Exploratory analysis

Regression models and moderation hypothesis (interactions)

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In exploratory analysis, two hierarchical linear models were tested. In the first model, depression was the outcome. In the other model, happiness was the outcome. Both models consist of three blocks. In the first block (Block 1), there were only decision-making tendencies (satisficing, maximizing as a strategy and maximizing as a goal). The aim here was to examine the effect of decision-making tendencies on well-being. In the second block (Block 2), age and gender were added as control variables as well as personality traits (neuroticism and extroversion) and self-rumination. These variables were added to look at the effect of decision making tendencies on well-being in the context of other variables. In the third block (Block 3), the interaction between decision making tendencies and personality traits and self-rumination were added. By adding the interaction, the hypothesized moderation effect of personality traits and self-rumination on the relationship between decision-making tendencies and well-being was tested. The linearity and multicollinearity of the variables were verified before testing the models. The linearity of the relationship between the independent variables and the dependent variable was not verified in the model but separately using the curve estimation method. In multicollinearity, a critical value for VIF of more than 5 and a tolerance of less than 0.20 was chosen (O'Brien, 2007).

In the context of depression, it was found that people with a higher level of maximizing as a strategy have a higher level of depressive symptoms if only the decision-making tendencies were examined as predictors of depression (Block 1). There was no effect found of the decision-making tendencies on depression if they were examined as predictors of depression in the context of other variables (age, gender, neuroticism, extroversion, and self-rumination) (Block 2). It was also found that a higher level of depression depends on the interaction of maximizing as a strategy and neuroticism as well as the interaction of maximizing as a goal and self-rumination (Block 3) (Table 3). In terms of the moderation effect, it was found that an increase in neuroticism made the relationship between maximizing as a strategy and depression stronger and vice versa. In other words, the relationship between maximizing as a strategy and depression became positive with a higher level of neuroticism while the relationship between maximizing as a strategy and depression became negative with decreasing neuroticism (Figure 1). The same pattern was found with regards to the moderation effect of self-rumination on the relationship between maximizing as a goal and depression (Figure 2). Table 2 shows the results of the hierarchical linear regression using depression as the outcome. In the first block, it was found that maximizing as a strategy was a significant positive predictor of depression ($\beta = 0.13$, $p = 0.008$). In the second block, it was found that neuroticism ($\beta = 0.30$, $p < 0.001$), extroversion ($\beta = -0.18$, $p < 0.001$) and self-rumination ($\beta = 0.29$, $p < 0.001$) were significant predictors of depression. Extroversion was a negative predictor of depression while neuroticism and self-rumination were positive predictors. In the third block, the interaction between maximizing as a strategy and neuroticism ($\beta = 0.62$, $p = 0.043$) and the interaction between maximizing as a goal and self-rumination ($\beta = 0.73$, $p = 0.015$) were found to be significant positive predictors of depression.

Table 3

Regression results using depression as the criterion and decision-making tendencies (Block 1), gender, age, and selected personality factors (Block 2), and the interaction between personality factors and decision-making tendencies (Block 3) as predictors

