

PROCRASTINATION PREDICTORS AND MODERATING EFFECT OF PERSONALITY TRAITS

Katarzyna Markiewicz, Paulina Dziewulska

Institut Psychologii, Uniwersytet Marii Curie-Skłodowskiej w Lublinie
Institute of Psychology, Maria Curie-Skłodowska University in Lublin

Summary. The present paper constitutes an attempt at finding out whether personality traits were moderate relationships between procrastination and its predictors. Students of the Faculty of Education and Psychology ($N = 27$) and Faculty of Economics ($N = 20$) participated in the study (total $N = 47$), 74,5% were women and 25,5% were men. Mean age was 20,28 years (min. = 19, max. = 24). Neither sex nor age differentiated the participants.

The study confirmed interrelations of such personality traits as neuroticism, extraversion, and conscientiousness with procrastination, widely discussed in scientific literature. Other significant predictors of procrastination were fear of failure, low motivation and persistence, lack of time management, and preference for social life. Relationship of those variables with procrastination was positive, which meant that their higher index indicated a stronger tendency to delay tasks. High index of neuroticism moderated the relationship of low motivation and lack of time management with decisive procrastination. Moreover, high degree of conscientiousness moderated interrelations among fear of failure, evaluation anxiety, and behavioral procrastination.

Key words: procrastination, personality traits, procrastination predictors

Procrastination is described as a tendency to constant delaying of decisions (Klingsieck, 2013), intentional avoiding of carrying out the intended and necessary activities (Van Eerde, 2000) "self-weakening" (Procee et al., 2013) or non-adaptive behaviour caused by problems with self-regulation and executing purposeful activities connected with commencement or completion of an activity (Ferrari, Tice, 2000; Park, Sperling, 2012). Researchers mention the following negative effects of procrastination: deteriorating general feeling, headaches and hypoimmunity (Tice, Baumeister, 1997; Sirois, Melia-Gordon, Pychyl, 2003; Klingsieck, 2013), decreased fitness and vitality, decrease of efficiency (Sirois, 2004), as well as mental problems, fear, anxiety, depression (Ferrari, 1991; Ferrari, Johnson, McCown, 1995; Flett, Blankstein, Martin, 1995; Haycock, McCarthy, Skay, 1998; Tibbett, Ferrari, 2015).

Adres do korespondencji: Katarzyna Markiewicz, e-mail:
katarzyna.markiewicz@poczta.umcs.lublin.pl

Procrastinating is a problem for about 15-25% of adult population (Ellis, Knaus, 1977; McCown, Johnson, Petzel, 1989; Harriott, Ferrari, 1996; Ferrari, 2010; Procee et al., 2013; Tibbett, Ferrari, 2015). Among academic youth the percentage of persons admitting chronic "putting off" is as high as 80-90% (Ferrari et al., 2007; Steel, 2007; Steel, Ferrari, 2013), of which experiencing serious negative consequences and problems is reported by 50% (Day, Mensink, O'Sullivan, 2000; Onwuegbuzie, 2000; Steel, 2007).

The reasons for academic form of procrastination the researchers find in behaviour typical of students' lifestyle, such as putting difficult tasks off until the last moment and inadequate estimation of time, indispensable for correct task execution (Van Eerde, 2003; Park, Sperling, 2012). The aptness to "putting off" may also result from the property of the task (Procee et al., 2013), the accomplishment of which is accompanied by boredom, frustration (Blunt, Pychyl, 2000), negative valuation of meaning (Little, 1983) or disadvantageous motivational attitude (Vansteenkiste et al., 2009). The cause of procrastination is also the divergence between intention and activity, resulting from disorders in self-regulation system connected with behaviours oriented at achieving personal goals (Lay, Knish, Zanatta, 1992; Zimmerman, 2000).

