accompanied by goodness-of-fit tests. Since the data on the IS (skewness = 0.424, kurtosis = -0.166) and on individual items follow a normal distribution pattern, the maximum likelihood estimation method of extraction was used. In observing the eigenvalues of

the extracted factors (first three values 6.80, 1.44 and 0.98) and a visual inspection of the scree plot it was clear that a single factor structure was the appropriate solution given the huge drop in explained variance after the first factor as well as the lack of interpretability and simple structure even after rotation when multiple factor structures were studied. Osborne and Costello (2005) state some criteria for a good factor fit: correlations with a factor higher than 0.3, at least 3 items per factor, few to no items with a complexity higher than one. The single factor solution covers all these criteria. Since the single factor structure was shown to be the best fit, as was expected, subsequently the psychometric properties of the shortened 11-item version were examined. The factor loadings were fairly similar to those in the long form and the internal reliability coefficient was very similar ($\omega = .90$). Unsurprisingly, the correlation between the two measures is exceptionally high ($r = .98, p < .01$).

CORRELATION BETWEEN THE IS AND THE HEXACO-PI-R

The planned correlational analyses required roughly normal distribution of the variables (see Field, 2009). Therefore, distributions of the HEXACO factors and facets were tested using the Kolmogorov-Smirnov test, followed by skewness and kurtosis analysis and, finally, a visual inspection of the distributions. Although the K-S test was significant, all kurtosis and skewness indices ranged from $-.59$ to $.21$ at the domains level, and $.72$ to $.56$ at the facets level. Therefore, they were below the critical value (see Field, 2009; George & Mallery, 2010; Gravetter & Wallnau, 2014; Trochim & Donnelly, 2006) that recommend skewness and kurtosis to be in a ± 2 range.

As can be seen in Table 2, 4 out of the 6 personality domains had a statistically significant correlation with the IS. Both versions of the IS show the same, convergent pattern of correlations with the HEXACO-PI-R. Substantial correlations of IS and IS-11, respectively, were found for extraversion ($r = -.52$ and $-.50$), conscientiousness ($r = -.35$ and $-.29$), emotionality ($r = .26$ and $.27$), and agreeableness ($r = -.16$ and $-.13$). All of the mentioned domains except emotionality showed a negative correlation with the IS. The results support our hypotheses about the relationship of indecisiveness with emotionality, extraversion and conscientiousness. However, a marginal correlation of indecisiveness with agreeableness, which was not expected, was also found. At the facet level, the following facets were found to correlate with the IS: fearfulness, anxiety, social self-esteem, social boldness, sociability, liveliness, forgiveness, patience, organization, diligence and prudence.

DISCUSSION

One of the aims of the study conducted was to investigate the factor structure and reliability of the Indecisiveness Scale. Both the full 15-item and the shortened 11-item version have a high reliability and

the same one-factor structure. The full and shortened version showed very similar, convergent patterns of correlation with the HEXACO personality dimensions, and it is safe to conclude that the 11-item version of the IS is a satisfactory replacement for the longer version.

Table 1

Descriptive statistics and factor loadings for the items of the Indecisiveness Scale (N = 296)

Item	M	SD	IS (IS-11)
1. Pokušavam odgoditi donošenje odluka. <i>I try to put off making decisions.</i>	2.99	1.30	.59 (.55)
2. Uvijek znam točno što želim. <i>I always know exactly what I want.</i>	2.97	1.05	.61 (.61)
3. Smatram da mi je lako donositi odluke. <i>I find it easy to make decisions.</i>	3.12	1.15	.78 (.79)
4. Teško mi je isplanirati slobodno vrijeme. <i>I have a hard time planning my free time.</i>	2.34	1.19	.51
5. Volim biti u poziciji u kojoj donosim odluke. <i>I like to be in a position to make decisions.</i>	2.82	1.17	.61 (.62)
6. Jednom kad donesem odluku, prilično sam uvjeren/a da je dobra. <i>Once I make a decision, I feel fairly confident that it is a good one.</i>	2.54	1.10	.69 (.70)
7. Kad naručujem sa menija, obično mi je teško odlučiti što uzeti. <i>When ordering from a menu, I usually find it difficult to decide what to get.</i>	2.82	1.17	.46
8. Obično brzo donosim odluke. <i>I usually make decisions quickly.</i>	3.06	1.19	.70 (.71)
9. Jednom kad donesem odluku, prestanem se zabrinjavati njome. <i>Once I make a decision, I stop worrying about it.</i>	3.05	1.16	.66 (.67)
10. Postanem tjeskoban/na kad donosim odluku. <i>I become anxious when making a decision.</i>	2.88	1.16	.70 (.72)
11. Često se brinem jesam li napravio/la krivi izbor. <i>I often worry about making the wrong choice.</i>	3.04	1.20	.74 (.75)
12. Nakon što sam izabrao/la ili odlučio/la nešto, često vjerujem kako je to bio krivi izbor/odluka. <i>After I have chosen or decided something, I often believe I've made the wrong choice or decision.</i>	2.29	1.05	.73 (.74)
13. Ne završim zadatke na vrijeme jer ne mogu odlučiti što prvo napraviti. <i>I do not get assignments done on time because I cannot decide what to do first.</i>	2.06	1.05	.58
14. Imam problema s obavljanjem zadataka jer ne mogu dati prioritet onome što je najvažnije. <i>I have trouble completing assignments because I can't prioritize what is most important.</i>	2.10	1.15	.55
15. Čini se da mi je potrebno puno vremena za odlučivanje o najtrivialnijim stvarima. <i>It seems that deciding on the most trivial thing takes me a long time.</i>	2.38	1.27	.69 (.65)