Predictor	*B*	*SE B*	*ß*	Fit	Difference
Block 1 (decision making tendencies)					
(Intercept)	6.92				
Satisficing	-0.10	0.15	-0.03		
Maximizing (S)	0.15**	0.06	0.13		
Maximizing (G)	-0.002	0.10	-0.001		
				R2 = .017	
				95% CI[-.01,.04]	
Block 2 (age, gender, personality)					
(Intercept)	-5.98				
Satisficing	-0.05	0.12	-0.01		
Maximizing (S)	-0.02	0.04	-0.01		
Maximizing (G)	0.10	0.08	0.05		
Age	0.003	0.04	0.003		
Gender	0.65	0.90	0.03		
Neuroticism	0.47***	0.07	0.30		
Extroversion	-0.29***	0.07	-0.18		
Self-rumination	0.31***	0.05	0.29		
				R^2 = .40***	ΔR^2 = .23***
				95% CI[.33,.47]	95% CI[.17, .30]
Block 3 (personality and decision-making interaction)					
(Intercept)	58.26*				
Satisficing	-1.63	1.09	-0.49		
Maximizing (S)	-0.46	0.39	-0.39		
Maximizing (G)	-0.94	0.54	-0.46		
Age	0.01	0.04	0.001		
Gender	0.54	0.90	0.02		
Neuroticism	-0.48	0.58	-0.31		
Extroversion	-1.43	0.53	-0.91		
Self-rumination	0.005	0.31	0.04		
Satisf:Neuroticim	0.03	0.02	0.33		
Maxim (S):Neuroticism	0.02*	0.008	0.63		
Maxim (G):Neuroticism	-0.01	0.01	-0.16		
Satisf:Extroversion	0.04	0.02	0.41		
Maxim (S):Extroversion	0.01	0.008	0.32		
Maxim (G):Extroversion	0.01	0.01	0.25		
Satisf:Self-rumination	-0.001	0.01	-0.01		
Maxim (S):Self-rumination	-0.005	0.005	-0.31		
Maxim (G):Self-rumination	0.02*	0.01	0.73		
				R^2 = .42***	ΔR^2 = .02
				95% CI[.36,.48]	95% CI[-.00,.04]

Note. * indicates p < .05. ** indicates p < .01. *** indicates p < .001; Maxim (S) – means maximizing as a strategy; Maxim (G) – means maximizing as a goal; Satisf – means satisficing

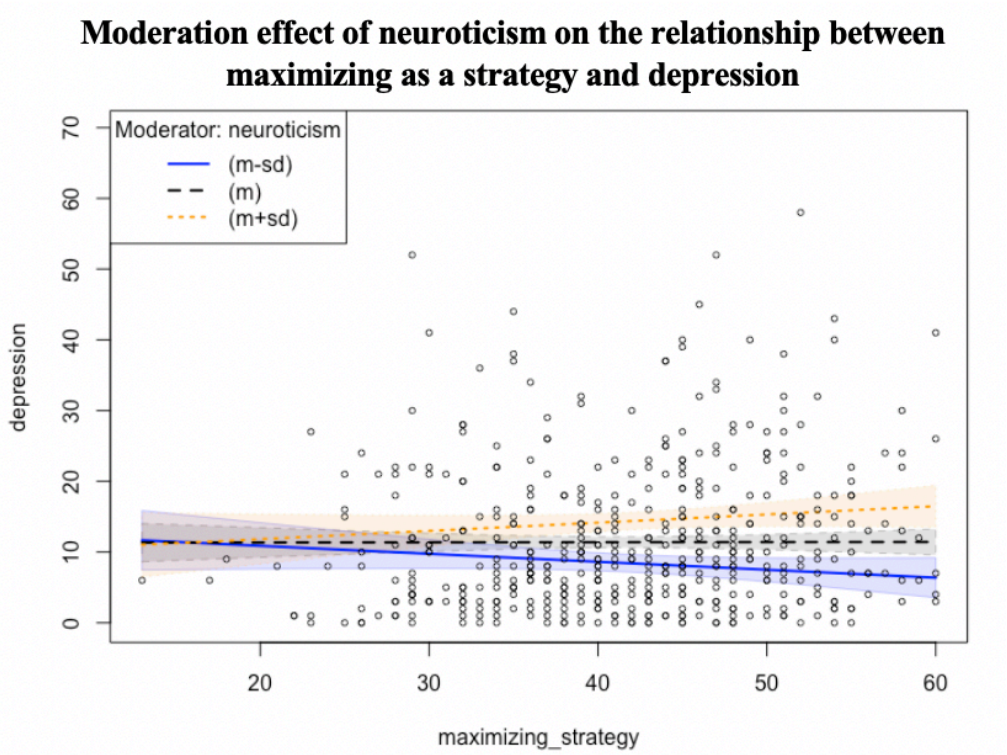

Figure 1: Moderation effect of neuroticism on the relationship between maximizing as a strategy and depression