Attempts were made at explaining procrastination while studying the connection between self-regulation and sense of one's own effectiveness (Park, Sperling, 2012), however, the results turned out to be ambiguous. Certain studies indicate that students with high level of self-regulation simultaneously have a high sense of their own effectiveness, are academically active, able to set task goals and accomplish them (Pintrich, 2000; Steel, 2007). On the other hand, persons with low self-regulation level frequently simply learn ineffectively (Zimmerman, 2002). Therefore, it was deemed that procrastination is influenced much more than by self-regulation, by the following factors: applying ineffective -preventive strategies, lack of meta-cognitive skills and inappropriate work organization (Ferrari, 2001; Howell, Watson, 2007), as well as impulsiveness, problems with focusing attention and decreased resistance to stress (Steel, 2007).

Personality conditionings of procrastination

The connection of procrastination with personality traits is frequently analysed. Negative correlations were found between procrastination and diligence (Locke, Latham, 1990, 2004), agreeableness (Knaus, 1979; Burka, Yuen, 1983), openness to new experience (Schouwenburg, Lay, 1995; Watson, 2001) and, in a not very significant degree, with extraversion (Ainslie, 1992; Schouwenburg, Lay, 1995). Positive interaction, in turn, concerns the connection of procrastination with neuroticism, with participation of such mediators as irrational thinking and perfectionism (Ellis, Knaus, 1977; Burka, Yuen, 1983; McCown, Johnson, Petzel, 1989; Schlenker, Weigold, 1990; Beck, Koons, Milgrim, 2000). The tendency to procrastination is also related to

decreased mood or depression, typical of neuroticism (Ruiz-Caballero, Bermudez, 1995; Saklofske, Kelly, Jansen, 1995). Thomas P. Tibbett and Joseph R. Ferrari (2015) demonstrated that neuroticism, especially in connection with indecisiveness and tendency to introversion, enhances general procrastination, whereas its decisive dimension is connected with negative experiences from the past, as well as with the application of wrong patterns of postponing decisions facing conflict situations, accompanied by a strong sense of fear (Beswick, Rothblum, Mann, 1988; Harriott, Ferrari, Dovidio, 1996; Ferrari, Dovidio, 2000, 2001; Milgram, Tenne, 2000; Watson, 2001; Tibbett, Ferrari, 2015). This form of procrastination affects results in science (Germeijs, De Boeck, 2002), interpersonal relationships (Ferrari, Emmons, 1994), somatic and mental health state.

Other studies do not, however, confirm the connections between neuroticism and procrastination (Johnson, Bloom, 1995; Schouwenburg, Lay, 1995).

Due to ambiguity of results concerning the relationship of personality traits with procrastination, many authors postulate justifiability of continuing such kind of research queries (Tibbett, Ferrari, 2015).

Methodology of research

Study objective and hypotheses

On the basis of literature survey it was assumed that personality traits may constitute a significant moderator of the relationship between the tendency to procrastination and its particular aspects and the potential factors enhancing the “putting off” attitude.

Formulating the hypotheses we assumed that:

- 1) there is a connection between personality traits, especially high neuroticism, low extraversion, diligence and procrastination;
- 2) significant predictors of the tendency to procrastination can be: fear of failure, fear of rejection and criticism, low motivation and perseverance, as well as lack of organization (time management);
- 3) intensity of personality traits (neuroticism, extraversion and diligence), may modify the connection of particular aspects of procrastination with its predictors.

Additionally, the connection between sex, studied discipline and the tendency to procrastination was checked.

The examined persons

We examined 47 2nd year students (74.5% women, 25.5% men) of the Faculty of Pedagogy (Education) and Psychology ($N = 27$) and the Faculty of Economics ($N = 20$) of Maria Curie Skłodowska University in Lublin. The mean age of the examinees – 20.28 years (min. = 19, max. = 24, standard deviation = .994). Exclusively the persons who expressed their consent to it took part in the examination.