Note. IS – Indecisiveness Scale, IS-11 – shortened 11-item version of the Indecisiveness Scale.

However, the main aim of this study was to investigate the relationship between indecisiveness and the HEXACO model of personality. The results show that higher indecisiveness is accompanied by higher emotionality and lower extraversion, conscientious-

ness and agreeableness. What this research has in common with studies on the five-factor models is that it seems that emotionality/neuroticism, extraversion and conscientiousness have the strongest connection to indecisiveness. However, our results indicate that

Table 2

Descriptive statistics and reliabilities for the HEXACO-PI-R scales and their correlations with the Indecisiveness Scale and its shortened version (IS-11)

Item	<i>M</i>	<i>SD</i>	α	<i>r</i> IS (IS-11)
Honesty-humility	3.59	0.63	.83	-.06 (-.06)
Sincerity	3.48	0.81	.65	-.02 (-.01)
Fairness	3.71	0.99	.72	-.09 (-.10)
Greed avoidance	3.45	0.93	.80	-.04 (-.01)
Modesty	3.70	0.83	.71	-.01 (.02)
Emotionality	3.38	0.59	.80	.26** (.27**)
<i>Fearfulness</i>	3.15	0.81	.66	.30** (.32**)
<i>Anxiety</i>	3.50	0.85	.65	.32** (.34**)
<i>Dependence</i>	3.23	0.99	.85	.06 (.06)
<i>Sentimentality</i>	3.63	0.86	.75	.02 (.04)
Extraversion	3.50	0.64	.87	-.52** (-.50**)
Social self-esteem	3.67	0.75	.70	-.48** (-.46**)
Social boldness	2.98	0.94	.80	-.41** (-.42**)
Sociability	3.83	0.73	.67	-.26** (-.22**)
Liveliness	3.50	0.92	.85	-.44** (-.41**)
Agreeableness	2.82	0.59	.83	-.16* (-.13*)
Forgiveness	2.54	0.79	.70	-.19** (-.17**)
Gentleness	3.18	0.75	.69	.03 (.02)
Flexibility	2.63	0.75	.58	-.08 (-.07)
Patience	2.93	0.93	.77	-.16** (-.13**)
Conscientiousness	3.61	0.59	.83	-.35** (-.29**)
Organization	3.62	0.90	.73	-.35** (-.28**)
Diligence	3.84	0.73	.72	-.42** (-.38**)
Perfectionism	3.71	0.79	.68	.03 (.06)
Prudence	3.27	0.80	.66	-.29** (-.24**)
Openness	3.60	0.59	.79	-.02 (0)
Aesthetic appreciation	3.59	0.87	.65	.09 (.11)
Curiosity	3.47	0.86	.61	-.08 (-.07)
Creativity	3.62	0.95	.78	-.09 (-.08)
Unconventionality	3.74	0.74	.62	-.07 (-.05)
Altruism	4.11	0.92	.56	-.13 (-.09)

Note. IS – Indecisiveness Scale, IS-11 – shortened 11-item version of the Indecisiveness Scale; * $p < .05$, ** $p < .01$.

HEXACO extraversion had a higher and emotionality a lower correlation than comparable domains in previous studies which were based on the five-factor models (see Bavolar, 2018; Di Fabio et al., 2013; Germeijs & Verscheuren, 2011a). Finally, agreeableness unexpectedly also had, although significant, a low correlation with indecisiveness. It is also important to mention that not all of the facets of these 4 factors had significant correlations with indecisiveness. Thus, the results only partially support our last hypothesis, and it is important to mention in greater detail and try to offer an explanation for the more unexpected results.

First of all, given that we know neuroticism/emotional stability typically had the strongest correlation with indecisiveness, it was expected that emotionality, which is most similar to five-factor neuroticism, not extraversion, would have the strongest correlation with indecisiveness. The most likely explanation for this occurrence concerns the way that the factors/facets are defined in HEXACO versus the five-factor models. To begin with, the emotionality factor shares only part of its variance with neuroticism, meaning that it is possible that the lack of strength in its correlation with indecisiveness is due to the fact that it does not encompass all the relevant parts of neuroticism that have an effect on a person's indecisiveness. Next, we need to take a closer look at extraversion. One of the facets of extraversion is social self-esteem, where people who are low on this facet exhibit a tendency towards helplessness, which has ties with depression. Given that it was mentioned in the introductory part that indecisiveness is an indicator of depression, this can, in part, explain the stronger connection with Extraversion. Another facet of extraversion is liveliness. People who are low on liveliness tend to feel less energetic and dynamic. While this is not the same as the extreme fatigue and inability to take action that is present in depressed people, a feeling of tiredness, both physical and psychological, can still be a warning sign for depression.