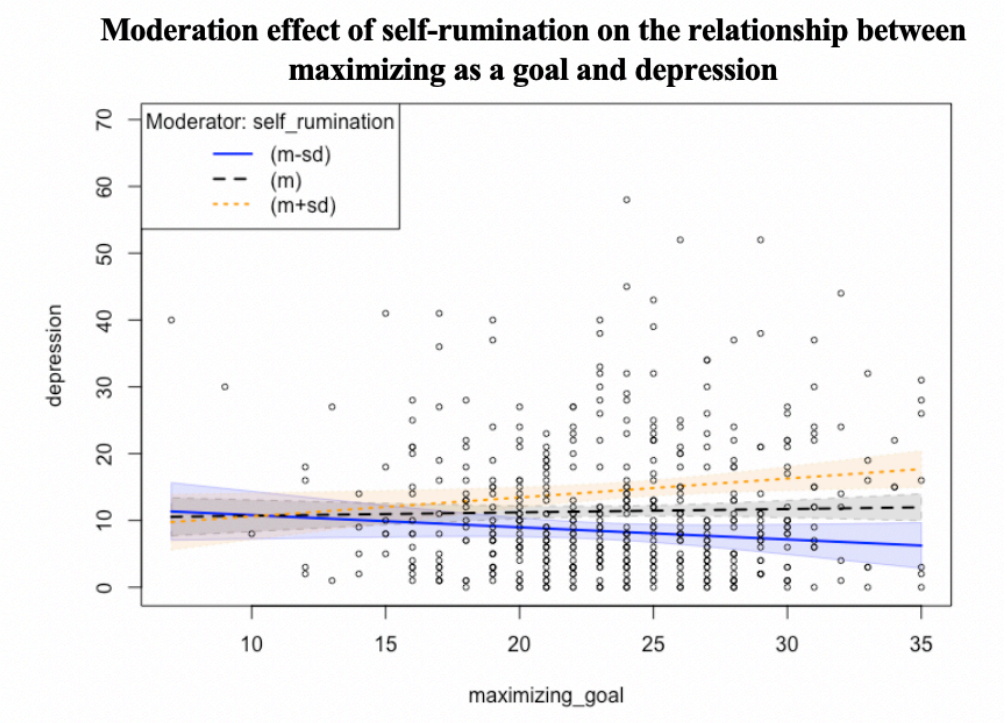

Figure 2: Moderation effect of self-rumination on the relationship between maximizing as a goal and depression

In the context of happiness, it was found that people with a higher level of maximizing as a strategy are less happy if only the decision-making tendencies were examined as predictors of happiness (Block 1). There was no effect found of decision-making tendencies on happiness if they were examined as predictors of happiness in the context of other variables (age, gender, neuroticism, extroversion and self-rumination) (Block 2). It was also found that a higher level of happiness depends on the interaction of satisficing and neuroticism as well as the interaction of maximizing as a goal and self-rumination (Block 3) (Table 4). With regards to the moderation effect, it was found that an increase in neuroticism made the relationship between satisficing and happiness stronger, and vice versa. In other words, the relationship between satisficing and happiness became negative with a higher level of neuroticism while the relationship between satisficing and happiness became positive with a decreasing a level of neuroticism, (Figure 3). The same pattern was found regarding the moderation effect of self-rumination on the relationship between maximizing as a goal and happiness (Figure 4). Table 3 shows the results of the hierarchical linear regression analysis using happiness as the outcome. In the first block, it was found that only maximizing as a strategy was a significant negative predictor of happiness ($ß = -0.11$, $p = 0.019$). In the second block, it was found that personality factors were significant predictors of happiness. Extroversion was a positive predictor of happiness ($ß = 0.29$, $p < 0.001$) while neuroticism ($ß = - 0.29$, $p < 0.001$) and self-rumination were negative predictors ($ß = - 0.19$, $p < 0.001$). It was also found that women were happier than men ($ß = 0.10$, $p = 0.008$). In the third block, the interaction between satisfaction and neuroticism ($ß = - 0.66$, $p = 0.014$) as well as the interaction between maximizing as a goal and self-rumination ($ß = - 0.63$, $p = 0.034$), and interaction between extraversion and maximizing as a strategy ($ß = - 0.55$, $p = 0.04$), were found to be significant negative predictors of happiness.