Research tools and methods

The tests were performed with the use of pen-and-paper method. The following tools were used:

1. To establish the causes of procrastination we used Procrastination Causes Questionnaire (PCQ) developed for the needs of these studies. The questionnaire items were established on the basis of literature survey (e.g. Steel, 2007; Van Eerde, 2003). The original list had 31 items. The ultimate internal structure of the scale was established on the basis of the exploration factor analysis using main axes method. To determine the number of factors the talus chart criterion, which indicated the justifiability of isolating 3 factors: FACTOR I – the non-personal external ($\alpha = .92$) (a/ SEE – social and economic situation in Europe, charge force .956; b/ SES – social and economic situation in the world, charge force .934; c/ SEK – social and economic situation in the country, charge force .785). The choice of items that fulfilled factor I (the non-personal external) dictated by the analysis of trends taking place in the contemporary socio-economic space (Renn, 1998; Giddens, 1999, 2001; Rosa, 2010). As the studies show, directing towards the future may be connected with inducing threats and, consequently, feeling uncertainty about the experienced transformations (Beck, 2004). The sense of uncertainty connected with the future may, in turn, be translated into taking important life decisions (or procrastinating it). FACTOR II – the personal external ($\alpha = .81$) (d/ temptation, charge strength .829; e/ other pleasures, charge strength .745; f/ weather, charge strength .724; g/ social life, charge strength .617); FACTOR III – internal ($\alpha = .714$) (h/ fear of failure, charge strength .732; i/ fear of rejection and criticism from other people, charge strength .653; j/ low motivation and perseverance, charge strength .574; k/ lack of organization, charge strength .546). To establish the strength of factor charges oblique rotation of Oblimin line. The distinguished factors explain jointly nearly 60% of results variance. The statistics defining the properties of K-M-O (.698) correlation matrix and Bartlett's test for sphericity ($\chi^2 = 337.64$, $p = .000$) indicate good properties of the data – correlations that are significantly different from 0. The examinees indicated on the 5-point Likert scale (1 – weak; 5 – maximum) the strength of the subjective meaning of particular factors as potential reasons for procrastinating them.
2. Personality features were examined with the use of Personality inventory NEO-FFI, by Paul Costa and Robert McCrae (1991; Polish adaptation: Zawadzki et al., 1998). Due to commonness of that tool, its description will be omitted.
3. To measure procrastination we used Pure Procrastination Scale Questionnaire (Steel, 2010, Polish adaptation: Stępień, Topolewska, 2014, p. 152-154), enabling us to isolate three aspects in general procrastination: decisive, behavioral and non-adaptive. Reliability coefficients (alpha-Cronbach) are, respectively for each of the scales: general procrastination $\alpha = .89$, decisive $\alpha = .87$, behavioral $\alpha = .82$, non-adaptive $\alpha = .83$ (Stępień, Topolewska, 2014). The maximum result that can be obtained in this test is 60 points.

Results

All the calculations were made with the use of the statistic package IBM SPSS Statistics 22.

The conducted descriptive statistics (table 1) show that sex or domain of studies differentiate the examinees as to: 1/ openness: students of psychology demonstrated higher index ($M = 28.74$) than students of economics ($M = 24.25$), 2/ neuroticism ($M_{Kobiety} = 27.26$) ($M_{Men} = 17.00$) and 3/ lack of organization ($M_{Women} = 3.26$; $M_{Men} = 2.33$), in both the cases women demonstrated higher indexes than men.

Table 1. Descriptive statistics for the analyzed variables, including study domain and sex of the examinees