Second, despite expectations, agreeableness had a significant correlation with indecisiveness in the present study. Again, we turn to the facets of this dimension to offer an explanation. To be more specific, it is the facets of forgiveness and patience that show a significant correlation with indecisiveness. Since it was mentioned in the introduction that the HEXACO agreeableness factor shares a part of its variance with five-factor neuroticism, namely the parts about anger, it is proposed that precisely those parts of its variance are responsible for the higher than expected correlation between agreeableness and indecisiveness as well as the lower than expected correlation of emotionality with indecisiveness.

Finally, there was no significant relationship between indecisiveness and the perfectionism facet of conscientiousness. A few studies (Frost & Shows, 1993; Gayton et al., 1994) have detected a significant

relationship between the more maladaptive sides of perfectionism and indecisiveness. The obvious explanation for a lack of correlation is the way perfectionism is measured with the HEXACO-PI-R. More specifically, the questionnaire uses only 4 items to measure perfectionism and the items are far more generalized than they are in the aforementioned papers, as well as being obviously far less exhaustive. This points to the conclusion that the lack of connection here is because perfectionism is a far more complex and nuanced construct than is measured by the HEXACO-PI-R.

LIMITATIONS

Like all research, this one has its limitations. First, the data were collected using an online questionnaire because no other method was plausible due to the COVID-19 pandemic and the social distancing rules that went along with it. Although some research indicates that data collected through online questionnaires are comparable to data collected through traditional methods (Gosling et al., 2004), it is still worth noting that the conditions under which participants filled out the questionnaire were not controlled, or in other words, the conditions were not standardized, which might have impacted the results.

Although the final number of participants is relatively large ($N = 296$), the sample is gender biased and educationally biased, given that 77% of the sample were highly educated women. Also, most of the participants are young adults, with 90% of them being between 20 and 30 years old. It would be interesting to see if the results would be different in a more balanced sample.

The primary assumption behind the IS is that it measures a trait-like construct which is fairly stable across time and situations. It is therefore unfortunate that no study of test-retest reliability was conducted to prove this assumption. Although research suggest that indecisiveness is indeed fairly stable over time (Rassin et al., 2007; Bavolar, 2018), it is a task for future research using the adapted IS measure to confirm these results and substantiate the claim that indecisiveness is indeed a trait-like construct.

Also worth mentioning is that the IS is a self-report measure, and such measures are infamous for being sensitive to social-desirability bias. It might be of interest to construct an observer report measure and examine the differences in the results.

The criterion validity of the scale was not studied, and it would be of interest to see how the IS correlates with and predicts constructs known from the literature to have a relationship with indecisiveness such as decision-making styles, need for cognition and various psychopathological constructs such as anxiety, depression, perfectionism, worry and obsessive-compulsive symptoms. The presence of criterion

validity would enable clinical researchers to perhaps incorporate this instrument as a quick diagnostic tool given its known correlations with psychopathological symptoms and certain relevant aspects of personality, as shown in this study. Another domain of research where this questionnaire could be used is market research. It can be used to gain more understanding as to how people choose items for purchase and perhaps can be used to study the effect of choice overload on indecisive individuals. Conceivably it can even be used to find out how to target products specifically to more indecisive individuals. Finally, the IS could surely be of use in organizational psychology. Given that there are jobs (for example doctor, air traffic controller, various managers) where making quick, efficient and confident decisions is imperative given the high risks associated with making mistakes, a tool for quick appraisal of suspect candidates would benefit any organization which employs such staff.

Last but not least, this is a correlational study, which means no inferences can be made in terms of causal relationships. For this study that means we cannot conclude whether indecisiveness is a cause or consequence of differences in personalities. One other possibility is that indecisiveness is in fact a personality trait but it does not emerge in any models because it does not fit the simple structure criterion but is loaded on more than one factor, as can be seen in the results of this study.

CONCLUSIONS

To sum up, the results indicate that the Croatian translation of the IS is a valid and reliable measure. The results also confirm that the shortened 11-item version can be used as a replacement for the full 15-item version. It was found that extraversion has the strongest relationship with indecisiveness, followed by conscientiousness, emotionality and agreeableness. Emotionality was the only personality domain that showed a positive correlation with indecisiveness. At the facet level, the following facets were found to correlate with the IS: for emotionality – fearfulness and anxiety; for extraversion – social self-esteem, social boldness, sociability and liveliness; for agreeableness – forgiveness and patience; for conscientiousness – organization, diligence and prudence. Since there was no measure of indecisiveness in Croatian before, this instrument could be used in the future by researchers interested in this construct.

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