Table 4

Regression results using happiness as the criterion and decision-making tendencies (Block 1), gender, age and selected personality factors (Block 2), and the interaction between personality factors and decision-making tendencies (Block3) as predictors

Predictor	*B*	*SE B*	*ß*	Fit	Difference
Block 1 (decision making tendencies)					
(Intercept)	18.10***				
Satisficing	0.09	0.08	0.05		
Maximizing (S)	-0.07*	0.03	-0.11		
Maximizing (G)	0.06	0.05	0.06		
				R2 = .015 95% CI[-.00,.04]	
Block 2 (age, gender, personality)					
(Intercept)	21.05***				
Satisficing	0.05	0.06	0.03		
Maximizing (S)	0.01	0.02	0.02		
Maximizing (G)	-0.02	0.04	-0.02		
Age	0.01	0.02	0.01		
Gender	1.20**	0.45	-0.10		
Neuroticism	-0.23***	0.04	-0.29		
Extroversion	0.23***	0.03	0.29		
Self-rumination	-0.10***	0.02	-0.19		
				R^2 = .40*** 95% CI[.33,.47]	ΔR^2 = .385** 95% CI[.32, .45]
Block 3 (personality and decision making interaction)					
(Intercept)	-19.22				
Satisficing	0.95	0.54	0.57		
Maximizing (S)	0.29	0.19	0.50		
Maximizing (G)	0.68*	0.27	0.66		
Age	0.01	0.02	0.01		
Gender	-1.12**	0.45	0.09		
Neuroticism	0.62*	0.29	0.81		
Extroversion	0.88**	0.26	1.13		
Self-rumination	-0.02	0.15	-0.04		
Satisf:Neuroticim	-0.03*	0.01	-0.66		
Maxim (S):Neuroticism	0.01	0.004	-0.51		
Maxim (G):Neuroticism	-0.01	0.007	-0.24		
Satisf:Extroversion	-0.01	0.01	-0.29		
Maxim (S):Extroversion	-0.01*	0.004	-0.55		
Maxim (G):Extroversion	-0.01	0.006	-0.26		
Satisf:Self-rumination	0.003	0.007	0.12		
Maxim (S):Self-rumination	0.003	0.003	0.29		
Maxim (G):Self-rumination	-0.01*	0.005	-0.63		
				R^2 = .43*** 95% CI[.37,.50]	ΔR^2 = .03* 95% CI[.00,.06]

Note. * indicates p < .05. ** indicates p < .01. *** indicates p < .001; Maxim (S) – means maximizing as a strategy; Maxim (G) – means maximizing as a goal; Satisf – means satisficing