		<i>M</i>	<i>SD</i>	<i>U (p)</i>		
				Kierunek studiów	Płeć	
Personality traits	NEU	24.64	9.4	202.50 (.146)	68.50 (.001)	
	EX	29.70	7.52	252.00 (.698)	182.50 (.502)	
	OP	26.83	6.46	173.00 (.036)	189.00 (.607)	
	COM	30.28	5.75	208.00 (.181)	165.00 (.271)	
	DIL	31.19	6.61	232.00 (.412)	173.00 (.365)	
Procrastination aspects	PRO_GEN	33.83	8.59	240.00 (.518)	208.00 (.961)	
	PRO_DEC	7.81	2.82	267.50 (.956)	207.00 (.941)	
	PRO_BEH	20.45	5.40	233.50 (.431)	194.00 (.696)	
	PRO_N.AD	5.53	2.82	268.50 (.974)	168.00 (.294)	
Przyczyny zachowań prokrastynacyjnych	Czynnik III	F_F	2.36	1.19	270.00 (1.00)	168.00 (.279)
		F_C	2.36	1.28	263.00 (.874)	158.50 (.186)
		LM	3.19	1.30	226.00 (.323)	163.00 (.231)
		LO	3.02	1.31	225.00 (.316)	127.00 (.036)
	Factor II	WEA	3.53	1.14	267.00 (.945)	172.00 (.320)
		TEM	3.94	.919	244.50 (.543)	163.00 (.203)
		PLEA	4.06	.895	244.00 (.528)	209.00 (.978)
		S_L	2.87	1.14	231.00 (.380)	156.00 (.168)
	Factor I	SEK	3.34	1.07	229.00 (.348)	193.00 (.659)
		SEE	3.28	.994	263.00 (.873)	182.00 (.470)
SES		3.34	.962	254.00 (.717)	192.50 (.634)	

Explanations: NEU – neuroticism; EX – extraversion; OP – openness to experiences; COM – complacency; SUM – diligence; PRO_G – general procrastination index; PRO_DEC – decisive aspect of procrastination; PRO_BEH – behavioral aspect; PRO_N.AD – non-adaptive aspect; F_F – fear of failure; F_C – fear of criticism and rejection; LM – low motivation and perseverance

ance; LO – lack of organization; WEA – good weather; TEM – temptations; PLEA – other pleasures; S_L – social life; DES – domestic economic situation; EES – economic situation in Europe; WES – economic situation in the world.

1. Establishing the connection between personality traits and tendency to procrastination

On the basis of literature survey we assumed that there exists a connection between personality traits, especially high neuroticism, as well as between low extraversion and diligence with procrastination. The analysis conducted with the use of correlation coefficient *r-Pearson* (unilateral significance) confirms our assumption. At the same time extraversion and diligence turned out to be negatively connected with all aspects of procrastination, i.e. general ($p_{\text{Extraversion}} = .003$; $p_{\text{Diligence}} < .001$), decisive ($p_{\text{Extraversion}} = .012$; $p_{\text{Diligence}} < .001$), behavioral ($p_{\text{Extraversion}} = .020$; $p_{\text{Diligence}} < .001$) and non-adaptive ($p_{\text{Ekstrawersja}} = .041$; $p_{\text{Sumiennosc}} = .003$). Neuroticism, in turn, is positively connected with the general aspect ($p = .007$), decisive ($p < .001$) and behavioral ($p = .023$) (table 2).

Table 2. Correlations between personality traits and procrastination

	<i>r-Pearson</i> (<i>p</i>)			
	PRO_GEN	PRO_DEC	PRO_BEH	PRO_N.AD
Neuroticism	.354 (.007)	.498 (.000)	.293 (.023)	.085 (= .284)
Extraversion	-.402 (.003)	-.327 (.012)	-.299 (.020)	-.257 (.041)
Openness	-.011 (.472)	.003 (.492)	-.024 (.437)	-.013 (.466)
Complacency	.163 (.136)	.065 (.332)	.173 (.123)	.099 (.253)
Diligence	-.662 (.000)	-.537 (.000)	-.539 (.000)	-.395 (.003)

Explanations: Unilateral correlation ($N = 47$)

PRO_OG – general procrastination index; PRO_DEC – decisive aspect of procrastination; PRO_BEH – behavioral aspect; PRO_N.AD – non-adaptive aspect.

2. Establishing procrastination predictors

On the basis of previous studies (Markiewicz, 2017) it was assumed that the significant predictors of the tendency to procrastination can be: fear of failure, fear of rejection and criticism, low motivation and perseverance, as well as lack of organization. The conducted regression analysis confirmed our assumptions. Significant ($p < .05$) predictors for general procrastination turned out to be: fear of failure ($\beta_{\text{stand}} = .275$), low motivation and perseverance ($\beta_{\text{stand}} = .324$), lack of organization ($\beta_{\text{stand}} = .552$). Besides, it was found that preferring participation in social life ($\beta_{\text{stand}} = .386$), as well as economic and social situation in Europe ($\beta_{\text{stand}} = -.594$) and in the world ($\beta_{\text{stand}} = -.548$) also constitute significant procrastination predictors. The assumed model turned out to be well adjusted to data $F(11,35) = 8.069$, $p = .000$ and it explained 63% of variances.

Significant ($p < .05$) predictors of decisive procrastination, in turn, turned out to be: fear of failure ($\beta_{\text{stand}} = .371$), lack of organization ($\beta_{\text{stand}} = .338$), preferring participation in social life ($\beta_{\text{stand}} = .500$), assessment of social and economic situation in Europe ($\beta_{\text{stand}} = -.556$) and in the world ($\beta_{\text{stand}} = -.610$). The adopted model reveals good adjustment to data $F(11,35) = 4.565$, $p = .000$ and explains 46% of variances.

In case of behavioural procrastination significant ($p < .05$) predictors turned out to be low motivation and perseverance ($\beta_{\text{stand}} = .338$), lack of organization ($\beta_{\text{stand}} = .530$), temptation or something that distracts attention while performing a task ($\beta_{\text{stand}} = .358$), as well as the assessment of social and economic situation in Europe ($\beta_{\text{stand}} = -.533$). The model demonstrates good adjustment to data $F(11,35) = 7.730$, $p = .000$ and explains 62% of variances.

None of the isolated variables revealed a relationship (dependence) with procrastination in non-adaptive dimension (table 3).

Table 3. Predictors of procrastinating behaviour

Predictor	PRO_OG	PRO_DEC	PRO_BEH	PRO_N.AD
	$\beta_{\text{standardized}} (p)$			
Fear of failure	.275 (.044)	.371 (.025)	.141 (.300)	.223 (.291)
Fear of rejection and criticism	.039 (.764)	.074 (.637)	.143 (.282)	.172 (.404)
Low motivation and perseverance	.324 (.023)	.197 (.237)	.388 (.008)	.005 (.983)
Lack of organization	.552 (.000)	.338 (.024)	.530 (.000)	.180 (.348)
Weather encouraging to spending time in more pleasant way	-.078 (.546)	-.005 (.973)	-.63 (.633)	-.050 (.808)
Temptation	.250 (.095)	.062 (.728)	.290 (.058)	.188 (.422)
Something more pleasant to do	.127 (.414)	.082 (.658)	.358 (.027)	.278 (.260)
Participation in social life	.386 (.004)	.500 (.002)	.224 (.091)	.308 (.135)
Social and economic situation in the country	-.048 (.747)	-.299 (.103)	-.182 (.235)	-.272 (.255)
Social and economic situation in Europe	-.594 (.011)	-.556 (.043)	-.533 (.023)	-.147 (.677)
Social and economic situation in the world	-.548 (.015)	-.610 (.025)	-.338 (.131)	-.459 (.188)

Thus, the conducted regression analysis confirmed our assumptions.

3. Moderating share of personality traits in the relationship between predictors of procrastination and its aspects

It was assumed that the intensity of personality traits (neuroticism, extraversion and diligence), may modify the connection between particular aspects of procrastination with its predictors. In order to verify our assumption, we performed a hierarchical regression analysis with the interaction component. That part of analysis was preceded by centering the explanatory variable (procrastination predictors measured by KPP) and moderator (personality traits: neuroticism, extraversion, diligence).