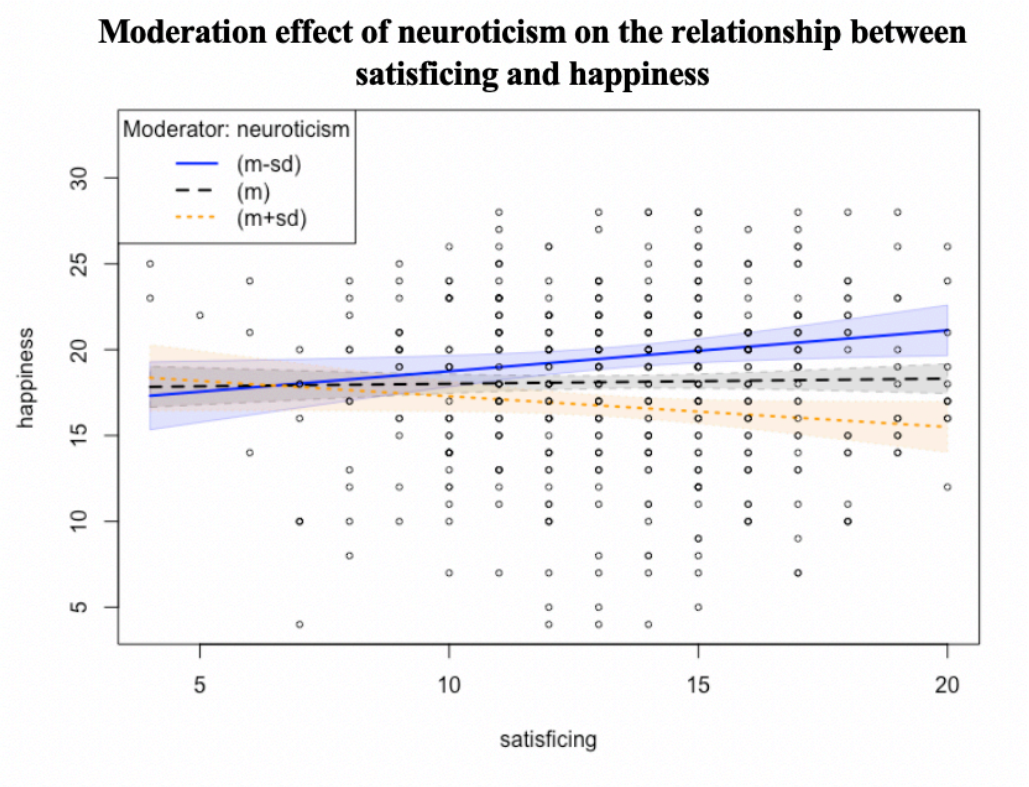

Figure 3: Moderation effect of neuroticism on the relationship between satisficing and happiness

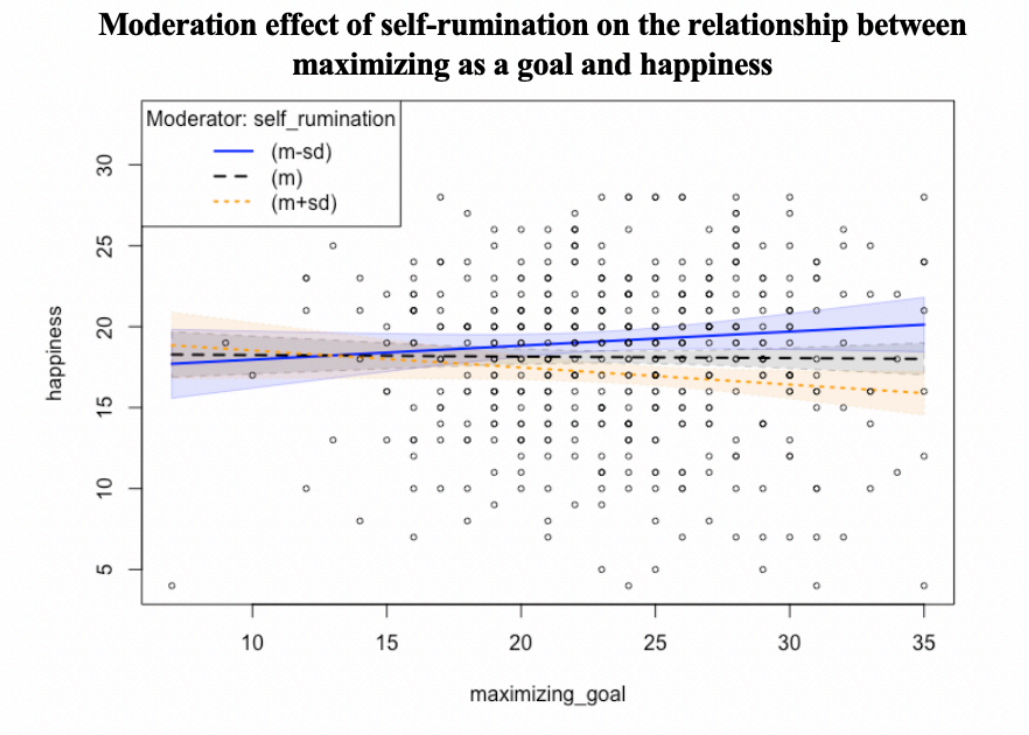

Figure 4: Moderation effect of self-rumination on the relationship between maximizing as a goal and happiness