No significant interaction effect was found of neuroticism and fear of failure upon procrastinating ($\beta_{\text{int}} = .092, p = .531, F(1,43) = .399$). In other words, although a strong connection was reported between neuroticism and tendency to general, decisive and behavioral procrastination (table 2), and fear of failure turned out to be a significant predictor of general and decisive procrastination (table 3), no significant influence of interaction effect of both these factors upon procrastination. Probably the fact that feeling fear is one of the components of neuroticism (Costa, McCrae, 1980, 1992), causes mutual cancelling out of these two kinds of variables in the interaction with the predictor with substantially and emotionally very similar meaning (fear of failure), which leads to wrong estimation of the moderating effect (Bedyńska, Książek, 2012).

We reported, however, the interactive effect of the influence of neuroticism, sense of low motivation and lack of organization upon general, decisive and behavioural procrastination. No significant interactive effects, in turn, were reported for non-adaptive procrastination with any of the analysed predictors (table 4).

Table 4. Interactive effect of neuroticism and procrastination enhancing factors upon its particular aspects

		NEUROTICISM		
		PRO_OG	PRO_DEC	PRO_BEH
MOTIVATION	$F(3,43)$	13,149 ($p < .001$)	10,753 ($p < .001$)	14,025 ($p < .001$)
	$\beta_{\text{standardized}}$.228 ($p = .047$)	.308 ($p = .011$)	.204 ($p = .069$)
	corrected $R^2(R^2_{\text{changes}})$	44% (.051)	39% (.093)	46% (.041)
	$F_{\text{changes}}(1,43)$	4,189 ($p = .047$)	6,981 ($p = .011$)	3,471 ($p = .069$)
LACK OF ORGANIZATION	$F(3,43)$	Ni	10,048 ($p < .001$)	ni
	$\beta_{\text{standardized}}$	Ni	.248 ($p = .043$)	ni
	corrected $R^2(R^2_{\text{changes}})$	Ni	37% (.059)	ni
	$F_{\text{changes}}(1,43)$	Ni	4,334 ($p = .043$)	ni

The connection between the sense of low motivation and procrastination turned out to be statistically significant, both in persons with low ($\beta = .508$; $F(1,22) = 7.66$, $p = .011$), and high ($\beta = .721$, $F(1,21) = 22,684$, $p = .000$) intensity of neuroticism. Similar results were obtained for the behavioural aspect of procrastination (low neuroticism: $\beta = .587$; $F(1,22) = 11,588$, $p = .003$; high: $\beta = .737$, $F(1,21) = 24,911$, $p = .000$). The connection between decisive procrastination with low motivation is, in turn, statistically insignificant ($\beta = .129$, $F(1,22) = .375$, $p = .547$) in persons with low intensity of neuroticism. However, in persons revealing high neuroticism the relationship between these variables becomes strong ($\beta = .608$, $F(1,21) = 12,342$, $p = .002$).

The connection between the sense of lack of organization and behavioural procrastination turned out to be insignificant in persons with low neuroticism ($\beta = .176$, $F(1,22) = .700$, $p = .412$), whereas in persons with high intensity of that trait it is distinct ($\beta = .621$, $F(1,21) = 13,213$, $p = .002$).

In the case of extraversion a single interactive effect was reported, concerning the sense of low motivation in connection with the behavioural aspect of procrastination (table 5).

Table 5. Interactive effect of extraversion and procrastination enhancing factors upon its particular aspects

		EXTRAVERSION
		PRO_BEH
MOTIVATION	$F(3,43)$	14,047 ($p < .001$)
	$\beta_{\text{standardized}}$	-,221 (.052)
	corrected $R^2(R^2_{\text{changes}})$	46% (.047)
	$F_{\text{changes}}(1,43)$	3,994 ($p = .052$)

The connection between the sense of low motivation and behavioural procrastination turned out to be statistically significant, both in persons with low ($\beta = .737$; $F(1,24) = 28.536$, $p = .000$) and high ($\beta = .544$, $F(1,19) = 8.000$, $p = .011$) intensity of extraversion.

Fear of failure and criticism, which did not give interactive effect with neuroticism, turned out to be statistically significant for diligence. The influence of that effect was, however, reported exclusively upon behavioural procrastination. The significant interactive effects were reported with the variable: lack of organization, but they concerned the effect upon general and behavioural procrastination (table 6).

Table 6. Interactive effect of diligence and procrastination enhancing factors upon its particular aspects

		DILIGENCE			
		PRO_OG	PRO_DEC	PRO_BEH	PRO_N.AD
FEAR_FAILURE	$F(3,43)$	Ni	ni	8,673 ($p < .001$)	ni
	$\beta_{\text{standardized}}$.249 ($p = .049$)	
	corrected $R^2(R^2_{\text{changes}})$			33% (.060)	
	$F_{\text{changes}}(1,43)$			4.119 ($p = .049$)	
FEAR_CRITICISM	$F(3,43)$	Ni	ni	8.390 ($p < .001$)	ni
	$\beta_{\text{standardized}}$.304 ($p = .039$)	
	corrected $R^2(R^2_{\text{changes}})$			33% (.067)	
	$F_{\text{changes}}(1,43)$			4.538 ($p = .039$)	
LACK OF ORGANIZATION	$F(3,43)$	24,083 ($p < .001$)	ni	16.909 ($p < .001$)	ni
	$\beta_{\text{standardized}}$.171 (.085)		.204 ($p = .065$)	
	corrected $R^2(R^2_{\text{changes}})$	60% (.027)		51% (.038)	
	$F_{\text{changes}}(1,43)$	3.100 (.085)		3.590 ($p = .065$)	

In persons with low diligence $\beta = .075$; $F(1,23) = .131$, $p = .721$) the connection between feeling fear of failure and behavioural procrastination turned out to be insignificant. High diligence, however, significantly modified the relationship between these variables ($\beta = .422$, $F(1,20) = 4.337$, $p = .050$). also in the case of fear of criticism no interactive effect was found with behavioural procrastination in persons with low diligence ($\beta = -.50$, $F(1,23) = .057$, $p = .814$). The interactive effect turned out to be significant on the level of tendency ($\beta = .392$, $F(1,20) = 3,636$, $p = .070$) for high diligence.

The connection between the sense of lack of organization and general procrastination turned out to be statistically significant, both in persons with low ($\beta = .451$; $F(1,23) = 5.859$, $p = .024$) and high $\beta = .715$, $F(1,20) = 20,913$, $p = .000$) intensity of diligence. Similar result was obtained for behavioural procrastination (low diligence $\beta = .448$, $F(1,23) = 5,772$, $p = .025$; high diligence $\beta = .731$, $F(1,20) = 22,963$, $p = .000$).

Conclusions and discussion

1. Assumptions about the connection between such personality traits as neuroticism, extraversion and diligence with procrastination in its particular aspects, found their confirmation in the presented studies.
2. Significant predictors of procrastination in its general aspect turned out to be fear of failure, low motivation and perseverance, lack of organization and preferring social life. The higher the index of these variables, the bigger is the ten-

dency to postponing things. The connection of procrastination with the assessment of economic situation in Europe and in the world in turn, also statistically significant, turned out to be negative. The better the examinees assessed the social and economic situation in Europe and in the world, the lower the index of the tendency to procrastination turned out to be. Similar results were obtained in the decisive aspect. Except low motivation and perseverance, the remaining predictors, significant to general procrastination, also turned out to be important for decisive procrastination. Significant predictors for behavioural procrastination, in turn, turned out to be, except low perseverance, lack of organization and assessment of economic and social situation in Europe and in the world, the tendency to give in to temptations.

3. Fear of failure and criticism, sense of low motivation and lack of organization in the interaction with personality traits, especially neuroticism and diligence, turned out to significantly affect procrastination. High neuroticism index gave the effect that moderated the connection of low motivation and lack of organization with procrastination of decisions. Fear of failure and criticism, in turn, enhanced behavioural procrastination in the case of high level of diligence.