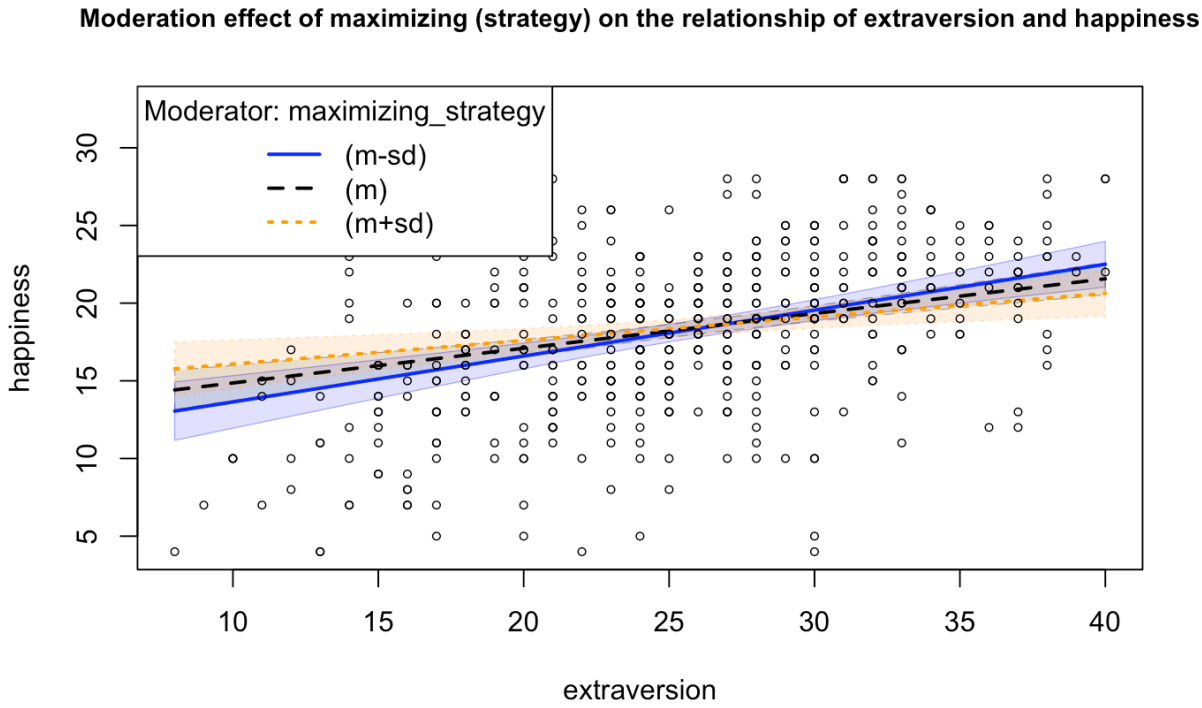

Figure 5: Moderation effect of extraversion on the relationship between maximizing as a strategy and happiness

It it necessary to state that the results of the exploratory analysis need to be taken with a grain of salt, as multiple regression and interaction have several limitations, especially if they are implemented on cross-sectional data (Tzaglev & Henik, 1991; Wagenmakers et al., 2012). These exploratory results could rather serve as an inspiration for forming hypotheses for further research with more complex designs (e.g., longitudinal or experimental). The second point which is necessary to taking into a part is that the results of interaction apparently offer also an alternative interpretations (see osf https://osf.io/3csjk/). But when we look at alternative interpretation of moderation effects, that decision-making tendencies moderate the relationships between personality traits, self-rumination and well-being it is possible to see that moderation effect of decision-making tendencies is weaker than moderation effect of personality. Also in depression the direction of the relationship does not change compared to the moderations which we suggest in our moderation hypothesis that personality traits and self-rumination would be moderators. The third point in the context of interactions and its interpretations which is necessary to stress is that the effect of interactions in the current study were weak and p-values in some of the interactions are nearly to p-value 0.05, which means that could be false positive.