The data above authorize us to state that the first of the assumptions concerning the connection of personality traits, especially high neuroticism and low extraversion and diligence with procrastination found confirmation in our studies. Such connections were also reported by other researchers (in. a. Watson, 2001; Scher, Osterman, 2002; Steel, 2007; Van Eerde, 2003). The literature survey allows us to distinguish at least eight factors conditioning procrastination. These are: self-confidence, self-control, self-awareness as negative predictors and perfectionism, impulsiveness, depression, low sense of self-value (low self esteem) as well as low sense of effectiveness as positive predictors (Beswick, Rothblum, Mann, 1988; Lay et al., 1989; Ferrari, Johnson, McCown, 1995; Flett, Blankenstein, Martin, 1995; Flett, Hewitt, Martin, 1995; Lay, 1995; Beck, Koons, Milgrim, 2000; Scher, Osterman, 2002; Tan et al., 2008). Our studies demonstrated that the significant predictors of the tendency to procrastination may also be: fear of failure, low motivation and lack of organization, as well as succumbing to temptations and pleasures, taking part in social life, negative assessment of social and economic situation in Europe and in the world. These results are consistent with those obtained by Brett L. Beck, Susan R. Koons and Debra L. Milgrim (2000). These researchers emphasize that when analysing such a complicated phenomenon as the tendency to procrastination one should consider the co-occurrence of many different antecedences and a complex of personality traits, not a single feature. Thus, it is worth emphasizing that in our studies the influence of fear, as well as motivation and lack of organization upon the tendency to procrastination turned out to be regulated by the intensity of such personality traits as diligence and neuroticism. High diligence indicator significantly differentiated the connection of fear of failure and criticism with behavioural procrastination. High neuroticism index in turn, moderated the connection between low motivation and

decisive procrastination, as well as between lack of organization and behavioural procrastination.

The presented analyses show the complexity of problems. It is the analysis of prediction connections and moderating effects of procrastination. The ambiguity of the obtained data indicates the need for continuing the studies. Diligent persons may be prone to putting things off, fearing criticisms of the effects of their work. Obviously procrastination behaviour will not, however, concern all diligent students, nor will they refer to all persons with increased level of fear. It is only the interaction of personality traits with various predictors that gives distinct effects connected with aptness to procrastination. In our view the obtained results also show the significance of therapeutic work with procrastinating persons, focused on identifying personality conditionings of responding to various stimuli influencing an individual.

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PREDYKTORY PROKRASTYNACJI I MODERACYJNY EFEKT CECH OSOBOWOŚCI

Streszczenie. Niniejsza praca stanowi próbę określenia, czy cechy osobowości oddziałują moderująco na związek między prokrastynacją i jej predyktorami. Uczestnikami badań było 47 osób (w tym 74,5% kobiet, 25,5% mężczyzn) – studentów Wydziałów Pedagogiki i Psychologii ($N = 27$) oraz Ekonomicznego ($N = 20$) UMCS w Lublinie. Średnia wieku badanych wynosiła 20,28 lat (min. = 19, max. = 24). Płeć ani wiek nie różnicowały badanych.

Prezentowane badania potwierdziły opisywane w literaturze naukowej założenia o związku między takimi cechami osobowości, jak neurotyczność, ekstrawersja i sumienność z prokrastynacją w jej poszczególnych aspektach. Ponadto istotnymi predyktorami prokrastynacji okazały się lęk przed porażką, niska motywacja i wytrwałość, brak umiejętności zorganizowania i preferowanie życia towarzyskiego. Związek tych zmiennych z prokrastynacją był dodatni, co oznacza, że im wyższy wskaźnik tych zmiennych, tym większa była też skłonność do odkładania spraw na później. Wysoki wskaźnik neurotyczności dawał efekt moderujący związek niskiej motywacji oraz braku zorganizowania z prokrastynacją decyzyjną. Z kolei na powiązania lęku przed porażką i krytyką z prokrastynacją behawioralną moderująco oddziaływała silnie wyrażona sumienność.

Słowa kluczowe: prokrastynacja, cechy osobowości, predyktory prokrastynacji

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